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Public Investment Capacity Building Project Azerbaijan
Training Needs Assessment for “Azersu” OJSC

- Training Needs Assessment Report -
March 2013
# Table of Contents

Introduction ........................................................................................................................................................................... 7

A. Approach of the Study .......................................................................................................................................................... 12

B. The Azerbaijani Water and Sanitation Sector – an Overview ................................................................................................. 13
   B.1 History and Organizational Structure ............................................................................................................................ 13
   B.2 Financial Structure .......................................................................................................................................................... 23
   B.3 Staffing Structure .......................................................................................................................................................... 25
   B.4 Physical Infrastructure and Challenges in Service Provision .......................................................................................... 29
   B.5 Investments ................................................................................................................................................................. 35

C. Training and Capacity Building Needs Assessment ............................................................................................................ 37
   C.1 Management & Customer Communication .................................................................................................................. 38
      C.1.1 Management - Middle Management – Third Level Management ........................................................................... 38
      C.1.2 Human Resources Development ............................................................................................................................ 45
      C.1.3 Training Centre ........................................................................................................................................................ 50
      C.1.4 Customer Communication - Complaints - Applications .......................................................................................... 52
      C.1.5 Archive – Documentation - Knowledge Management ............................................................................................. 54
      C.1.6 Legal Provision of International Projects and Contracts .......................................................................................... 56
      C.1.7 Information & Communication Technologies ......................................................................................................... 57
   C.2 Water & Sanitation Investments ................................................................................................................................. 62
      C.2.1 Strategic Development, Expertise of Project, Design of Projects ............................................................................. 62
      C.2.2 Sukanal Scientific Research and Design Institute ...................................................................................................... 66
   C.3 Water & Sewerage Systems Construction ..................................................................................................................... 68
      C.3.1 Constructions - Project Management .......................................................................................................................... 68
      C.3.2 Investments - Foreign Relations – Tenders .................................................................................................................. 69
      C.3.3 Construction Supervision .......................................................................................................................................... 72
   C.4 Operation & maintenance, water quality .......................................................................................................................... 75
      C.4.1 Water Sources – Water Treatment ............................................................................................................................ 75
      C.4.2 Transmission Mains – Reservoirs – Water Network .................................................................................................. 79
      C.4.3 Wastewater & Rainwater Management ..................................................................................................................... 82
      C.4.4 Mechanics – Electrical Equipment ............................................................................................................................ 86
      C.4.5 Occupational Health and Safety - Environmental Protection .................................................................................... 88
      C.4.6 Instrumentation and Remote Control (Automatics - Metrology) ............................................................................. 91
C.4.7 Control over Technological Processes & Water Quality ........................................... 92
C.4.8 Transport and Special Techniques ........................................................................... 94
C.5 Accounting & Financial Management ......................................................................... 95
C.5.1 Commercials - Customer Base - Sales Control - Billing ........................................ 95
C.5.2 Economic Analysis and Forecasting - Accounting & Reporting ............................. 97
C.5.3 Logistics - Procurement - Supply ........................................................................... 102
D. Training Concept - Training Plan ................................................................................. 104
D.1 Azersu’s experiences with trainings until October 2012 .............................................. 104
D.2 Some considerations to make trainings successful ...................................................... 107
D.3 Suitable training formats and methods ....................................................................... 109
D.4 Training Plan ............................................................................................................... 114
D.5 Training Cluster and Training Areas .......................................................................... 158
E. Terms of Reference for prioritized Trainings ............................................................... 164
E.1 Criteria for the prioritization of trainings .................................................................... 164
E.2 Structure of Terms of Reference for prioritized trainings .......................................... 165
E.3 Terms of Reference for selected training modules ....................................................... 167
F. Next Steps .................................................................................................................... 175
FIGURES AND TABLES

Figure 1: Cycle of Training and Capacity Building ............................................................... 10
Figure 2: Azersu – the Net of Stakeholders ......................................................................... 17
Figure 3: Organizational Structure of Baku Sukanal ............................................................ 20
Figure 4: Organizational Structure of Baku Sukanal – Rayon Narimanov ......................... 21
Figure 5: Organizational Structure of United Sukanal .......................................................... 22
Figure 6: Organizational Structure of Joint Stock Companies ........................................... 22
Figure 7: Political Structure of Azerbaijan .......................................................................... 29
Figure 8: Structure of Water Sources in Azerbaijan ............................................................. 31
Figure 9: Design of a Helical Curriculum .......................................................................... 109

Table 1: Overall aims and objectives of assignment ........................................................... 9
Table 2: Tariff Design in Azerbaijan (Summer 2012) .......................................................... 24
Table 3: Staffing Structure of Azersu - Summary ................................................................. 28
Table 4: Main River Indicators ............................................................................................ 30
Table 5: Main Lake Indicators ............................................................................................. 30
Table 6: Reservoirs in Azerbaijan ....................................................................................... 31
Table 7: Groundwater Resources in Azerbaijan ................................................................. 32

ANNEXES

Annex 1 Findings of a Questionnaire submitted to Subsidiary Organization of Azersu in July 2012
# ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ACCA</td>
<td>Association of Chartered Certified Accountants</td>
</tr>
<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
</tr>
<tr>
<td>ATV</td>
<td>Abwassertechnische Vereinigung – Federation for Sewage Technology</td>
</tr>
<tr>
<td>AWWA</td>
<td>American Water Works Association</td>
</tr>
<tr>
<td>AZN</td>
<td>Azerbaijani New Manat</td>
</tr>
<tr>
<td>CE</td>
<td>Collection Efficiency</td>
</tr>
<tr>
<td>CEO</td>
<td>Caucasus Environmental Outlook</td>
</tr>
<tr>
<td>CISCO</td>
<td>(San Fran) CISCO: company for network operations</td>
</tr>
<tr>
<td>CV</td>
<td>Curriculum Vitae</td>
</tr>
<tr>
<td>DIN</td>
<td>Deutsche Industrienorm – German Industry Standards</td>
</tr>
<tr>
<td>EC</td>
<td>European Commission</td>
</tr>
<tr>
<td>EE</td>
<td>Energy efficiency</td>
</tr>
<tr>
<td>EPANET</td>
<td>Software that models the hydraulic and water quality behavior of water distribution piping systems</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>EUR</td>
<td>Euro</td>
</tr>
<tr>
<td>FIDIC</td>
<td>Fédération Internationale des Ingénieurs Conseils</td>
</tr>
<tr>
<td>IBNET</td>
<td>International Benchmarking Network for Water and Sanitation Utilities</td>
</tr>
<tr>
<td>IDB</td>
<td>Islamic Development Bank</td>
</tr>
<tr>
<td>IFA</td>
<td>International Fiscal Association</td>
</tr>
<tr>
<td>IFRS</td>
<td>International Finance Reporting Standards</td>
</tr>
<tr>
<td>ILF</td>
<td>Ingenieurgemeinschaft Lässer-Feizlmayr - ILF Beratende Ingenieure</td>
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<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>IWA</td>
<td>International Water Association</td>
</tr>
<tr>
<td>JAICA</td>
<td>Japan International Cooperation Agency</td>
</tr>
<tr>
<td>KfW</td>
<td>KfW Entwicklungsbank</td>
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<tr>
<td>KOICA</td>
<td>Korean International Cooperation Agency</td>
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<td>NRW</td>
<td>Non-Revenue Water</td>
</tr>
<tr>
<td>Ofwat</td>
<td>economic regulator of the water &amp; sewerage industry in England and Wales</td>
</tr>
<tr>
<td>OJSC</td>
<td>Open Joint Stock Company</td>
</tr>
<tr>
<td>PC</td>
<td>Personal Computer</td>
</tr>
<tr>
<td>PI</td>
<td>Performance Indicator</td>
</tr>
<tr>
<td>PICBP</td>
<td>Public Investment Capacity Building Project</td>
</tr>
<tr>
<td>PIU</td>
<td>Project Implementation Unit</td>
</tr>
<tr>
<td>RAID</td>
<td>Redundant Array of Independent Disks (IT)</td>
</tr>
<tr>
<td>SAM</td>
<td>Strategic Asset Management</td>
</tr>
<tr>
<td>SECO</td>
<td>Secrétariat d'Etat à l'économie (Switzerland)</td>
</tr>
<tr>
<td>SNIP</td>
<td>Russian Industry Standards</td>
</tr>
<tr>
<td>TA</td>
<td>Technical Assistance</td>
</tr>
<tr>
<td>ToC</td>
<td>Theory of Constraints</td>
</tr>
<tr>
<td>ToR</td>
<td>Terms of Reference</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
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INTRODUCTION

Since 2004 Azersu OJSC is in charge of planning, providing and monitoring water supply and wastewater disposal services in entire Azerbaijan. Significant investments are planned and ongoing in the country in order to ensure a safe and healthy water supply and wastewater disposal situation. At the same time Azersu’s Head Office is undergoing significant developments to better meet the requirements that coincide with new investments and challenges for future operations.

On this background The World Bank has launched the study Training Needs Assessment for Azersu OJSC in the context of the Public Investment Capacity Building Programme and has contracted MACS to carry out the study.

Apart from a Training Needs Assessment the study covers the design of a Training Plan and the elaboration of Terms of Reference for prioritized trainings. This way Azersu will be in a position to tender trainings in 2013. The study in hand covers these elements. The elaboration of Terms of Reference will occur subsequently to a prioritization process based on the Training Plan presented in this report.

Anticipating those training areas that – based on the needs assessment - play a most prominent role for the further development of “Azersu” OJSC, it is advised to focus primarily on oversea trainings in the following four fields:

1) Water loss reduction in distribution networks - the NRW approach,
2) Commercial goals for managers,
3) Human resources, general management issues and psychology of leadership,
4) Water engineering issues.

Main focus of all training endeavors is to support Azersu’s development towards the commercialization of water and sanitation services. Different training formats can contribute to the development of knowledge and skills of employees and workers and support the company on its way to enhanced service provision. Study tours and fellowship trainings may help understanding lessons learned from other countries.

In this introduction we present some information about the Public Investment Capacity Building Programme, we depict the structure of the study, and we briefly elaborate our appreciation of vocational training and capacity building.

Structure of this report

This report elaborates the different components as follows:

- Chapter A presents the approach and methodology applied for this study.

- Chapter B elaborates a brief overview on the Azerbaijani water supply and sanitation sector insofar it is relevant as background knowledge. We outline the history of Azersu OJSC and present specifics in the country’s Districts (Rayons). We depict the financial structure, the staffing structure and the investment policy.

- Chapter C presents the training and capacity building needs assessments, structured according to the five areas (1) management & customer communication, (2) water & sanitation investments, (3) water & sewerage systems
constructions, (4) operation, maintenance, water quality, and (5) accounting & financial management.

- Chapter D specifies the training concept, initiating with experiences that Azersu has gained with previous trainings. We present criteria for successful trainings and elaborate different training formats. The Training Plan suggests 100 trainings, which are finally clustered into four training areas.

- Chapter E suggests criteria for the prioritization of trainings, develops the structure for the Terms of Reference of prioritized trainings, and presents a draft version for further discussions.

- Chapter F provides an outlook on next steps, such as suggestions for an Accreditation and Certification System, guidelines for a Cooperation & Twinning Agreement, a Workshop for the prioritization of trainings, and ideas for a Training Plan Report for 2013 to support Azersu in the planning process of trainings.

### Background: Public Investment Capacity Building Programme

The study Training Needs Assessment is embedded in the Public Investment Capacity Building Programme (PICBP). The programme is supported by The World Bank, aimed at improving quality and efficiency of investment projects in sectors with main focus on infrastructure. The programme entails four components:

- **Component one** provides technical assistance. It covers training as well as goods and works to enhance the capacities of ministries and agencies to handle investment projects and to take care of related environmental and social safeguards.

- **Component two** is designed for sector-specific capacity building and focuses also on the water and sanitation sector.

- **Component three** envisages funding activities that shall help improving the effectiveness of training and capacity development measures. The approach includes capacity needs assessments, activities to establish competencies for key staff, and consultancies to develop an accreditation and certification program.

- **Component four** focuses on the implementation requirements and covers implementation costs of the Project Coordination Units, including staffing, audits, consultancy for project management and further capacity development activities.

### Structure of the study

The study is assigned to component three and encloses (1) the Assessment of Training Needs, (2) the design of a Training Plan, and (3) the elaboration of Terms of Reference (ToR) for prioritized trainings.

- The assessment of training needs shall provide for a mid and long term perspective. Establishing priorities on certain trainings according to importance and urgency shall enable their implementation at short term.

  The needs assessment focuses on the five areas (1) Management & Customer Communication, (2) Water and Sanitation Investments, (3) Water and Sewerage

MACS / CPL March 2013 8
Table 1 provides an overview on the objectives of the assignment.

### Table 1: Overall aims and objectives of assignment

<table>
<thead>
<tr>
<th>Overall Aims Assignment shall contribute to ...</th>
<th>Objectives of assignment Assignment shall ...</th>
</tr>
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<tbody>
<tr>
<td>◼️ the development of sustainable water services in the long run</td>
<td>◼️ assess trainings needs for “Azersu” OJSC incl. subsidiaries / regional offices</td>
</tr>
<tr>
<td>◼️ water services on cost covering principles, resource efficiency, sustainable environmental policies</td>
<td>◼️ assess capacity building needs for “Azersu” OJSC incl. subsidiaries / regional offices</td>
</tr>
<tr>
<td>◼️ the availability of surface and subsurface water resources including the maintenance of their qualities</td>
<td>◼️ make assessment pertaining to overall aims</td>
</tr>
<tr>
<td></td>
<td>◼️ make use of previous experience in the water and sanitation sector</td>
</tr>
<tr>
<td></td>
<td>◼️ identify required trainings, types of trainings, suitable target participants</td>
</tr>
</tbody>
</table>

### Organizational Development – Vocational Training - Capacity Building

**Vocational training** takes place at the interface between the development requirements an organization has (the **capacity building needs**), and the **abilities of people** working there – and of those who shall be employed in future.

**Vocational training** contributes to organizational development: it helps developing skills and capacities of staffs in a way that the organization can implement strategies and achieve defined objectives. Coinciding with those organizational developments the motivation and job satisfaction of the employees shall grow. **Vocational training** substantially contributes to the progress of a **learning organization**.

The training needs assessment starts with an analysis of Azersu and subsidiary companies: objectives, history, infrastructural conditions and development perspectives are in the focus – as well as specifics of planning and operational procedures for work organization. Previous training experiences are of particular interest, and it is important to inquiry further programs that also focus on human resources development.

**Vocational training** and **capacity building** are interdependent measures. The consideration of both may result in a performance improvement process, which can positively affect work flow, coordination, cooperation, assignments to jobs and decision making processes.
The needs assessment, suggestions for capacity building and the training plan presented in this study aim at becoming part of the ongoing organizational developments of Azersu.

They can contribute to enhanced skills and competencies of the staffs to excellently meet outstanding requirements on a future oriented service provision in the water and sanitation sector of Azerbaijan.

The overall aim is healthy and sustainable water supply to the country’s population.

*Figure 1: Cycle of Training and Capacity Building*
Acknowledgement

In the course of this study we have been talking to many people in Azersu, in subsidiary companies and in the Ministry of Education. We would like to thank for the openness that were facing in during many interviews and in many meetings, namely

- the Section Human Resources in the Head Office for all the support provided in the context of the study;
- the Heads of Divisions and Sections in the Head Office who repeatedly met our experts in different interview sessions,
- the many representatives of the subsidiary organizations United Sukanal, Baku Sukanal, Sumquayit Sukanal, Jeiranbatan Water Pipelines Division, and the Sukanal Scientific Research and Design Institute, who were available for many interviews between June and October 2012 and who also provided the opportunity to visit many technical facilities, such as water and wastewater treatment plants, pumping stations, and pipeline sections.
- the representatives of the Ministry of Education who were available for good and very helpful brainstorming sessions and discussions concerning the concept design of a training plan for Azersu;
- the experts of the Azerbaijani partner of MACS, caspian projects limited (cpl), without whose contribution this study could not have been elaborated as it is available now.
- and finally all experts from the interdisciplinary team of MACS for their contributions.
A. **Approach of the Study**

Main focus of the HR development and training program is to support Azersu’s development towards the commercialization of water and sanitation services. Training – basically different training formats – may contribute to the development of knowledge and skills of employees and workers in Azersu and subsidiary companies. This development may support the entire company on its way to enhanced service provision - coinciding with considerable investments and restructuring Divisions or Sections in the company. Training may stimulate the wish of Azersu’s employees to contribute to the improvement of the own company - and to the vision of good service provision and satisfied customers. Study tours and fellow ship trainings may help understanding lessons learned from other countries.

Aimed at identifying the training and capacity building needs of Azersu and the subsidiary companies we have applied the following approach in the course of this study:

- The analysis of the organizational chart of Azersu’s Head Office provided the baseline for a first round of structured interviews with heads of Divisions and Sections. The structured interviews in a first step focused on
  - the scope of work and forthcoming challenges,
  - needs in the field of capacity building and cooperation,
  - specific training needs for the staff, and
  - assessments regarding appropriate training formats.

- In a second step the interviews were extended to subsidiary organization, such as Baku Sukanal, United Sukanal, Sumquayit Sukanal, Sukanal Scientific Research and Design Institute, and the Jeiranbatan Water Pipeline Division.

- Subsequently, in a third round, expert interview were carried out in order to deepen and to detail professional aspects in the five areas relevant for the study. It is understood that especially within the area *Operation and Maintenance* on-site visits in laboratories, pumping stations, water treatment plants and wastewater treatment plants were on the agenda.

- A questionnaire submitted to subsidiary organizations inquired their assessments in the fields of capacity development needs, training needs, suitable training formats etc. The findings are attached to this report as annex 1.

- Next, findings were critically appreciated and valued in the light of the international experience by MACS’ experts - engineers, economists, social scientists and training experts. Comments and background information provided by the Azerbaijani partner of MACS, *caspian projects limited* (cpl), have put essential value to the assessments.

- Desk studies were an accompanying element in the course of the entire study.

At a later stage a workshop with stakeholders will have to check and revise (1) the completeness of the training areas, (2) the appropriateness of suggested contents, target groups and training formats, and (3) the cluster of trainings. The workshop attendees will be invited to discuss and agree on a set of indicators to be applied in order to prioritize the trainings, prioritize clustered trainings, and check and revise the items that are to be considered for the elaboration of Terms of Reference.
B. THE AZERBAIJANIAN WATER AND SANITATION SECTOR — AN OVERVIEW

This chapter initiates with a condensed overview on the history and the current structure of the Azerbaijani water and sanitation sector and the organization Azersu, insofar those facts are relevant as background information for the study.

The second section provides for an insight in Azersu’s financial structure, followed by an elaboration on the company’s staffing structure and staffing policies in section three. Finally the last section specifies the physical infrastructure of water supply and wastewater disposal, including a brief outline on ongoing constructions and planned investments.

B.1 History and Organizational Structure

This section outlines the historical development of Azersu. In a second part we analyze the current organizational structure of the enterprise.

**Historical Outline**

To cope with the severity of the critical situation in water supply and sanitation, the Government undertook initial reforms in the 1990s and created the joint stock Absheron Regional Water Company (AbsheronSu) to serve the Greater Baku and the Absheron peninsula areas with a population of 3.5 Mio persons. The Committees for Housing and Communal Property were merged into the State Committee for Architecture and Construction (SCAC); its subordinated department AzerSuKanal was in charge of steering and supervising water supply and sanitation in the department’s 57 local branches all-over Azerbaijan. Basic infrastructure services were started to be decentralized to local authorities, based on the Water Supply and Wastewater Law and a series of laws on municipalities.

However, responsibilities of different actors were unclear. Still inefficient institutional arrangements resulted in inappropriate tariffs, low collection rates, and poor financial states of water utilities. Fragmentation of functions was exacerbated by the absence of coherent planning for the country’s water resources. The tendency for ad-hoc policy decisions, and dubious investment choices were common.

At the same time - with the ongoing transition to a market economy - previously significant government subsidies to the WSS sector disappeared. The State Privatisation Programme of 1995 defined two stages of privatisation: small enterprises started in March 1996 with the transfer to companies of limited partnership (ltd.), while big state owned companies as of 2001 entered into transformation processes into joint stock companies, completely - at least initially - owned by the state.

Contradictory and unclear developments in terms of decentralization, and local authorities too weak to perform sector supervision in their District (Rayon), led to the decision to re-centralize the water and sanitation sector - also to centrally steer outstanding investments – with the foundation of the Azersu Open Joint Stock Company, affiliating AbsheronSu and AzerSuKanal under one umbrella. As of now, Azersu was in charge for water supply and wastewater services of the entire country, covering all responsibilities associated with water supply and wastewater disposal, be it investment planning, constructions or operation of facilities. Due to this centralization process tariffs and salary structure are defined centrally.
According to the stipulations of the Water Code, as well as the Law on Water Supply and Wastewater Management, the assets for providing water related services are owned by the state. The Law on Ownership stipulates that enterprises founded by the state, entrusted to manage state-owned assets, have the right of economic ownership on those assets, meaning that they can utilize them and generate profit. According to the Civil Code state owned enterprises are managed by their founders. To do so they do not need to establish a Board of Directors and a General Assembly as internal management bodies:

- A **Chairman**, who organizes activities of the enterprise and who represents its interests towards third persons and relevant bodies;

- An internal **Financial Audit Commission** to supervise the financial – economic transactions of the enterprise at least once a year. Members of this commission are employees of the enterprise.

The following description summarizes the role of different stakeholders in the water and sanitation sector prior to the foundation of Azersu OJSC.

### Absheron Regional Water Company (ARWC)

The **Absheron Regional Water Company (ARWC)** was created in 1996 and responsible for the treatment and distribution of water to Greater Baku and bulk water supply to the vodokanals of Absheron and Sumgayit. ARWC was under the direct supervision of the Cabinet of Ministers, all shares owned by the Ministry of State Property. In 1999, ARWC had a total of 3,725 employees. Additional 488 employees were assigned to a construction association, and a design department had 91 employees. ARWC was legally independent and self-financing. Domestic and industrial water tariffs were proposed by ARWC and approved by the Ministries of Finance and Economy, the Antimonopoly Committee and the Cabinet of Ministers. Tariffs for commercial customers were set independently. ARWC faced several governance limitations to fulfill its mandate and to achieve financial sustainability.

### Baku Wastewater Department (BWD)

Wastewater collection and treatment services in Baku were under the responsibility of the **Baku Wastewater Department**, a self-sustaining independent entity which was under the sole control of the Baku City Executive Authority. The assets were not owned by BWD, but their use was given in perpetuity and free of charge. BWD had a separate budget and accounting. The General Manager was authorized to independently approve wastewater tariffs, but this approval required discussions with the Baku City Executive Power. BWD had about 1,200 employees.

### Committee for Housing and Communal Property (CHCP):

Water supply and wastewater disposal in other urban areas were managed by water and wastewater utilities, so called vodokanals. Apart from the Autonomous Republic of Nakhchivan they were supervised by Local Executive Authorities and the Committee for Housing and Communal Property (CHCP). This Committee was in charge of water, wastewater, public heating, street lighting, and solid waste disposal services.
The water and wastewater responsibilities of CHCP in urban areas were executed through the Vodokanal Union. While the Committee monitored and supervised the operations of the vodokanals, the Vodokanal Union provided them with technical assistance, including bulk purchasing of equipment which was sold to the vodokanals. The Union was financed from these sales as well as from supervision and technical assistance charges.

Water services in some rural areas underlay the responsibility of AzerKend Rural Water Supply, an independent self-sufficient organization supervised by the Cabinet of Ministers. AzerKend was charged with the provision of water supply services and other rural infrastructure services to less than 500 villages out of an estimated total of 4,200 villages in Azerbaijan. This organization was merged into CHCP.

Water and Wastewater Utilities (Vodokanals):

The water supply and wastewater services in urban areas outside Baku were provided by 59 utilities (five in the Autonomous Republic of Nakhichevan). The vodokanals' services covered an estimated total of 1.7 million people - in villages and towns ranging from 500 to 285,000 persons. Even though they were independent self-financing organizations - in charge of operation and maintenance, implementation of investments, billing, collection, customer services - the dual subordination under CHCP and Local Executive Authorities created confusion and conflicts. The institutional capacity and productivity were limited due to four major constraints:

- Vodokanals were predominantly engineering oriented organizations, emphasizing production with insufficient attention to maintenance and efficiency in operations.
- The engineering orientation had left little space for expertise in planning as well as in financial and commercial management.
- Vodokanals were mostly highly staffed due to poor organization and management, low individual staff productivity, and the support of non-core activities.
- The Management systems did not provide information for effective planning. The reliance on planned values rather than on actual information created difficulties.

The vodokanals relied on a network of state enterprises for design and construction services or, in some cases, on internal departments. Other government organizations were periodically invited to participate in construction projects.

Establishment of Azersu 2004

The Azersu Open Joint Stock Company was established by the Decree of the President of the Republic of Azerbaijan, dated June 11, 2004, and titled “On Improvement of the Management in Water Supply Sector in Azerbaijan Republic”. Ever since Azersu is responsible for covering all water supply and wastewater services in the country, except for the Autonomous Republic of Nakhichevan. The main functions include:

- Obstruction, treatment, transportation and distribution of drinking water, and collection and treatment of wastewater;
- Design, construction, operation and maintenance of water intakes, transmission mains, water reservoirs, distribution pipes, wastewater collection systems, collectors and wastewater treatment plants;
- Organization and regulation of subsidiary organizations in the field of water intakes, water treatment, transportation and sale to consumers, as well as carrying out control on design, construction and operation and maintenance of technical facilities;
- Organization and regulation of subsidiary organizations in the field of wastewater discharge and treatment, including sewerage utilities and systems operation and maintenance;
- Organization and regulation of the necessary sanitary – protection zones around the water structures according to local norms and regulations, and the creation of the control regime;
- Organization of water intakes from surface and underground sources;
- Monitoring of volumes of water supplied and wastewater collected;
- Organization of analytical controls on the qualities of domestic drinking water and domestic and industrial wastewaters, according to state norms;
- Safeguarding - within its power – that measures against legal entities and individuals violating the rules of operation of water supply and sanitation facilities – as defined by legislation - are taken;
- Preparation of proposals for the formation of the tariffs and their submission to the Tariff Council of the Republic of Azerbaijan.

Azersu – the net of stakeholders

- The **Cabinet of Ministries** regulates the activities of Azersu, issues relevant rules or regulations and approves funding for projects.
- The **Ministry of Finance** conducts the financing of projects and the allocations of funds for Azersu’s activities.
- The **State Committee on Property Issues** keeps the shares of Azersu and is responsible for the management of the assets under the control of Azersu;
- The **State Amelioration and Water usage OJSC** makes records on water usage between different branches, including water supply.
- The **Ministry of Environment and Natural Resources** allocates water sources for water supply; it takes care for their limits, and for the protection of surface and underground water quantities.
- The **Ministry of Health** via its **National Epidemiology Center** carries out controls on the sanitary status of water qualities, and also controls the sanitary protection zones to protect water utilities from pollution.
- The **Ministry of Economic Development** reviews water projects and does social – economic benefit analyses concerning projects implemented by Azersu;
- The **Ministry of Emergency Situations** control water dams, big volumes of reservoirs, and it monitors and (among others) regulates the flows for floods.
Figure 2: Azersu – the Net of Stakeholders

Organizational Structure of Azersu OJSC – Head Office

Azersu as an Open Joint Stock Company is structured in a centralized way with a Head Office in Baku and Subsidiary Stock Companies resp. Sukanal Departments in Districts (Rayons). The Head Office is in charge of managing investments, supervising construction works, and organizing major procurement issues. The office manages IT, financial forecasts and financial planning, HR, investment planning, construction supervision and monitors operations in subsidiary organizations.

The 61 subsidiary organizations - state-owned and sub-ordinated to the Head Office - take care for water production, technical operations, maintenance and repair works. They issue bills, do the fee collections, and they manage customer communications.

- Four different Sukanal Subsidiary Stock Companies are responsible for service provision in (1) Agdas, (2) Ganja, (3) Goycay, and (4) Sheki.
- Three different Sukanal Departments are in charge of services in (1) Baku, (2) the Absheron peninsula, and (3) Sumquayit.
- 54 Sukanal Departments provide services to people in smaller towns and villages. The subsidiaries act under the umbrella of United Sukanal.

In the recent past Azersu has experienced several changes in its management structure. Since the current chairman of the company is in charge (February 2011), a great part of the management staff of upper and - partly - medium level in the Head Office and some subsidiary organizations was replaced. Young, smart and motivated people have followed, eager to develop the company and to push things forward.
Many of them have gained experience in the oil-sector, but not so much in the water and sanitation sector - a fact which may adversely affect the organizational memory and experience in the company. The company is in an ongoing development process.

Main feature is a new focus: since March 2011 the Head Office experiences the set-up of new Divisions and Sections, such as the ones for Information Technology, Foreign Relations (renamed), Management of Tenders (renamed), Health & Occupational Safety & Environmental Protection, Complaints and Applications, SCADA and GIS, Human Resources Development, Training Center, and Construction Supervisions.

Until October 2012 the organizational structure is still determined by ongoing changes: Sections are merged or get assigned to different Divisions, which then are involved in the process of designing their own procedures, targeted at continuous improvement processes. Newly established teams of specialists and new structures aim to improve services mainly in the following areas:

- Strengthening of the staff capability to prepare and revise project designs and to carry out construction supervision;
- Improvement of working condition for the staff offices;
- Organization of trainings as well as training programs for the staff to improve the knowledge and skills in the management of new facilities;
- Strengthening of the capacities in subsidiary companies;
- Improvement of consumer oriented services and consumer relationship;
- Improvement of metering program and billing /collecting system.

In terms of the training needs assessment the challenge is to identify, in which ongoing processes capacity development and vocational trainings will have to fit in.

In October 2012 the Head Office in Baku has the following structure:

- The Chairman of the company also is also head of 61 Sukanal-organizations, which directly deal with water supply to the customers and with wastewater collection and treatment. In addition he controls six pipelines Divisions that are responsible for operation and maintenance of long transmission mains, such as the Oguz-Gabala Water Pipeline, the Kura Water Pipelines, the Khachmaz Water Pipelines, the Water Pipelines Division named after H.Z. Tagiyev, the Jeiranbatan Water Pipeline, and the Sangacal Water Pipelines. The chairman is also superior to the Sutikinti Enterprise, the Division Production & Technical Integration, and the Sukanal Scientific Research and Design Institute. As of July 2012 the new Division for Construction Supervision is subordinated to the chairman.

The chairman has six Deputy Chairmen:

- The First Deputy Chairman is Head of the new comprehensive Division dealing with Information & Communication Technologies. Other Sections that fall under his responsibility support Mechanics, Energetics (Power), Occupational Health & Safety and Environmental Protection, and Automation and Metrology.
- The Deputy Chairman for Operations is the Head of Water Operation and the Section for Rainwater & Wastewater Management.
The **Deputy Chairman for Construction** is the Head of Sections in charge of Constructions, Capital Construction, Capital Maintenance, and Project Management.

The **Deputy Chairman for Investments and Marketing** is Head of a Division which deals with contract management of projects financed by donors and the Azerbaijani state budget. It is divided into the Sections **Foreign Relations** and **Tenders Organization and Management**. The latter has already obtained the status of a Division since January 2013.

Under the responsibility of the **Deputy Chairman for Economic Affairs** fall the Logistics including Procurement and Supply, and the widely differentiated **Section Economic Analysis and Forecasting**.

The **Deputy Chairman for Water Sources** is head of the Sections that monitor Water Pipelines, Water Sources, and Operative Management.

Six further Divisions do not have a Deputy Chairman as a superior. They are structured as follows:

- The **Law Division** embraces the Sections Works on Juridical Arguments, and Legal Provision of International Projects and Contracts.

- The **Strategic Development Division** encloses the Sections Expertise of Project, Design of Infrastructure Projects, and Geodesy. The Sections Strategic Research and Land Cadastre and Science, Technology and Standards Processing will be moved to another Division.

- The **Internal Control Division** is divided into the Sections Water Communication and Sales Control.

- The **Commercial Division** covers the Sections Service and Sales Control.

- Under the umbrella of the **Internal Audit Division** are assembled the Internal Audit Organizational Section and the Section Works on Internal Normative Documents.

Organizational Structure of Azersu OJSC – Baku Sukanal

In this chapter we exemplarily outline the organizational structure of Baku Sukanal and of the Narimanov Rayon Sukanal Division. In October 2012, 3,454 people work in Baku Sukanal. It is the biggest operational unit under the umbrella of Azersu.

- The Chairman of Baku Sukanal acts likewise as Head of 15 Departments, eleven of which are in charge of operating water supply and wastewater services (networks) in Baku’s Districts (Rayons) and the adjacent village of Baghlar. Three Divisions operate and maintain Transmission mains and water distribution installations, Collectors and pumping stations, or Treatment facilities.

- The First Deputy is superior of the Divisions for Water Operations, for Health, Safety & Environment, and for Commercial Affairs. The Deputy on Production performs as Head of the Sections Repair, Mechanics, Energetics, and Automation & Metrology. The First Deputy on Sewerage Service supervises Storm and Waste Water Management.

- Another branch is busy with economics and financials, conducted by the Deputy on Economic Issues. Four Sections deal with Accounting & Bookkeeping, Personal & Salary, Economic Analyses and Forecasting, Key Asset Management, and Supply.

- A comprehensive branch in terms of number of Divisions is called Bodies under Chairman, which covers Legal Issues, Staff Administration, Operative Management, Complaints & Applications, Confidential Mode & Military Mobilization, and Staff Administration, Execution Supervision, Clerical & Utility Work. Also the Central Laboratory is assigned to this branch.

This structure presented in figure 2 corresponds to the structure prevailing in Azersu’s Head Office.

Figure 3: Organizational Structure of Baku Sukanal
**Organizational Structure of Baku Sukanal – Rayon Narimanov**

Exemplarily we present the structure and the scope of work for the Sukanal of Baku’s District (Rayon) Narimanov.

- Subordinated to the Chairman are five local service areas, supported by the units Operation Service of water networks and facilities, Operation service of sewerage networks, and Installation and operation field of water meters.
- The Deputy of the Chairman acts as Head of the Commercial Division. The Chief Engineer supervises Technical Production and Operative Management.
- The Divisions Bodies under the Chairman deal with Customer Service, Accounting and Bookkeeping, and with Staff Administration, Execution Supervision and Clerical & Utility Work.

*Figure 4: Organizational Structure of Baku Sukanal – Rayon Narimanov*

**Organizational Structure of Azersu OJSC – United Sukanal**

*United Sukanal* is an affiliate of Azersu OJSC. The company assembles 54 Sukanal companies - located in so-called secondary towns and villages – which provide water supply and sanitation services to a population of 5.040.000 persons\(^1\), of which 1.520.000 people live in towns and 3.520.000 persons live in villages. *United Sukanal* coordinates and supervises water supply and waste water operations for about 60% of the Azerbaijani population.

The functions of *United Sukanal* as a legal entity with limited liability focus on water sale, water supply and wastewater discharge. *United Sukanal* is in the complete ownership of Azersu. Operational Sukanals under *United Sukanal* have a stamp, an own account and they prepare their own balance sheets as well as profit and loss statements, out of which United Sukanal prepares the consolidated documents for Azersu’s Head Office. United Sukanal reports to Azersu in a consolidated way.

\(^1\) According to information provided by representatives of the management of United Sukanal
Organizational Structure of Azersu – Stock Companies

The Ganja Sukanal Subsidiary Stock Company is the biggest of four companies of this legal form under the umbrella of Azersu. The organization is structured by three clusters under the Director: cluster (1) includes the Deputy of the Director and the Divisions for Technical Production and Automation & Metrology. The administration in cluster (2) consists of the Divisions for General Administration, Accounting & Bookkeeping and Commercial Affairs. Cluster (3) with the Divisions Water Network Operation, Security Service, Repair, Emergency and Transport focuses on technical operations.

Figure 6: Organizational Structure of Joint Stock Companies
B.2 Financial Structure

We continue our analyses of Azersu with some considerations concerning the financial structure of Azersu. The organizational chart of Azersu suggests that it is the parent or holding company of a group of separately organized water and wastewater utilities. As such a holding company, it would provide certain services for the utilities held by the “mother” company. Besides ownership, business relations between the holding and the group companies would be most likely organized on the basis of contracts. In case the physical assets would belong to the holding, she would lease these assets to its subsidiaries. The revenue stream of the parent company would then normally derive from the lease of the assets and a possible appropriation of the subsidiaries profits. However, a closer look at Azersu shows a quite different picture.

A look at the legal status of the subsidiary companies reveals that only some of them work on its own charter, legally separated from Azersu as Joint Stock Companies. These are the utilities of secondary towns like Ganja, Sheki, Goycay and Agdash. For the rural areas and smaller towns, United Sukanal operates 54 smaller systems. The company has been founded as a Limited Liability Company, also fully owned by Azersu. While United Sukanal works as separate financial entity (covering about 20% of total consumption) the Sukanals in the wider Baku region are operative branches of Azersu. Within the Azersu group financial functions are organized as follows:

- **Water Bills**

  Water bills are issued by subsidiary companies, based on information provided by Azersu, where a central client data base is maintained. About 48% of revenues are generated by household customers. Currently only a minor portion of bills is produced on the basis of water meter readings. The majority of household customers are charged by “norm” according to the number of adult persons registered in the household. Thus the invoicing is a rather simple procedure.

  However, Azersu sees the importance of water metering and has started to introduce water meters. According to Azersu, the company’s billing system (local software) has been adapted properly. It runs on a central customer data base located and maintained at the parent company in Baku. Although currently not all subsidiary companies are linked up, connection of the subsidiaries is foreseen for the near future.

- **Payments**

  Customers can pay their water bills at every post office or most commercial banks. According to received information, payments are collected at a transitory account of the National Payment System from where the money is credited to the account of the parent company or to one of the subsidiaries, depending on who has printed the bill. Verification of payments is carried out on the level of Azersu, the parent company and subsidiaries are informed. Following Azersu representatives, collection efficiency has increased since 2011 from 73% to 85% in 2011.

- **Procurement of Goods and Services**

  Within the Azersu the procurement of goods and services and related expenses are widely controlled by the parent company. Only acquisitions of up to 50,000 AZN can be carried out without a comprehensive tender. All other acquisitions need to be tendered out, for which the parent company is responsible.
**Tariffs**

The cost (overhead) of the parent company for the services provided to the subsidiaries as well as the overhead of United Sukanal is not calculated in the tariff and is also not formally invoiced to the subsidiaries. Internal service agreements do not exist. In practice it looks like these overheads are financed out of the cash flow generated by the subsidiary companies, with the resulting deficit covered from time to time by additional Government transfers. These inconsistencies in cost accounting contribute to Azersu’s weak financial performance and should be addressed in the framework of a capacity building and training program. Concrete issues are: “Tariff Systems” and “Benchmarking”.

**Table 2: Tariff Design in Azerbaijan (Summer 2012)**

<table>
<thead>
<tr>
<th>Service</th>
<th>Water supply</th>
<th>Wastewater</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baku Sumgait, Ganja, Mingechevir, Shirvan, Khirdal cities and Absheron region: domestic users</td>
<td>0.30 AZN / m³</td>
<td>0.06 AZN / m³</td>
</tr>
<tr>
<td>Baku Sumgait, Ganja, Mingechevir, Shirvan, Khirdal cities and Absheron region: commercial users</td>
<td>1.00 AZN / m³</td>
<td>0.30 AZN / m³</td>
</tr>
<tr>
<td>Other regions: domestic users</td>
<td>0.25 AZN / m³</td>
<td>0.06 AZN / m³</td>
</tr>
<tr>
<td>Other regions: commercial users</td>
<td>1.00 AZN / m³</td>
<td>0.30 AZN / m³</td>
</tr>
<tr>
<td>Use of water as raw material</td>
<td>12.00 AZN / m³</td>
<td></td>
</tr>
</tbody>
</table>

**Long Term Investments**

Investments are planned and realized by Azersu. Long term investment loans are recoded until now in the books of the parent company, including those that have been contracted for the realization of projects carried out by subsidiaries. However the corresponding assets and thus depreciations are recorded in the books of the subsidiaries, which is another inconsistency in the current accounting praxis. The accounting staff of Azersu is aware that loans might have to be transferred to the books of the legally separated subsidiaries where the investment has been carried out.

**Financial Planning Processes**

Furthermore financial aspects are not considered within the company’s planning process. State of the art methods of strategic asset management are not known, but are of high importance for a company that directly or indirectly manages all the water and wastewater assets of the entire country. Therefore, the stepwise introduction of “Strategic Asset Management” has been indicated as a priority area for a training and capacity building program.

Following IARS, which recently have been introduced for all companies belonging to the Azersu group, the individual financial statements of the subsidiaries are consolidated on the level of the parent company. For the 54 smaller systems, a first consolidation is carried out by United Sukanal. Consolidation of subsidiaries’ (other than financial) data is reported to be sometimes cumbersome, due to the lack of an
integrated electronic database, where financial as well as technical data would be integrated. Information between the subsidiaries and the parent company is transmitted in different electronic formats as well as on paper. Consequently no comprehensive “MIS” is in place, which indicates potential training and capacity building needs.

- Economic and Financial Analysis

Economic and financial analysis is carried out on the level of the parent company mainly for reporting purposes regarding the annual performance. Basic indicators are calculated and reported to management, like cost/m³ (0,26 AZN) and revenue/m³ (0,22 AZN). Also some forecasting of individual parameters is done. However until now, the company approaches strategic development rather from an engineering perspective. Commercial goals are not clearly defined and financial forecasting is not done within a framework of a comprehensive financial model. Thus, Azersu lacks a strategic business plan which would describe the company’s short- mid and long term development strategy for service delivery including its financial implications. However this would be a prerequisite for Azersu’s intention to enhance the efficiency of service quality as well as to increase financial sustainability. Therefore, we see “Financial Modeling” as another priority area of a training program, paving the way for the introduction of strategic business planning.

B.3 Staffing Structure

In this chapter we present an insight in the staffing structure of the organization. Emphasis is put on the number of staff as well as on the qualification and age structure. Lastly also different hierarchic levels and recruitment processes are in the focus of attention.

The total of staff in Azersu comes to approximately 10.500 persons (in July 2012), of which 8.000 persons are assumed to be workers. In terms of hierarchy, employees and workers are allocated to five different levels. In terms of jobs requiring different expertise, staffs may have 200 different positions. The average age comes to 41 years. Not too many staff members are going to be retired within the next years. Due to the settlement of debts that customers had towards Azersu in the amount of 264 Mio AZN through the Azerbaijani state budget in 2011, Azersu was in a position to pay back own debts. Coinciding with this procedure the salary for Azersu staff was increased by 40%. An incentive payment system is neither in place, nor is any endeavor foreseen in this respect.

- Staffing Structure in the Head Office

In October 2012 a staff of 452 persons is assigned to the Head Office, a slight increase by five people in comparison to figures at the beginning of the year. Fluctuation is low and comes to merely 1,1%. The staff number may increase week by week as new Divisions and Sections emerge, coinciding with additional employments to mainly cover needs in the fields of investments and constructions supervision. Due to the Office’s scope of work the share of specialists and higher educated employees comes to 389 / 386 persons, which corresponds to a share of almost 86%. Merely 57 persons (12, 6%) are workers. In some Sections it was striking to identify the relative low number of staff in charge of managing a work load, which due to the centralized sector approach seems to be a quite comprehensive one. One receives the impression that not enough people have to cover the monitoring work on subsidiary companies.
**Staffing Structure of Sukanals - Baku, Sumgayit, Absheron**

In October 2012 a total number of 3,454 persons work in Baku Sukanal, the biggest structure in Azersu. Baku records the highest staff fluctuation of all subsidiary companies: in comparison to January 2012 figures, staff has diminished from 3,994 persons, corresponding to a share of 14.4%. Employees predominantly leave own request. Still in October 2012 the overwhelming part of 2,678 persons are workers (77.5%), while 714 persons are educated as experts (20.7%) and 62 persons are so-called office workers (1.8%). 795 persons have a higher education (23%).

The number of staff in the 15 operational units of Baku Sukanal varies from 250 to 600 employees. Three persons per unit are in charge of bookkeeping. Each unit has an engineer in charge of supervising technical operations and defining the staffing needs in line with the staff ratio in place in Azersu.

A similar staffing structure prevails in the neighboring Sukanals: in Sumgayit (435 employees) 342 persons are workers (78.6%), in Absheron (250 employees) 181 persons (72%) carry out manual works. Both Sukanals have a low staff flow. Experts have a share of 20%, resp. 26%, and the share of higher educated people comes to a quarter (25%) of the total number of employees.

**Staffing Structure in United Sukanal and operational Sukanals**

*United Sukanal* has a total staff of 2,578 persons; 110 persons work in the Head Office in Baku. The number of staff in each Sukanal under this umbrella (a total of 54) varies from 30 employees in villages up to 160 employees in Mingechevir.

Within the structure 1,888 persons (Oct. 2012) are employed as workers - a share of 73.2%. Staff fluctuation is low (1.2%), the total number of employees did not significantly change in 2012. 598 persons (23.2%) are experts, 92 persons act as so-called office workers. Finally, the share of higher educated people is lower than in Baku and adds up to 435 people (16.9%).

**Staffing Structure in Joint Stock Companies**

Ganja, Sheki, Goychay and Agdash have Subsidiary Joint Stock Companies. In *Ganja* - around 313,300 inhabitants - the company hast a staff of 389 persons: 336 persons are workers (86%), 50 employees collaborate as experts (12.6%), and 3 people belong to office workers (1%). In *Sheki* – cultural heritage – 85 workers (72%), 30 experts (25.4%) and 3 office workers (2.5%) compose a group of 118 employees. Higher educations have 55 persons in Ganja (14.1%) and 25 persons in Sheki (21.2%).

The companies in *Goychay* and *Agdash* (69/36 employees) have 50/26 workers - a share of 72%. 15 specialists in Goychay (8 in Agdash) correlate with a share of 22% of total staff. 11% of employees in both towns have a higher education.

**Staffing Structure in Pipeline Departments**

Azersu has six pipeline departments to operate and sustain transmission mains. They have a staff of 1,335 persons: the majority of them are workers (79.4%), 266 employees are experts (20%); 9 persons (1%) are assigned to administrative works. In detail, the staff structure is as follows:
228 employees operate the Oghuz-Gabala-Baku Water Pipeline, including 184 workers (80,7%), 42 experts (18,4%) and 2 administrative staff (0,9%). 52 employees can show a higher education.

Assigned to the Kura Water Pipeline (417 employees) are 345 workers (82,7%), 68 experts (16,3%), and 4 office workers (1%); 30 persons have a higher education.

To operate the Jeyranbatan Water Pipeline, Azersu employs 274 workers, a share of 77,4% of the staff of 354 persons; 80 experts (22,6%) work for the pipeline; 61 persons have a higher education.

88 persons operate the Sanghachal Water Pipeline, of which 65 are workers (73,9%) and 23 act as experts (26,1%); 13 people have a higher education.

The Water Pipeline named after H.Z. Taghiyev has a total staff of 145 persons: 108 (74,5%) are workers, 35 operate as experts (24,1%), and 2 persons are assigned to administration (1,4%). 16 persons have a higher education.

Finally, the Xachmaz Water Pipes with 103 employees is operated by 84 workers (81,6%), 18 specialists (17,5%) and 1 office worker (1%). 4 persons can show a higher education.

### Staffing Structure in supportive Organizations

Four organizations support Azersu’s water and sanitation business:

- The Sutikinti Entity has to total of 386 staff members. A majority of 289 are workers (74,8%). In addition 91 experts (23,6%) experts work in the unit, and 6 persons (1,6%) are assigned to administrative works.

- Regularly the Sukanal Scientific Research and Design Institute is contracted by the Head Office to carry out design works for investments. The Institute employs 156 persons – 133 of them are experts (85,3%). Consequently 126 persons can look back to a higher education. Lastly, the institute has also 15 workers (9,6%) and 8 people for administrative works (5,1%).

- The Production – Technical Integration Utility is an organization which with a total staff of 35 persons: 21 people are experts (60%), 12 person act as workers (34,3%) and 2 persons (5,7%) manage administrations.

- The Transport and Special Technical Utility with 809 staff members is in charge of operating and maintaining the motor pool and machineries. The work is done by 718 workers (88,8%), 79 experts (9,8%) and 12 office workers (1,5%). 73 persons show a higher education.

### Staffing Structure - Summary

Early in October Azersu employs 10.502 persons in 73 organizations:

- A majority of 7.329 persons (69,8%) is assigned to operative Sukanals or Subsidiary Joint Stock Companies which are in direct contact with customers and which predominantly cover - or will have to cover - all operational areas in water supply and sanitation. In those operational units 5.586 persons act as workers (76,2% of all people working there), 1.568 contribute a specific expertise (21,4%), and 175 persons are so-called office workers (2,4%).
Due to the specific nature of work (monitoring, coordination, design) the Head Office, the Scientific Research & Design Institute and the Production – Technical Integration Utility have the highest share of experts: Out of 643 persons working in all three organizations 543 employees are skilled experts in their respective fields (84,5%), while 84 persons are workers (13%), and a minority of 16 persons (2,5%) is assigned to the category office workers.

Finally six pipeline departments, the Sutikinti Enterprise and the unit for Transport assemble a total of 2.530 persons – with a majority of 2.067workers (81,7%), a smaller group of 436 experts (17,3%) and a minority of 27 employees assigned to administrations (1%).

It is striking that labor turnover is mostly very low – from zero up to 1,6 per cent. Four organizations record a labor turnover between 2,7% and 5,6%, while Baku Sukanal has to document a staff flow of 14,4% in nine months.

In all organizations the share of female workers and employees is low, varying from 27,2% in the Head Office or 25,3% in Baku Sukanal, Sumgayit, and Absheron – to 17,8% in United Sukanal or 3,8% in the Transport & Special Technical Utility. Table 3 presents a summary of the staffing structure in Azersu.

Table 3: Staffing Structure of Azersu - Summary

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Worker</th>
<th>Expert</th>
<th>Admin</th>
<th>Higher educ.</th>
<th>Av. Age</th>
<th>Years exp.</th>
<th>Years Azersu</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head Office</td>
<td>452</td>
<td>57</td>
<td>389</td>
<td>6</td>
<td>386</td>
<td>329</td>
<td>123</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baku Sukanal, Sumgayit, Absheron</td>
<td>4,139</td>
<td>3,201</td>
<td>867</td>
<td>71</td>
<td>973</td>
<td>3.089</td>
<td>1.050</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Sukanal (1+54)</td>
<td>2,578</td>
<td>1,888</td>
<td>598</td>
<td>92</td>
<td>435</td>
<td>2.120</td>
<td>458</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Joint Stock Companies</td>
<td>612</td>
<td>497</td>
<td>103</td>
<td>12</td>
<td>92</td>
<td>495</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Pipeline Departments</td>
<td>1,335</td>
<td>1,060</td>
<td>266</td>
<td>9</td>
<td>176</td>
<td>998</td>
<td>337</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sutikinti Entity</td>
<td>386</td>
<td>289</td>
<td>91</td>
<td>6</td>
<td>94</td>
<td>349</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scientific Research &amp; Design Institute</td>
<td>156</td>
<td>15</td>
<td>133</td>
<td>8</td>
<td>126</td>
<td>89</td>
<td>67</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production – Technical Integration Utility</td>
<td>35</td>
<td>12</td>
<td>21</td>
<td>2</td>
<td>22</td>
<td>26</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport &amp; Special Technical Utility</td>
<td>809</td>
<td>718</td>
<td>79</td>
<td>12</td>
<td>73</td>
<td>786</td>
<td>23</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>TOTAL</td>
<td>10,502</td>
<td>7,737</td>
<td>2,547</td>
<td>218</td>
<td>2,377</td>
<td>8,281</td>
<td>2,221</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Recruitment Processes

Formally staff for all subsidiary companies and for the Head Office in Baku is appointed by the Head Office, namely the Section Human Resources. The number of positions assigned to any functional job is defined by a specific staff ratio, e.g. a certain number of plumbers that is required for maintaining a certain length of pipes. Together with the respective job description the staff ratio is defined in the staffing plan.
The structure and the content of job descriptions - e.g. for staff in *United Sukanal* - is defined centrally in the Head Office, while *United Sukanal* defines the structure and the job descriptions that are relevant for the subordinated 54 operational Sukanals.

In case any vacancy is to be staffed, the recruitment process initiates with a suggestion of a person for the job, provided by any subsidiary organization to the HR Section, which screens the application, carries out a job interview and tests the applicant. The procedure is followed for any job to be filled. Frequently the decision made by the Section HR complies with the proposal made by the subsidiary organization.

### B.4 Physical Infrastructure and Challenges in Service Provision

In this section provides an overview on the population structure and on demographic tendencies in Azerbaijan and presents a brief description of the structure of water sources, water qualities and wastewater disposal services. Emphasis is given to the specific challenges the country is facing in service provision in both areas.

#### Population Structure and Demographic Tendencies in Azerbaijan

Azerbaijan is composed of 66 Districts (Rayons), 77 towns, 258 settlements and 4,257 villages. In June 2011 the country’s population is estimated at 8,372,400 persons. Assessments on the population increase vary between 0.85% and 1.02%, based on birth rate estimations from 17.3% to 17.8%, and on mortality rates from 7.13 to 8.25 deceases. Migration is very low and comes to maximum of minus 1.14 persons.

Based on 2011 estimations, persons with an age between 15 and 64 years have a share of 70.3%, with a slight majority of females. 23.2% of the population are children younger than 14 years, and a minority of 6.4% is older than 65 years. The average age is 28.8 years. Average life expectancy accounts for 67.4 up to 71.3 years depending on the source of 2011 estimations. Persons domiciled in urban areas are estimated at 52%, while 48% lived in rural regions (2010 estimations).

Basic school education is currently 11 years for both male and female population, and is planned to be 12 years in the near future.

#### Surface Water Sources

Water sources are under control of the *Ministry of Environment and Natural Resources*. The country has few water resources. Particularly the lowlands of Kura-Araks (Araz)

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2 http://www.azstat.org/statinfo/demographic/az/001_1.shtml
3 http://de.worldstat.info/Asia/Azerbaijan
4 All estimations in relation to a population of 1,000 persons
and the peninsula of Absheron suffer from significant water deficits due to unfavorable climatic conditions. Due to the high population density in this part of Azerbaijan - and given the fact that agricultural production comprehensively depends on irrigation - the country is in a development process for more water production services.

Surface water resources are rivers, lakes and reservoirs. Rivers mainly belong to the Kura – Araks (Araz) River Basin, located on the territory of four countries. The country predominantly depends on water from the Kura River, which provides 70% of potable water\(^5\). In the coastal areas, most of the water supply comes from small rivers such as the Samur River. Lakes provide for 0.90 km\(^3\) of water resources, their surface is about 394 km\(^2\). Table four and table five present an overview on the main indicators for rivers and for lakes. Figure 7 presents the structure of water sources in Azerbaijan.

<table>
<thead>
<tr>
<th>River</th>
<th>Estuary</th>
<th>Length (km)</th>
<th>The water shed area (m²)</th>
<th>Height condition m river head</th>
<th>debouchment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Kur</td>
<td>Caspian Sea</td>
<td>1.515</td>
<td>188,000</td>
<td>2.740</td>
<td>-27</td>
</tr>
<tr>
<td>2 Ganikh (Alazan)</td>
<td>Mingechevir res</td>
<td>413</td>
<td>16,920</td>
<td>2.560</td>
<td>75</td>
</tr>
<tr>
<td>3 Gabirri (lori)</td>
<td>Mingechevir res</td>
<td>389</td>
<td>4,840</td>
<td>2.560</td>
<td>51</td>
</tr>
<tr>
<td>4 Khramy</td>
<td>Kur river (right)</td>
<td>220</td>
<td>8,340</td>
<td>2.422</td>
<td>255</td>
</tr>
<tr>
<td>5 Aqstafachay</td>
<td>Kur river (right)</td>
<td>133</td>
<td>2,586</td>
<td>3.000</td>
<td>210</td>
</tr>
<tr>
<td>6 Kurekchay</td>
<td>Kur river (right)</td>
<td>126</td>
<td>2,080</td>
<td>3.100</td>
<td>18</td>
</tr>
<tr>
<td>7 Araz</td>
<td>Kur river (right)</td>
<td>1.072</td>
<td>102,000</td>
<td>2.990</td>
<td>-11</td>
</tr>
<tr>
<td>8 Arpachay</td>
<td>Araz (left)</td>
<td>126</td>
<td>2,630</td>
<td>2.985</td>
<td>780</td>
</tr>
<tr>
<td>9 Hekeriychay</td>
<td>Araz (left)</td>
<td>128</td>
<td>5,540</td>
<td>3.080</td>
<td>268</td>
</tr>
<tr>
<td>10 Samur</td>
<td>Caspian Sea</td>
<td>216</td>
<td>4,430</td>
<td>3.600</td>
<td>-27</td>
</tr>
<tr>
<td>11 Pirsaat</td>
<td>Caspian Sea</td>
<td>199</td>
<td>2,280</td>
<td>2.400</td>
<td>-11</td>
</tr>
<tr>
<td>12 Bolgarchay</td>
<td>Mahmulchala lake</td>
<td>168</td>
<td>2,170</td>
<td>1.710</td>
<td>-17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>№</th>
<th>Name of lake</th>
<th>Location</th>
<th>Area (km²)</th>
<th>Volume (Mio m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sərrusu</td>
<td>Kür-Araz ovalığı</td>
<td>65,70</td>
<td>59,10</td>
</tr>
<tr>
<td>2</td>
<td>Ağzıbirçala</td>
<td>Daçaçı rayonu</td>
<td>13,80</td>
<td>10,00</td>
</tr>
<tr>
<td>3</td>
<td>Göygöl</td>
<td>Kürəkçayın hövzasi</td>
<td>0.79</td>
<td>24,00</td>
</tr>
<tr>
<td>4</td>
<td>Hacıqabul</td>
<td>Kür-Araz ovalığı</td>
<td>84,00</td>
<td>12,10</td>
</tr>
<tr>
<td>5</td>
<td>Böyük-Ş</td>
<td>Abşeron yarımadası</td>
<td>16,20</td>
<td>27,50</td>
</tr>
<tr>
<td>6</td>
<td>Ağğöl</td>
<td>Kür-Araz ovalığı</td>
<td>56,20</td>
<td>44,70</td>
</tr>
<tr>
<td>7</td>
<td>Candarg</td>
<td>Gürüçüstanın sarhədi</td>
<td>10,60</td>
<td>51,00</td>
</tr>
<tr>
<td>8</td>
<td>Böyük Alagöl</td>
<td>Qarabağ vulkanik yaylası</td>
<td>51,00</td>
<td>24,30</td>
</tr>
<tr>
<td>9</td>
<td>Aşıq-Qara</td>
<td>Həkəriçayın hövzasi</td>
<td>1,76</td>
<td>10,20</td>
</tr>
<tr>
<td>10</td>
<td>Qaraçuq</td>
<td>Naxçıvançayın hövzasi</td>
<td>0,45</td>
<td>2,53</td>
</tr>
</tbody>
</table>

Reservoirs and Water Treatment Plants

In the country 11 reservoirs serve as water sources, of which 90% are artificial dam lakes. The reservoirs have been created via the feeding of water from the Rivers Kura, Araks (Araz) and Tertarchay, which supplies water to the reservoirs of Shemkir, Mingechevir, Yenikend, Varvara, Araz, and Serseng. The reservoirs are complex water management objects, among others used for the purposes of energy generation, irrigation, and drinking water supply. The biggest reservoir in the District (Rayon) of Mingechevir is operational since 1953. Of 12 water treatment plants, the Jeiranbatan Treatment Plant and the Kura Treatment Plant are the biggest. Smaller treatment plants, partially not functioning and subject to reconstructions, are located for instance in Ganja and Mingechevir.

Groundwater Resources

In Azerbaijan a minor contingent of water stems from groundwater sources. Estimations indicate an amount of 5%. Groundwater sources play a role in secondary towns and in rural areas, especially on the foothills of mountainous areas. They contribute to the supply in the regions of Nakhichevan, Ganja, Khankandi, Yevlakh, Ujar, Agdash, Goychay, Qazakh, Tovuz, Shamkir, Quba, Qusar, Khachmaz, Agdam, Shamakhi, Beylaqan, Imishli, Fizuli, Zangilan, Jabrayil, Agsu, Shusha, Khoyav, and Hadrut. In order to solve water supply problems in Baku and on the Absheron peninsula, groundwater resources located at the Samur-Valvalchay-Plain where identified in connection with the Ill-Baku water pipeline. In summer 2012 about 2,000 wells in Azerbaijan supply groundwater. Table 6 gives a review on the groundwater sources in Azerbaijan.
Table 7: Groundwater Resources in Azerbaijan

<table>
<thead>
<tr>
<th>Regions</th>
<th>Exploration reserves of groundwater (1,000/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Foothills and plain areas</td>
<td></td>
</tr>
<tr>
<td>1 Samur-Devechi plain</td>
<td>1,686,10</td>
</tr>
<tr>
<td>2 Sheki-Zagatala plain</td>
<td>2,000,00</td>
</tr>
<tr>
<td>3 Ganja-Gazakh plain</td>
<td>447,40</td>
</tr>
<tr>
<td>4 Garabagh-Mil plain</td>
<td>665,80</td>
</tr>
<tr>
<td>5 Jebrayil plain</td>
<td>234,60</td>
</tr>
<tr>
<td>6 Nakhchivan plain</td>
<td>902,20</td>
</tr>
<tr>
<td>7 Shirvan plain</td>
<td>158,70</td>
</tr>
<tr>
<td>8 Mughan-Salyan plain</td>
<td>76,00</td>
</tr>
<tr>
<td>9 Lenkeran plain</td>
<td>86,00</td>
</tr>
<tr>
<td>10 Absheron peninsula</td>
<td>0,30</td>
</tr>
<tr>
<td>11 Great Caucasus</td>
<td>17,70</td>
</tr>
<tr>
<td>12 Small Caucasus</td>
<td>74,60</td>
</tr>
<tr>
<td>13 Mountainous part of Nakhchivan</td>
<td>24,30</td>
</tr>
<tr>
<td>14 Shamakhi-Gobustan area</td>
<td>9,80</td>
</tr>
<tr>
<td>Total</td>
<td>6,383,50</td>
</tr>
</tbody>
</table>

Transmission Mains

Azersu supplies water to Baku and the Absheron Peninsula from two underground sources: one is located in the Khachmaz region, one in the Oguz region. More water sources include the Jeiranbatan Reservoir, which is fed by water from the Samur River via the Jeiranbatan Pipeline and from the Kura River via the Kura Pipeline. Additional water pipelines were laid from the Khachmaz region (e.g. Shollar Pipeline), and finally the 2nd Baku Water Pipelines conveys water to the capital. The relatively new Oguz-Gabala Water Pipelines does not record any breaks so far and sedimentation is not an issue. The Shollar Pipeline, 160 km long, was the first pipeline to supply Baku: it was installed in 1910.

Water Demand

The amount of water available in Azerbaijan for drinking purposes lies under the average that worldwide is accessible for per capita consumption.

“Azerbaijan is short on water, only allowing an average use of 1.000 m³ per person per year, which is one of the lowest rankings in the world.”

For areas in Azerbaijan where no water meters are installed (e.g. Ganja) daily per capita water consumption is assumed to be 450 liters, defined by the total amount of water produced divided by the number of population. Azersu strives for a standard in the range of 160 l/c/d.

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Water Quality and Public Health

Appropriate water quality is an important factor for public health. Due to the structure of the Kura-Araks (Araz) watershed, both rivers have already passed Armenia and Georgia. Hence, water is extracted downstream when pollution is higher and presents a specific challenge to water treatment processes:

“Surface water from the Kura and Aras Rivers is used for a variety of uses, including municipal, agricultural, industrial, and mining and the waste products from each of these uses are discharged back into the rivers. Many of the resulting contaminants pose significant risks to human health, including exposure to organic pollution derived from municipal use, organ chlorine pesticides and high nitrate from agriculture, chemical contamination from industry, and heavy metal contaminants from mining.”

Organic pollution is a problem as sewage is discharged untreated into the rivers. Microbiological contaminations may give reason to waterborne diseases. The comprehensive use of pesticides in agriculture in the past still poses a threat to water quality. However, as the monitoring of surface water qualities has been readopted only recently, little reliable and comparative data is available.

In many areas of Azerbaijan, turbidity in drinking water proves to be a major problem. The problem exists e.g. at Jeiranbatan, and with higher turbidity concentrations for instance in water from the Kura River and in Sheki. Also other Sukanal companies complain about turbid water due to sedimentary material: very fine particles, which damage the pipe-systems. Turbidity in water give also reason for customers to complain about water quality. In a higher concentration “… turbidity levels are often associated with higher levels of disease-causing microorganisms such as viruses, parasites, and some bacteria”. The problem is well known, and the country focuses very much attention on the issues with the construction of new wastewater treatment plants and with the inauguration of a new central laboratory in Baku in the near future.

Networks and Water Losses

The first pipeline was built in Baku in 1913. Since achieving independence in 1991, the country’s infrastructure had significantly deteriorated. Most water supply networks have exceeded their lifespan, are in very bad conditions and do not meet modern requirements. Subsidiary companies report on old water (and sewerage) pipes, frequently causing accidents. Regular drops in water pressure cause under pressure and provoke infiltrations into the supply systems. Pipe bursts cannot be remedied due to lacking equipment. Some systems face problems in supplying water in the summer. Other companies have to deal with damaged water treatment facilities for several years, mainly as a result of flooding (Ganja, Goychay): sediments in the raw water directly fed into the pipe system and cause disruptions. To conclude the critical factors, in many urban and suburban districts pipelines were not planned as a network, but as water mains with dead ends, which hampers water flow, encourages entrapped air and implicates vulnerability to corrosions. These phenomena especially prevail in Baku and Ganja. In some areas insecure power supply hampers steady water supply. In Ganja – for instance - frequent electricity cuts lead to deficits in water supply from wells.

Amy Ewing, l.c.

USEPA, 2002 - cited in: Amy Ewing, l.c.
Water losses are high: estimations fluctuate between 40 and 65% for the entire country. For Baku they are estimated at 70% of the water produced. Bulk water meters have been installed in order to identify the amount of water losses. It can be assessed that illegal connections may cause 25% of losses, 25% are caused by non-paying customers, and 50% can be attributed to technical losses, which mostly occur in transmission mains and networks, but less in water treatment plants and at house connections. Subsidiary companies frequently report on illegal connections at transmission pipes, causing pipe failures.

To control losses – (e.g. in Baku) - the supply areas are too big to properly carry out measurements, since previous zones were illegally connected to each other. Maps that would document the locations of networks do not exist. The IT department of Azersu has initiated some endeavours in this respect, inviting experienced employees to indicate pipe-locations due to their memory on a prepared map.

The replacement of pipes in Baku has initiated seven years ago and shows first positive results, mainly in terms of a longer duration of daily water supply.

**Water Meters**

In Baku the installation of water meter initiated in 2005, in summer 2012 water meter coverage came to 60% of all households. The program foresees 5,000 installations per month. For the installation public entities and private companies have to pay, for private households the installation is free of charge.

While water meters of domestic customers are checked each five years, water meters in commercial households are checked annually. The checking is done by a group that consists of a representative of Azersu and a representative of the State Water and Metrology Standard Committee. The Committee supervises the standardization and registration of water meters and approves the meters to be installed. In subsidiary organizations the work is delegated to staff on-site.

Since 02/2012 Baku Sukanal is in the process of implementing post-terminals, which allows for printing and submitting bills immediately after meter reading. Besides, the installation of smart-card water meters is ongoing in a pilot area in Baku and has led to the installation of 900 water meters until summer 2012.

**Wastewater Disposal**

According to own statements, some Districts (Rayons) do not dispose of any sewerage system; some of them describe their sewerage systems as old, and – similar to water supply networks – filled with deposits, causing pipe failures and damaging electric motors. Mixed collectors for rainwater and wastewater induce problems in many towns, as during heavy rains the double function leads to flooding due to under-dimensional collectors. It is intended to separate the collector systems.

Mostly wastewater treatment plants are out of service or do merely keep up minimal operations. Sewage sludge concentrations need to be checked in accordance to EU guidelines to learn about implications for future re-use.

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9 11 groups with 3 persons each install up to 13 water meters per day/group in private households, and up to ten water meters in companies. 454,000 water-meters had been installed: 366,000 of them at domestic connections, sometimes two or three water meters per household due to cold and warm water connections.
B.5 Investments

In this chapter presents a brief outline on investment measures. The section Expertise of Projects in Azersu’s Head Office accompanies the design of all projects. In summer 2012, 150 different projects are ongoing, and 40 new projects are in a planning process. The time horizon for the water and wastewater demand of most of the projects is 2035. All projects aim at covering the entire water cycle: from water source generation through water treatment, water storage, transmission mains and distribution network up to the house connections, and wastewater collection and treatment. The projects are financed using state funds and loans allocated by international financing institutions.

Ten water treatment plants are intended to be built. Of five wastewater treatment plants, three are located in Baku. It is planned to construct 50 further wastewater treatment plants in entire Azerbaijan until 2035. Exemplarily we outline a list of projects, which – due to the investment dynamics in the sector – make no claim to be complete:

- A new Central Laboratory in Baku is expected to be opened in December 2012. It will be in charge of analyzing qualities of water and wastewater in all Azerbaijan. The number of parameters to be applied will rise to 90 against 62 in use now. The application of new standards is under development, in line with the policy set by the State Standards Committee.

- A loan agreement between the Republic of Azerbaijan and the Asian Development Bank (ADP) under the Urban Water Supply and Sanitation Project is aimed at the reconstruction of supply and sewerage systems in Agdash and Goychay.

- Loan agreements on a Water Supply and Sanitation Investment Program with the Asian Development Bank (ADB) finances the reconstruction of water supply and sanitation systems in Agjabadi, Beylagan and Balakan, Agdash, Goychay and Nakhchivan, as well as in surrounding settlements of Baku.

- In the frame of the National Water Supply and Sewerage Service Project I, agreements between the Government of Azerbaijan and the World Bank finance the reconstruction water supply and sewerage systems in four District (Rayon) centers and nearby villages. The project focuses on Shamakhi, Gabala, Saatli and Sabirabad.

- A loan agreement between the Republic of Azerbaijan and KfW (Germany) in the frame of the Open Municipal Infrastructure Program II finances the reconstruction of water supply and sewerage systems in Ganja and Sheki. An agreement with the Government of the Swiss Confederation supports the Open Municipal Infrastructure Program I and II.

- A loan agreement on the Provincial Cities Water Supply and Sewerage Project with the Japan International Cooperation Agency (JAICA) is aimed at the reconstruction of water supply and sewerage systems of ten towns and District (Rayon) centers (Shirvan, Salyan, Neftchala, Gusar, Khachmaz, Khizi, Gobustan, Yevlakh, Barda, and Naftalan).

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10 According to statements in Head Office in June 2012
11 The information present an abstract taken from the website of Azersu, http://azersu.az/en
As part of projects financed by the Azerbaijani State budget, a modern water treatment plant is constructed based on ultra-filtration technology in the area of the Jeiranbatan treatment plant in line with the 2011-2013 State Programs of Social-economic Development of Baku city and its settlements. A new transmission main, water distribution network and reservoirs are intended to be constructed as well.

Several projects that focus on the reconstruction of water supply and sewerage systems are aimed at improving service provision for customers in small and mid-sized towns. All projects take into account the forecasted population growth until 2035 and foresee network rehabilitations financed by the Azerbaijani state budget in:

- Guba, Girmizi and Timiryazev settlements and Davadabani;
- Hajigabul for 30,400 users,
- Imishli for 40,000 users,
- Shamakhi for 45,700 users. A wastewater treatment plant will be constructed at the edge of the city.
- Mingachevir for 120,500 users,
- Zardab for 120,500 users,
- Kurdamir for 22,300 users, and in
- Bilasuvar for 230,000 users and for 13,500 consumers in Gakh city and 7,200 consumers in Gakhbash and Gakhingloy villages.

**Conclusion**

The comprehensive number of new projects requires also the capacity to manage them. Azersu’s staff has to continuously communicate with various project teams, e.g. in order to comply with established schedules.

A problem frequently encountered is the good handing over of completed technical facilities to operations, which is especially true of the management of water and wastewater treatment plants.

The main focus of investments is on infrastructure development. However, weaknesses in management and operations have led to an increased need for capacity building and training. This is the background of this training needs assessment.
C. TRAINING AND CAPACITY BUILDING NEEDS ASSESSMENT

The assessment of capacity building and training needs - subject of this chapter – is structured according to the scope of work as it assigned to Divisions and Sections. We refer to them as shown in different organizational charts of Azersu, which correspond to three different levels, namely to the

- Head Office in Baku,
- centrally coordinating and supervising units, such as Baku Sukanal or United Sukanal,
- locally oriented operative units directly in contact with customers, first-hand dealing with technical operations in a District (Rayon).

To better understand the interdependency of capacity building and training needs between those levels, we follow the logical path of steps to be followed in a certain procedure. Procedures actually consist of legworks to be accomplished on different levels, Divisions and Sections - in order to compile required documents and to generate (sub) products that correspond to Azersu’s duties, to legal stipulations and to development needs in terms of healthy and safe water supply in line with WHO standards.

In line with the Terms of Reference for this assignment we structure the needs assessment according to five action areas

- Management and Customer Orientation,
- Water & Sanitation Investments,
- Water & Sewerage Systems Construction,
- Operation, Maintenance, Water Quality, and
- Accounting and Financial Management.

Within each area we follow the logics of the organizational charts in place. Respectively we ask for (1) structure and current scope of work and for (2) specific challenges, problems and changes. Subsequently we present the (3) capacity building and training needs assessment related to (3.1) Azersu’s Head Office and related to (3.2) subsidiary companies – either in terms of supervising and coordinating units (United Sukanal, Baku Sukanal) or in terms of operative units as Sukanals in a District (Rayon).

The training needs that we identify are transferred to suggestions for trainings, which are presented in detail in chapter D.1.4, Training Plan. Subsequently the trainings are clustered into four different groups in chapter D.1.5, Training Plan and Training Areas.
C.1 Management & Customer Communication

- **Related Departments and Divisions in Azersu’s Head Office:**
  - Human Resources Section incl. Personnel and Staffing & Wage
  - Training Center
  - Complaints and Applications Section
  - Secretariat and Press Service & Public Relations Section
  - Archive
  - Section for Control over Documents Handling, Office Works and Administrative Matters
  - Internal Audit Section incl. Internal Audit Organizational and Works on Internal Normative Documents
  - Law Division incl. Works on Juridical Arguments and Legal Provision of International Projects and Contracts
  - Information & Communication Technologies
  - Management Development

- **Departments in Azersu’s Subsidiary Companies and Sukanals**
  - Middle Managers
  - Upper Management positions

C.1.1 Management - Middle Management – Third Level Management

The capacity building and training needs assessment presented in this section is based on interviews with managers of different Divisions and Section in the Head Office, Baku Sukanal, United Sukanal, Sumquayit Sukanal and Jeiranbatan Sukanal.

Interviews did not exclusively focus on management training needs, but inquiries were put at the end of almost each interview, in terms of general management or own development needs. The assessments are enriched with appraisals on capacity building and training needs submitted by subsidiary companies (Sukanals, Open Joint Stock Companies) in response to a questionnaire sent out in July 2012. Critical appreciations and assessments by MACS’ experts complement the capacity building and training needs assessment presented in this section.
1. **Structure and current scope of work**

Azersu is an organization with about 10,500 employees working in 73 different sub-organizations\(^\text{12}\). Each organization has Divisions and Sections - e.g. in Azersu’s Head Office in Baku they come to about 20. The total number of managers that work in Azersu and subsidiary organizations may be assessed at 500 persons, considering top management, second level management and middle management. If including also third level management - e.g. team and shift leaders or foremen - the quantity of employees which cover management functions might be more than 2,000 persons. Based on these approximate figures we see four management levels in Azersu and subsidiary organizations:

- **Top Management** is in charge of designing the strategic development of Azersu. Top management has to balance internal processes with requirements rooted in the organizations’ environment - formulated by state bodies, baselines of sector policies, political and international organizations. The top management has to calculate and reduce external risks. In Azersu this level is covered by the Chairman.

  Experience shows that top management - by nature of its work - may tend to perceive guidance and leadership as a one-way road: it may happen that important and urgent issues is decided on without taking into account the opinions of operational experts. Hence, it may happen that some strategies prove to be complex and difficult to be implemented - and implementation problems may be attributed to weak managers that on lower operational levels seem to be unable to implement the plans.

- **Second Level Management** - according to newest researches - forms the backbone of the organization. Second level management is essential for good corporate management and culture, which according to 10,000 employees worldwide proves to be one of the most important motivators in daily business\(^\text{13}\). The second level fulfills an essential and indispensable function: on the one hand those managers are located close to day-to-day-business, so they are in a position to capture and assess operational expert knowledge. On the other hand they are located close to the top management, and thus they are able to exert influence on strategic decision making processes. The second level presents the main body of the company that can bridge between top management and the corpus of the organization. In Azersu this level is covered by Deputies of the Chairman, but also Heads of major organizational units, such as Baku Sukanal and United Sukanal, may be allocated to this level.

- **Middle Management** acts at the interface between top management’s strategic decision making and the transfer into day-to-day operations. Middle managers include all employees that execute management functions in terms of leadership and in terms of operational decision making. The categorization starts above team leaders (third level management) and includes all Heads of Divisions in Azersu’s Head Office and Heads of smaller Sukanal companies.

  The middle management is located between the second level management and the third level management that has a more practical and down-to-earth way of

\(^{12}\) According to the organizational chart of the company in summer 2012

\(^{13}\) Kienbaum and the British research-enterprise ORC have queried 10,000 employees worldwide in 2011
thinking. Middle managers act as connectors between the strategic top and the operational nucleuses of the company - and often they find themselves in the focus of contrary positions: getting from top the request to change – and from bottom the desideratum to have stability; from top the demand to have a higher output – and from bottom the desideratum to be relieved; from top the visions – and from bottom the feasibility constraints.

Up to now the importance that the middle managers' roles have in an organization is widely neglected. There are almost no concepts in place how to define their positions. Still, *middle management* is not merely a *transit station* on the way to the top, but has a value of its own, as middle managers - yes - want to design the company strategically, but they also *want* to act in the field of operations. On this background it might be suitable to enhance the role and the position of the middle management in Azersu in the context of future training programs.

- **Third Level Management** embraces teamleaders and foremen. They transfer concepts to an operational level; they need to be good experts in their field. They assign and instruct employees and workers, and monitor their performances. Output orientation is essential on this level, as team leaders are responsible for sound results in their sphere of work. They are also in charge of taking care for the availability of necessary equipment, consumables and other resources that are necessary for the work to be accomplished. Also reporting issues are essential in their scope of work.

2. **Specific challenges, problems, changes**

Many positions in Azersu and subsidiary organizations are staffed with new managers in central positions since spring 2011. The set-up of many new Divisions and Sections in the Head Office that previously did not exist – or the re-launch of existing ones - has put positive momentum to the company. Young and smart people manage Divisions and Sections, still getting acquainted with characteristics of the water and sanitation sector. In the context of future capacity building and training it is advisable to support initiated development processes and henceforth to encourage the management on all levels.

A major challenge for Azersu we see in the strategic alignment and coordination of all initiated and ongoing developments in many different fields. It is striking that the company currently does not dispose of a specific Division for monitoring / designing organizational development processes and providing support to the top management in steering them. This fact may hold the risk to double efforts, while other issues might not sufficiently be taken care of.

Another challenge is the cooperation in those specific areas where comprehensive coordination and reconciliements between different Divisions and Sections is required. As a result of many interviews we can state that work flow management is an issue in those cases where many actors are involved in a process chain.

3. **Assessment of Capacity Building & Training Needs**

This section presents an assessment of capacity building and training needs in the field of management and middle management.
Capacity Building Needs

Since Azersu is a big company undergoing comprehensive developments, a Division coordinating organizational development processes might be appropriate. The Division may act as an active partner in the preparation and implementation of change processes in the company and consult the top management accordingly. The Division may focus its activities on (1) the development of the entire structure of the company, and (2) the interests of employees and workers concerned. In detail a Division for Organizational Development may

- Identify to what extend doubling of work exists;
- Categorize to what extend different Divisions could be merged or split;
- Support the identification of staffing needs;
- Carry out follow-ups on procedures and make suggestions for improvement,
- Carry out assessments on legal issues to be covered so that activities of Azersu comply with relevant legislations;
- Identify the set-up and organizational establishment of new issues in the organizational chart, such as environmental protection standards or wastewater treatment issues;
- Raise awareness on the consideration of cross-cutting issues;
- Any other issues assigned by the top management.

Training Needs

Training Needs are structured according to the presented four management levels. We suggest offering management trainings as an open program, meaning a specific target group is being addresses. Trainings will have to be designed for this group, but openness means that – in line with prior assessments – also members of different management levels may attend certain management trainings, provided that the training corresponds to individual development needs.

- Training on organizational development for top management and second level management can be offered on request: individually designed forms of coaching and consulting may provide support on some upper management topics, such as ethical standards in the water and sanitation sector, vision development, development of corporate culture, strategic thinking, scenario techniques and models of (and pattern for) organizational development issues.

(Please refer to training 1.1 in the training plan.)

- Training and coaching on water sector policies for top management and second level management may cover - based on individual requests – factors that affect a water and sanitation enterprise in three different settings. (1) Government policies and regulations will embrace tax regulations, public health issues and market conditions, while the area (2) Urban Development may include demographic developments, town and industrial development. The third section would entail (3) the availability of financial means.

(Please refer to training 1.2 in the training plan.)

- Aimed at enhancing role and position of the middle management, the design of a carrier path of its own – a middle management development program - can...
be taken into consideration: a way that directly leads to the middle management and stops there. The first step would be the development of a mission statement for middle managers: strategically thinking leadership with close relation to operative feasibility. The program may include the following:

1. Diplomatic aptitude to keep neutrality between lower and higher levels to encourage own capability to act: middle managers need to be trained to resist conflicts.

2. Argumentation techniques, as demands set by the top management may collide with things achievable: middle managers are frequently requested to explain to both - higher and lower - levels in case a "solution" proves to be suboptimal. This duty requires high argumentative competencies.

3. Expression of „NO“ and own positioning, in case demands set by the management prove to be not feasible: if the middle manager is not in a position to do so, he/she will work his/herself to the ground to make the impossible possible. Top managers usually appreciate a friendly and clear “NO” on an objective level.

4. Courage to reduce things: usually the middle manager is requested to translate sophisticated and complex strategies into clear and generally understandable messages. He needs to have linguistic competence, but also capability and courage to transfer sophisticated strategies into effective messages for workers and employees.

5. Transfer competence: middle managers have to transfer strategies to an implementation level. They need to know, to understand and to share the strategy; commitment of middle managers is paramount. Strategy workshops by top- and middle management may help to commonly transfer operational objectives into the design of work processes and – vice versa - to adequately adapt strategies to realities.

6. Leadership skills: middle managers play an important role in determining the culture of the organizational unit they lead. Therefore a module on leadership might be - optionally - taken into consideration. Details are presented in the Training Plan under the section Leadership for Third Level Management.

(Please refer to training 1.3 and 1.4 in the training plan.)

- In response to the questionnaire on training needs sent to subsidiary organizations in July 2012, training on management and leadership for third level management shall support (1) the knowledge of different styles of leadership and their appropriate application, (2) the selection of qualified staff for defined jobs, and (3) the design of different strategies to encourage the staff’s commitment and to foster employee retention. For that purpose it is important to focus on (4) labor conditions and emphasized horizontal communication and on (5) different tools of human resources development, such as performance and training needs assessments, delegation principles, meeting management and feedback as part internal motivation policies.

(Please refer to training 1.5 in the training plan.)
Training modules on **general management issues** can respond to statements of representatives of subsidiary companies in response to a questionnaire inquiring training needs in July 2012 and to different statements by Heads of Division and Section in the Head Office of Azersu. On request, general management issues can be clustered into groups, depending on individual training needs. We suggest covering the following issues, based on findings realized during this study:

- A strategy defines the way to move from an original state to a targeted goal. Training on **strategic thinking and creativity at work for management** will initiate with a definition of the term **strategy**. It will be followed by the description of different goals that are relevant for the respective organizational unit, and by the design of different ways how to achieve the targeted goals, e.g. to establish modern services or to make customers pay their bills. **Strategic thinking** shall train the participants (the strategists) to quickly identify the way to the targeted goal in the frame of their strategy planning. It is understood that the clear description, different scenarios, and adaptations of measures are paramount for implementation. **Strategic thinking** means to reflect on past experiences and to deduct lessons learned for the future. Finally the training will embrace tools that can encourage creativity in strategy design and in daily business.

(Please refer to training 1.6 in the training plan.)

- Training on **modern work techniques for managers** will have to cover a suite of different issues, such as (1) workflow management and performance improvement, (2) workplace design, (3) decision making process, (4) methods for problem solving with focus on scheme design and operation chart, (5) structured work organization, and (6) meeting and moderation management. This suite of work techniques can be extended to further topics.

(Please refer to training 1.7 in the training plan.)

- Training on the **commercial goals for managers** may start with the general idea about commercialization in the water sector. It will be essential to emphasize the need of commercial goal setting and ways to develop business policies in this respect, supported by essentials for business planning. Another training topic will be the monitoring based on quantitative and qualitative indicators. Training on service planning and service management shall emphasize the need for customer orientation. Service management embraces all activities that are necessary for the set-up, maintenance and extension of all service activities towards the customers of the subsidiary company.

(Please refer to training 1.8 in the training plan.)

- Five **principles of effective management** according to the European management theoretician Fredmund Malik may lay new and reviewed foundations for the (self)-understanding of management as a work and an employment that can be well learned - provided the broad range of management responsibilities is being well considered and adequately balanced in the ongoing work process.

(Please refer to training 1.9 in the training plan.)
• Training on water supply operation and monitoring for managers may focus on the knowledge of operational steps from water sources to house connections. Work with new equipment, the re-organization of work flow might be topics - as well as the monitoring of actual and planned performance with indicators, or maintenance standards for supply systems. New approaches in dealing with NRW water may be important. Optionally the training may include reflections on operational issues to be delegated to subsidiary organizations - for the sake of facilitating work-flow and readiness to take initiative on local level.

(Please refer to training 1.10 in the training plan.)

• Training on self-monitoring as a manager may focus on the capability to grasp and transfer knowledge, on self-coaching and self-motivation competencies. Training on self-management and on time management may include the setting of priorities and the delegation of certain tasks - in order to manage daily business with less stress and to have a higher output of performances.

(Please refer to training 1.11 in the training plan.)

• Training on business communication and reporting as a manager may include communication principles, the clarity of information (and misunderstandings) and basic negotiation skills. Psychologically oriented, well-structured customer communication has a prominent role. Conducting meetings in a productive, participatory, interactive and result oriented way is a challenge many managers have to deal with - and need to get used to it. Reflections on communication structures within the own utility (or Division, Section) may encourage direct and horizontal communication approaches in future daily business. A prominent role shall be given also to the set-up and maintenance of local communication networks. Finally essentials to structure and write a report and to do technical or financial reporting may conclude the communicative training modules.

(Please refer to training 1.12 in the training plan.)

• Training on the professional design of planning processes focuses on essential planning and forecasting issues and may consider in nine modules (1) planning principles – planning scenarios, (2) specifics of water planning, (3) business planning, (4) strategic planning / strategic asset management, (5) general management issues, (6) knowledge management, (7) interaction and communication, (8) master plans and feasibility studies, and (9) leadership and self-management. The objective is to gain an overview on main planning processes in the water sector; target group may be a group economists and engineers with at least five years of experience.

(Please refer to training 1.13 in the training plan.)

• A young manager’s development program may encourage young and talented staff to further develop skills and competencies to become a manager at mid-term. It might be linked to the above training on planning processes. It may have a motivating effect to see a work perspective in Azersu and maintain and further develop commitment. Such kind of a program falls under the section Human Resources Development in the next chapter.
C.1.2 Human Resources Development

The capacity building and training needs assessment presented in this chapter is based on many interviews with the Head of Human Resources in Azersu and with further staff members in this Section. Interviews with the Heads of Staff Administration in United Sukanal and in Baku Sukanal contributed to the assessment presented in this chapter. The same is true for capacity building and training needs assessments submitted by subsidiary companies (Sukanals, Open Joint Stock Companies) in response to a questionnaire in July 2012. Finally the critical appreciation of provided comments complements the picture on capacity building and training needs in the field of Human Resources Development.

1. Structure and current scope of work

Human Resources Development (HRD) is a newly defined work area in the public sector of Azerbaijan. Up to now only a few Azerbaijani public organizations have a Division for HRD. At Azersu a HRD-Section merely exists in the Head Office. The subsidiary organizations deal with personnel administration.

The Section HRD was created early in 2012; the Sections Personnel and Staffing and Wages were integrated in July 2012. Ever since, the organizational unit - subordinated to the Division Records Management - is in charge of recruitment and personnel administration issues. In cooperation with the Training Centre the Section also manages training measures.

2. Specific challenges, problems, changes

As the idea of organized and institutionalized Human Resources Development is a new phenomenon in Azersu, the Section faces multiple challenges to deal with. The major challenge is to develop the Section from staffing and administration to a Division that generally deals with the development of human resources, designs a policy for that and provides HRD consultancy to managers on all levels in Azersu.

A major challenge consists also in the design of a policy against staff leaving the company. During interviews dialogue partners stated that the staffs’ motivation to improve service provision may require encouragement. Frequently interview partners emphasize the need for “psychological” competencies especially for staff in contact with customers and for middle managers that hold a position with leadership functions.

Currently there is no formalized methodology in place on how to identify training and - in general - human resources development needs within the organization. The approach need to be systematized in agreement with the management.

3. Assessment of Capacity Building & Training Needs

In this section we present the assessment on capacity building and training needs in the field of Human Resources Development.

- Capacity Building Needs in the Head Office

In terms of capacity building it is advisable to focus on five areas in the field of Human Resources Development: (1) on an overall concept for HRD planning, (2)
on an career path management to enhance development perspectives for young and talented experts, (3) on a Train-the-Trainers (ToT) concept to develop internal training resources, (4) on a review and update of the existing structure of job descriptions, and (5) on the design of a mid and long-term motivation policy.

- **Human Resources Development Planning:**

  "Human Resources Development consists of measures for further education and training, the structuring of work, and consultancy for career planning and management. All those measures are very complex and shall – at the same time – convey the greatest possible benefit. In order to safeguard this benefit, HRD … shall be oriented towards actual needs. The needs arise mainly from strategic objectives of the organization, the corresponding performance requirements in relation to outstanding tasks, and from strengths and development areas of those persons who have to perform those tasks. Hence, prior to any intervention by a human resources development strategy, sound diagnostics of existing needs are required."

*Human Resources Development Planning* shall provide for tools and approaches to analyze competencies, skills and capabilities that presently prevail within the workforce. Findings are compared with competencies, skills and capabilities that are required to manage “the future” – to implement strategic plans, to handle outstanding challenges, and to make Azersu’s mission come true. This way *development needs* and also *surpluses* can be identified - the basis for adjusting the workforce’s qualifications to meet current and future performance requirements and to safeguard job satisfaction.

Development tools are well-structured job profiles, staff appraisal interviews, single trainings and training programs, programs for middle age or elder staff, young talents development programs and similar approaches.

Specific emphasis need to be given to motivation policies, as salary levels are relatively low and may impede commitment, ownership and identification with the work. It is advisable that Azersu’s new Human Resources Development Section receives support for setting up and implementing an overall concept for HRD policies and strategies.

- **Career Path Management:** a young manager’s development program (talent development program) may have a motivating effect to see a perspective in Azersu and to maintain and further develop commitment. Career path and career growth can encourage talented young employees and workers to increasingly professionalize their way of working. The career path program may consider existing capabilities and potentials and support young staffs in their further individual development.

  The program may include knowledge on expertise and on team management. Two options may be considered: either to deepen expertise and to become highly skilled experts, or to develop leadership skills to act in a management function at midterm.

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14 Jurij Ryschka, Marc Solga, Axel Mattenklot: Praxishandbuch Personalentwicklung, Wiesbaden 2005, p. 31
Concerning both options the adjustment of behaviours, the development of new ideas and the capability to design concepts and care for their implementation are in the focus. Existing milestones can be integrated or can be further developed. The basic idea is that both - the individual employee or worker and the organization Azersu - benefit from such kind of a program.

- **Train-the-Trainees (ToT) Pool:** Current deficiencies in the approach with internal trainers indicate development needs. ToT based trainings may refer to issues of technical operations, such as mechanics, energetics or automation.

  Trainings need to connect theory and practice, system and human being, learning and experiences, fast successes and sustainability. Beyond facts also emotions of trainees are to be addressed. *What you do, you remember* is the motto to follow. It is essential to develop a didactic concept that includes practical exercises, team work, ludic drive, curiousness and memorable events into the overall training process. A train-the-trainers concept may help establishing a pool of internal trainers that apart from their expertise have sound didactical knowledge and skills to train staff in Azersu. Certain requirements to be met are outlined in the section *Training Needs in the Head Office*. It is recommendable to prioritize three to five areas, in which training in line with ToT can be provided.

- The **structures of job profiles** provide the basis for human resources development, as they define the starting points for all measures. Current job profiles contain statements on (1) required qualifications, (2) experience in similar positions, (3) descriptions of the work to be accomplished, (4) an agreement to not request a rise in salary, and (5) the affirmation to provide for a workplace close to the place of residence.

  It is advisable to extend this structure to different groups of competencies that are required to have (or to develop) in order to accomplish assigned tasks. In different positions in Azersu people started to elaborate job descriptions for the positions they are superiors to. These development endeavours may be harmonized. In addition, the job profiles may be aggregated into qualitative staffing plans that record trainings planned or completed, and that record further development steps. The staffing plan may help identifying competencies that in a Division/Section do exist as well as those that might be lacking.

- **Aimed at relieving the section HRD and providing it with more resources for outstanding strategically oriented work, currently pursued recruitment principles** might be reviewed.

  It may be helpful to train persons in each subordinated organization to carry out recruitment interviews according to defined procedures and standards. This approach may facilitate and accelerate the recruitment processes, as it is done in *United Sukanal*. In this case the number of recruitment interviews and tests in Azersu’s Head Office might be restricted to those for management positions only, or to positions for high level experts. Recruitment processes of staffs on the third management level (foremen, team and shift leaders) and staff with mediate or lower educations (especially workers in the technical field) could be delegated to the respective subsidiary organization.
In order to put the Section Human Resources Development in a position to professionally manage all outstanding strategic and operational duties, it is recommended to promote the Section to a Division. In this case the Training Centre might be subordinated to an in future upgraded Division Human Resources Management. This option may emphasize the significant role that human resources play in the context of the ongoing development processes in Azersu.

### Capacity Building Needs in Subsidiary Companies

- As response to a questionnaire sent to subsidiary organizations, some organizations indicate the need to improve staff administration manners; others declare psychological trainings to be necessary in the field of human resources management.

### Training Needs in the Head Office

- **Human resources development planning** may be supported by training, consulting and coaching. Training may focus on (1) ways to identify competence profiles in different areas, (2) staff performance assessment tools (forms, interviews), (3) motivation policies, (4) structured, objectified training needs assessments, (5) work-integrated tools of HRD (job enrichment, job enlargement, team development, forms of coaching), (6) management of learn-transfers, (7) evaluation, and (8) efficiency analysis of HRD measures. Aspects of consultancy to managers may be covered as well.

(Please refer to training 1.14 in the training plan.)

- Training and/or coaching pertaining to career path management may focus on process competencies to (1) manage the clarification process with the management, (2) identify potentials of candidates, (3) manage staff talks to agree on career path development, (4) take care for contractual arrangements, (5) manage intermediate follow-up workshops, (6) define steps and milestones, (7) take care for intermediate coaching, and (8) regular briefing of managers. Close liaison with managers will safeguard the applicability of training contents.

(Please refer to training 1.15 in the training plan.)

- Provided an internal professional trainer’s pool shall be established, especially for technical trainings, the section HRD may be supported via training and coaching in the design and implementation of a Train-the-Trainers (ToT) concept. The following aspects will have to be considered:
  - Candidates for trainers will have to be selected carefully and have to meet these requirements: sound expert knowledge, experience on the topic to be trained, charisma, creativity, patience, and excellent communication skills, so that they listen actively and can link theory and practice.
  - Trainers need to be partly released from their work in order to prepare and conduct the trainings. They also need time for evaluation and reporting. All these elements need to be considered when the exemption from daily work is being calculated.
- Internal trainers pass through a train-the-trainers (ToT) program to learn about training design, script elaboration, curricula development, elaboration of training materials, and about essentials of didactics with adults in terms of interactive training tools. During the ToT the internal trainers will elaborate their trainings and receive coaching in this process by the training provider who conducts the ToT.

- Azersu (HRD) concludes a contract with the internal trainers, which stipulates the trainers’ obligations, such as preparing the trainings as being instructed, implementing trainings with a maximum of practical relevance, and providing for reports. Further duties should include the documentation of the training for the trainees, and a description of lessons learned in order to further improve the training approach - as well as the contents, the methods applied and the selection of the target groups.

- It is meaningful to establish a pool of internal trainers, in which external trainers may be included in order to integrate an outside view and to have synergetic effects. It is advisable to regularly coach the members of the training pool to safeguard the quality output of training endeavors.

(Please refer to training 1.16 in the training plan.)

- It recommendable to support the **review and extension of job profiles** via training and coaching to the HRD Section, emphasizing the following issues: (1) template design, (2) features of competencies (expertise, strategic-methodological, social, personal), (3) preliminary profiling for 200 positions, (4) management of a participatory approach with managers in subsidiary organizations to review and update job profiles, and (5) features and characteristics of a staffing plan as an aggregated form of job profiles.

(Please refer to training 1.17 in the training plan.)

### Training Needs in Subsidiary Companies

- There is a need to train employees in **essentials of human resources development**. The staffs responsible for human resources up to now do not have a clear picture about the difference between personnel administration and human resources development. Training should include 150 persons in subsidiary organizations. Similar preconditions in subsidiary organizations will facilitate the training, which will have to emphasize the following:

  - **Development areas of HRD**, such as leadership and self-competence, communication (staff talks, presentations, meetings, negotiations), conflict management, self/time management, staff retention, motivation policies;

  - **Organization of HRD processes**, such as staff marketing, pre-selection criteria for staffing, performance appraisals, training needs assessment, adjustment to new jobs, training-on-the-job, health and safety management;

  - **Role and scope of work of a HRD manager** with focus on HRD concepts based on given conditions, consultancy to managers and staffs, and evaluation and reporting issues.

(Please refer to training 1.18 in the training plan.)
Another training need emphasized in interviews - especially in Baku Sukanal - refers to the *definition of labor arrangements and work force planning*. It is meant to be a chronology of the workplace including workflow analysis, reengineering and performance improvement approaches. It is a way to measure staffing needs in terms of time and work load. Objective is to precisely enable adequate workforce planning based on actual work load and the distribution of work among several jobs and qualification levels.

*(Please refer to training 1.19 in the training plan.)*

Training on *legislative issues in the field of human resources management* will have to provide for an update concerning labor legislations and new stipulations set by the Labor Code. The Training may focus on the meaning of normative documents and shall support the trainees in discussing the implications for staff administrations. Planning of related work steps for the respective utility may conclude the training. It is recommendable to discuss lessons learned in a follow-up training.

*(Please refer to training 1.20 in the training plan.)*

### C.1.3 Training Centre

The assessment of capacity building and training needs in this chapter is based on interviews with Head and staff of the *Section HRD* and with the Head of the *Training Centre*. Responses to an inquiry on capacity building and training needs sent to subsidiary companies in July 2012 complement the assessment - as well as the critical appreciation by MACS’ experts.

1. **Structure and current scope of work**

   As of late, Azersu’s training center is under construction at a distance of 20 km from Baku - close to the *Jeiranbatan* water treatment plant. The center will have 15-20 class rooms and will allow for trainings of up 200 persons at the same time. The *Training Centre* will prepare, organize and implement trainings on request of Azersu’s Section *Human Resources Development*. It will be equipped with overnight and recreational facilities and it will be staffed with 30-40 persons.

   The *Training Center* has been staffed and already manages trainings especially for the technical Divisions. Prior to their participation the future trainees undergo a test. Their participation mainly depends on the evaluation of this test. Subsequently to the trainings, the *Training Centre* carries out a final assessment and does the evaluation; the participants make an exam and receive a certificate. In addition to training management, the *Centre* has carried out a training needs assessment referring to technical staff members.

2. **Specific challenges, problems, changes**

   Up to now the *Training Centre* does not dispose of internal trainers (please see chapter *Human Resources Development*) and is not in a position to professionally manage in-
house trainings based on own resources. The major challenge will be the design of a comprehensive training concept in close cooperation with the Section HRD.

The concept should define basis quality standards for future trainings. In this context it will be helpful to take into account the quality standards implicitly formulated by representatives of subsidiary organizations in response to a questionnaire in July 2012:

- As to indicators for successful trainings, employees of subsidiary organizations emphasize that the close relation of trainings to practical work is relevant. The future participants would like to reflect own experiences in the courses and have the opportunity to apply learnt knowledge and skills in daily practice afterwards. Training should be executed during work time.

- Expectations from an eligible training provider refer to the teaching of modern knowledge by qualified trainers. Training providers should have good capabilities to develop a close relation with the trainees, and they need to be in a position to positively affect their motivation. Good trainers are requested to widely share their experience with the participants. Prepared plans should be really implemented.

- Suitable training formats comprehend training-on-the-job, class room training and trainings managed in different modules. Generally, a mix of different training formats is highly appreciated. Likewise, sending specialists to foreign countries to attend courses there and to share experiences with foreign specialists are considered as suitable training formats.

3. Assessment of Capacity Building & Training Needs

Subsequently we outline some needs as to capacity building and training needs for the future training center of Azersu.

Capacity Building Needs in the Head Office

- It is advisable to generally promote introductory trainings for those staff members who are newly assigned to their job. This may refer to the staff that is in charge of constructions supervision, and to staffs that work with machinery. Introductory trainings shall coincide with trainings that update existing knowledge and skills from time to time - in order to adjust competencies to new requirements and to prevent from deficient work habits.

Training Needs in the Head Office

- Training on the Training Management Cycle may support the design of a basic training concept. In the focus are different training formats, such as such class room, on-the-job, workshops or study tours etc. The cycle embraces indicators to define different target groups and puts emphasis on options for a needs assessment in cooperation with HRD. The definition of training objectives and contents, and the outline of modules, time frame and methodologies follow. Terms of Reference will have to be elaborated; incoming proposals evaluated and training providers will have to be contracted. The training organization is followed by formative and summative evaluations. The cycle concludes with the certification. Budget control accompanies the entire cycle.

*(Please refer to training 1.21 in the training plan.)*
C.1.4 Customer Communication - Complaints - Applications

The assessment of capacity building and training needs in the area of Customer Communication is based on an interview with the Head of the Division Complaints and Applications in Azersu’s Head Office. Results of a questionnaire submitted to subsidiary companies in July 2012 complete the assessment, as well as the critical appreciation and assessment by the experts of MACS.

1. Structure and current scope of work

The Division Complaints and Applications in Azersu’s Head Office is staffed with four persons. The Division was set up in spring 2011, subsequently to the deployment of the new management of Azersu. A similar structure was in place since 2006. The Division aims at establishing a policy which accepts all citizens who approach subsidiary organizations with complaints and suggestions related to their service provision.

In case of complaints or suggestions, customers usually contact their local service company (or United Sukanal) which tries to solve the problem. All subsidiary organizations report monthly on customer complaints to the Division Complaints and Applications and indicate the steps that were taken to remedy the tricky situation. The submitted concerns are recorded and clustered for further analyses. The Head Office’s Division also receives customers in case a problem cannot locally be solved.

Azersu maintains a Call Center (“955”), where six employees work round-the-clock in shifts. On average they receive 15 complaints per day, which mainly refer to house connections, water protection areas, pipe bursts and – in a lower extend – to non-functioning water meters.

2. Specific challenges, problems, changes

In response to a questionnaire, in July 2012 some utilities declare to be satisfied with the level of customer communication. Being asked what training needs do they see for their scope of work, most utilities refer to technical issues, maintenance and repair - the idea of enhanced customer communication does not explicitly appear in their statements.

Notwithstanding, development needs in this respect can be indicated both for the Head Office and for subsidiary organizations that are in direct contact with the customers: a major challenge is how to psychologically deal with the “mentality of the customer”. Among others, the staff in charge of meter reading will have to develop competencies and skills for that.

3. Assessment of Capacity Building & Training Needs

In this section we present the assessment of capacity building and training needs.

- Capacity Building Needs in the Head Office
  - Apart from recording and processing data concerning different complaints and suggestions of customers, the Division may extend its scope of work from pure complaints management to pro-active customer communication and marketing.
Hence, the Division can be in charge of developing a marketing concept for a strategic, future-oriented and pro-active customer communication and information policy. Once a marketing concept has been developed, the Division may provide consultancy services to subsidiary organizations in the field of customer communication. For that purpose the development of marketing competencies and psychological know-how about the customer is required.

- **Capacity Building Needs in Subsidiary Companies**

  - Corresponding to a *Division for Marketing and Customer Communication* in Azersu’s Head Office, regional offices may focus on the implementation of *marketing campaigns* on a local level. It is to be seen where to allocate these competencies in the respective organizational structure. The task would be to proactively manage customer communication for different target groups and to implement related *Public Relation* measures.

- **Training Needs in the Head Office**

  - Training on a *marketing concept for future oriented customer communication* may review existing concepts for corporate design and investigate the role of corporate identity of the employees for successful customer communication. *Psychology of the customer* should be a training topic, before the adapted design of diverse *Public Relations* measures that correspond to different target groups may follow. The approach of a differentiated marketing mix is important in this context as well as the management of marketing consultancy to subsidiary companies. The latter will explicitly include the topic tendering and evaluation of PR measures.

  *(Please refer to training 1.22 in the training plan.)*

- **Training Needs in Subsidiary Companies**

  - Basic training on *psychology of the customer as basis for good relationship management* can lay the foundations for a marketing concept. Relevant training subjects to be covered are: (1) different target groups and their interests, (2) criteria for good relationships with customers, (3) client centered psychological conversation techniques, (4) steering of behaviours in counseling and selling situations, (5) and reflection on the role of the own personality. Elements of (6) *Public Relation* measures in a marketing mix may complement the training, which will conclude with the planning, organization and evaluation of the relationship management.

    Objective is to motivate staffs to communicate with customers – and to put them in a position to argue with them in a psychologically convincing way. Billing officers and meter readers should be involved.

    *(Please refer to training 1.23 in the training plan.)*

  - Training in *customer information management* may emphasize on how to submit and explain information material, such as on (1) water tariff and house connection fee, (2) application for new house connections, (3) water use and improvement of hygiene, (4) ongoing or planned investments and construction
works, and (5) individual strategies for water savings. Training may cover methods for information policies and PR activities (flyers, organization of open days) as well as feedback management on submitted information in order to care for the update of future information materials.

(Please refer to training 1.24 in the training plan.)

- Training in customer complaints management may include modules that deal with different levels of customer satisfaction or discontent. To handle complaints, it is required to dispose of negotiation and communications skills, such as active listening, questioning techniques and handling of emotions in critical situations. The basis for that is the analysis of different interest that customers may have.

Complaints management has a strong link to repair teams and response quotients. This includes the need to review current procedures and decision making in order to improve service quality. Therefore it will be meaningful to combine trainings on customer communication with the approach on how to reduce NRW, as there are three source of water losses: (1) people do not pay their bills, (2) illegal connections (also here psychological conversation techniques required), and (3) water losses in a network.

(Please refer to training 1.25 in the training plan.)

C.1.5 Archive – Documentation - Knowledge Management

To assess capacity building and training needs in the field of archiving and documentation, an interview with the Head of Archive assigned to Azersu’s Head Office was conducted. Findings are appreciated and critically assessed by MACS’ experts.

1. Structure and current scope of work

The archive is in place since 1999 and employs a staff of four persons. The archive administrates mainly technical documentations (90%), but also personnel documents. Some files are of confidential character. The archive manages about 60 requests per week and also restores existing documents. Financial means for the purchase of books are available. Apart from Azersu’s central archive, two or three subsidiary organizations dispose of an archive of their own.

2. Specific challenges, problems, changes

Currently applied guidelines for archive administration date back to the USSR period, prove to be outdated and do not meet modern requirements. At present the archive’s 8,400 documents are determined and registered in an elementary, non-electronic way. The archive disposes simply of a list of documents in a computer. Neither a differentiated compilation of documents, nor an electronic search machine does exist. The challenge is to make staff in charge acquainted with new guidelines for archival storage. Currently training courses that would deal with archiving and archive administration do not exist.
3. **Assessment of Capacity Building & Training Needs**

In this section we outline capacity building and training needs regarding archiving and documentation.

- **Capacity Building Needs in the Head Office**
  - It is advisable to take care for a *digitalization of archive administration*. It would be the first step in a capacity building process having the required electronic infrastructure available.
  - A digitalized archive may be linked to a future system for *knowledge management*. For that purpose the archive could be further developed to a *technical library* that would support e.g. design engineers in their work. Steps in this direction are already foreseen and might be supported. The set-up of a *knowledge management system* is a comprehensive process and may require the assignment of an internal project manager. Another idea which will be pursued is the set-up of a *water museum*. The approach might be linked to customer communication issues.
  - *Manuals* on how to manage the archive need to be updated or need to be completely renewed. They need to be available in Azerbaijani language, which is not the case up to now.

- **Capacity Building Needs in Subsidiary Companies**
  - It might be taken into consideration to *standardize local technical libraries* with easy access to documents relevant for the respective District (Rayon). Up to now an archive is available in *United Sukanal*.

- **Training Needs in the Head Office**
  - The first step would be to train staff in charge in the *digitalization of archive documents*. The training may focus on (1) different specifics of record types, (2) guidelines for digitizing archival materials for electronic access, (3) the creation of digital surrogates, (4) problems of re-formatting, (5) technical benchmarks for the creation of production-master raster images, (6) derivative files for distribution, and finally on (7) the reproduction purposes via hardcopy.

  *(Please refer to training 1.26 in the training plan.)*

  - An issue to be covered is enhanced knowledge about *archiving and filing methods in line with knowledge management* in order to better meet multifaceted requests from different parties. Trainings might happen in Turkey or any other place abroad. Acquired knowledge can be broken down to Azersu’s conditions in a *Train-the-Trainers* program. Topics to be covered are different types of filing systems, sub-classification systems, data access, metadata of files, and network protocol administration.

  *Knowledge management* systematically deals with the resources *knowledge and expertise* in a company and aims at a better application of existing know-how. Knowledge management also embraces the way of learning within the company, and the culture to organize things and the way to communicate.
A major target of knowledge management is to provide the basis for the development towards a learning organization – an organization that does not repeat same errors again, but an organization that transfers lessons learned into new strategies and new approaches.

To systematically deal with the resource knowledge, trainings may emphasize these issues: (1) classification of knowledge levels, (2) transparency about responsibilities, (3) definition of rules on how to capture, structure and distribute internal knowledge, (4) tools for knowledge management (unified data storage, exchange of information in workshops and regular meetings, information flow diagrams, internal blogs), (5) integration of outside perceptions, (6) central storage of knowledge and information, and (7) the integration of employees in development and set-up process.

(Please refer to training 1.27 in the training plan.)

Training Needs in Subsidiary Companies

- In the context of a train-the-trainers program, staff assigned to Azersu’s main archive might be put in a position to forward their knowledge about approaches and procedures in modern archiving to local archives and libraries, in case the respective infrastructure is being set up in subsidiary organizations. Training will be required in case a knowledge management system will be established and maintained. For details please refer to Training Needs in the Head Office.

C.1.6 Legal Provision of International Projects and Contracts

The following assessments on capacity building and training needs refer to findings made during an interview with the Head of the Section Legal Provision of International Projects and Contracts, which is assigned to the Head Office of Azersu.

1. Structure and current scope of work

   The comparatively small section covers the presentation of Azersu at court in case of legal disputes; hence, the Section deals with juridical cases (disputes) within the country - and increasingly also in the context of international contracts. Apart from that, the scope of work additionally covers the provision of legal support to projects with reference to internal normative documents.

2. Specific challenges, problems, changes

   A major challenge for the Section is the dealing with international contracts, associated with finances and formulated in English. It would be helpful having discussions on the handling of international contracts and on the settling of disputes prior to any juridical proceedings. Mediation skills might be required. Another challenge consists in the handling of dispute-issues: staff has to anticipate what problems may arise in respect to very specific internal normative documents.
3. **Assessment of Capacity Building & Training Needs**

In this section we present the assessment of capacity building and training needs regarding the *Legal Provision of International Projects and Contracts*.

**Training Needs in Head Office, optionally Subsidiary Organizations**

- Training on how to *handle disputes via mediation* may be helpful. Training on mediation skills in order to settle disputes prior to any potential juridical proceeding should include aspects of conflict management. The following training topics are considered to be appropriate: (1) the role of a mediator, (2) triggers for conflictive situations, (3) elaboration of conflict topics and conflict lines, (4) design of a win-win situation and different mediation tools, (5) analyses of interests, (6) design of option and solutions, (7) trust building measures and (8) management of follow-up processes.

The training can also be helpful for any party within Azersu that is in need of conflict management and mediation tools to better handle repeatedly conflictive situations in daily business.

*(Please refer to training 1.28 in the training plan.)*

**C.1.7 Information & Communication Technologies**

In this chapter we present findings on capacity building and training needs in the field of Information Technology (IT). The assessments are based on interviews conducted with the Head of the *IT Division* in the Head Office of Azersu, the Head of the *SCADA and GIS* Section, as well as with Heads of further Sections. The critical appreciation of findings by MACS’ experts complements the assessment.

1. **Structure and current scope of work**

The IT Division was established in December 2011. Before that there was no similar structure in place in Azersu; centralized IT-services did not exist and computers were almost not in use. The Division is planned to have five Sections:

- The Section *Networking and Communication* aims at building a network between all systems, in October 2012 staffed with seven employees. Centralized data is available, a server room does exist. The Section focuses on Microsoft solutions (Windows, UNIX and administrative tools) and covers also telecommunication issues, such as telephones, land lines, and control of mobile phones.

- The Section *Programming* is intended to build up the programming strategy for Azersu, but does not do the programming by itself. Programming refers to all kind of software, such as the development of the *billing system*, which is running. A new billing software - AMICE - is under development to better meet requirements towards a central client data base. Now it is important to integrate different information. The *data-net* is currently in a testing phase. The Division has started the implementation of new software to manage accounting in line with IFRS (*International Finances Reporting Standards*). The implementation will take two years. Finally the integration of Azersu into the state intranet falls under the responsibility of this Section.
The Section GIS - staffed with eight persons in summer 2012 - is in charge of collecting data and information on all assets of Azersu and to keep records on them in electronic format. Drawings from already implemented projects, but also data about existing networks must be digitalized. The Section takes care for the documentation of new constructions, scans documents available in the archive, and records data updates provided by construction companies. The section receives maps and as-built drawings from the contractors. Maps were sent to the regions to make staff of subsidiary organizations inscribe the positions of pipelines. The transfer process has been initiated for Baku and will be continued with data from different Districts (Rayons) and may take three years. Objective is to facilitate access to network information to any Division in need in Azersu.

The Section SCADA will enable the automatic control of water flow in the network system and may - in future - facilitate the central management of flow meters and pumps. The program SCADA (Supervisory Control and Data Acquisition) is a technical operations monitoring system. It may provide all information about water quantity and pressure – also the operation status in facilities – and will allow for automatic regulations. With this monitoring and management tool Azersu aims to identify water losses from afar in future.

The Section Information Security has not been set up yet.

2. Specific challenges, problems, changes

A major challenge predominantly in subsidiary organizations is to pass from handwriting to the electronic writing of letters. Internal personnel to adequately train Azersu’s staff in the handling of IT software are hardly available. Respective trainings will have to be outsourced to external training providers.

In the Section GIS the employees have to deal with the fact that drawings frequently do not contain information about corrections and modifications. In many design and construction contracts the formats facilitating the transfer of data is not well specified. This should be improved. Another challenge is to identify the location of old pipe networks which are not documented anywhere. Listening to consumers, evaluating records of pipe bursts and talking to old staff members is important.

Another challenge is the cooperation with the Section Geodesy in the process of handing over data and information. Process chain and work flow organization need to be improved, so that as-built information could be made available to both Sections GIS and Geodesy simultaneously in order to facilitate work processes.

3. Assessment of Capacity Building & Training Needs

This section presents the assessment of capacity building and training needs.

- **Capacity Building Needs in the Head Office**
  - The Section GIS is very much challenged on how to generate information on existing networks from different Districts (Rayons). A knowledge management system within Azersu can be set up and be maintained to bundle information by (new) constructors, by subsidiary organizations, by customers, and by former (older) staff. Once established, the centralized system may facilitate
access to information for any Division or Section in need. The system may be linked to the knowledge management system portrayed in chapter Archive - Documentation - Knowledge Management (please refer to training 1.27).

- To pave the way to better coordination between the different Sections, it would be useful to know the history of a document and to learn about modifications and adaptions that were taken in different stages of its development. In order to facilitate this process an **informatics network** within Azersu may help to easily transfer comprehensive documents from one Division or Section to another.

- Existing contracts foresee that constructors provide information about newly constructed networks and facilities according to defined parameters. Despite this requirement, it proves that some contractors are not in a position to appropriately prepare **as-built drawings** and documentations that would provide for the necessary information\(^{15}\). Considerations are ongoing to entitle another company with the preparation of the **as-built drawings**. However, **quality criteria on how an as-built drawing will have to look like** should be considered in contractual arrangements between Azersu and any applying construction company.

- The Section GIS has to articulate and define the requirements for the **easy transfer of delivered data** to their documentation system. It would be useful to include to all contracts a DVD with examples of drawings and other kind of data that show how they should be delivered. We are sure that Azersu may select very carefully the most convenient hard and software for this purpose and will stick to this kind of tools.

At mid-term it might be taken into consideration to establish an **Integrated Management Information System (MIS)**. MIS is a micro-economic oriented and EDP supported information system. Via MIS the management may dispose of information that is relevant for the planning, steering and controlling of performance processes. Information can provide support to decision making.

Information on the state of affairs (key data, operating figures) provide for a realistic mapping of the current situation. It is aggregated in a set of **Key Performance Indicators** (KPI). They can be available for specific user groups only, but the information can also serve as a basis for further analyses and projections. Data can be generated due to statistics, but also due to assessments and subjective assumptions.

### Capacity Building Needs in Subsidiary Companies

A **knowledge management system** works if it benefits from contributions by subsidiary companies. If such a system shall be established, there is a need to communicate to subsidiary companies the meaning of the system, the contributions that are required, and the benefits that it can bring for all parties that are involved. In each subsidiary organization a person or Division can be nominated as a responsible contact person.

### Training Needs in the Head Office

\(^{15}\) Currently construction companies are provided with information about program components; then they hire staff that can apply them.
- Training on how to set up a knowledge management system in cooperation with Divisions and Sections in the Head Office may include a Train-the-Trainers component, aimed at appropriately involving subsidiary organizations - to clarify their roles, responsibilities, contributions and benefits. Please refer to chapter Archive - Documentation - Knowledge Management (training 1.27).

- Courses dealing with the application of the software Oracle prove to be cost-intensive. Notwithstanding, those courses are required to acquire knowledge and skills to properly operate and maintain this database management system. Due to the expenses trainings may be restricted to three or four persons.

In view of future oriented internal communication and knowledge management systems, the training should cover matters that help safeguarding the functioning of the Oracle database system, such as (1) permanent investigation of log files, (2) identification and interpretation of error messages, (3) handling of database management tools, and (4) recognition of complex queries. To enhance skills in problem solving, the optimization of the system with support by developers, and the design of scenarios in case different queries appear at the same time should be covered.

(Please refer to training 1.29 in the training plan.)

- Training on how to maintain hardware facilities will have to focus on general issues and on network issues. In the field of network issues it will be paramount to develop competencies on how to identify the server(s) of the network and on how to carry out load tests with the use of the appropriate software. To prevent from potential failures, knowledge on measures for data security is paramount. The handling of Redundant Array of Independent Disks (RAID) systems is important to know, such as the mirroring of systems or the distribution of data to several hard discs.

In terms of general issues the training should encourage the investigation of conditions for components via software. Knowledge in spare parts management may include storage conditions, temperature and safety issues. With regard to data security it will be important to know how to protect data lines to prevent from manipulations - including physical protections - and how to manage the availability of back-up systems. Also, knowledge on the cellular composition of networks and further concepts for data protection is important.

(Please refer to training 1.30 in the training plan.)

- To properly manage networking operations, training on how to deal with CISCO products will have to explain how to investigate and how to interpret log files. The recognition of bottle necks and load times will help to properly assess and steer network capacities. Knowledge about functionality and steering of the load balancer will complement the training.

(Please refer to training 1.31 in the training plan.)
Training on **IT applications** may focus on four levels:

- **Level 1** may cover the handling of Microsoft products, such as Word, Excel, Outlook, Power Point, internet devices and the use of billing software. MS trainings may happen periodically within a year.
- **Level 2** is intended to encourage skills in database update, scripting, security issues, and web based matters. The level is meant to be eligible for elder professionals.
- **Level 3** is dedicated to software development, while
- **Level 4** addresses networking skills including CISCO and HB products.

A specific training may focus on SAP, as all operations in the field of staff administration shall be carried out with this program in future. First trainings will be accomplished by a Russian company that is also in charge of installing the software. About 200 persons will have to be trained. Then periodical trainings will have to follow for new staff members.

It is advisable to outsource related training activities and not to cover them via a *train-the-trainers* component, as the trainings will be too comprehensive.

*(Please refer to training 1.32 in the training plan.)*

Training for set-up and use of a **Management Information System (MIS)** will focus on (1) the definition of eligible key performance indicators, (2) data collection, storage, processing and administration, (3) mapping of exchange processes, (4) supervision / optimization of business processes, (5) weak-point analyses, (6) comparison / evaluation of data, and (7) communication issues.

*(Please refer to training 1.33 in the training plan.)*

Concerning **new GIS software** the cooperation with other institutions, such as municipal administrations and suppliers (gas, energy, telephone) can support the use of the same base maps (road maps). Training includes the (1) application of new software versions, (2) explications of new features, and (3) the transfer of documents to newest versions.

*(Please refer to training 1.34 in the training plan.)*

Training on an update of **new SCADA software** may facilitate work processes. Training will have to include the (1) application of new versions of the software, (2) explications of new features, (3) transfer of documents from old versions to newest versions, and (4) SCADA for remote control of project facilities.

*(Please refer to training 1.35 in the training plan.)*

### Training Needs in Subsidiary Companies

Training of the use of **GPS for operating staff** can support the survey of existing pipeline networks. The challenge is how to document own systems and facilities. Training subjects include (1) general issues about GPS, (2) the handling of GPS, (3) the management of GPS data, and (4) the transfer of data to a drawing.

*(Please refer to training 1.37 in the training plan.)*
C.2 Water & Sanitation Investments

- **Related Departments and Divisions in Azersu’s Head Office:**
  - Strategic Development Division incl. Expertise of Project, Design of Infrastructure Projects Division and Geodesy
  - Strategic Research & Land Cadastre Section, and Science, Technology and Standards Processing
  - Sukanal Scientific Research and Design Institute
  - Law Division incl. Legal Provision of International Projects & Contracts Division

C.2.1 Strategic Development, Expertise of Project, Design of Projects

The following assessments are based on interviews with the Head of the Strategic Development Division and the Head of the Section Projects Expertise at Azersu’s Head Office. They are complemented by capacity building and training needs assessments submitted by subsidiary companies (Sukanals, Open Joint Stock Companies) in response to a questionnaire submitted in July 2012, and on a critical appreciation of findings by the interdisciplinary team of MACS.

1. **Structure and current scope of work**

The Division Strategic Development - created in 2010 and staffed with approximately 50 persons - has four sections, responsible for the planning of projects financed either by the state budget, by international donors, or by both. The responsibility for decision making on projects to be planned is allocated to the Chairman of the company in coordination with his Deputies and Heads of Division. The Division Strategic Development - having the following structure - manages the design process:

- The Section Design of Infrastructure Projects deals with the checking and approval of design documents which are delivered by external design companies.

- The Section Expertise of Projects accompanies the design of all projects from the water sources up to the house connections and awards contracts to external consultants to carry out project designs. In summer 2012 ten consulting companies are engaged in projects financed by international donors, such as Islamic Development Bank (IsDB), the German Kreditanstalt für Wiederaufbau (KfW), the Japan International Cooperation Agency (JICA), the Asian Development Bank (ADB), the World Bank (WB) and the Korean International Cooperation Agency (KOICA). Donor agencies do also directly contract consulting companies for the design of investment projects.

The Section elaborates Terms of Reference for the design of water supply and sewerage networks as well as for water treatment and wastewater treatment plants, which formulate binding stipulation for the contractors. One of the major contractors is Azersu’s Sukanal Scientific Research and Design Institute.

Main focus is also the development of criteria for design works. In force and mainly applied are Russian Industry Standards (SNIP), while EU standards apply for wastewater treatment plants. The staff verifies incoming designs and assesses their appropriateness.
2. **Specific challenges, problems, changes**

The number of planned investments projects exceeds the staffing capacities of the Section *Expertise of Projects*, e.g. for the envisaged construction of 50 wastewater treatment plants until 2035.

The Section can easily formulate the stipulations for the connection of new facilities, hotels and factories, but this work turns out to be difficult in the case of older facilities.

Donors require that design documents, investment planning and constructions of technical facilities comply with international standards; but the relevant information is rarely available in an understandable language to the design engineers.

The Division is staffed with young people. They face many difficulties when they have to check submitted drawings. Often drawings are not complete, or engineers cannot read or interpret them due to a lack of knowledge. In addition time constrains hamper a careful examination and assessment of submitted drawings.

Representatives of subsidiary companies emphasize the difficulty to design and plan construction works in mountainous regions. Also information about future investments is not sufficiently provided by the Head Office.

3. **Assessment of Capacity Building & Training Needs**

This section presents the assessment on capacity building and training needs in the Division *Strategic Development*.

**Capacity Building Needs in the Head Office**

The Division is in urgent need of *additional design engineers*, who are able to elaborate *Terms of Reference* and assess the quality of delivered design documents. Personnel shall be sufficient to cope with future tasks and to handle urgent and important projects. Relevant technical documents and standards in foreign languages shall be translated and shall be made available to the design engineers for the preparation of the *Terms of Reference* and to prove the quality of submitted design documents. The application of the SNIP standard should be reviewed and their compliance with international standards determined. The following technical documents shall - at least partly be - translated into Azerbaijanian language:

- *EU-Directives* that lay down certain end results that must be achieved,
- *EN (European Norms)*,
- *DIN-Standards* set by Deutsche Industrienorm (German Industry Standards),
- *ATV-Standards* set by the Abwassertechnische Vereinigung (Federation for Sewage Technology), relevant for hydraulic dimensioning and performance verification of sewers and drains,
- *BS-Standards (British Standards)*,
- *ISO Standards*,
- *AWWA Standards* set by the American Water Works Association, and
- *FIDIC Standards* set by the Fédération Internationale des Ingénieurs-Conseils (International Federation of Consulting Engineers).
Capacity Building Needs in Subsidiary Companies

- Training needs in this respect in subsidiary companies were not identifiable.

Training Needs in the Head Office

Interviews elucidated that a project-oriented way of thinking across different Divisions in Azersu can be fostered to overcome problems with some projects. A process chain can be labeled management of project. Objective is the facilitation of handover processes between different sections involved. The process chain may consider the phases (1) design of planning documents, (2) detailed or final design for constructions, (3) as-built drawings, and (4) transfer to the Section for Geodesy and to the GIS Section. The training format would be workshops, in which the set-up of a so called knowledge management system can be combined with the refreshing of engineering knowledge. For details on knowledge management please refer to chapter C.1.5, Archive (Training 1.27).

(Please refer to training 2.1 in the training plan.)

- Competencies to examine and evaluate planning documents elaborated by commissioned planning agencies are required. It is advisable to sensitize staff for the related steps to be accomplished. It could be done by a senior consultant who may act as the evaluator and who - at the same time - may act as a trainer-on-the-job. Planning documents can be examined and evaluated together with the trainees, who stepwise take over the examination process.

(Please refer to training 2.2 in the training plan.)

- Training is required on how to design interconnections between older and newer infrastructure facilities. In case of linking existing facilities together with new extensions, it is important to understand well the applied technology. As connections can happen for each component in the fields of water supply and wastewater disposal, it is required to cover all options. Different training modules can deal with different facilities. Azersu should provide a list of priorities, which components urgently need upgrading and where engineers face most difficulties to adapt new design with existing facilities.

(Please refer to training 2.3 in the training plan.)

- Training to encourage the understanding on different standards will have to focus on (1) the comparative judgment of different standards, followed by (2) ways to cope with different standards, and (3) alternatives to a particular standard. Training may continue with (4) problem solving via FIDIC standards and (5) ways to assess the contractor’s knowledge and capability concerning certain standards.

(Please refer to training 2.4 in the training plan.)

- Training on update of know-how to formulate Terms of Reference (ToR) and of the general approach to work can help to better formulate Terms of Reference for design works to be tendered. The training can be done via university
experts that can be invited to training courses. Topics are - among others – the relation between ToR and specific kind of facility, ToR as element of international / national contract, and the inclusion of ToR into daily work.

(Please refer to training 2.5 in the training plan.)

- Training on how to review and adapt designs may include competencies on the modeling of water supply networks based on network modeling programs. This competence shall support the checking of submitted planning designs. Topics cover diverse network modeling software, e.g. different features of EPANET, the handling and transfer of network data, and the application of the software to existing networks.

(Please refer to training 2.6 in the training plan.)

- Training for design engineers on new technologies for water treatment and wastewater treatment processes - and understanding of their functions - shall pave the way to better operations. Implications for design and planning from an operational point of view need to be emphasized. It would make sense to link personnel from any subsidiary company dealing with operation and maintenance together with design engineers to improve a common understanding of design and operations issues. Topics to be covered are, among others, main factors of expenses for operation /maintenance, concepts of energy efficiency, and the re-use of treated wastewater and sludge.

(Please refer to training 2.7 in the training plan.)

- The Division cooperates with the IT-Division. The use of updated drawing programs – sewerage CAD, Water CAD, Macro Stations – may increase the efficiency of controlling processes on submitted drawings.

(Please refer to training 2.8 in the training plan.)

- Design engineers need to be trained to introduce operation engineers in pre-operation phase. In particular relevant standards need to be known for operations. Training topics may include the definition of the pre-operation phase, the inclusion of this phase into the construction contract, and specific requirements to be considered when entering into operations.

(Please refer to training 2.9 in the training plan.)

- Training on operation and maintenance for designers, contract supervisors and construction supervisors shall contribute to the reduction of expenses for operation and maintenance. Among others, topics to be covered may be as follows: (1) locations of pumping stations and accessibility to chambers and valves, (2) use of materials and consumables, (3) control engineering, (4) role and positioning of measurement devices, and (5) ergonomics and human engineering at work.

(Please refer to training 2.10 in the training plan.)
Training on the project implementation cycle may support young staff members to systematically complement their knowledge. The first part of the cycle - Tenders - may start with (1) the meaning of Master Plan and Feasibility Studies and how to care for their update, and continue with the implementation of (2) infrastructure planning and (3) design and project management processes. To be considered as training topics are also (4) the preparation of tender documents, the prequalification and tender process, and (5) contracting for design and constructions. The (6) administration of design and construction tenders may complete the training.

In a second part training may pay attention to engineering drawings and plans, such as (1) tender drawings, (2) construction drawings, and (3) as-built drawings. The training will include (4) different methods to prepare drawings and (5) knowledge about quality criteria for the assessment of good drawings. Knowledge on (6) the use of drawing modules can facilitate drawing processes.

(Please refer to training 2.11 and 2.12 in the training plan.)

Training on foreign languages will cover general communication skills, but also courses with focus on technical, financial or contractual issues, such as negotiations in English on an advanced level.

(Please refer to training 2.13 in the training plan.)

Training Needs in Subsidiary Companies

Concerning this topic, training needs in subsidiary companies is not identified.

C.2.2 Sukanal Scientific Research and Design Institute

The following assessments are based on an interview with the Head of the Sukanal Scientific Research and Design Institute as well as on a critical appreciation of findings and their interpretation by the interdisciplinary team of MACS.

1. Structure and current scope of work

The only “Institute” within Azersu was previously directly subordinated to the Republic of Azerbaijan. Today the Institute has 170 employees in the sections Topographical Survey, Geology and Design Works. The institute employs geologists, topographers, designers, electric designers, an automation group, and it maintains a laboratory. The Head of the Institute fills his position since August 2012.

This Sukanal acts like a design-company and does all kind of design work including cost estimations for water supply and wastewater projects. Mostly the government is the client. On request by Azersu the Institute elaborates feasibility studies and carries out the designs for construction works. For this purpose the Institute cooperates with the Strategic Development Division, from where the Institute’s employees receive documents. The Institute is independent from Azersu, has its own income and can pay salaries higher than the basic level. The Institute also carries out geodesic and geological surveys, mostly financed by the Azerbaijani state budget. The Institute is in a position to carry out construction supervision.
2. **Specific challenges, problems, changes**

A major challenge consists in the human potentials, as it is difficult to find appropriately skilled designers after the USSR’s collapse. Previously the Institute elaborated 30-40 projects per year with a staff of 50-60 persons. Since March 2011 (assignment of new management in Azersu) the workload has significantly increased to 450 projects per year, which are managed by additional 110-120 new staff members, all experienced in the water sector.

3. **Assessment of Capacity Building & Training Needs**

This section presents the assessment of capacity building and training needs for the *Scientific Research and Design Institute*.

- **Capacity Building Needs**
  - Engineers should know more about *operation and maintenance* issues, including aspect of energy-efficiency and facilitation of operation.

- **Training Needs**
  - The Institute is in need of *training for the design of all kind of tunnels*, mainly pipe-tunnels up to a diameter of 2.5 m. Correspondent training-on-the-job can be organized in cooperation with an international design company dealing with such kind of projects

  *(Please refer to training 2.14 in the training plan.)*

  - Another training need identified consists in an updated and more profound knowledge about *modern technologies for wastewater treatment plants*. Specific attention should be focused on large scale plants, and the requirements that emerge in relation to environmental protection.

  *(Please refer to training 2.15 in the training plan.)*

In both areas young staff members already employed can be trained in order to cover the needs for 10 -15 qualified persons per action area.
C.3 Water & Sewerage Systems Construction

- **Related Departments and Divisions in Azersu’s Head Office:**
  - Deputy Chairman for Construction incl. Project Management Team
  - Construction Section incl. Capital Construction and Capital Maintenance
  - Deputy Chairman for Investments & Marketing incl. Foreign Relations and Tenders Organization and Management
  - Construction Supervision Division

C.3.1 Constructions - Project Management

For the following assessment of training and capacity building needs interviews were conducted with the Head of the Division Construction in Azersu’s Head Office. A critical appreciation of fact findings and their interpretation the team of MACS complement the assessment.

1. **Structure and current scope of work**

   The Division Construction manages construction works formulated in the approved state program and financed from the Azerbaijani state budget. Constructions refer to small scale projects, such as pumping stations and repair works. The Division includes the Sections (1) Construction, (2) Capital Construction, and (3) Capital Maintenance.

   The Division receipts the project designs and forwards them to the Division Expertise of Project to have examined the suitability of drawings. The Division assists in understanding the documents. Subsequently the tender procedures and the signing of contracts are managed. Coinciding with the commencement of construction works the responsibility is assigned to the Division Construction Supervision. At a later stage, the Division is again involved in the acceptance of construction works after completion.

2. **Specific challenges, problems, changes**

   The Division faces difficulties in all above mentioned steps. Frequently delivered drawings can hardly be understood. Performance of constructors is often weak and materials in use do not meet the requirements.

3. **Assessment of Capacity Building & Training Needs**

   This section presents the assessment on capacity building and training needs.

   - **Capacity Building Needs in the Head Office**
     - The definition of quality criteria for the design of drawings and the quality of constructions works (including specifications of materials) delivered beforehand may prevent from weak performances of design and construction companies.

   - **Capacity Building Needs in Subsidiary Companies**
     - Training needs with regard to subsidiary companies were not identified.
Training Needs in the Head Office

- Training on management of small scale construction works may cover (1) the supervision of drawing process to familiarize staff with design and functioning of the project to be implemented. Training on (2) the management of tender procedures and the singing of contracts may follow. The (3) documentation of plans for construction works and (4) negotiation skills with any contracted company will be essential in the context of this training, which may conclude with (5) the acceptance of construction works. Training should also cover knowledge about contract design and contract monitoring.

(Please refer to training 3.1 in the training plan.)

Training Needs in Subsidiary Companies

- As to staff of subsidiary companies training needs were not identified.

C.3.2 Investments - Foreign Relations – Tenders

To assess capacity building and training needs in the field of investment and contract management for big construction projects interviews were conducted with the Head of Foreign Relations and Investment Management, and with the Head of Tenders Organization and Management. We appreciate the findings and arrive to the following recommendations related to capacity development and training needs.

1. Structure and current scope of work

Both Divisions Foreign Relations and Investment Management and Tenders Organization and Management (previously International Projects Handling Division) were renamed and restructured in the beginning of October 2012. Both Divisions are staffed with young, relatively inexperienced people.

Ever since existing, the Division Foreign Relations and Investment Management deals with the management of projects financed by international donors, such as the Asian Development Bank (ADB), the German agency Kreditanstalt für Wiederaufbau (KfW), the Japanese agency Japan International Cooperation Agency (JAICA), the Swiss agency Secrétariat d’Etat à l’économie (SECO), the Islamic Development Bank (IDB) and the Saudi Fund For Development. Each international partner works with a separate Project Implementation Unit (PIU), which acts on behalf of Azersu and represents the company in the context of a project. The Division is staffed with six persons, who take care for project documentation, correspondence, general relationship management and the supervision of PIUs.

PIUs were created to involve both international and Azerbaijani engineers; they provide for comments on project implementations from the company’s point of view. A PIU acts as technical supervisor to project implementations and usually have a project leader, a deputy manager, a procurement expert, an overall financial expert to work according to IFA-Standards (set by the International Fiscal Association), an engineer in charge of tender documents, and support staff. It is mandatory that every PIU provides for competencies in organization, engineering and English.
The Division Tenders Organization and Management is in charge of any kind of nationally and internationally financed projects. Every tender exceeding the amount of 50,000 AZN has to pass through this Division, which will have three sections. Two of them already exist in October 2012, staffed with 14 persons:

- The Section Preparation of Requests for Proposals receives project designs, checks drawings and prepares the documentation of facilities to be built. Also Feasibility Studies is made use of.

- The section Preparation of Tender and Procurement Documents prepares and organizes tenders for constructing companies in line with elaborated studies and the company’s procedures. The section prepares bidding documents, takes care for the announcement of tenders, manages the tender process, participates in tender evaluations, and manages the signing of contracts. For that purpose close cooperation with the Law Division and the Procurement Division is necessary.

- The section Supervision of Contracts accompanies the fulfilment of contracts through all stages of their implementation, and supervises contracts with international contractors. The section cooperates with the Law Division in regard to international contracts based on the FIDIC-model.

The third section will be established as soon as possible and be staffed with additional six to eight persons. Currently the Division Procurement is in charge of managing procurement. However, this responsibility will be assigned to the Division Tenders Organization and Management as well.

2. Specific challenges, problems, changes

The Section Foreign Relations and Investment Management is looking for new staff. About 15 to 20 additional engineers are needed, of which ten could work as technical supervisors in Rayons, and additional five to ten for PIUs in Baku. However, it proves to be difficult to identify and hire good staffs that are in a position to meet the qualification requirements for procurement, financial management and engineering. One of the reasons may be rooted in the relatively low salary level.

Striking is the demand for engineers skilled in the application of FIDIC approaches. Related trainings in the past merely delivered a brief update of knowledge and proved to be too superficial to meet qualification demands.

The Division Tenders Organization and Management is very busy. Requirements set by international partners require a lot of labour time and challenge the staff. Also this Division faces difficulties to find appropriate staff, since standards set by Azersu are very high to find appropriately qualified engineers on the labour market.

An additional challenge consists in the adaption of project designs to new conditions, which requires a broad understanding for construction circumstances, for alternative approaches, and finally flexibility without neglecting framework and major parameters to adhere to. Close cooperation with the Construction Supervision is required.
3. **Assessment of Capacity Building & Training Needs**

This section presents capacity building and training needs in the Divisions *Foreign Relations* and *Tenders Organization and Management*.

- **Capacity Building Needs in the Head Office**
  - A major challenge is the staffing of both Divisions. Creativity and flexibility is required. Payment and salary conditions ought to be reflected before identifying new staff. A specific policy to motivate existing staff ought to be taken into account. *Supervision Bonuses*, limited in time, might be considered and linked to successful, in-time implementation of projects.

- **Capacity Building Needs in Subsidiary Companies**
  - Training needs regarding this topic were not identified.

### Training Needs in the Head Office

- In depth training on *contract management and supervision - FIDIC standards and applications* is required and should cover a time frame of two to three months. The design of procedures and steps - tendering in line with FIDIC, the design of a logical sequence in steps of investment planning and construction supervision - are paramount. Trainings shall include procurement issues and may mostly happen as class room trainings to lay the theoretic foundations.

  (Please refer to training 3.2 in the training plan.)

- *Procurement* training should embrace *IFA standards* and could be done in the time frame of one month. It is essential that staff in charge can develop a technical understanding with regard to goods to be purchased and also gets acquainted with FIDIC standards.

  (Please refer to training 3.3 in the training plan.)

- In order to foster smooth project implementation, training on how to *adapt projects to new conditions* will be paramount. The balance of different interests is important in this respect. Training will emphasize reasons for changes in a project include the management of different information and focus also on practical steps how to carry out the required updates.

  (Please refer to training 3.4 in the training plan.)

- Training on *operation & maintenance for contract supervisors* may facilitate operation processes, as supervisors will be in a position to better consider requests from an operation and maintenance point of view during design processes. The aspects of physical handling, the dimensioning of equipment and issues with regard to energy efficiency are important.

  (Please refer to training 2.10 in the training plan.)

- **Training Needs in Subsidiary Companies**
  - Training needs for staff of subsidiary companies was not identified.
C.3.3 Construction Supervision

In order to facilitate and accelerate project implementation in terms of construction, a new Division Construction Supervision is set up as of July 2012. Finding related to capacity building and training are based on an interview held with the new Head of the Division, on interviews conducted with Heads of Divisions of the previously fragmented construction supervision, and finally on the critical appreciation of findings by MACS’ experts.

1. Structure and current scope of work

The new division is directly subordinated to the chairman of Azersu, which indicates its importance. The Division supervises all projects and carries out construction supervision from the beginning up to the acceptance and handing-over. Designs to guide building activities come from external design companies (e.g. Sukanal - Scientific Research and Design Institute), which are approved by the Strategic Development Division and tendered/contracted by the Division Tenders Organization and Management. The time horizon for the water and wastewater demand of most of the projects is 2035, which means a time planning period of 20 to 24 years.

The scope of work of the Division Construction Supervision starts with the checking of the quality of purchased materials and their confirmation with a certificate. The work process continues as follows, exemplarily shown for the case of pipe-laying operations:

- Test material of pipe samples in a laboratory and confirm quality with a certificate;
- Control (sand) bedding conditions for pipelines;
- Make pressure tests prior to backfilling;
- Control of backfilling (material used, compaction, layers of backfill material);
- Check specifications for suppliers (linkage to procurement);
- Control quality of construction works and application of environmental issues;
- Carry out laser test for pipelines; and
- Carry out further pressure tests prior to operation.

Construction works are documented also by photographs to back up potential claims for damages. The Division has developed a broad variation of forms and templates in order to assess constructions qualities in a standardized manner and to immediately call for corrections in case of any discrepancy in comparison to given standards. An ongoing list documents all projects under current supervision and proves a considerable work load.

The supervision process is carried out by two supervisors at the same time: one of them represents Azersu, while the second person is seconded by the construction company. Work is organized in two teams of six persons each, which stay in a Rayon for a day to visit all ongoing projects. In Baku work is organized in three groups. After acceptance of construction works payments to constructors are authorized. From July to September 2012 many construction works were stopped because of quality problems; six construction contracts were cancelled due to the same reasons.

2. Specific challenges, problems, changes

In October 2012 the Division has 19 employees, mainly coming from the construction and repair section. The staff is in need of specified trainings to properly fulfil their jobs.
Six persons come from Turkey in order to train Azerbaijani staff. Previously the Division Capital Construction was responsible for construction supervision. Not all construction sites can benefit from sufficient supervision so far. Also contractors tend to produce bad quality, especially when supervision is weak. Once the Division will have been formally approved, the intention is to have 200 people working there.

3. Assessment of Capacity Building & Training Needs

This section outlines capacity building and training needs for Construction Supervision.

- **Capacity Building Needs in the Head Office**
  - To optimize the supervision procedure it will be helpful to apply the *Performance Improvement* approach with emphasis on staff deployments and the assignment to Rayons and projects. The already successfully initiated work flow in the Division can be stabilized and optimized. It might be taken into consideration to focus on specializations within the supervision process and to have groups e.g. for pipe-laying, water treatment, and wastewater treatment facilities. Respective specifications may consider certain kinds of projects and also different reporting tools, as the scope of work will increase significantly.

  The approach of *Performance Improvement* helps analyzing all work-steps according to their eligibility, efficiency and complexity. The interdependency of different steps can be investigated and be improved based on charts that depict the currently prevailing work flow.

  - Complementing the *Performance Improvement* approach, an introductory training needs to be established within the Division, which can systematically cover the entire scope of work in the context of construction supervision. Internal trainers need to be identified who are in a position to train and supervise new (and also existing) staff on-the-job.

- **Capacity Building Needs in Subsidiary Companies**
  - Capacity building needs for subsidiary companies was not identified

- **Training Needs in the Head Office**

  Regarding *performance improvement in construction supervision* the training will – in the light of the defined objectives of the Division, the *raison d'être* - emphasize the comparison of the current with the desired output. The *cause analysis* includes assessments on knowledge and capabilities of employees as well as conditions set by the work environment or further potential constraints. The training continues with the definition of interventions that help remedying the deficiencies. The training is based on the approach of workflow analysis, reengineering and output orientation. Training on performance improvement may be applied in all cases where workflow, cooperation - also between different Divisions or sections - will have to be improved.

  *(Please refer to training 3.5 in the training plan.)*
As the new Division has to recruit many engineers and supervisors, it makes sense to organize an introductory training program on *effective and in-time construction supervision* of four to six weeks for a group of 10 to 12 "newcomers" each. Topics are related to construction supervision with emphasis on (1) general construction issues, (2) knowledge about standards (apart from SNIP, which is known), (3) supervision methodologies, and (4) skills for negotiations with construction companies.

We recommend training-on-the-job, guided by experienced engineers who previously have passed a training-of-trainers program. Objective will be to best understand the instructions prepared by Azersu and to be able to apply them. Afterwards each candidate has to make an examination, as it is already in place. A four to six weeks training can be structured as follows:

- **Week 1:** Basics of construction supervision, environmental protection, knowledge about construction materials including field trips for observations;
- **Week 2:** Specific supervisions, such as networks, pumping stations or treatment facilities; civil construction issues and equipment; field trips with structured observations, preparation of own supervisory activities;
- **Week 3:** Take-over of supervisory functions *on-the-job* monitored by an experienced trainer, covering interpretation of drawings and specifications, application of standards and knowledge of materials, examination methods, communication with contractors, and documentation or reporting issues.
- **As of Week 4:** Increasingly independent supervisory functions.

It might be taken into account to define expert groups for (1) water networks, (2) water treatment facilities, (3) sewers and (4) wastewater treatment plants.

As performances of some constructing companies are weak, it could be very useful to train also the staff of the contractors in order to make them acquainted with the quality requirements of finalized building measures.

*(Please refer to training 3.6 in the training plan.)*

- Given the fact that skills and knowledge of supervision engineers will have to exceed competencies of the construction companies’ staff, it would be good if they can benefit from training on operation and maintenance issues, which would provide for a comparative advantage vis-à-vis the experts of construction companies.

*(Please refer to training 2.10 in the training plan.)*

**Training Needs in Subsidiary Companies**

- In case staff in subsidiary organization will be involved in any construction supervision activities, training may refer also to staff from these companies.
C.4 Operation & maintenance, water quality

- **Related Departments and Divisions in Azersu’s Head Office:**
  - Deputy Chairman for Water Source incl. Water Pipelines Section, Water Source Section and Operative Management Section
  - Deputy Chairman for Operation incl. Water Operation Section and Rainwater & Wastewater Management Section
  - Mechanical Division, Energetics/Power Section
  - Health, Occupational Safety & Environmental Protection Section
  - Automatics & Metrology Section
  - Records Management Section
  - Division for Control over Technological Processes & Water Quality

- **Departments in Azersu’s Subsidiary Companies and Sukanals**
  - Six Pipeline Departments
  - Subsidiary Companies and Sukanal

C.4.1 Water Sources – Water Treatment

The assessment of capacity building and training needs concerning water sources and water treatment is based on interviews conducted with the Head of Water Resources Division, the Head of Operative Management Division, the Head of Water Operation in Baku Sukanal, the Deputy of the Jeiranbatan Water Treatment Station, and capacity building and training needs assessments submitted by subsidiary companies in response to a questionnaire submitted in July 2012. Findings are critically appreciated by MACS’ interdisciplinary experts.

1. **Structure and current scope of work**

   - The Water Sources Division in the Head Office of Azersu is in charge of monitoring Hydrology and Hydrogeology. In October 2012 five employees monitor precipitations and deduce the impact on the ground water formation. They carry out modeling of ground waters and manage well drillings.

   - Five employees of the Operative Management Division monitor the entire process of water supply from production facilities until house connections. Respectively one engineer is in charge of monitoring water sources operations, transmission mains, flow in networks, and of caring for process drawings of networks including updates.

   The Division also supervises sanitation, which creates a problem since supervision of water supply and sanitation should be divided into different Divisions. The Division likewise covers some operative works and currently supports Sukanals in the handling of occupational accidents, as long as regional Divisions for Occupational Health and Safety are not established yet. The Head has compiled instructions and regulations for the staff. The number of employees is not sufficient for the monitoring work to be done.

   - The water treatment station Jeiranbatan operates under the control of the Jeiranbatan Water Pipelines Division. The station is in function since 1961 and was extended in 1968 and 1978. Last construction works have been finalized in 2002.
Water is conveyed over 190 km via a channel into a lake-reservoir. The treatment station has established some automatic control systems, and it passes stepwise from manual to automatic steering and controlling.

Treatment equipment is designed in accordance with the chemical composition of raw water. The process initiates with chemical treatment. Ultra filtration was installed in 2011 and improved the treatment processes. Three pipelines convey water to Baku with a capacity of 3m³/s each; a fourth pipeline will provide the same quantity of water to urban areas in Baku which still face insufficient supply.

2. Specific challenges, problems and changes

Although the quality of raw water is generally good, turbidity is a major problem, which is recorded at the water inlet and the water outlet. Although Jeiranbatan water records a lower turbidity in the raw water than others, the treatment plant faces difficulties to appropriately remove turbid particles. The solution is considered to be ultra-filtration. Another challenge is the appropriate use of equipment, for which staff has to be trained. Currently those companies who install new equipment do not train the staff which will be responsible for operation and maintenance. Manuals do exist but in languages that are unknown to the staff. Some improvised training is carried out by the managers of the treatment plant, but they also cannot read the manuals.

3. Assessment of Capacity Building & Training Needs

This section presents an assessment of capacity building and training needs in the field of water sources and water treatment.

- **Capacity Building Needs in the Head Office**
  
  - It is recommended to analyze the current organization of the Divisions for Water Supply, Water Pipelines, Water Sources, Operative Management, Water Operation, Rainwater and Wastewater Management, and Wastewater Treatment (in future to be established) and to reflect on a re-organization of assignments and duties of staff. Potential doubling of efforts and weaknesses in fulfilling operational duties might be identified. Depending on the results, a re-arrangement of the Divisions might be considered to enhance efficiency.

  - The translation of manuals for operation and maintenance - or suitable abstracts of them - is of great importance to facilitate the functioning of supply facilities. The issue applies to many areas of water supply to enhance operation, maintenance and repair in an independent, self-organized manner. The work can be done by an interdisciplinary operations review and editorial group to find out the most appropriate way to elaborate, translate or transliterate and adapt manuals for practical use.

  - Turbidity is a major issue for many water networks. Newest information and findings on how to deal with micro-sediments in water should be made available to the staff in charge of treatment processes. This could be done via the network of the International Water Association (IWA).
Capacity Building Needs in Subsidiary Companies

- Some water treatment plants do not have sufficient staff for the adequate operation of plants. A staff recruitment program should be initiated combined with an introductory training to attract interested applicants.

- Translated or transliterated and understandable manuals must be available for staff in charge in water treatment plants and other supply facilities. The structure of the manual must allow for an update, so that lessons learned can be included. A loose-leaf-collection might be recommendable. Adequate translations - also translations of some excerpts - are necessary in order to support operation and maintenance. A critical review of manuals as to their applicability should precede the translation process.

Training Needs in the Head Office

- Introductory and basic training in operation and maintenance of water treatment plants will provide for a general update of existing knowledge. Among others, the following issues will have to be emphasized: (1) possible compositions of water, (2) functioning of plants, (3) typical treatment processes (coagulation, flocculation, sedimentation, filtration, and disinfection), (4) instrumentation and control equipment, (5) safety requirements, (6) control tests and record keeping, and (7) handling of emergency cases.

(Please refer to training 4.1 in the training plan.)

- Training on surface and ground water development may start with considerations about storage impoundments, continue with the intake structure and spillway, and it may conclude with the challenge on how to maintain good water quality as far as surface water development is concerned. In the field of ground water development the exploitation, field investigations, well constructions, and the dangers of water contaminations are in the focus.

Essentials of an environmental impact assessment may conclude the training: the definition of a water protection area is an issue in order to protect open systems from potential pollutions. Training topics to be covered are (1) definition of water protection area, (2) bodies to define the protection area (application / approval procedure), (3) definition of requirements to meet in an area, and (4) monitoring and control of determinations.

(Please refer to training 4.2 in the training plan.)

Training Needs in Subsidiary Companies

- The introductory training on water treatment processes is required for new equipment installed in rehabilitated water treatment plants. As sufficiently skilled staff might not be available for current infrastructures, training will have to be foreseen for those cases as well. Among others, (1) compositions of water, (2) functioning of plants, (3) treatment processes (coagulation, flocculation, sedimentation, filtration, and disinfection), (4) instrumentation and control equipment, (5) safety requirements and (6) handling of emergency cases are the topics. The issue maintenance may conclude the training.

(Please refer to training 4.1 in the training plan.)
• Training on contents and requirements of SCADA systems shall enable the participants to properly manage this tool for operating control system. The training will have to enclose (1) elements the system, (2) functionality and size, (3) properties and use of processor, controller, operator interface, (4) investments and process control, and (5) technical limits. The training may be open for a great range of staff in need of properly handling SCADA in operation and maintenance processes. The training may also be open for staff assigned to the Head Office – for any staff dealing with process data.

(Please refer to training 4.3 in the training plan.)

• Training for shift operation managers and foremen shall be aimed at updating knowledge and skills in human resources management, as shift managers and foremen play an important role when it comes to the implementation of a future oriented motivation policy. Leadership styles and executive functions need to be covered - as well as documentation of work processes and occupational health and safety tasks.

(Please refer to training 4.4 in the training plan.)

• Training in crisis and emergency management will have to encourage the good ability to appropriately respond to the case of an emergency. The definition of a crisis, the triggering or response mechanisms, and the development of emergency management scenarios are tropics to be covered in the context of the training. The training will have to include the issuing of emergency documents.

(Please refer to training 4.5 in the training plan.)

• Knowledge and experience of staff to manage technical operations deemed to be satisfactory or normal, as responded in the questionnaires submitted to Azersu’s subsidiary organizations. This however refers to the current situation. Utilities also underline (1) the weak theoretical knowledge, (2) the need to learn about innovations, and (3) the non-satisfactory knowledge and skills for the operation of newly installed facilities and equipment.

A task force to manage the handing over of projects to operations can be launched to supervise and manage the handing over of finalized building measures to staff that in future will operate the new infrastructure facilities. The task force can identify to what extend introductory trainings during the post-construction phase are suitable to acquaint operational staff with tasks and duties to be fulfilled in daily work.

The task force shall check the training plans of contractors in terms of content, time and applicableness. Based on the assessment of the training quality, the task force may consult on further training measures. Basics of monitoring and supervision will be part of the knowledge that is needed. In case introductory trainings are not foreseen, the task force may have the duty developing an alternative approach for the handing over process.

(Please refer to training 4.6 in the training plan.)
C.4.2 Transmission Mains – Reservoirs – Water Network

Interviews with the Head of Water Pipeline Division (Head Office of Azersu), the Head of Water Operation Division (Head Office of Azersu), the Head of the Oguz-Gabala Water Pipeline Division, the Head of Mechanical and Head of Electrical Sections of the Gabala Pumping Station, the Head of the 69-Eastern Reservoir in Baku, and the Technical Chief of Baku Sukanal provide the basis for the capacity building and training needs assessment outlined in this section. The findings are complemented by comments from subsidiary organizations and critical comments by MACS’ multidisciplinary team.

1. Structure and current scope of work

The Water Pipeline Division in Azersu’s Head Office is in charge of monitoring the work of water treatment plants and transmission mains.

The Water Operation Division is in charge of controlling and supervising operations related to drinking water. The Division has initiated an inventory of assets and is in the identification process of the number of people per household and the number of households that have functioning water meters.

The Oguz-Gabala Water Pipeline with a length of 265 km terminates at a pumping station in a suburban area of Baku. The Head of the Pipeline Section is in charge for 400 workers who operate and maintain 14 facilities - reservoirs, automatically greased valves - in two daily shifts. The pipeline is fed with water from 70 wells. Water is treated near the groundwater sources and flows to a reservoir at an elevation of 410m, from where it gravitates to Baku. Flow meter measurements happen daily, the data is forwarded by phone. In one district, flow meters are read automatically and data is transferred automatically to the Control Section Metrology in the Head Office. It is foreseen to apply this approach to all measurement devices.

Following a first chlorination process, chlorination happens consecutively at four to five different points. Staff is instructed beforehand about the danger working with chlorine and confirms to be instructed in a written form. Staff undergoes a medical check-up beforehand and is instructed on how to behave in case of an emergency. Related trainings are carried out four times per year, even though two times is obligatory. Equipment in use is checked regularly.

Workers have been introduced into operation and maintenance of pumps and carry out all repair works by themselves. Required spare parts are ordered by Azersus. Another company carries out the annual check for the chain host lifting equipment. Pumping stations facilities are operated in four shifts with 6.000 voltage transformer stations. The impression is that setting and arrangements within the pumping station can be improved, in terms of cleanliness, tile walls, and electrical lines. From technical point of view it seems to be well functioning.

The 69-Eastern Reservoir in Baku is located at 69m above sea level. The reservoir’s staff daily measures the amount of water passing through, is busy with pumping operation and takes water samples for quality checks, which is done in the laboratory. Data is forwarded to the Section Metrology in the Head Office. Also cleaning, disinfections and the control of the reservoir fall under the responsibility of the staff. The reservoir is emptied completely each five years for maintenance purposes. Repair work is carried out by a separate repair team.
2. **Specific challenges, problems, changes**

Transmission mains and networks are mainly in very bad conditions. All subsidiary companies face a high level of water losses and report on frequent pipe bursts that cannot be remedied due to lacking equipment. Water losses on average are on average estimated at 60% in Azerbaijan due to illegal connections (25% of losses), non-paying customers (25% of losses), and technical losses in networks (50% of losses). Some training in water loss reduction has been initiated and is ongoing. The outcome needs still to be evaluated.

Manuals on how to operate valves and pumps have been translated into brief data sheets. They need to be extended into more detailed descriptions that support operation and maintenance.

3. **Assessment of Capacity Building & Training Needs**

This section presents the findings with regard to capacity building and training needs in the fields of transmission mains, reservoirs, and water distribution networks.

- **Capacity Building Needs in the Head Office**
  - It might be suitable to review the existence of documents for reservoirs that indicate rules to be followed in case of an emergency. A standardized form can be developed that also considers the specifics of each reservoir.

- **Capacity Building Needs in Subsidiary Companies**
  - The pumping station at the final point of the Oguz-Gabala Pipeline has no fencing; in October the area was easily accessible to the public, but it is foreseen to set up a fence and to cover open concrete chambers. However, it might be part of supervisory and monitoring work to make sure that areal conditions of pumping stations correspond to any regulations in force.

- **Training Needs in the Head Office**
  - Training in the *use and revision of GIS* will have to impart knowledge on (1) the functional basis of a GIS, (2) key data quality issues that are involved in the use of GIS, (3) strategies to implement an effective GIS, (4) the facilitation of data collection, and (5) finally the efficient data storage. The training is meant to be for employees in charge of supervising operation and maintenance of transmission mains.

  *(Please refer to training 4.7 in the training plan.)*

  - Training in *use and installation of a SCADA system* will have to cover (1) elements of a SCADA system, (2) functionality and size of a SCADA system, (3) properties and use of processor, controller and operator interface, (4) investments and process control, and (5) technical limits in a SCADA system. The training may be open for a great range of staff in need of properly handling SCADA in operation and maintenance processes.

  *(Please refer to training 4.3 in the training plan.)*
As water losses are a major challenge to deal with, we recommend pursuing a holistic and integrated approach aimed at reducing the amount of non-revenue-water (NRW). As far as the reduction of technical losses in the distribution networks is concerned, the subsidiary companies need to be involved to manage the strategy in their areas. However, in case the strategic decision to pursue the holistic NRW reduction approach will be taken, the Head Office of Azersu will be requested to steer the strategy to reduce non-revenue-water (NRW). In this case training for employees assigned to Divisions and Sections in the Head Office dealing with water supply will have to focus on the following topics: (1) ideas of new utility developments and coinciding challenges, (2) water loss cycle, (3) design of a water balance, (4) understanding of physical losses, (5) quantification of physical losses, (6) important performance indicators, (7) reduction of commercial losses, (8) reduction of physical losses, and finally (9) the management of NRW reduction programs.

(Please refer to training 4.8 in the training plan.)

**Training Needs in Subsidiary Companies**

- Training will be required on how to **maintain a closed water reservoir** under consideration of modern techniques and materials to use in order to minimize risks of pollution and the accrualment of bacteria. Training will have to refer to properties of the construction materials that have been used, to cleaning techniques, and to knowledge about disinfection means (type of chemicals, consumables). Training will have to consider procedures for bacteriological control and should foresee the review of current work organization under consideration of accessories, instrumentation and control equipment. It is understood that occupational health and safety issues should be also covered.

  Technical training should be oriented towards modern operation and maintenance of reservoirs according to ISO-standards. Public enterprises in Azerbaijan are in a process of adjusting their work to the ISO-Standards. The training will be of accompanying nature, in terms of checking whether existing performances correspond to professional requirements.

(Please refer to training 4.9 in the training plan.)

- Engineers of facilities and other interested technical experts can be trained in all issues related to **network operation and maintenance from the source to the house connection**. Training may inform about modern methods in the operation of transmission mains and water supply systems and can help developing an integrated idea on the interdependency of different sections in water supply from water sources to the house connections. Training may include the use of materials and consumables as well as **human engineering**, complemented by the topics NRW monitoring, basic hydraulic requirements and the application of the IWA water balance.

(Please refer to training 4.10 in the training plan.)

- As transmission mains are locations of water high losses and illegal connections, training in **operation and maintenance of transmission mains** is paramount. Training may cover water mains flushing, removal of residues,
different problems that cause leakages, leakage control as well as operation and maintenance of valves, pumps and compressors. Training in functionality and maintenance of water meters installed in main pipe works is followed by instructions on data processing, training on repair works organization and the handling of illegal connections.

(Please refer to training 4.11 in the training plan.)

- Aimed at achieving sustainable network operations, reducing the number of breakdowns in distribution systems and increasing service levels, an integrated and holistic approach on how to reduce water losses is required. Training on **water loss reduction in distribution networks - the NRW approach** needs to be designed as a combination of **technical aspects**, **marketing aspects** and **change management approaches**.

As to the technical aspects the training will have to emphasize (1) indicators for non-revenue-water management, (2) non-revenue water management options (District Metering Areas, measurements pipeline, asset management), and (3) the implementation of NRW management strategies, which needs to include elements of a change management approach.

The adequate training format is on-the-job-training, which foresees imparting theoretical know-how and mainly practical activities in the field. Young experts can be sent to foreign countries. The training should also cover preventive leak detection and the use of leak detection equipment.

(Please refer to training 4.12 in the training plan.)

C.4.3 Wastewater & Rainwater Management

The assessment on capacity building and training needs in the field of wastewater and rainwater management is based on interviews with the Heads of the Rainwater and Wastewater Management Division, the Wastewater Treatment Plant Baku and Sukanal Sumquayit. Complementarily the section considers aspects mentioned by staff in subsidiary organization in response to a questionnaire in July 2012. The findings and comments provide the basis for the assessments by MACS’ experts.

1. **Structure and current scope of work**

   In summer 2012 the Division for **Rainwater and Wastewater Management** (once Division for pumping stations and collectors) is staffed with 6 persons mainly acting as engineers. Their scope of work refers to the control of pumping stations and equipment for rainwater and wastewater collection up to the wastewater treatment plants. They arrange for the sewerage cleaning, for which four special cars are available in Baku. Finally the Division collects data accrued in facilities to control levels of wastewater in the pumping stations.

   - A partly rehabilitated wastewater treatment plant in Baku is operational with an output of 700,000m³ of treated wastewater from the older part, and 100,000m³ from the newer part, which has an integrated denitrification process. Staff has the ability to operate the plant as instructed. Outlet values are appropriate.
- **Sukanal Sumquayit** is in charge of water supply and wastewater disposal for the city of Sumquayit. 240 km of sewer networks in the city collect both wastewater and rainwater. During heavy rains the double function leads to flooding, as collectors are under-dimensioned. It is intended to separate the system and to directly discharge rainwater into the sea - and wastewater to the treatment plant.

Collectors in Sumquayit are checked visually; inspections by cameras do not take place. For maintenance purposes two vehicles with sucking and flushing devices are available. Both cars - in a good shape - are available on request via the *Transport and Special Technical Division*. In future at least one modern vehicle will be directly allocated to the company in Sumquayit. Repair work is carried out by own staff. Required standards on safety equipment are met.

2. **Specific challenges, problems, changes**

The fact that Azersu is in charge of water supply and wastewater services only since 2004 creates a problematic situation, as the company - due to this tradition - is still in a process to get acquainted with wastewater disposal and environmental issues. In the Head Office a responsibility to monitor performances of wastewater treatment processes is not established yet.

During the past two years, operating procedures in the above mentioned wastewater treatment plants have been improved - required effluent values are met. This can be mainly attributed to constructional changes and to external support by construction companies. The steering of operational procedures by own staff still shows weakness.

The concentration of heavy metals can hardly be analyzed. Sewage sludge concentrations need to be checked in accordance to EU guidelines to learn about implications for future re-use. Some Districts (Rayons) do not dispose of any sewerage system, or sewerage systems are old and filled with deposits. Hence, there is a need to deal with sewerage maintenance.

Responsibilities how to operate and supervise wastewater treatment processes need to be developed and staff need to be trained. The question arises whether the staff is in a position to steer treatment processes also in case of unexpected events, or in case the performance of plants needs to be improved.

3. **Assessment of Capacity Building & Training Needs**

This section defines capacity building and training needs in the field of wastewater disposal.

- **Capacity Building Needs in the Head Office**

  - Required is the establishment of a Division in Azersu’s Head Office that is in a position to *monitor the performance of wastewater treatment plants*. The Division should prepare standards for plant effluents and for sludge disposal. Specific focus may be set on environmental protection issues.

  - Regarding cleaning and inspection processes of sewerage networks, it is recommendable to establish a monitoring unit at Azersu's Head Office. *Cleaning and inspection processes for sewerages* can be done via *Closed*
Circuit Television (CCTV) established on a truck. The equipment can be subordinated to an organizational unit at the Head Office, which steers the inspection processes in the entire country with an own team. This team carries out all related works. CCTV is eligible not only for inspections of existing sewerages, but also for the acceptance of works in relation to newly constructed sewerages. A specific team can be responsible for this final examination. The teams need training for that purposes.

- Regarding industrial discharge control Azersu’s Head Office may determine a coordinator that will be in charge of collecting and evaluating all relevant information. The employee will also have to manage the relevant coordination between the subsidiary companies that actually will carry out the direct discharge control.

Capacity Building Needs in Subsidiary Companies

- As to cleaning and inspection of sewerages, supporting capacities need to be established in the subsidiary companies. For that purpose some training modules will be required. Regarding industrial discharge control responsibilities should be assigned to an organizational unit that will be in charge of environmental protections issues, or in charge of wastewater disposal matters.

Training Needs in the Head Office

- In a potentially new Division monitoring and supervision of wastewater treatment plants staff in charge ought to be trained on how to (1) design a monitoring process, (2) define indicators for each plant, (3) apply relevant standards, (4) interpret legal issues regarding environmental protection, and (5) handle benchmarks in respect to different wastewater treatment plants.

(Please refer to training 4.13 in the training plan.)

- Training on the inspection of sewerages via Closed Circuit Television (CCTV) will have to cover (1) an analysis of prevailing problems in sewerages, (2) the definition of maintenance intervals, (3) the operational inspection and cleaning processes, (4) the definition of cleaning intensities in relation to the length of sewerages, (5) the evaluations of videos to assess the condition of the sewerage networks, and finally (6) the definition of the need for repair and rehabilitation.

(Please refer to training 4.14 in the training plan.)

- Training in the use and revision of GIS will have to impart knowledge on (1) the functional basis of a GIS, (2) key data quality issues that are involved in the use of GIS, (3) strategies to implement an effective GIS, (4) the facilitation of data collection, and (5) finally the efficient data storage. The training is meant to be for employees in charge of supervising operation and maintenance of transmission mains.

(Please refer to training 4.7 in the training plan.)
Training Needs in Subsidiary Companies

- Training for operation and maintenance of rain water collectors will have to focus on the cleaning with mobile suction and jetting vehicles and the maintenance of these vehicles. In addition, training on the regular inspection of pipe sections, repair or replacement of broken pipes, application of machinery and equipment, reporting and record holding are required.

(Please refer to training 4.15 in the training plan.)

- Training is required for the operation and maintenance of sewerage collectors. The training will have to embrace (1) preparatory works for the inspection of sewerage systems, (2) organization and support of inspections, (3) the cleaning with mechanical and mobile equipment (sucking and jetting vehicles), (4) repair and rehabilitation of sewer network incl. manholes, (5) maintenance of equipment, and (6) occupational health and safety matters.

(Please refer to training 4.16 in the training plan.)

- To impart knowledge on the functionality of wastewater treatment plants training will have to focus on treatment processes, such as (1) mechanical treatment, (2) biological treatment, (3) nitrogen and phosphate elimination, (4) sludge treatment, (5) sludge drying, and (6) sludge disposal. Specific focus needs to be put on environmental issues and modern technologies in use.

(Please refer to training 4.17 in the training plan.)

- Training to manage, operate and maintain wastewater treatment plants should be carried out prior to the start of operations. It should consider the control of all treatment processes: from the inlet of wastewater to the outlet (and re-use) of treated wastewater, up to further applications of tried sewage sludge. Compared to training 4.17 - functionality of wastewater treatment plants - this training covers all operational aspects. Apart from operations, the training may emphasize knowledge and develop skills on how to assess optimization potentials and available resources for the best capacity utilization. Process control and process engineering (task management) are paramount. Specific focus will have to be put on environmental protection issues and occupational health and safety matters. Training shall support an anticipating and strategic way of thinking for the planning of operations and maintenance as well as for staff assignments.

It is advisable to initiate this kind of training at an early stage, so that the management is better in a position to take over the operation of newly constructed wastewater treatment plants and to assess and evaluate also the performance of construction companies. On a later stage, these managers can act as trainers in the context of a training-of-trainers program and train technicians and workers that will be in charge of operations and maintenance of wastewater treatment plants. Close cooperation will be required with the task force that monitors the handing over processes of newly built wastewater treatment plants (please refer to training 4.6)

(Please refer to training 4.18 in the training plan.)
A specific training is required on how to carry out wastewater treatment processes in the case of unexpected events, such as declining outlet standards of effluents - or the need to improve the performance of the wastewater treatment plant. The background is to understand, to control and to gain autonomy as well as decision making skills on how to proceed in operations beyond the normal case. The training will also have to cover occupational health and safety matters.

(Please refer to training 4.19 in the training plan.)

With regard to operation and preventive maintenance of wastewater pumping stations training will be required to focus on pumps, motors, electrical panels, and flow and level measurement devices. Any required electric equipment, the SCADA system, and finally on occupational health and safety matters are additional training topics.

(Please refer to training 4.20 in the training plan.)

As environmental protection is a major issue to deal with, training on industrial discharge control may help to proceed in this respect. Among others, training topics may debate (1) legal basis and background, (2) practical approaches to accomplish industrial discharge control, (3) parameter for a cadastre, (4) the creation of a cadastre, (5) necessary self-declarations by industrial dischargers, (6) the procedures for sampling and analysis, and (7) decision-making and activities to be taken in case of exceeding limit values.

(Please refer to training 4.21 in the training plan.)

C.4.4 Mechanics – Electrical Equipment

This section present the assessment on capacity building and training needs in the field of mechanical and electrical equipment. Interviews were conducted at the Head Office with the Head of the Mechanical Division and the Head of the Energetics Division. Interviews followed with Heads of Pumping Stations, the Head of Jareinbatan Water Pipeline and Water Treatment Plant, the Head of the Wastewater Treatment Plant Baku, and the Head of Water Operations at Baku Sukanal.

1. Structure and current scope of work

The Mechanical Division is in charge of selecting mechanical equipment for new or recently installed facilities, arranging operations of equipment of existing facilities, and purchasing new equipment. Instructions on how to handle equipment were developed and submitted to subsidiary companies. The Division supervises the functionality of installed mechanical equipment and its adherence to monitoring regulations, and provides advice for repair works. In summer 2012 about 70% - 80% of installed equipment was considered as old and outdated. The Division plans the purchase a year in advance, anticipating which equipment is expected to get broken. The list is adopted by the Chairman. The Construction Division carries out repair work, supervised by the Mechanical Division.
The Electrical Division with a staff of five persons calculates the consumption of electricity. A limited amount of electric power is available for each subsidiary company for a certain period. The Division participates in the design of electrical equipment for the construction of new plants, is involved in the acceptance of works prior to the start of operations, and provides technical advice for the purchase of new equipment. Small repair works are carried out by the subsidiary companies. The Division arranges for comprehensive repairs and maintains mobile repair teams. Most of electrical equipment needs to be replaced; emergency management - the solving of electrical failures – falls under the Division’s responsibility. The Division tests the knowledge of staff working with electric facilities and equipment and provides workers with introductory trainings. Once a year electricians have to undergo a test of their knowledge in operations and maintenance.

2. Specific challenges, problems, changes

In the field of mechanical equipment a major challenge is how to retain new knowledge in the field of operations and maintenance, and also how to ensure that new and most modern equipment is being installed in case an exchange is required.

Concerning electricity a major challenge is the handling of new equipment, e.g. frequency converters in pumping stations. Existing introductory trainings prove to be insufficient and do not show a positive impact at long term. However, current contracts do not obligatorily foresee the accomplishment of introductory trainings coinciding with the installation of new electrical equipment. The lack of qualified technical staff is a challenge to deal with. Low salaries do not encourage motivation.

3. Assessment of Capacity Building & Training Needs

This section outlines capacity building and training needs both in the fields of mechanical and electrical equipment.

- **Capacity Building Needs in the Head Office**
  - *Introductory trainings* need to be foreseen in contracts with suppliers of new installations and equipment. The execution of these trainings and their quality might be concatenated with final payments. Quality indicators can help measuring the quality of those introductory trainings.
  - The set-up of a *simplified quality management system* related to mechanical and electrical equipment may help standardizing procedures. The system may also help keeping an eye on new options to be considered when it comes to renewals of installations and equipment.

- **Capacity Building Needs in Subsidiary Companies**
  - The use of *digitalized maintenance* plans in subsidiary companies may facilitate supervision and monitoring on installed equipment. It is helpful if they also include check lists with memory functions.
Training Needs in the Head Office

- Training on how to set up and monitor a simplified quality management system that supports self-steering processes will help the Head Office to support work in subsidiary companies. Similar to trainings for subsidiary organizations, trainings need to cover a suite of qualitative and quantitative indicators to control the quality management process. Digitalized maintenance plans may safeguard quality standards in future.

(Please refer to training 4.22 in the training plan.)

Training Needs in Subsidiary Companies

- In the context of the application of a simplified quality management system training on the planning of repair works shall be based on a summary-sheet of technical specifications (passport). Ways how to identify updated and more modern versions of equipment to be exchanged should be part of the training. Trainings shall cover the participatory definition of qualitative and quantitative indicators, on the basis of which the maintenance process can be planned and monitored. Digitalized plans may ensure that new knowledge can be maintained and fetched. Experts may visit facilities in foreign countries for acquainting themselves with modern ways to operate and maintain mechanical and electrical equipment. A creative approach to work may be included in the training approach.

(Please refer to training 4.23 in the training plan.)

- An introductory training and crisis management skills for mechanics and electricians are required for operational staff. The training embraces the handling of converters and measurement devices. A module on emergency management may cover (1) knowledge about electrical components, (2) installation / operation of electrical and mechanical devices, (3) ways to analyze a dysfunctionality, (4) fault finding and rectification, (6) documentation of faults/repairs, and (7) occupational health and safety matters.

(Please refer to training 4.24 in the training plan.)

C.4.5 Occupational Health and Safety - Environmental Protection

In this section we present the assessment of capacity building and training needs in the fields of Occupational Health and Safety and Environmental Protection. The combination adverts to the structure of the Division in Azersu’s Head Office. The assessment is based on interviews with the Head of the Division for Health, Occupational Safety and Environmental Protection in the Head Office, complemented by MACS’ experts.

1. Structure and current scope of work

The Division Occupational Health and Safety and Environmental Protection is subordinated to the First Deputy Chairman and was established in 2011 without any similar structure in place before. In July 2012 four persons supervise occupational health and safety and environmental protection issues in all subsidiary companies. Azersu maintains sub-offices in some Districts (Rayons) staffed with engineers,
responsible to apply given standards. However, in October 2012 safety Divisions do not exist yet in each District (Rayon).

2. **Specific challenges, problems, changes**

Guidelines for health and occupational safety are stipulated in the *Work Code of Azerbaijan*. In Azersu, the safety standards OHSAS 18001 (*Occupation Health and Safety Assessment*) - part of an international system - entered into implementation. The standards aim at supporting organizations to control occupational health and safety risks and were developed in response to the widespread demand for a recognized certified standard.

Staff in chlorination stations has little knowledge about the use of harmful substances, such as chlorine. Trainings have been carried out, but outcome, benefit and impact are weak.

Concerning ecological issues Azersu can merely resort to the competencies of one ecologist within the organization. Though, Azersu is obliged to carry out ecological monitoring. Especially pollution of some surface water is high and represents a specific challenge to water treatment.

3. **Assessment of Capacity Building & Training Needs**

This section outlines the needs regarding capacity building and training in the field of *Occupational Health and Safety and Environmental Protection*.

- **Capacity Building Needs in the Head Office**
  - A system should be established to support work flow management in line with *18001 OHSAS standards* and to provide required information to the staff concerned.
  - Challenge is also the set-up of new *safety Divisions* in those Districts (Rayons), where up to now those Divisions do not exist.
  - Challenge is to set up an *Ecological Monitoring System* with specific focus on surface water.

- **Capacity Building Needs in Subsidiary Companies**
  - The challenge is to develop new mechanisms on how to organize occupational health and safety issues and to build up mechanisms and safety departments in subsidiary organizations.

- **Training Needs in the Head Office**
  - Training is required on how to set up systems for Health & Occupational Safety according to 18001 OHSAS standards, for new Safety Divisions subsidiary organizations, and for Ecological Monitoring. Details are outlined in the section *training needs for subsidiary companies*.

>(Please refer to training **4.25** in the training plan.)
Training Needs in Subsidiary Companies

- **Basic training on occupational health and safety** may train engineers and workers how to adhere to new OHSAS 18001 standards with these topics to be covered: (1) safety requirements for different facilities, (2) risk assessments, (3) essentials of OHSAS 18001 standards, (4) application of OHSAS 18001 in work flow management, (5) preventive measures (e.g., dealing with consumables), (6) awareness raising and minimizing risks for accidents, and (7) actions to be taken in case of an emergency. Likewise legislative requirements to update occupational health and safety issues shall be part of the training. The same is true for ways how to intermittently test the staffs’ knowledge regarding occupational health and safety issues.

(Please refer to training 4.25 in the training plan.)

Training in characteristics, virtue, **use and disposal of harmful substances** may focus on chlorines, but also on chemicals used for treatment processes and harmful substances necessary in the context of sewerage disposal. The training topics refer to (1) characteristics and effects of disinfectants and other harmful substances, (2) modes of applications, (3) administration of the material safety data sheet, (4) health protection issues and preventive measures, (5) storage and maintenance of equipment and substances, (6) lifespan and environmentally sound disposal, and finally (7) action taking in case of an emergency.

(Please refer to training 4.26 in the training plan.)

- **Basic training on environmental issues** should cover water safety legislations of the Azerbaijani Republic. It includes the protection of water sources from pollution and the disposal / agricultural re-use of sewerage sludge and treated wastewater. Knowledge about standards of the World Health Organization (WHO) for water quality is paramount as well as information about indicators for public health. Training topics should be complemented by the assessment on potential sources for contaminations in the supply system, and by measures to be taken to foster environmental awareness.

(Please refer to training 4.27 in the training plan.)

- The implications of the **EU-Code and EU Water Convention**, which has been signed by Azerbaijan, can be discussed in a workshop or in training sequences. Topics to be covered are (1) the background of the water convention, (2) the comparison to further water documents, (3) central aims, essentials and definitions, (4) concepts to protect and ensure quantity, quality and sustainable use of trans-boundary water resources, (5) the holistic approach for the ecosystem, and (6) legal stipulations.

It should be mandatory to clarify the consequences that arise from the convention for design, construction supervision, operations and laboratories in Azersu and subsidiary organizations.

(Please refer to training 4.28 in the training plan.)
• Training in legal preconditions, parameters, organization, procedures and reporting related to the set-up and management of an Ecological Monitoring System may mark initial steps to start with this system. The training will have to embrace different paces of an environmental impact assessment and will have to deepen aspects relating to preconditions, standards, parameters and indicators in use. Another focus will have to be put on organizing the monitoring procedures, as well as on reporting matters. The training may be initiated with background information that gives reason for setting up such a system. Likewise the output and the outcome one can expect at mid- and long-term must be investigated.

(Please refer to training 4.29 in the training plan.)

C.4.6 Instrumentation and Remote Control (Automatics - Metrology)

The capacity building and training needs assessment with reference to instrumentation and remote control is based on an interview with the Head of the Section Automation and Metrology in Azersu’s Head Office. Findings are critically appreciated and reflected by MACS’ experts.

1. Structure and current scope of work

The seven persons of the Division Automation and Metrology deal with the automation of equipment in pipelines. The scope of work covers the supervision of subsidiary companies in their work with automatic processes. Automation so far is limited to water meters. The Division has launched the installation of smart-card water meters and carries out a follow up in a pilot zone, also with respect to customer complaints.

An old master work shop for meter calibration was abandoned. New calibration facilities will be inaugurated in autumn 2012. The section elaborates Terms of Reference for water meter tenders, screens the market and provides for recommendations. Purchased water meter are tested in the own meter shop. They are installed by the own unit Installation and Testing of Water Meter. 11 groups with respectively three persons install up to 13 water meters per day/group in private households, and up to ten water meters in companies. The installation process in Baku was initiated in 2005.

2. Specific challenges, problems, changes

This section specifies capacity building and training needs in the fields of automation and metrology.

3. Assessment of Capacity Building & Training Needs

In the context of this study specific capacity building needs in the Head Office as well as in subsidiary organizations with regard to technical expertise could not be identified. Work is highly standardized and supervised. Some training needs refer to psychological factors in relationship with the company’s clients in terms of target group oriented communication skills.
Training Needs in the Head Office

- It will be required to carry out some training on how to psychologically structure and guide conversations and discussions with customers of subsidiary organizations. The challenge of these trainings will be how to balance client orientation and expertise, and how to deal with customers. The training may include the following subjects: (1) consideration of customers as a "group", (2) the customers’ needs and interests, (3) the difference between natural communication and professionally structured communication, (4) guided conversations and information to be provided, (5) how to balance facts, interests and emotions in a communicative situation, and finally (6) how to conclude a guided conversation.

(Please refer to training 4.30 in the training plan.)

Training Needs in Subsidiary Companies

- It will be required to carry out some training on how to psychologically structure and guide conversations and discussions with customers. The challenge of these trainings will be how to balance client orientation and expertise, hence how to deal with customers.

(Please refer to training 4.30 in the training plan.)

C.4.7 Control over Technological Processes & Water Quality

The needs assessment regarding capacity building and training in this section is based on interviews held with the Head of the Division Control over Technological Processes and Water Control, the Head Technologist of Baku Sukanal and with Head and staff of the Central Laboratory of Baku Sukanal. Critical appreciations of findings supplement the ideas and approaches.

1. Structure and current scope of work

The Section Control of Technological Processes and Water Control is staffed with five employees, who supervise technological processes in water treatment plants and execute physical and chemical control of water from all reservoirs.

Currently staff of the old central lab in Baku takes samples from all 11 reservoirs in town - from defined places in the network and from public buildings, such as schools, kindergartens and hospitals. The laboratory caries out bacteriological, biological and chemical analyses according to Russian standards and makes use of about 46 parameters. Findings are reported to the Section Metrology in the Head Office.

A new Central Laboratory in Baku is expected to be opened in December 2012, where the number of parameters to be applied will rise to 90 against 62 in use now. The application of new standards is under development, in line with the policy set by the State Standards Committee.
2. **Specific challenges, problems, changes**

In the new central laboratory in Baku new standards will be considered: the current use of Russian standards shall be adapted to EU and ISO Standards. Some employees are currently benefitting from trainings in Turkey to learn more about lab procedures and chemical and biological analysis. Azerbaijan’s laboratories will be facing outstanding developments: due to legal requirements – and due to Azersu’s initiative – the points where to take samples will triple. However, the capacities of some technical facilities do not allow taking and processing more samples under current conditions and procedures.

3. **Assessment of Capacity Building & Training Needs**

In this section we assess the need for capacity building and training needs in the field of control over technical processes and water quality.

- **Capacity Building Needs in the Head Office**
  - The Division in the Head Office will have to be in charge of defining and monitoring the frequency and the objects of samplings and testing. National and international standards will have to provide the starting points for that. Consolidated or individual results will have to be evaluated, in order to draw conclusions for decision making on further need for action. Actions then have to be initiated and supervised.

- **Capacity Building Needs in Subsidiary Companies**
  - Outdated analyses process in the *microbiological field* may be adapted to new standards.
  - Special emphasis need to be put on *proper buildings* including appropriate conditions of rooms.
  - Some advice might be required in the field of *determination and purchase of necessary equipment* for proper analysis according to international analyzing standards.

- **Training Needs in the Head Office**
  - Training may support the Division in the Head Office to define and *monitor the frequency and the objects of samplings and testing*. Knowledge on national and international standards is necessary, complemented by a suite of parameters in use. Evaluation of results by laboratories is another training subject, as well as the definition of instructions for decision making in dependence on these findings. The definition of a suite of actions that can be taken should conclude the training together with an overview on different supervision methodologies.

(Please refer to training 4.31 in the training plan.)
Training Needs in Subsidiary Companies

- Basic and refreshment training on modern standards of water quality control in laboratories may cover the following issues: (1) properties and appropriate use of new equipment in laboratories to carry out analyses, (2) initiation and logical path of work steps, (3) set of parameters to be considered (incl. microbiological/chemical analysis in line with European standards), (4) sound work conditions for proper application of parameters, (5) sampling, preservation and storage, (6) microbiological, physical and chemical tests, (7) identification of pipe water and ground water in case of water losses, (8) comparative analysis and conclusions for actions to be taken, and (9) reporting. An up-dating of health and safety issues may complement the training.

(Please refer to training 4.32 in the training plan.)

C.4.8 Transport and Special Techniques

The capacity building and training needs assessment in this section is based on the professional judgment of MACS’ experts.

1. Structure and current scope of work

Azersu maintains a Division Transport and Special Technique, which is in charge of maintenance of cars, excavators and trucks. The Division maintains vehicles for repair and maintenance, for the transportation of staff and material supply, and it maintains machines for repair works.

2. Specific challenges, problems, changes

It might be subject to further investigations to what extent the structure of the Division responds to the needs.

Capacity Building Needs

- It might be advisable that the Head Office takes a decision in which field the central administration is meaningful, and in which cases a delegation principle should be taken into account.

Training Needs in the Head Office

- Training on modern standards of car and vehicle maintenance may help to update the current knowledge and skills of staff in charge. Trainings can cover (1) the functioning of existing machineries, (2) introduction to new vehicles and machines, (3) maintenance intervals, (4) use and storage of consumables, (5) use of maintenance and repair equipment, and (6) occupational health and safety matters.

(Please refer to training 4.33 in the training plan.)
C.5 Accounting & Financial Management

- **Related Departments and Divisions in Azersu’s Head Office:**
  - Commercial Department incl. Service Division for Customer Base and Sales Control Division
  - Internal Control Department incl. Water Communication Departments and Sales Control Department
  - Economic Analysis and Forecasting Division incl. (1) Accounting & Reporting Division, (2) Finances & Taxes, (3) Fixed Assets Management Division, (4) Financial Statements Consolidation Division, and (5) Methodology of Accounting
  - Deputy Chairman for Economic Affairs incl. Logistics Department, Procurement Division and Supply Division
  - Social Development Division

- **Departments in Azersu’s Subsidiary Companies and Sukanals**
  - Subsidiary Companies and Sukanals

C.5.1 Commercials - Customer Base - Sales Control - Billing

The assessment of capacity building and training needs in this section is based on interviews the Head of the Commercial Division in Azersu’s Head Office, the Chief Accountant in Baku Sukanal, and the Chief Accountant in United Sukanal. Assessment given by representatives of further subsidiary organizations - in response to a questionnaire submitted in July 2012 - complement those appraisals. Finally the critical appreciation and comments by MACS’ experts complement the assessments on capacity building and training needs in this chapter.

1. Structure and current scope of work

The Commercial Division in Azersu's Head Office supervises the water balances of the subsidiary organizations. To the Division's scope of work belongs the definition of the amount of water supplied to customers, which is based on consolidated information provided by subsidiary organizations. The Division carries out the controlling on the entire amount of water sold, and on the revenue of income for water and sewerage services.

- In Baku water meter coverage in summer 2012 comes to 60% of all households: A water meter program foresees 5,000 installations per month. Since 02/2012 the company is in the process of implementing post-terminals, which allow for printing and submitting bills immediately after meter reading. Besides, the installation of smart-card water meters is ongoing in a pilot area and has led to the installation of 900 water meters until summer 2012. Collection efficiency in Baku in summer 2012 varies between 65% and 80%.

- In United Sukanal, bills for companies and public customers are printed and submitted by the central office, while bills for private households are prepared by operational Sukanal companies. They check payments and outstanding debts via the customer data base (AMICE-system) and add outstanding debts to the next bill. The data base is maintained and updated in United Sukanal's central office. Staffs in operational Sukanals can check registered data, but not modify or update them.
Income generated in Sukanal companies is compiled in United Sukanal’s central office, which pays all expenses for salaries, materials, oil and electricity. Expenses for salaries, consumables and electricity can be covered. Debts emerge from unsettled taxes and non-paid contributions to the pension fund. United Sukanal settles debts generated by operational Sukanals.

2. Specific challenges, problems, changes

In response to the questionnaire representatives of subsidiary organizations state that water fee collection is a major challenge to deal with. This is attributed to poor service qualities, nonfunctioning water meters and silty water due to old treatment facilities. A problem is the low motivation level of employees that read the water meters and submit the bills. Despite the salary increase by 40% in 2011, wages for this staff is still low, a fact that negatively affects motivation.

Concerning financial operations, representatives of subsidiary organizations state to be satisfied. The procedures prove to be acceptable, but training need is identified as a general update of weak knowledge of staff assigned to commercial groups.

3. Assessment of Capacity Building & Training Needs

In this section we outline capacity building and training needs related to commercials, customer base and billing.

Capacity Building Needs in the Head Office

- It might be taken into consideration to design a simplified Incentive Payment System for staff to enhance billing efficiency, such as meter readers. Incentive payments for directors - in case they set up policies to increase the collection efficiency as well as real increases of collection efficiency - might be considered on a management level.

  The approach might be retained for a certain period - for not running the risk to lose its effectiveness once it will have been established. As the issue is a sensitive one, a work group could be established to balance all aspects that coincide with such an approach.

- In addition to the above endeavors, awareness raising campaigns emphasizing the need to pay water and sanitation bills can be designed in cooperation with a future Division for Marketing and Customer Communication. Please refer to chapter C.1.4 of this report.

- It is recommendable to develop a strategy on how to deal with illegal connections, as they contribute significantly to water losses. We believe an interdisciplinary approach is necessary in this respect, merging technical, juridical, commercial and psychological competencies in a common approach. Please refer to chapter C.4.2 of this report.
Capacity Building Needs in Subsidiary Companies

- It could be taken into account to entitle subsidiary organizations to carry out the update of their customer data base, once the respective infrastructure will make this possible and staffs have been trained on how to carry out the procedural steps.

- An incentive payments structure for meter reader could be linked to the number of bills they submit. In addition, discussions to convince customers to pay their bills might be considered in such a system. Please refer also to C.1.2 and C.4.2 of this report.

Training Needs in the Head Office

- As to the Head Office not training needs were identified.

Training Needs in Subsidiary Companies

- In terms of an upgrade of knowledge for commercial staff it is advisable to have an open training program which covers these topics: (1) receiving new customers application forms, (2) connection fee and installation of new service connections, (3) meter reading and calculation of water bills, (4) signing of water bills, (5) filing and bookkeeping, (6) payment of water bills, (7) reminders and complaints management, and (8) sanction-options in case of unpaid bills.

(Please refer to training 5.1 in the training plan.)

- In case subsidiary organizations will be entitled to update the customer data base, training on customer data base management can be included in trainings that refer to IT knowledge. The training can be aimed at giving local staffs a more active role and enhance motivation in the given work structure.

C.5.2 Economic Analysis and Forecasting - Accounting & Reporting

The needs assessment concerning capacity building and training needs in this section is based on interviews conducted with the Head of Economic Analysis and Forecasting, the Head of Accounting and Reporting and some accountants who participated in training courses. The assessments are critically appreciated and complemented by MACS’ experts.

1. Structure and current scope of work

The scope of work in this organizational unit is done by the Divisions Economic Analysis and Forecasting and Accounting and Reporting.

- The Division Economic Analysis and Forecasting with five employees is in charge of analyzing financial issues and taking care for financial planning as well as for financial forecasts. The Division cooperates intensively with all Divisions and sections in Azersu and manages the information exchange with other organizations, ministries and tax institutions.

The Division has defined main financial indicators, calculates further financial indicators, and prepares financial information, statements, normative and reports for state bodies. With its activities the Division aims at increasing the efficiency of
Azersu and subsidiary organizations, making them more profitable and spending money more efficiently.

Tariff planning plays a major role in the Division’s scope of work: water and wastewater tariffs are revised and proposals are submitted to the Azerbaijani Tariff Council.

- The Division Accounting is subdivided into the sections Accounting & Reporting, Finances & Taxes, Fixed Assets Management, Financial Statements Consolidation, and Methodology of Accounting. The Division manages the accounts of Azersu’s Head Office and is responsible for many financial transactions with subsidiary organizations. Revenues are formed in subsidiary companies, which deal with revenue and expenditure. All organizations submit reports on all financial issues to Azersu’s Head Office.

2. Specific challenges, problems, changes

- As to Economic Analysis and Forecasting a major challenge might be the modification of tariff setting. Currently only 1% of the average monthly income is paid for water. However, according to assessment prevailing in Azersu, people in Azerbaijan can afford to pay a higher share of their income for water and wastewater services.

The cost (overhead) of Azersu’s Head Office and United Sukanal’s central office and their services provided to subsidiary organizations is not calculated in the tariff. It is also not formally invoiced. Overheads are obviously financed out of the cash flow generated by subsidiary organizations. Occasionally Government transfers may cover deficits. These inconsistencies in cost accounting contribute to Azersu’s weak financial performance. The concrete issue to be addressed in this context is Water Pricing and Tariff Systems.

Tariffs can be based on local expenditures for water production, water distribution and wastewater disposal. In line with differing expenditures also tariffs may vary from one water utility (as subsidiary organization) to another. Once the new wastewater treatment plants will be operational, tariffs for wastewater disposal might be reconsidered anyhow. Notwithstanding, it is part of decision making by the State Tariff Council to finally adopt a certain level of tariff increases.

On the background of comprehensive investment measures Strategic Asset Management (SAM) can be established in the context of the organization to establish priorities regarding the management of assets needed for service delivery.

A constraint of current forecasting practices is to not entirely include development aspects. The development of different target groups, a risk and chances analyses, and the design of different scenarios are not foreseen as well. In terms of a holistic approach, Business Planning might be taken into account.

Coinciding with increasing investments the supply situation will improve in the country at mid-term. It would be a challenge to measure to what extend the improvement can be maintained – or furthermore be improved due to excellent operation and maintenance. A continuous improvement system, which can be implemented directly in a subsidiary organization, may help to provide the
management with tools to adjust business objectives and related activities. This can be done in comparison to other subsidiary organizations that work under similar conditions. The policy can be integrated into a Benchmarking Approach.

- Concerning accounting a major challenge is to develop staffs to a level, on which people will be in a position to work in line with new standards. Since 2008 state organizations are obliged to carry out accounting according to International Finance Reporting Standards (IFRS), issued by the International Accounting Standards Board (IASB). Independently from national legal provisions the standards regulate the compilation of internationally comparable annual financial statements. As of January 2012 Azersu has to apply those standards, the implementation of which has been initiated early in 2011. The current challenge consists in integrating bookkeeping into IFRS.

Since expertise is still low, trainings on how work according to IFRS have been initiated. 50 persons have finalized two trainings courses of 40-46 lessons each. It is intended that they participate also in advanced level courses. Trainings continue, as about 200 accountants in all Districts (Rayons) need to acquire new skills and knowledge.

Currently the Division is gaining experience with the trainings. Feedback is critical, as in one course only four persons of 20 participants managed to get the certificate. There is uncertainty regarding the content and methodology, even though training topics prove to be suitable. Some participants stated that trainings were too short. Accountants in Baku are easy to be trained, training of accountants in Districts (Rayons) prove to be difficult. New ideas and approaches might be considered when planning new trainings. A challenge is also to improve the approach how to evaluate the courses.

A contract was signed to assess the values of assets. The Head of Accounting is in charge of arranging the courses and installing the software.

3. Assessment of Capacity Building & Training Needs

In this section we present the assessment of capacity building and training needs regarding the Divisions Economic Analysis and Forecasting and Accounting and Reporting.

- Capacity Building Needs in the Head Office
  - Azersu’s weak financial performance exists also due to inconsistencies in cost accounting. Water pricing and tariff systems should be in the focus of attention - parameters in use to calculate tariffs (e.g. including cost for overhead) can be reviewed.
  - To extend the basis for economic analyses - to manage demand and guide acquisition, use, and disposal of assets - the approach of strategic asset management may help to make the most of their service delivery potential and to manage costs and risks (of failure of the asset) over their entire life.
  - At present forecasts are done for one or three years respectively. To further develop this practice to a more holistic and complex approach, the business planning approach may be pursued. Business planning goes beyond pure
forecasting. It considers a broader range by way of developing different scenarios on how the company may look like.

- A systematic and continuous process of comparing the performances of subsidiary companies having comparable conditions - in terms of size, customer structure, supply conditions (e.g. water production) - can be integrated in a **benchmarking approach**. Following the definition of qualitative and quantitative **Performance Indicators** (PI), the comparison of accomplishments in various fields may encourage the companies’ motivation to improve. The system may also inspire lessons learned and have a positive impact on the improved organization of work processes.

### Capacity Building Needs in Subsidiary Companies

- Depending on above mentioned Capacity Building Activities, counterpart activities will be required also in Subsidiary Companies.

### Training Needs in the Head Office

- Training on **water pricing and tariff systems** will have to focus on (1) different goals to be considered in the context of tariff designs, (2) the consideration of supply conditions, (3) possible tariffs structures for water supply services, and (4) tariff structures for sanitation services.

  (Please refer to training 5.2 in the training plan.)

- Training on **strategic asset management** - covering the process to manage demand and guide acquisition, use, and disposal of assets - may include different levels of asset management, the life-cycle approach, the incorporation of risk assessment, customers’ demand from the service provider, and organizational requirements including improved management systems.

  (Please refer to training 5.3 in the training plan.)

- To understand the benefit of **business planning** training will have to focuses on
  - **Purposes**, discussing the relevance for different stakeholders;
  - **Timing**, referring to the budget year, the project cycle and the updating;
  - **Designing**, including structural developments and changes;
  - **Products and Services**, covering the development level of each product;
  - **Clients and Marketing**, estimating of market potentials;
  - **Finances** specifies, forecasting revenue and expenditures, capital needs, liquidity planning and reserves and impact on the Balance Sheet;
  - **Risks & chances analyses**, inspecting factors affecting the development;
  - **Strategies**, outlining development needs for coming years; and
  - **Implementation and Monitoring**, enclosing measures, monitoring procedures and the management of adjustments.

  (Please refer to training 5.4 in the training plan.)
Training on *performance assessment and benchmarking* firstly centers on the need for a performance assessment. It includes an analysis of challenges in the water industry and outlines benefits for water utilities, policy making bodies, regulatory agencies, financing bodies, and customers. Examples of best practice for performance assessment and benchmarking activities may follow. Training continues with a practical introduction in the approach of the *International Water Association* (IWA) and may be finalized with issues to be considered when it comes to the implementation of a performance assessment and benchmarking system.

*(Please refer to training 5.5 in the training plan.)*

Introductory trainings for new staff and training-updates for existing staff shall support, sustain and update expertise, knowledge and skills of economists in the Head Office. Concerning new staff training should focus on data processing as legwork for financial forecasting. This kind of training is repeatedly required due to high turnover of staff. With regard to experienced staff, the exchange of experience, study tours, colloquia, and measures to gain new optimism and to work more proactively is important.

*(Please refer to training 5.6 in the training plan.)*

**Training Needs in Subsidiary Companies**

- Accountants need to be trained on how to apply *International Financial Reporting Standards* (IFRS) at work. Training of employees in the Head Office need to be followed by training of about 180 accountants in subsidiary companies. People need to be trained within 2 years; training providers who take exams on IFRS do that only once or twice a year. The challenge is how to organize those training courses. We suggest including envisaged trainings in the training plan, but we also suggest reviewing the training approach, the timing, the duration of the courses and the way how expert knowledge is being transferred into daily business.

*(Please refer to training 5.7 in the training plan.)*

- There is a need to train people in Baku Sukanal on how to carry out economic analysis, as they are in charge of analyzing the economic results of all 15 departments and consolidating them. Training will have to focus on the structure of data, accounts and sub-accounts, legal requirements to be considered, booking processes, additional items, tax-relevant issues, procedures how to consolidate all data, and finally reporting standards (application of normative, templates to be used).

*(Please refer to training 5.8 in the training plan.)*
C.5.3 Logistics - Procurement - Supply

The assessment on capacity building and training needs in the field of logistics, procurement and supply is based on an interview with the Head of the Division Logistics in the Head Office of Azersu. Capacity Building and Training Needs Assessments submitted by subsidiary companies in response to a questionnaire submitted in July 2012 complement the findings. Finally the critical appreciation of findings by MACS’ experts completes the assessment.

1. Structure and current scope of work

The Division Logistics is subordinated to the organizational unit Economic Affairs and embraces the Sections Procurement and Supply. Both, Procurement and Supply have been set-up in April 2011, did not exist before and are not fully arranged yet.

Previously a major part of subsidiary companies - but not all of them - managed the purchase of goods and deliverables by themselves. It was proven that actual needs were not always verifiable. It also happened that goods or spare parts were in a certain stock for a longer period, while other water utilities were in need of them. Due to the new system, products can be transferred to the subsidiary companies in need.

Up to the amount of 50,000 AZN usually any subsidiary company formulates the need for procurement, which is transferred to the chairman, followed by assessments (in parallel) at the Procurement Division and the Expert Division in charge, depending on mechanical or electrical issues. Upon approval, goods are purchased by the purchase office. Up to 50,000 AZN subsidiary companies may also carry out procurement by themselves, but they do it less than possible.

The depreciation commission controls supervises the life span of goods in the storage. Each subsidiary organization has its own storage. The Division in the Head Office has an overview on all goods and supplies there. Azersu has a central warehouse to lower expenses to convey materials and supplies between subsidiary companies.

2. Specific challenges, problems, changes

So far a solid training on how to follow the procurement procedures does not exist. In response to a questionnaire send to subsidiary organizations, a majority expresses to be satisfied with the current approach and procedures. Some organizations state that it would be helpful to have a set of indicators to facilitate the request for goods on a resource base and also to be informed about potential innovations.

3. Assessment of Capacity Building & Training Needs

In this section we present the assessment of capacity building and training needs in the field of procurement and supply.

- **Capacity Building Needs in the Head Office**
  - The central warehouse approach shall minimize storage time of spare parts, consumables and goods. It is advisable to develop a program that registers delivered and existing goods in electronic format. Staff to be hired needs to be
trained on how to operate the *data base for warehouse management*. The program may include a link to depreciation periods and expected life-spans.

- **Capacity Building Needs in Subsidiary Companies**

  - The registration of good and supplies in subsidiary organizations might be done in the same way as in the Head Office in order to have synchronized forms and data available in all sub-organizations involved.

- **Training Needs in the Head Office**

  - Training on how to manage *efficient procurement processes* may cover new rules on procurement, which facilitate the process, enriched with examples from other countries. Training may cover the acceleration of the approval process, negotiations and selection of suppliers and the process of issuing materials and supplies to the subsidiary organizations. The training can be organized for both procurement experts from the Head Office and procurement experts from subsidiary companies.

(Please refer to training 5.9 in the training plan.)

  - Training needs refer to the use of a *data base for warehouse management*. Training will have to focus on the registration of issued materials or supplies and on the control their depreciation periods. The connection and link-up of different warehouses and stock is another training issue to be covered. The training can be linked with the training on how to arrange for procurement.

(Please refer to training 5.10 in the training plan.)

- **Training Needs in Subsidiary Companies**

  - Training on how to prepare for procurement, improve the procedures and learn more about modern methods how to manage *efficient procurement processes* would be helpful. Training may cover ordering of materials and supplies can focus on stock control, check of minimum stocks, preparation of list for requesting material and supplies, and the procedure for receiving material. The training can be organized for both procurement experts from the Head Office and procurement experts from subsidiary companies.

(Please refer to training 5.9 in the training plan.)
D. TRAINING CONCEPT - TRAINING PLAN

While capacity building refers to the improvement of Azersu’s business organization, trainings are aimed at fostering individual developments in terms of improving knowledge, skills, behaviours and competencies to better meet professional requirements.

This chapter initiates with a description of experiences that Azersu has gained with trainings until autumn 2012 in the course of the relatively brief history of the company. Some considerations on how to make trainings successful follow.

It is also important to focus on a set of training formats that we consider as meaningful for Azersu and subsidiary companies.

All these issues are important for the anticipation of the Training Plan, which takes the main part in this chapter. The training plan suggests a suite of 100 trainings in the areas Management and Customer Orientation, Water and Sanitation Investments, Water and Sewerage Constructions, Operation and Maintenance, and Accounting and Financial Management. The training plan assembles trainings to be prioritized. The prioritization shall provide the basis for the elaboration of Terms of Reference (chapter E).

Next - in line with the Terms of Reference for this study – this chapter clusters those 100 trainings in into four principle training areas, such as (1) trainings on forthcoming challenges, (2) trainings on qualification improvements, (3) training on current operations, and (4) training on general skills.

D.1 Azersu’s experiences with trainings until October 2012

In this chapter we provide for an overview on experiences that Azersu has gained with trainings so far. Given the fact that the section Human Resources has been established only at the beginning of 2012, Azersu’s “history” of prior trainings is not centrally recorded. This outline results from statements and assessments communicated in interviews during this study, and from impressions read between the lines. The summary of training experiences is sorted by the categories (1) training needs assessment, (2) main topics covered, (3) training formats in use, and (4) qualitative evaluations. The chapter concludes with (5) an analysis and a suite of implications that we see for future trainings.

Training needs assessment

At present Azersu does not dispose of a formalized methodology for defining training needs in any water and sanitation utility. Decisions about training needs are made according to comments and observations of the management, which might be very relevant on the one hand, but on the other hand it is a very subjective assessment.

A mechanism is in place, according to which the trainees are tested prior to their participation in a training course. A second test follows when the trainings have been concluded.

Main topics covered

Up to now, the majority of trainings referred to the development of skills and knowledge in the field of pure technical expertise. The major part of participants was sent by technical Divisions, even though it is difficult to identify suitable training providers for
technical trainings in Azerbaijan. Some training in water loss reduction has been initiated and is ongoing. The outcome needs still to be evaluated.

Recently training has initiated with accountants to acquaint them with International Finance Reporting Standards (IFRS). As far as financial trainings are concerned, people can easily be sent to trainings, as training providers offering financial trainings are available in Azerbaijan.

Training formats in use

- Even though - trainings provided by internal trainers seem to be easily manageable, this format up to now does not prove to be efficient. Usually managers (own staff) do the trainings, but it may happen that the majority of planned lessons must be canceled, as the trainer (= manager) is not available due to other obligations to be fulfilled, and training stops. Also due to other obligations internal trainers are not in a position to adequately prepare the trainings. A training plan –curriculum – that would need to be presented does not exist. Training materials are not well prepared and do not pursue a didactically sound concept for further professional education of adults. Training contents to not correspond to the title of the training - and the trainers impart what they know, but not necessarily what the trainees are in need of. A training needs assessment does not precede the training itself. Trainers from outside the company are not involved in inn-house trainings. A pool of professionally trained trainers does not exist.

- Existing introductory trainings prove to be insufficient and do not show a positive impact at long term. However, current contracts do not obligatorily foresee the accomplishment of introductory trainings coinciding with the installation of all new equipment.

- In terms of time, modularization and intervals interview partners frequently state that trainings prove to be too short to make proper results possible. The design of learning in different modules is considered to be beneficial for positive training effects.

- Very positive experience is made with internships and trainings in other countries, as done with trainees sent to Turkey. Four groups of 20 persons each participate in trainings relating to work in laboratories, water treatment, mechanics / energetics, and automation and metrology. Those trainings are highly ranked by staff. Staff also reports to be more motivated to work after coming back.

Qualitative evaluations

Trainings about the use of harmful substances carried out for staff dealing with chlorine are reported to show weak outcome and benefit. Training on FIDIC approaches delivered a brief update of knowledge and did not meet existing qualification demands. Also the Division for accounting is gaining experience with trainings on IFR Standards. The Feedback is critical, as in one course only four persons of 20 participants managed to get the certificate. There is uncertainty regarding the content and methodology, even though training topics prove to be suitable.
By way of summarizing, it can be stated that a major part of trainings was reported to be (1) too short, (2) not sufficiently organized in different modules, (3) too superficial, and (4) not well prepared (in case of internal trainers). **Trainings abroad (study tours etc.) are highly appreciated** and have a motivating effect on staff that was trained.

### Analysis - a suite of implications for future trainings

The overwhelming majority of staff working in present-day Azersu did not experience training for 10 to 15 years. An organizational culture of training and further education is emerging only since the new Section **Human Resources** and the **Training Centre** were established in 2011. On this background, we summarize our analysis as follows.

- **Trainings should be of longer duration** in terms of their extension over a period of some weeks or months in different modules. Experience shows that modularized trainings have a better, a more sustainable learning effect, as – proven by psychology of learning – new skills and knowledge are usually completely applied only after a couple of weeks. Hence, the practical application during day-to-day work should only then be followed by a new period of reflections and by new input. Accordingly a modularization in at least two or three modules is the most promising approach if a sustainable effect of trainings is aimed at.

- **Similar criteria apply to study tours.** Experiences in Azersu shows that study tours enjoy great popularity and have a motivating effect on the participating staff to perform lessons learned after their return to Azerbaijan. Due to this psychological positive impact, we believe that study tours should be an integrated element of Azersu’s future training plans. Concerning quality criteria for study tours please refer to chapter D.2.2, **Suitable Training Formats**.

- **The same is true for fellowship trainings**, which present a more comprehensive approach than study tours. Due to the fact that some topics may not be covered by providers in Azerbaijan, oversea trainings are appropriate. We believe that also fellowship trainings should be an inherent element in Azersu’s training plan. Concerning quality criteria for fellow-ship trainings please refer to chapter D.2.2, **Suitable Training Formats**.

- **It is recommendable to design a set of quality criteria for future trainings**, which shall be universally valid. The set of quality criteria need to reflect Azersu’s corporate culture and identity. We recommend elaborating this set of criteria in a communicative process between the Section Human Resources and representatives of different management levels of Azersu (please refer to chapter C.1.1, **Management – Middle Management – Third Level Management**). We believe a major criterion should be the one of practice orientation; on the other hand, a minority of training issues may also be covered on an academic level. In the following chapter we suggest a set of quality criteria that may encourage the discussion.

- **Due to identified weaknesses we draw the conclusion that a professional Train-the-trainers (ToT) method is the suitable approach to follow.** The set-up of an internal pool of professionally skilled trainers is presented in detail in chapter C.1.2, Human Resources Development, training 1.16). The program can have a twofold effect: on the one hand it may provide the opportunity to develop internal skills and
knowledge in a cost-effective way; on the other hand, ToT will have a motivating effect on employees who can benefit also personally from a program that helps developing them as a professional trainer. Principal considerations of the ToT approach are presented in D.2.2, Suitable Training Formats.

- In terms of training design it might be taken into account to organize courses and lessons by different focus groups, by strategic groups, and by age groups. Another categorization can consist in basic or advanced level groups. It will have to be decided what specific target group a specific training is meant for – what shall be the contribution to the development needs of Azersu and the subsidiary organizations. This can be done when elaborating the Terms of Reference for prioritized training in conclusion of this study.

- The management of some training courses in Districts (Rayons) proves to be difficult. New ideas, new approaches and creativity have to be considered when planning those new training courses.

- A challenge is also to develop the evaluation of training courses to a more complex and manifold approach. Evaluation should have a monitoring component (formative evaluation), a result oriented component (summative evaluation), and an effect-oriented component (ex-post evaluation). The complexity of questions asked in the context of an evaluation process must allow for the deduction of lessons learned.

### D.2 Some considerations to make trainings successful

In order to safeguard the positive outcome of training endeavours, it will be helpful considering some criteria on how to make trainings successful. It is important to consider five aspects: target group, the individual preconditions of the person to be trained, the commitment of both parties, gender aspects, the application of lessons learned at the workplace, and finally the design of a helical curriculum:

1. **Target Audience and learning targets**

   The target audience is a certain amount of people (employees, staff) that have common properties and hence react in a homogeneous way to an offered training. It is necessary to identify those common properties: either in terms of common expertise (e.g. in the technical or financial field), or in terms of psychographic similarities, such as attitudes, values, positions, age, gender etc.

   Sometimes it can be helpful to have expertise from different areas in the same training, in case a certain kind of discussions shall be fostered. Hence, target audience and learning targets are closely linked to each other and need to be clearly defined before the training is being tendered. Usually the definition of both – target audience and learning targets – is an iterative process, as both mutually depend on each other. Therefore the definition process takes some time.

2. **Individual preconditions of the person to be trained**

   Trainings will be successful if they consider both individual training needs and the trainability of the potential trainee. Both need to be investigated prior to any participation in a training course. The best way is the assessment by two parties: by the
superior and by a brief interview conducted in the Section HRD. Alternatively a brief explanation in a questionnaire can be used, which can be combined with the registration for the training-course. Questions will have to inquiry expectations, previous knowledge, and individual capacities to capture new knowledge and skills.

**Commitment by Trainee and by Azersu**

Azersu and the trainee may commit themselves that

- the trainee will have the opportunity to apply what has been learning during the training course in daily business after the training. The trainee has to have conditions and resources that encourage the application of new skills.

- the trainee is ready to apply new knowledge, skills and competencies, and share them with his / her colleagues.

This commitment can be emphasized in a training-agreement between both parties and may cover the consent that people will not be removed from the job once they return from the training.

**Gender aspects**

The share of female trainees should correspond to the share of female employees and workers in the respective Division or Section.

**Helical training curriculum**

Learning methods shall foresee different learning options; methods need to stimulate visual and auditory perception, reading and writing skills. Apart from expert knowledge *learning* shall refer to mindset, attitude and a change in behaviors. That means a broadly planned training approach is required for obtaining the expected outcome.

Making new experiences and combing new lessons learned with previous, already existing skills and knowledge is paramount. We believe that in the water and sanitation sector a *learning field oriented, open curriculum* presents the most appropriate approach: to fuse practical experiences and theoretical knowledge.

In order to increase competencies for practical work, the curriculum firstly will have to stimulate trainees to reflect on own experiences prior to the first input and expert knowledge they get. By way of combining experience and input the trainees will then have to plan new steps to be accomplished in their day-to-day work. This is the first step to develop new competencies. The second step consist in the execution of own activities in the own work environment. After that, trainees return to courses in a next training module, where they reflect what they did – and where they make adaptions regarding their own (new) approaches to work. The step merges with the next one – again the reflection on previous experiences, but now on a higher level. We recommend that a *helical curriculum* presented in *Figure 8* should be the underlying approach of all training formats.
D.3 Suitable training formats and methods

In this section we present a suite of training formats that can be applied in the context of a training program for Azersu. Different training formats can also be applied in different modules of the same training or training program. According to our understanding the term training comprehensively includes a sequence of different exercises, practices, instructions, courses, further education events and skill enhancement programs. All those measures describe a continuation or reopening of organized learning events for adults who will have to increase their professional knowledge and skills. Accordingly the basis for training is provided by (1) the prior completion of a first phase of professional education (a study, a profession), and/or by (2) prior professional experience gained in practical work. In this spirit training is not vocational basic education aimed at acquiring a completely new profession or job without any prior expertise or experience. Training is further professional education - and the subsequently presented training formats comply with this purpose.

Class room trainings, training-off-the job

Class room trainings correspond to the classical learning experience of adults. Training-off-the job includes methods beyond the workplace and serves to impart theoretical knowledge in accordance with the work to be performed – and to further develop performance-related behaviours and skills. This training format applies lectures, simulations, case studies, business games, role playing and conference methods. To select among those methods, it is necessary to consider the pre-qualifications of the participants, their experience, mindsets and attitudes. The content of the course is another important criterion for the selection of the method. While lectures rather describe an isolated, more passive learning process, activating learning methods support the trainees’ self-steering competencies and deepen experience and reflections via the active processes of doing it. Activating methods can also better respond to different learning paces.
Training on-the-job

*Training-on-the-job* happens directly at the workplace and refers to current problems in operative routines. They impart and sample practical, applicatory knowledge and skills. These trainings apply methods of directed experience, job instructions, job rotations, or training in project groups. Job rotations encourage the experience of different conditions; project groups foster problem solving and effective cooperation competencies. Training happens at the respective workplace during the familiarization phase and during the routine phase, where trainers brings in further and new aspects in the cycle of activities - in order to prevent from *organizational blindness* and to make employees test new approaches. The method of *steered experiences* includes the systematic development of new behaviours. Individual plans define current knowledge levels and development goals. Job instructions help preparing the new labor situation, they familiarize the trainee with different conditions, and they acquaint him/her with the new approach to be pursued.

**e-learning, blended learning**

*E-learning* summarizes all forms of learning, for the purpose of which electronic and digital media is applied to present and distribute practice material and to support interpersonal communication. *Blended learning* foresees a combination of in-class lectures and virtual learning on the basis of new communication media. Usually the trainees have a shared virtual workplace for the up- and download of documents, they are given homework which is being corrected virtually, and they interact in chat rooms.

**Learning on demand**

*Learning on demand* describes the spontaneous and voluntary learning at any time and at any place. Compared to formal learning in training courses with defined learning targets (*storage knowledge*) this informal training format makes knowledge and micro-learning processes available whenever somebody is in need of them. For that purpose producer of e-learning modules offer collections of small, self-contained modules of knowledge, which can be selected by the use from a menu. As soon as the gained information has helped to remedy the identified problem, daily work may continue. Learning-on-demand is particularly eligible for those employees who already have a good basic knowledge, and who are in a position to independently identify and judge the information they need. On-demand applications are available also on a mobile level (*m-learning, mobile-learning*). *Learning on demand* encourages the self-learning competence of the trainee, makes up-to-date knowledge available and happens in the workplace.

**Simulations, business games**

A *simulation* enables the learner to reconstruct and comprehend a work process via own experience in a new context, and to modify it. This can happen on a computer; in-class trainings use this training format in terms of *models or business games*. While in simulations the learning process is more of individual nature, in a *business game* cooperation and common decision making are paramount. Simulations and business games are eligible for those employees that can easily grasp complex issues playfully and visually. *Learning simulations (game-based-learning)* are available at the market.
The simulation helps understanding a system that is too complex in order to handle it in a mere theoretic and abstract way, such as cooperation, work flow analysis etc. Those phenomena have their own dynamics. In a simulation the trainees experiment with a model in order to gain new knowledge about the system and the inherent dynamics. Hence, the first step in a simulation is always the identification of the appropriate model to deal with.

**Case studies**

A *case study* depicts real situations, or situations very close to the reality of specific work-related problems or challenges. In the course of the training the trainees revise those situations with relevant facts and potential solutions. They weigh different options before they design the suitable solution. Objective of this training format is to consider different alternatives and to acquire analytical-cognitive skills. *Case studies* can be applied for the introduction into a new subject, for the implementation of newly acquired knowledge, or when it comes to the evaluation of learning successes. They can be used in the context of any seminar, or as a stand-alone methodology. *Case studies* request that the attendees of the training already dispose of specific expert knowledge.

**Study tours**

Oversea trainings and *study tours* provide for the unique possibility to extend individual perspectives. Due to own views the trainees may become aware of different variations on how to act in daily business. We have made excellent experiences with study tours, as we have realized that they definitely encourage the transfer of new knowledge and skills in the own work environment. Participants can see the real operation of the water utilities, including technical, organizational and financial management, and identify what is similar and different. Gathering new impressions in one or two weeks is paramount.

It will be beneficial to demonstrate a successful story from a water and wastewater utility in a certain town. Water utilities in a former communist country (e.g. Romania, Bulgaria, Albania, and Lithuania) with the same background as Azerbaijan might be appropriate in order to see how rapid developments in the water and wastewater sector may happen. Similarly this trip could be organized to Turkey or any other country.

Study tours correspond to good quality criteria, (1) if they provide for an own view on different approaches to work, (2) if they foresee the provision of input, (3) if they request the trainees to develop something related to their work environment, and (4) if they allow for reflections on the transfer of new impressions, skills and knowledge to the own work environment.

**Fellowships**

*Fellowship* trainings represent an extended form of a study tour. The quality criteria defined for the study tour also apply for this training format. The participants go to stay in another country for three to four months, where they pass through a training program that combines the (1) provision of new input in class room lessons and other training formats, (2) the experience of new approaches to work in brief internships, (3) the view on facilities in a study tour component, and (4) the elaboration of an own task to be accomplished after the return to Azerbaijan.
It will be essential to prepare this task in close cooperation with the manager of the respective trainee prior to the attendance in the fellowship training – so that it best suits to the development needs of the trainee, but also to the Division or Section he / she is assigned to in Azersu or any subsidiary organization. It should also be mandatory that the respective training provider will have to visit Azerbaijan prior to the fellowship training – in order to get acquainted with the scope of work and with working conditions, cultural aspects, challenges and strategies. It is advisable to organize one or two training sessions already in Azerbaijan in order to enter in a good preparation process. Similarly, after the return to Azerbaijan, these case-based trainings will have to experience a sound follow-up via coaching and workshops.

**Workshops**

In *workshops* the participants exchange their experiences. All participants do that on the same level, they have the same rights to participate and to discuss. In facilitated workshops people come together in order to commonly develop strategies, to solve problems or to develop new ideas and approaches. Good workshops are characterized by intensified interaction between the participants: the more people are motivated to interact and the less prepared documents are presented, the more people learn from each other, come to new knowledge and to new conclusions. Hence, workshops activate the participant’s previous knowledge and experience, occasionally they impart some new information, but the main focus is put on interaction, participation and the agreement on decision that each participant can share.

**Coaching and consultation**

*Coaching* is a form of psychologically oriented individual consultation that focuses on problems in the work environment. Coaching mostly runs over a period of three to six months and foresees in regular intervals consultations between the coach and the coachee. Mostly the reason for coaching is identified by the direct superior of the coachee, e.g. in case problems repeatedly appear in fulfilling assigned tasks. But it can also happen that the future coachee expresses the need for external support.

In case the superior is not in a position to advice on how to remedy an issue, the coaching process is assigned to an external coach, a person that does not belong to the company. This is necessary for two reasons: on the one hand, the coachee needs to completely trust the person that is coaching him /her; on the other hand an external person can bring in new ideas on how to proceed.

The coaching is structured in four phases; it starts with (1) the re-definition of the problem and (2) an agreement on objectives to be achieved including a set of indicators that show the end of the process. The main item is (3) the consultation, which provides the opportunity to continuously discuss problems and to design solution. Coaching centers in the ongoing agreement between coach and coachee on how to proceed in daily business. These agreements are evaluated in the ensuing session. Coaching concludes with (4) statements on results and outcome. Apart from problem solving, coaching can also be used as a very interesting alternative to traditional leadership trainings. The concept allows for a tailor-made design - according to individual needs of the respective manager.
International conferences, symposia, networking

International conferences and symposia provide the opportunity to meet people working in the same subject area and sharing similar interests. The attendees may listen to lectures regarding current research and further developments. The participation in different sessions and focus groups enables them to deepen new aspects, share experiences and discuss new issues. People may come up with new ideas, they can broaden their perceptions and listen and learn from lessons learned in other countries. Apart from that new contacts may enable networking for the future and for the regular exchange of ideas and concepts. Sending employees to conferences – e.g. arranged by the International Water Association (IWA) – may provide new input to Azersu and it may have a motivating effect on the employees who attend the conference.

Task forces

A task force is a group that is founded for problem solving. The group is deployed at the interface between two different working areas, such as construction supervision and operation of new facilities. The members come from different sub-areas of the organization and they may belong to different hierarchical levels, but within the task force a formal hierarchical structure does not exist. The task force is in charge of certain tasks, tasks that occur from time to time. The members do not cooperate continuously. The task force acts limited in time until specific functions are fulfilled. The group can be assembled horizontally (members come from the same hierarchic level of different organizational units), vertically (members come from different levels of the same unit), and laterally (members come both from different hierarchic levels and different units). Task forces are always secondary organizations – the members keep their original positions and jobs. Their duty is a problem-oriented one.

Train-the-trainers (ToT)

The set-up of an internal pool of trainers will require a train-the-trainers program. Internal trainers will have to be qualified in the field of their expertise, but in the program they will learn how to plan the training (structure, dramaturgy, selection of content and methods), how to impart new knowledge and skills in a lively and interactive way (didactics), and how to prepare practical materials. How to communicate with participants - also in case of conflictive situations – is another topic to be covered. A good train-the-trainer program directly applies those methodologies that later should be used by the internal trainers. It is understood that the ToT approach is applicable in those areas only, in which a sufficient number of trainers can be available. Each internal trainer must be released from usual work obligations in order to be in a position to act as a trainer, but the work as a trainer should not exceed 30% of the usual working time.
D.4 Training Plan

In this section we suggest a Training Plan which assembles all trainings that we recommend to carry out in response to the training needs assessment elaborated in Chapter C of this report. For the sake of a clear overview the design of the plan is limited to five items. Items used and their meanings are as follows:

- The line training topic firstly specifies the area the respective training is related to (e.g. “Accounting”) and then provides for the preliminary title of the training we suggest. The title equals the one we use also in the training needs assessment in Chapter C.

- Column one presents the objectives of the suggested training in terms of an as-achieved-status once the training will have been completed successfully.

- Column two provides for a preliminary outline of training topics to be covered in the context of the training. Usually a set of five to eight training topics is presented, including also some associated aspects that explain in more detail what the respective training topic is all about. For the sake of clarity and comparableness the description of training topics stops at this second layer, even though some training topics will prove to be more complex than others. A further elaboration may happen once the training will has been prioritized in the context of a workshop. Then the further elaboration will be considered when it comes to the design of Terms of Reference for prioritized trainings.

- Column three outlines the training format in line with the above definitions. In some cases we indicate two or three training formats in case such kind of combination may promise good training results.

- Column four suggests the target audience(s) the training could be meant for.

- Column five gives a preliminary assessment regarding the time frame for the respective training. Depending of pre-knowledge, work time and other conditions the indicated time frame may differ. Here we just give a tentative indication. A more binding indication can be given when elaborating the Terms of Reference for future training providers, who will finally have to concretize the exactly required time frame in the context of their proposals.

What all trainings will have in common is the helical and open curricula design, including a problem-based learning approach to activate the participants and to facilitate the transfer of newly acquired knowledge, skills and competencies to the own work environment.
Overview on training topics, objectives, contents, training formats, target audience, time frame

1 **Management and Customer Orientation**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
</tr>
</thead>
</table>
| 1.1 Training Topic: 1) **Management: Organizational development for top management and second level management** | - Vision development  
- Ethical standards in water & sanitation sector  
- Strategic thinking and scenario techniques  
- Models of / pattern for organizational development issues  
- Development of corporate culture | - Individual coaching  
- Individual consultancy  
- International colloquia and conferences | - Members of top and second level management | - Up to 60 lessons in different modules |

| 1.2 Training Topic: 1) **Management: Water sector policies for top management and second level management** | - The participants are aware of different approaches in water sector policies.  
- Factors affecting a water and sanitation enterprise I:  
  Government policies, regulations  
  - Tax regulations - price restrictions  
  - Public health regulations  
  - Market conditions and material supplies  
  Factors affecting a water and sanitation enterprise II:  
  Urban development  
  - Number of inhabitants, demographic development  
  - Income of customers  
  - Town development  
  - Industrial development  
  - Development of water consumption  
  Factors affecting a water and sanitation enterprise III:  
  Availability of financial means  
  - Government assistance  
  - Loans - interest rates - tariff setting | - Individual coaching  
- Individual consultancy  
- International colloquia and conferences | - Members of top and second level management | - Up to 60 lessons in different modules |
## Management and Customer Orientation

### Objectives

1. Management and Customer Orientation
2. Training Needs Assessment for Azersu OJSC

### Outline of Contents

1. Management and Customer Orientation
2. Training Needs Assessment for Azersu OJSC

### Training Format

1. Class room trainings
2. Simulations
3. Conferences
4. Strategy workshops

### Target Audience

1. Members of (and candidates for) the middle management

### Time Frame

1. Up to 160 lessons in different modules

### Training Topic: 1) Management: Middle Management Level – Middle Management Development Program

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
</tr>
</thead>
</table>
| - The participants know about the specific roles of a middle manager and can position themselves accordingly. | - Mission Statement for Middle Managers  
- Diplomatic aptitude and conflict resistance  
- Argumentation techniques  
- Own positioning  
- Courage to reduce things to an explanatory level  
- Transfer competence  
- Leadership skills | - Class room trainings  
- Simulations  
- Conferences  
- Strategy workshops | - Members of (and candidates for) the middle management | - Up to 160 lessons in different modules |

### Training Topic: 1) Management: Transfer Competence for middle management

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
</tr>
</thead>
</table>
| - The participants are aware of the significance of transfer competence. | - Transfer competence: Strategy workshops with second level and middle management help to  
- Commonly transfer objectives into design of work processes  
- Adequately adapt strategies to realities  
- Enhance commitment | - Strategy Workshops | - Members of (and candidates for) the middle management | - Up to 60 lessons in different modules |

### Training Topic: 1) Management: Management and leadership for third level management

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
</tr>
</thead>
</table>
| - The participants are aware of leadership issues and can apply tools accordingly. | - Psychology of leadership and different leadership styles  
- Selection of worthy staff for defined jobs  
- Labor conditions, horizontal communication  
- Tools of Human Resources Development  
- Performance and training needs assessments  
- Encourage staff’s commitment and prevent fluctuation  
- Instructions and delegation principles  
- Meeting management with staff  
- Participation and appreciation  
- Feedback and annual personal talk | - Class room trainings  
- Workshops  
- Simulations  
- Study tours | - Employees that form part of the third level management | - Up to 100 lessons in different modules |
## Management and Customer Orientation

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
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</thead>
</table>
| **1.6 Training Topic: 1) Management: Strategic thinking and creativity at work for management** | - The participants know how to design a strategy, geared towards the achievement of targeted goals.  
- Definition of the term *strategy*  
- Description of different goals for the organizational unit  
- Different ways to achieve targeted goals  
- Essentials of strategic thinking: clearness, description, adaptation, different scenarios  
- Reflect on past experiences - deduct lessons learned  
- Tools to encourage creativity | - Class room training  
- Simulations | - Second level managers and members of the middle management | - Up to 40 lessons in different modules |

| **1.7 Training Topic: 1) Management: Modern work techniques for managers** | - The participants are aware of different work techniques and can apply them in their own professional context.  
- Workflow management and performance improvement  
- Workplace design  
- Decision making processes  
- Methods for problem solving: schemes - operation charts  
- Structured work organization  
- Meeting and moderation management | - Class room training  
- Simulations | - Managers on all levels | - Up to 60 lessons in different modules |

| **1.8 Training Topic: 1) Management: Commercial goals for managers** | - The participants are aware of all implications concerning commercialization in the water and sanitation sector.  
- Commercialization in the sector: how far can it go?  
- Definition of (commercial) goals  
- Development of resultant business policies  
- Essentials of business planning - why, how, what?  
- Monitoring based on indicators  
- Accompanying service planning - service management | - Class room training  
- Simulations | - Managers on all levels | - Up to 60 lessons in different modules |
# Management and Customer Orientation

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
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<tbody>
<tr>
<td><strong>1.9 Training Topic: 1) Management: Principles of effective management</strong></td>
<td>• The participants are aware of principles of effective management and know how to transfer the approach to their own work.</td>
<td>• Arrive for objectives &lt;br&gt; • Organize work, people and work flow &lt;br&gt; • Take decisions and communicate them &lt;br&gt; • Carry out controlling &lt;br&gt; • Support and develop staff</td>
<td>• Class room training &lt;br&gt; • Simulations</td>
<td>• Managers on all levels</td>
</tr>
<tr>
<td><strong>1.10 Training Topic: 1) Management: Water supply operation and monitoring for managers</strong></td>
<td>• The participants are aware of major operation and monitoring issues related to water supply.</td>
<td>• Overview on operational steps in water operations from source to house connections &lt;br&gt; • Work with new equipment &lt;br&gt; • Re-organization of work flow &lt;br&gt; • Use of monitoring indicators: comparison of actual and planned performance &lt;br&gt; • Standards of maintenance of supply systems &lt;br&gt; • New approaches in dealing with NRW water &lt;br&gt; • Potential delegation of operational issues to subsidiary organizations to smooth work-flow and to encourage readiness to take initiative in local organizations</td>
<td>• Class room training &lt;br&gt; • Simulations</td>
<td>• Managers on all levels</td>
</tr>
<tr>
<td><strong>1.11 Training Topic: 1) Management: Self-monitoring as a manager</strong></td>
<td>• The participants are aware of own capabilities and can structure their work according to the principles of self and time management.</td>
<td>• Grasp and transfer new knowledge &lt;br&gt; • Self-coaching and self-motivation competencies &lt;br&gt; • Self-management &lt;br&gt; • Time management &lt;br&gt; • Setting of priorities &lt;br&gt; • Delegation principles</td>
<td>• Class room training &lt;br&gt; • Simulations</td>
<td>• Managers on all levels</td>
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## 1 Management and Customer Orientation

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
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<tbody>
<tr>
<td><strong>1.12 Training Topic: 1) Management: Communication and reporting as a manager</strong></td>
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<tr>
<td>The participants are aware of communication principles of business communication and can structure their work accordingly.</td>
<td>Communication principles</td>
<td>Class room training</td>
<td>Managers on all levels</td>
<td>Up to 60 lessons in different modules</td>
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<tr>
<td></td>
<td>Clarity of information and misunderstandings</td>
<td>Simulations</td>
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<td></td>
<td>Basic negotiation skills</td>
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<td>Psychologically oriented customer communication</td>
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<td>Creation of local communication networks</td>
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<td>Circulation of documents</td>
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<td></td>
<td>Encourage direct and horizontal communication</td>
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<td>Structure of reports, technical and financial reporting</td>
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<td><strong>1.13 Training Topic: 1) Management: Professional Design of Planning Processes</strong></td>
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<tr>
<td>The participants have gained a helicopter view on all planning processes to better understand and improve business processes.</td>
<td><strong>Mod. 1: Planning – anticipate the future</strong></td>
<td>Class room training</td>
<td>Interdisciplinary group of 5-12 people (economists, engineers)</td>
<td>8 * 3 / 4 days at intervals of 5 weeks</td>
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<td></td>
<td>Vision - Mission – objectives</td>
<td>Simulations</td>
<td>At least 5 years of professional experience</td>
<td>Duration: in total = about 10 months, 4 months Transfer Project with coaching</td>
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<td></td>
<td>Anticipate developments: Scenario-technique</td>
<td>educational journey of 3-4 months</td>
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<td></td>
<td>Pattern of demographic developments</td>
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<td></td>
<td>Per capita consumptions: developments</td>
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<td></td>
<td>Legal framework conditions</td>
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<td>Further parameter for planning processes</td>
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<td></td>
<td><strong>Mod. 2: Water Planning</strong></td>
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<td></td>
<td>Integrated Water Resource Management</td>
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<td>Project identification</td>
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<td>Land Acquisition</td>
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<td></td>
<td>Project Management</td>
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<td></td>
<td><strong>Mod. 3: Business Planning</strong></td>
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<td>Products and services: development levels</td>
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<td></td>
<td>Clients and Markets: estimation of market potential</td>
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<td>Finances: forecast of revenue &amp; expenditures, capital needs, liquidity planning, Balance Sheet</td>
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<td></td>
<td>Risks / chances analyses - development strategies</td>
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</table>
### 1 Management and Customer Orientation

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
</tr>
</thead>
</table>
| Mod. 4: Strategic Planning, Strategic Asset Man. | - Definition of Strategic Asset Management  
- Levels of asset management - life-cycle approach  
- Risk assessment associated with an asset  
- Customers demand from the service provider  
- Organizational requirements and improved systems |                 |                 |            |
| Mod. 5: Management Issues            | - Organizational Diagnosis  
- Care for objectives: overall goals – sub-goals  
- Plan & organize: workflow / performance improvement  
- Monitor & evaluate: measure results – quality control |                 |                 |            |
| Mod. 6: Knowledge Management         | - Difference between data, information and knowledge  
- Identification / usage of informal knowledge networks  
- The elements of a knowledge management system  
- Reporting and documentation |                 |                 |            |
| Mod. 7: Interaction and Communication | - Meeting management - negotiation skills  
- Customer orientation - conflict management  
- Reporting skills |                 |                 |            |
| Mod. 8: Master Plans & Feasibility Studies | - Macroeconomic Situation - socio - economic aspects  
- Environmental aspects - demand projections  
- Conditions of Water Supply Scheme |                 |                 |            |
| Mod. 9: Leadership & Self- Management | - Staff talks - principles of delegation  
- Team building - performance appraisal  
- Motivation and de-motivation |                 |                 |            |
## Management and Customer Orientation

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
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</table>
| **1.14 Training Topic: 2) Human Resources Development: Human resources development planning** | - Identify competence profiles in different areas  
  - Job profiles, workflow analysis  
  - Staff performance assessment tools  
  - Interviews by superiors  
  - Structured appraisal forms  
  - Elements of a motivation policy  
  - Structured and objectified training needs assessment  
  - Work-integrated tools of HRD -  
    - Job enrichments - Job enlargements  
    - Team development  
    - Individual and group coaching  
  - Management of learn-transfer  
  - Forms of to evaluate HRD measures  
  - Efficiency analysis of HRD measures  
  - HRD consultancy to managers in Azersu | - Class room training  
  - Simulations | - Employees of the HRD Section in the Head Office and partly employees of Divisions for staff administration in subsidiary organizations | - Up to 100 lessons in different modules |
| **1.15 Training Topic: 2) Human Resources Development: Career path management** | - Process competence: clarification with management  
  - Identify capabilities and potentials of candidates  
  - Staff talks to agree on career path development  
  - Contractual arrangements  
  - Intermediate workshop management for follow up  
  - Define steps and milestones  
  - Manage intermediate coaching  
  - Regularly brief involved managers and superiors | - Class room training  
  - Simulations | - Employees of the HRD Section in the Head Office | - Up to 30 lessons in different modules |
### Management and Customer Orientation

#### Objectives

<table>
<thead>
<tr>
<th>1.16 Training Topic: 2) Human Resources Development: <strong>Internal professional trainers’ pool via a train-the-trainers concept (ToT)</strong></th>
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</thead>
<tbody>
<tr>
<td>The participants know how to establish, monitor and evaluate a train-the-trainers concept.</td>
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<tr>
<td>Selection of internal trainers according to profiles</td>
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<td>Manage contractual arrangements</td>
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<td>Supervise ToT program, which has to focus on</td>
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<td>Training design and script elaboration</td>
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<td>Curricula development</td>
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<td>Elaboration of training materials</td>
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<td>Didactics with adults and interactive training tools</td>
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<td>Reflections on target groups and learning targets</td>
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<tr>
<td>Coaching of future trainers in their development</td>
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<tr>
<td>Train-the-trainers</td>
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<tr>
<td>Simulations</td>
</tr>
<tr>
<td>Class room training</td>
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<tr>
<td>Candidates for the internal trainer pool from all Divisions in Azersu (mainly technical Divisions and Sections)</td>
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<tr>
<td>Up to 200 lessons in different modules</td>
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<thead>
<tr>
<th>1.17 Training Topic: 2) Human Resources Development: <strong>Review and extension of job profiles</strong></th>
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<tbody>
<tr>
<td>The participants know how to design an update of job profiles and how to manage the updates.</td>
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<tr>
<td>Template design</td>
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<tr>
<td>Feature of competencies (expertise, strategic-methodological, social, personal)</td>
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<tr>
<td>Preliminary design of job profiles for 200 positions</td>
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<tr>
<td>Management of participatory process with managers in subsidiary organizations to review / complete profiles</td>
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<tr>
<td>Elements, structure and maintenance of a qualitative staffing plan and integration of profiles</td>
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<tr>
<td>Train-the-trainers</td>
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<td>Simulations</td>
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<tr>
<td>Class room training</td>
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<tr>
<td>Employees of the HRD Section in the Head Office</td>
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<td>Employees for staff administration in subsidiary organizations</td>
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<tr>
<td>Up to 30 lessons in different modules</td>
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<thead>
<tr>
<th>1.18 Training Topic: 2) Human Resources Development: <strong>Essentials of human resources development</strong></th>
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<tbody>
<tr>
<td>The participants are aware of the difference between staff administration and HRD and can apply tools appropriately.</td>
</tr>
<tr>
<td>Specifics of personnel administrations and HRD</td>
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<tr>
<td>Development areas of HRD</td>
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<tr>
<td>Leadership and self-competence</td>
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<tr>
<td>Communication: staff talks, meetings, negotiations</td>
</tr>
<tr>
<td>Conflict management, self- and time management</td>
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<tr>
<td>Staff retention management and motivation policies</td>
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<tr>
<td>Train-the-trainers</td>
</tr>
<tr>
<td>Simulations</td>
</tr>
<tr>
<td>Class room training</td>
</tr>
<tr>
<td>HR staffs in all subsidiary organizations (150 persons)</td>
</tr>
<tr>
<td>Up to 60 lessons in different modules</td>
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## 1 Management and Customer Orientation

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Organization of HRD processes</td>
<td>Simulations</td>
<td>Employees dealing with work force planning on all levels</td>
<td>Up to 60 lessons in different modules</td>
</tr>
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<td></td>
<td>Staff marketing, pre-selection criteria for staffing</td>
<td>Class room training</td>
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<td>Performance appraisals, training needs assessment</td>
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<td>Adjustment to a new job, training-on-the-job</td>
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<td>Health and safety management</td>
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<td></td>
<td>Role of a HRD manager</td>
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<td></td>
<td>HRD concepts based on given conditions</td>
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<tr>
<td></td>
<td>Consultancy to managers and staffs</td>
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<tr>
<td></td>
<td>Evaluation and reporting issues</td>
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</tbody>
</table>

### 1.19 Training Topic: 2) Human Resources Development: Definition of labor arrangements and work force planning

- The participants are in a position to adequately plan and adapt work force assignments.
- Chronology of a job - analysis of work to be done
- Workflow analysis
- Reengineering approach
- Performance improvement approach
- Measurement of staffing needs
  - time, work load, leisure time, cooperation needs
- Distribution of work to different jobs and qualifications
- Simulations
- Class room training
- Employees dealing with work force planning on all levels
- Up to 60 lessons in different modules

### 1.20 Training Topic: 2) Human Resources Development: Legislative issues in the field of human resources management

- The participants are aware of new stipulations and new normative documents of the Labor Code and can apply the stipulations accordingly.
- Development of labor legislation
- New decrees – new stipulates in the Labor Code
- Meaning of normative documents
- Implications for staff administration
- Planning of related works steps for the context of the respective utility
- Follow-up session on lessons learned in course of the implementation process
- Class room training
- Case studies
- Employees of the HRD Section in the Head Office
- Employees for staff administration in subsidiary organizations
- Up to 30 lessons in different modules
## Management and Customer Orientation

### Objectives

<table>
<thead>
<tr>
<th>Training Topic: 3) Training Center: Basic training concept and training management cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The participants know how to manage the entire training cycle and can develop a basic training concept.</td>
</tr>
<tr>
<td>• Formulate vision and mission statement for trainings</td>
</tr>
<tr>
<td>• Analyze training formats: class room, on-the-job, workshops, study tours, colloquia, conferences, coaching</td>
</tr>
<tr>
<td>• Carry out needs assessment</td>
</tr>
<tr>
<td>• Analyze different target groups</td>
</tr>
<tr>
<td>• Define objectives / content of training to be carried out</td>
</tr>
<tr>
<td>• Identify methodology, modules, time</td>
</tr>
<tr>
<td>• Develop ToR for trainings to be tendered</td>
</tr>
<tr>
<td>• Evaluate and contract training provider</td>
</tr>
<tr>
<td>• Organize trainings (logistics):</td>
</tr>
<tr>
<td>- Design / implement formative / summative evaluation</td>
</tr>
<tr>
<td>- Manage certifications</td>
</tr>
<tr>
<td>- Manage / control training budget</td>
</tr>
<tr>
<td>- Manage training material and documentation</td>
</tr>
<tr>
<td>• Class room training</td>
</tr>
<tr>
<td>• Simulations</td>
</tr>
<tr>
<td>• Study tours</td>
</tr>
<tr>
<td>• Employees of the Training Center and HRD</td>
</tr>
<tr>
<td>• Up to 60 lessons in different modules</td>
</tr>
</tbody>
</table>

### Outline of Contents

1.21 Training Topic: 3) Training Center: Basic training concept and training management cycle

- Formulate vision and mission statement for trainings
- Analyze training formats: class room, on-the-job, workshops, study tours, colloquia, conferences, coaching
- Carry out needs assessment
- Analyze different target groups
- Define objectives / content of training to be carried out
- Identify methodology, modules, time
- Develop ToR for trainings to be tendered
- Evaluate and contract training provider
- Organize trainings (logistics):
  - Design / implement formative / summative evaluation
  - Manage certifications
  - Manage / control training budget
  - Manage training material and documentation
- Class room training
- Simulations
- Study tours
- Employees of the Training Center and HRD
- Up to 60 lessons in different modules

### Training Format

<table>
<thead>
<tr>
<th>Training Topic: 4) Customer Communication: Marketing concept for future oriented customer communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The participants know how to design a marketing Division and how to diversify communication strategies with customers.</td>
</tr>
<tr>
<td>• Review current concept for corporate design</td>
</tr>
<tr>
<td>• Corporate identity as basis for customer communication</td>
</tr>
<tr>
<td>• Psychology of the customer - different target groups</td>
</tr>
<tr>
<td>• Development of a Public Relation measures</td>
</tr>
<tr>
<td>• The approach of a marketing mix</td>
</tr>
<tr>
<td>• Consultancy services to subsidiary organizations</td>
</tr>
<tr>
<td>• Tendering and evaluation of PR measures</td>
</tr>
<tr>
<td>• Class room training</td>
</tr>
<tr>
<td>• Simulations</td>
</tr>
<tr>
<td>• Study tours</td>
</tr>
<tr>
<td>• Division Complaints and Applications in the Head Office</td>
</tr>
<tr>
<td>• Marketing experts in subsidiary organizations</td>
</tr>
<tr>
<td>• Up to 60 lessons in different modules</td>
</tr>
</tbody>
</table>

### Target Audience

<table>
<thead>
<tr>
<th>Training Topic: 4) Customer Communication: Marketing concept for future oriented customer communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Division Complaints and Applications in the Head Office</td>
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<tr>
<td>• Marketing experts in subsidiary organizations</td>
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<tr>
<td>• Up to 60 lessons in different modules</td>
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</tbody>
</table>

### Time Frame

<table>
<thead>
<tr>
<th>Training Topic: 4) Customer Communication: Marketing concept for future oriented customer communication</th>
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<tbody>
<tr>
<td>• Division Complaints and Applications in the Head Office</td>
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<tr>
<td>• Marketing experts in subsidiary organizations</td>
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<td>• Up to 60 lessons in different modules</td>
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</tbody>
</table>
## 1 Management and Customer Orientation

### Objectives

<table>
<thead>
<tr>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshops</td>
<td>Marketing experts in subsidiary organizations</td>
<td>Up to 60 lessons in different modules</td>
</tr>
<tr>
<td>Simulations</td>
<td>Billing Officers</td>
<td>Up to 60 lessons in different modules</td>
</tr>
<tr>
<td>Simulations</td>
<td>Meter Reader</td>
<td>Up to 60 lessons in different modules</td>
</tr>
</tbody>
</table>

### Outline of Contents

- Different target groups and their interests
- Criteria for good relationships with customers
- Client centered psychological conversation techniques
- Steering of behaviours in counseling/selling situations
- Role of the own personality
- Elements of Public Relation measures in a marketing mix
- Planning, organization, evaluation of relationship man.

### Training Format

- Workshops
- Training-on-the job
- Simulations

### Target Audience

- Marketing experts in subsidiary organizations
- Billing Officers
- Meter Reader

### Time Frame

- Up to 60 lessons in different modules

---

### 1.23 Training Topic: 4) Customer Communication: Psychology of the customer as basis for good relationship management

- The participants are aware of psychological aspects of customer communication and are able to steer their behaviours accordingly.

### Outline of Contents

- Characteristics of information versus communication
- Possible contents of information materials
  - Water tariff and house connection fee
  - Application for new house connections
  - Water use and improvement of hygiene
  - Ongoing or planned investments/construction works
  - Individual strategies for water savings
- Feedback Management on submitted information

### Training Format

- Workshops
- Training-on-the job
- Simulations

### Target Audience

- Marketing experts in subsidiary organizations
- Billing Officers
- Meter Reader

### Time Frame

- Up to 60 lessons in different modules

---

### 1.24 Training Topic: 4) Customer Communication: Customer information management

- The participants are aware of the diversity of information to be submitted and can explain details in an appropriate, generally understandable way.

### Outline of Contents

- Different levels of customer satisfaction or discontent
- Analyses of different interests of customers
- Negotiation skills
- Communication skills
  - Active listening and questioning techniques
  - Handling of emotions in a critical situation
- Cooperation with repair teams

### Training Format

- Workshops
- Training-on-the job
- Simulations

### Target Audience

- Marketing experts in subsidiary organizations
- Billing Officers
- Meter Reader

### Time Frame

- Up to 60 lessons in different modules

---

### 1.25 Training Topic: 4) Customer Communication: Customer complaints management

- The participants are aware of the customers’ interests and can handle complaints in an open, professional way.

### Outline of Contents

- Different target groups and their interests
- Criteria for good relationships with customers
- Client centered psychological conversation techniques
- Steering of behaviours in counseling/selling situations
- Role of the own personality
- Elements of Public Relation measures in a marketing mix
- Planning, organization, evaluation of relationship man.

### Training Format

- Workshops
- Training-on-the job
- Simulations

### Target Audience

- Marketing experts in subsidiary organizations
- Billing Officers
- Meter Reader

### Time Frame

- Up to 60 lessons in different modules
## 1 Management and Customer Orientation

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
</tr>
</thead>
</table>
| **1.26 Training Topic: 5) Archive – Knowledge Management: Digitalization of archive administration** | - The participants know how to digitize the archive administration.  
  - Specifics of different records types  
    - Texts, graphic illustrations, maps, plans, oversized  
    - Photographs, aerial photographs  
    - Guidelines for digitizing materials for electronic access  
    - Creation of digital surrogates  
    - Problems of re-formatting  
    - Techn. benchmarks for production-master raster images  
    - Derivative files for distribution  
    - Reproduction purposes via hardcopy | - Workshops  
  - Training-on-the-job  
  - Simulations | - Employees working in internal archives and libraries | - Up to 40 lessons in different modules |
| **1.27 Training Topic: 5) Archive – Knowledge Management: Archiving and filing methods in line with knowledge management** | - The participants know methods on how to apply an electronic filing system, which can contribute to a knowledge management system.  
  - Different types of filing systems  
    - Alpha-numerical - geographic - subject - chronological  
    - Sub-classification systems  
    - Data access, metadata of files  
    - Network protocol administration  
    - Knowledge management aspects  
      - Classification of knowledge levels  
      - Transparency about responsibilities  
      - Definition of rules on how to capture, structure and distribute internal knowledge  
      - Tools: unified data storage, exchange of information in workshops and regular meetings, information flow diagrams, internal blogs  
      - Integration of outside perceptions into the system  
    - Central storage of knowledge and information  
    - Integration of employees in development process | - Train-the-trainers  
  - Study tour  
  - Internship abroad | - Employees working in internal archives and libraries  
  - Managers | - Up to 70 lessons in different modules |
## 1 Management and Customer Orientation

### Objectives

<table>
<thead>
<tr>
<th>1.28 Training Topic: 6) Legal Provision of Projects and Contracts: Handle disputes via mediation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outline of Contents</strong></td>
</tr>
<tr>
<td>The participants are aware of the different dynamics that contribute to an increasingly conflictive constellation. They know tools on how to proactively handle those constellations.</td>
</tr>
<tr>
<td>Role of a mediator</td>
</tr>
<tr>
<td>Triggers for conflictive situations</td>
</tr>
<tr>
<td>Elaboration of conflict topics and conflict lines</td>
</tr>
<tr>
<td>Design of a win-win situation - mediation tools:</td>
</tr>
<tr>
<td>▪ Matrix quality assurance</td>
</tr>
<tr>
<td>▪ Questioning techniques, active listening</td>
</tr>
<tr>
<td>▪ Doubling - change of perspectives - negotiation skills</td>
</tr>
<tr>
<td>Analyses of interests of involved parties</td>
</tr>
<tr>
<td>Design of options and solutions</td>
</tr>
<tr>
<td>Trust building measures</td>
</tr>
<tr>
<td>Management of follow up processes</td>
</tr>
<tr>
<td><strong>Training Format</strong></td>
</tr>
<tr>
<td>Class room training</td>
</tr>
<tr>
<td>Case studies</td>
</tr>
<tr>
<td><strong>Target Audience</strong></td>
</tr>
<tr>
<td>Lawyers of Azersu</td>
</tr>
<tr>
<td>Any party within Azersu that is in need of conflict management and mediation tools</td>
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<tr>
<td><strong>Time Frame</strong></td>
</tr>
<tr>
<td>Up to 60 lessons in different modules</td>
</tr>
</tbody>
</table>

### 1.29 Training Topic: 7) Information Technologies: Operation of Oracle

| **Outline of Contents** |
| The Oracle Database System can be operated and maintained appropriately. All functionality options of the system are available |
| Permanent investigation of log files |
| Identification and interpretation of error messages |
| Handling of database management tools |
| Recognition of complex and time consuming queries |
| Contacting developers in order to optimize the system |
| Design of different scenarios in case different queries appear at the same time |
| **Training Format** |
| Class room training |
| Case studies |
| **Target Audience** |
| IT Administrators |
| **Time Frame** |
| Up to 20 lessons in different modules |

### 1.30 Training Topic: 7) Information Technologies: Maintain hardware facilities

| **Outline of Contents** |
| Hardware is properly maintained and safety issues is taken care of |
| Hardware and data lines function without difficulties |
| Network |
| ▪ Identify servers of network |
| ▪ Carry out load test incl. use of appropriate software |
| ▪ Measures for data security in case of potential failures |
| ▪ Handling of RAID systems: mirroring - distribution |
| **Training Format** |
| Class room training |
| Case studies |
| **Target Audience** |
| IT Administrators |
| **Time Frame** |
| Up to 20 lessons in different modules |
## 1  Management and Customer Orientation

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General Issues</td>
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<tr>
<td></td>
<td>▪ Investigation of conditions for components incl. use of appropriate software</td>
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<td></td>
<td>▪ Storage conditions, temperature, safety issues</td>
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<td></td>
<td>▪ Availability of back-up systems</td>
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<td></td>
<td>▪ Protection of data lines to prevent from manipulations</td>
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<tr>
<td></td>
<td>▪ Physical protection of data lines</td>
<td></td>
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<tr>
<td></td>
<td>▪ Safe cellular compositions, concepts for data safety</td>
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</tbody>
</table>

### 1.31  Training Topic: 7) Information Technologies: Management of CISCO

- Networks function properly according to required standards
- Investigation and interpretation of log files
- Recognition of bottle necks
- Recognition of load times
- Assessment of network capacities
- Assessment of load balancer

- Class room training
- Case studies

- IT Administrators
- Up to 20 lessons in different modules

### 1.32  Training Topic: 7) Information Technologies: IT Applications

- The participants know how to handle the respective IT applications and can integrate them in their own day-to-day work.
- Level 1: Microsoft Products
  - Word, Excel, Outlook, Power Point, internet devices
  - Use of billing software
- Level 2
  - Database update - scripting
  - Security issues - web based matters
- Level 3
  - Software development
- Level 4
  - Networking skills including CISCO and HB products
- SAP applications for staff administration
- Class room training
- Case studies

- All employees of Azersu and subsidiary companies that use IT applications
- Up to 60 lessons in different modules
## 1. Management and Customer Orientation

### Objectives

| Training Topic: 7) Information Technologies: Management Information System (MIS) |
|---|---|---|---|
| The participants are aware of the meaning of an MIS and know how to handle associated tools. | Definition of a set of eligible key performance indicators | Class room training | Employees dealing with data processing |
| Data collection, storage, processing, administration | Mapping of exchange processes within Azersu and with the environment | Case studies | Managers |
| Supervision and optimization of business processes | Weak-point analysis | | |
| Comparison and evaluation of data | Communication issues | | |

### Outline of Contents

- The participants are aware of the meaning of an MIS and know how to handle associated tools.
- Definition of a set of eligible key performance indicators.
- Data collection, storage, processing, administration.
- Mapping of exchange processes within Azersu and with the environment.
- Supervision and optimization of business processes.
- Weak-point analysis.
- Comparison and evaluation of data.
- Communication issues.

### Training Format

- Class room training.
- Case studies.

### Target Audience

- Employees dealing with data processing.

### Time Frame

- Up to 60 lessons in different modules.

### 1.34 Training Topic: 7) Information Technologies: Application of software in the field of GIS

- The participants can apply the newest versions of the software.
- Application of new versions of software.
- Explications of new features and how to apply them.
- Transfer of documents in older to newest versions.

### Training Format

- Training sessions done by software experts of the software provider.

### Target Audience

- Staff Section GIS.

### Time Frame

- Up to 60 lessons in different modules.

### 1.35 Training Topic: 7) Information Technologies: Application of software in the field of SCADA

- The participants can apply the newest versions of the software.
- Application of new versions of software.
- Explications of new features and how to apply them.
- Transfer of older documents to newest versions.
- SCADA for remote control of project facilities.

### Training Format

- Training sessions done by software experts of the software provider.

### Target Audience

- Staff of the Section SCADA.

### Time Frame

- Up to 60 lessons in different modules.

### 1.36 Training Topic: 7) Information Technologies: GPS-training for operating staff

- The participants Cooperation between staff of Rayon’s and GIS-department for as-built-documentation can be supported.
- General issues about GPS.
- Handling of GPS.
- Managing of GPS-data.
- Data transfer to a drawing.

### Training Format

- One-day workshops for each Rayon including practical exercises.

### Target Audience

- 5 to 7 persons from each District (Rayon).

### Time Frame

- 1 day per district (Rayon).
## 2 Water and Sanitation Investments

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
</tr>
</thead>
</table>
| **2.1 Training Topic: 1) Strategic Development: Management of project** | • A project oriented way of thinking is further developed.  
• The exchange of project processes between different sections is facilitated. | • Preparation of  
• Design and planning documents,  
• Final design for constructions  
• As-built drawings  
• Transfer to Sections for Geodesy and GIS and SCADA  
• Introduction of a knowledge management system | • Workshops (2 to 3 sessions)  
- It is not the intention to go too deep in details but to get an overview of the whole process of projects - | • Staff of different subdivisions from Strategic Development Division and others | • Sequences of 6 to 8 workshops within 4 to 6 months |
| | | | | | |
| **2.2 Training Topic: 1) Strategic Development: Examination and evaluation of planning documents** | • Participants can adequately examine and evaluate planning documents. | • All different kind of planning documents  
• Parameter to applied  
• Critical points in examination and evaluation  
• Documentation  
• Provision of Feedback and design of work steps | • Training-on-the-job  
• Coaching | • Employees dealing with examination and evaluation of planning documents | • Up to 100 lessons in different modules intermittently over 6 to 12 months |
| | | | | | |
| **2.3 Training Topic: 1) Strategic Development: Design of interconnections between older and new infrastructural facilities** | • Flexibility in design has been improved.  
• Applied technology is better understood.  
• Existing facilities are optimized and reused. | • Functioning and purpose of existing facilities  
• Limitations and remaining capacity of facilities  
• Recalculation and checking/understanding old design documents – if available  
• Checking and modeling of each component separately and assessment of integration into new facilities  
• Improving the technical knowledge of the applied methods  
• Presenting realistic examples, create solutions in teamwork | • Workshops  
• Modules for specific facilities / topics  
• Visit of existing facilities  
• Linking theory with case studies (different solutions shall be discussed, trainees explain pros and contras.) | • Design engineers from Strategic Development Division  
• Design engineers from Design Institute  
• Include staff responsible for O&M | • Up to 50 lessons in different modules |
## Water and Sanitation Investments

<table>
<thead>
<tr>
<th>Objectives</th>
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<th>Time Frame</th>
</tr>
</thead>
</table>
| **2.4 Training Topic: 1) Strategic Development: Understanding of different standards** | - The application of different standards is improved.  
- The background (logic) of different standards is understood.  
- Comparison of different standards  
- Cases and applications, cope with different standards  
- Potential alternatives to a particular standards  
- Difference between technical and legal standards  
- Problem solving by using FIDIC regulations  
- Assess contractor’s capability on certain standards                                                                 | Workshops                | Design engineers from Strategic Development Division  
Design engineers from Design Institute                                                                 | Up to 60 lessons in different modules |
| **2.5 Training Topic: 1) Strategic Development: Update of know-how to formulate Terms of Reference** | - Participants are able to formulate Terms of Reference for design works in an adequate and understandable way.  
- General approach to work  
- Relation between ToR and the kind of facility / applied standard and model of contract  
- ToR as basis for international / national contract  
- How to include ToR into the construction contract  
- Legal aspects of ToR and contract (conditions of contract)                                                                 | Workshops done by university experts (national or international) | Open for all staff of Azersu                                                                 | Up to 30 lessons in different modules |
| **2.6 Training Topic: 1) Strategic Development: Modeling of water supply networks** | - Knowledge in examination and approval of planning and design documentation is improved.  
- Gen. overview on diverse water network modeling software  
- Logic of EPANET (proposed software)  
- Starting with simple examples  
- Learning the different applications of EPANET  
- Handling and transfer of data’s of networks  
- Applying the software to existing networks and comparing results with monitoring of operation                                                                 | Workshop max. 10 persons per group  
After general introduction, the participants should apply the software (case studies) by preparing a small project, which will be presented to the other group-members | Staff of Strategic Development Division and others                                                                 | Up to 10 lessons in different modules |
## Water and Sanitation Investments

### Objectives

- Operations have been improved due to adequately planned infrastructure.
- Knowledge in design of water and wastewater systems with focus on operation is improved.

### Outline of Contents

- Overview of existing technologies
- Main factors affecting operation & maintenance expenses
- Meth. of simulation / calculation of operation expenses
- Concept of energy efficiency
- Reduction of chemicals and in-plant water consumption
- Reuse of wastewater and sludge
- Innovation in the sector, new technologies

### Training Format

- Workshops
- Case studies
- Exposure visits
- Study Tour

### Target Audience

- Decision-maker within Azersu
- Design engineers
- Staff for operation and maintenance from any subsidiary company

### Time Frame

- Up to 60 lessons in different modules

#### 2.7 Training Topic: 1) Strategic Development: New technologies for water treatment and wastewater treatment processes

- Efficiency of the controlling of delivered drawings is improved.
- Introduction of drawing software used within Azersu and used by national design institutes
- One session of theory for each drawing software used within Azersu and after individual experiences a repetition workshop
- Engineers of Strategic Development Division
- Up to 30 lessons in different modules

#### 2.8 Training Topic: 1) Strategic Development: Use of updated drawing programs

- Knowledge in the initial operation of plant and equipment is improved.
- Definition of the Initial Operation Phase
- Inclusion of the Initial-Operation phase in the construction contract (during the guarantee period)
- Requirements during the initial operation phase
- Consumables, preventive maintenance measures
- Workshops
- Site visits to get a better understanding of facilities
- Planning engineers
- Up to 40 lessons in different modules

#### 2.9 Training Topic: 1) Strategic Development: Introduce operative engineers in pre-operation phase

- Efficiency of the controlling of delivered drawings is improved.
- Introduction of drawing software used within Azersu and used by national design institutes
- One session of theory for each drawing software used within Azersu and after individual experiences a repetition workshop
- Engineers of Strategic Development Division
- Up to 30 lessons in different modules
## Water and Sanitation Investments

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>2.10 Training Topic: 1) <strong>Strategic Development</strong>: Operation and maintenance for designers, contract supervisors and construction supervisors</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
| • Ease of operation and maintenance during the design phase is considered. | • Physical handling  
• Locations of pumping stations, accessibility to chambers and valves  
• Application and location of meters and other measurement devices, number, types  
• Use of materials and consumables  
• Energy-efficiency  
• Control techniques / control engineering  
• Required capacity and dimensioning of equipment  
• Ergonomics and human engineering at work  
• Safety regulations | • Class room training  
• On-site-visits  
• Simulations | • Planning engineers  
• Contract supervisor  
• Construction supervisor | Up to 60 lessons in different modules |

| 2.11 Training Topic: 1) **Strategic Development**: Project implementation cycle - part 1 - from project identification to construction |
| • The participants have gained a sound understanding of the project implementation cycle up to construction. | • Master Plan and Feasibility Studies and update of details  
• Infrastructure planning process  
• Design and project management process  
• Operational issues in planning process  
• Preparation of tender documents with BoQ - contract conditions requested by IFI’s (KfW, EDB, World Bank etc.)  
• Prequalification, tendering, tender evaluation  
• Contract negotiation, awards of contracts  
• Administration of design / construction | • Class room training  
• On-site-visits  
• Simulations | • Staff of Divisions related to international projects  
• Engineers of Design Institute  
• Design engineers | Up to 80 lessons in different modules |
## 2 Water and Sanitation Investments

### Objectives

<table>
<thead>
<tr>
<th>Outline of Contents</th>
<th>Training Format</th>
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<th>Time Frame</th>
</tr>
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<tbody>
<tr>
<td>The participants have gained a sound understanding of engineering drawings and plans.</td>
<td>Class room training</td>
<td>Staff of Divisions related to international projects</td>
<td>Up to 40 lessons in different modules</td>
</tr>
<tr>
<td>- Information / input data needed for drawings and plans</td>
<td>On-site-visits</td>
<td>Engineers of Design Institute</td>
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<tr>
<td>- Final design drawings</td>
<td>Simulations</td>
<td>Design engineers</td>
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<tr>
<td>- Drawings: - tender - construction - As-built drawings</td>
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<tr>
<td>- Use of drawings and plans for different project phases</td>
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<tr>
<td>- Prepare drawings plans with Auto CAD, GIS, ARC Info</td>
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<td>- Drawing title, Scales, Sizes, Symbols</td>
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<tr>
<td>- Drawing modules, layout drawings, comprehensive drawings, sectional drawings, detail drawings</td>
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<tr>
<td>- Geological and survey maps</td>
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</table>

### Training Topic: 1) Strategic Development: Project implementation cycle - part 2 - engineering drawings and plans

- The participants have gained a sound understanding of engineering drawings and plans.
- Information / input data needed for drawings and plans
- Final design drawings
- Drawings: - tender - construction - As-built drawings
- Use of drawings and plans for different project phases
- Prepare drawings plans with Auto CAD, GIS, ARC Info
- Drawing title, Scales, Sizes, Symbols
- Drawing modules, layout drawings, comprehensive drawings, sectional drawings, detail drawings
- Geological and survey maps

### Training Topic: Foreign languages

- Knowledge in a foreign language (presumable English) of Azersu staff is improved.
- Ordinary English Courses
- Courses will focus on technical, financial, contractual or general issues, such as negotiation skills, business English etc.

### Training Topic: 2) Scientific Research and Design Institute: Training for the design of all kind of tunnels

- Planning capacity for tunneling mainly for small diameters is improved.
- Supervision skills for pipe tunneling construction sides are developed.
- General knowledge of petrography
- Geology, static of rocks and soil
- Classification of rock – selection of supporting measures / techniques
- Geotechnical monitoring and surveying
- Different technology of tunneling
- Machinery used for tunneling
- Drilling methods

- Part one: theoretical lessons (University or technical school abroad)
- Part two: training-on-the-job; work with tunneling engineers of specialized in design companies like ILF
- Engineers from Sukanal Design Institute
- Supervision engineers specialized for tunneling supervision
- Max 5 participants

- Part 1: 3 months
- Part 2: 3 months
## 2 Water and Sanitation Investments

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
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<tr>
<td>2.15 Training Topic: 2) <strong>Scientific Research and Design Institute</strong>: Modern technologies in use (EU Standard) in wastewater treatment plants</td>
<td>• Knowledge in design of wastewater systems using EU-Directives is improved.</td>
<td>• Training in two sessions (workshops) by international expert</td>
<td>• Design engineers of Azersu an Design instituted</td>
<td>• Up to 25 lessons in different modules</td>
</tr>
<tr>
<td></td>
<td>• Using practices and standards within the European Union</td>
<td>• 1\textsuperscript{st} Session: (1 day): Requirements of EU Directives</td>
<td>• Lecturers of Azersu's training center</td>
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<td></td>
<td>• EU Directives in studies</td>
<td>• 2\textsuperscript{nd} Session (2 days): Design Standards for Wastewater systems</td>
<td>• Lecturers of specialized technical universities</td>
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<td></td>
<td>• Meeting requirements of projects financed by IFIs apply modern design practices</td>
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### 3 Water and Sewerage Constructions

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
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<tbody>
<tr>
<td><strong>3.1 Training Topic: 1) Constructions – Project Management:</strong> <strong>Management of small scale construction works</strong></td>
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</tbody>
</table>
| ▪ Knowledge how to implement small scale constructions works is appropriately developed. | ▪ Supervise drawing process  
▪ Manage tender procedures, sign contracts  
▪ Drawings and documents for construction works  
▪ Negotiate with potential contractors  
▪ Manage acceptance of construction works | ▪ Employees dealing with drawings and tenders for small scale construction works | ▪ Employees of the construction Division | ▪ Up to 60 lessons in different modules |
| **3.2 Training Topic: 2) Investments - Contract management and supervision - FIDIC standards and applications** | | | | |
| ▪ The participants have developed in-depth understanding of the FIDIC approach to standardize work and solve problems. | ▪ Various FIDIC editions - specifics to apply FIDIC contracts  
▪ Problem solving with FIDIC  
▪ Pre contract tasks  
  ▪ Detailed design/tender documents with BoQ  
  ▪ Pre-(post) qualification document - evaluation  
  ▪ Tender submission, evaluation; contracting  
▪ Characteristics of project  
  ▪ Parties in implementation process  
  ▪ Engineer’s authority - resident engineer and assistant  
  ▪ Overall organizational & administrative measures  
  ▪ Quality assurance  
  ▪ Meetings, incl. procedures & form of minutes  
  ▪ Advance, interim, final payments, budget monitoring  
▪ Initial Construction Phase  
  ▪ Construction plan, program & financing plan  
  ▪ Contractor’s construction design & shop drawings  
  ▪ Quality assurance system - environmental protection  
  ▪ Health & safety of contractor’s personnel  
  ▪ Verification register  
  ▪ Compliance of insurance conditions | ▪ Class room training  
▪ Simulations  
▪ On-the-job-trainings | ▪ Employees in charge of contract management and supervision  
▪ Employees in the Division Strategic Development | ▪ Up to 150 lessons in different modules assigned to 2 – 3 months |
### 3 Water and Sewerage Constructions

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<thead>
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</table>
| **3.3 Training Topic: 2) Investments - Procurement according to IFA standards** | - The participants have developed the required technical understanding.  
- Criteria’s for selection of suppliers  
- Testing of material before delivery  
- Procedure for receiving materials  
- Inspection of material on site  
- Required stock keeping and storage | - Class room trainings | - Employees dealing with procurement issues | - Up to 30 lessons in different modules |
| **3.4 Training Topic: 2) Investments - Adapt projects to new conditions** | - The participants are in a position to update plans to new requirements.  
- Reasons for changes in project planning  
- Changes in preconditions, parameters etc.  
- Manage different information beforehand  
- How to update plan to current circumstances  
- How to make a plan “a living document” | - Class room trainings | - Employees dealing with project updates | - Up to 40 lessons in different modules |
| **3.5 Training Topic: 3) Construction Supervision – Performance Improvement in construction supervision** | - The participants are aware of how the procedures for construction supervision can be streamlined and optimized  
- Objectives of Division  
- Factors that influence performance  
- Perception of current performance  
- Comparison of performance with desired output  
- Analysis of reasons for deficits: knowledge, capabilities, work environment, resources etc.  
- Tools and methodological approaches  
- Essentials of work flow analysis and reengineering  
- Ideas of output orientation | - Workshop | - Employees of the Division in charge of construction supervision | - Up to 40 lessons in different modules |
### 3 Water and Sewerage Constructions

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<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Training-on-the-job</td>
<td>Staff of new department construction supervision (10 to 12 employees)</td>
<td>4 weeks at the beginning of employment for construction supervision, certificate and employment contract</td>
</tr>
</tbody>
</table>

#### 3.6 Training Topic: 3) Construction Supervision - Effective and in-time construction supervision

- **Module 1: Reading/Understanding the design**
  - Use of drawings and plans - scales, size, symbols
  - Methods for preparation of drawings and plans
  - Auto CAD, GIS, ARC Info
  - Comprehensive plans -
  - Supply system / sewage system planning
  - Sectional plans, valve plans

- **Module 2: Accompany a contract supported by FIDIC**
  - Entire cycle - project management with relevant steps
  - Different types and systematic of the FIDIC contracts
  - Duties of different parties
  - Types of conflicts when to apply the contract

- **Module 3: Control of materials and works**
  - Control of Procurement and Supplies
  - Background & application of standards in use
  - Specifics & quality criteria of materials
  - Delivery, Handling and Storage
  - Inspection, measuring, test equipment
  - Control of quality of concrete and various works
### 3 Water and Sewerage Constructions

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</table>
| **Module 4: Principals of pipe laying** | - Handling / stacking of pipes, anchor blocs, junctions  
- Protection of trenches  
- Checking of alignment  
- Pipe installation, pipe material  
- Fire hydrants installation  
- Tapping – valves - measurement points  
- Installation of service lines & water meters  
- Pressure tests  
- Pipe bedding, backfill material and procedure  
- Working in urban areas (environmental requirements like avoiding much noise and dust). | * | * | * |
| **Module 5: Post-Construction Phase** | - Tests and completion  
- Tests: (pre-)commissioning, trial operation  
- Taking over  
- Activities during maintenance period  
- Checks & tests after completion of guaranty | * | * | * |
| **Module 6: General issues** | - Skills for negotiations with contractors  
- Methods of communication  
- MIS system and information  
- Reporting and documentation (as-built)  
- Supervision methodologies – different meetings  
- Control tests and record keeping  
- Filing System for Communications and Correspondence  
- Safety aspects | * | * | * |
## 4 Operation and Maintenance

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>4.1 Training Topic: 1) Water Resources – Water Treatment</strong></td>
<td>Introductory and basic training in operation and maintenance of water treatment plants</td>
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<td></td>
<td>- Different compositions of water</td>
<td>Class room training</td>
<td>Employees dealing with water treatment processes</td>
<td>Up to 40 lessons in different modules</td>
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<td></td>
<td>- Functioning / components of treatment plants</td>
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<td>- Typical treatment processes</td>
<td>On-the-job-training</td>
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<td>- Preliminary treatment, aeration</td>
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<td>- Coagulation / flocculation/ storage / use of consumables</td>
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<td></td>
<td>- Sedimentation</td>
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<td>- Chemical treatment incl. storage / use of consumables</td>
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<td>- (Ultra)-filtration incl. use of consumables</td>
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<td></td>
<td>- Stabilization, Disinfection, Accessories</td>
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<td></td>
<td>- Instrumentation and control equipment</td>
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<td>- Safety requirements</td>
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<td></td>
<td>- Common operating problems</td>
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<td></td>
<td>- Control tests and record keeping</td>
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<td></td>
<td>- Handling of emergency cases</td>
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| **4.2 Training Topic: 1) Water Resources – Water Treatment** | Surface and groundwater development | | | |
| | | Class room trainsings | Employees dealing with water source development | Up to 60 lessons in different modules |
| | | | | |
| | | On-site-visits | | |
| | Surface water | - Type of storage impoundments | | |
| | | - Intake structure and spillway | | |
| | | - Service outlets and operating problems | | |
| | | - Evaporation and seepage | | |
| | | - Siling and maintaining of good water quality | | |
| | Ground Water | - Exploring of ground water | | |
| | | - Field investigation - well construction | | |
| | | - Sources of ground water contamination | | |
## 4 Operation and Maintenance

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</table>
| - General issues  
  - Protection areas: definition, procedure for approval, definition of requirements meet, monitoring and control  
  - Environmental restrictions  
  - EIA – Environmental Impact Assessment | | | | |

### 4.3 Training Topic: 1) Water Resources – Water Treatment – Contents and requirements of a SCADA system

- The participants know structure, purposes and limits of a SCADA system and can apply the tool appropriately.
- Elements of a SCADA system
  - Functionality and size of a SCADA system
  - Properties /use of processor, controller, operator interface
  - Investments and process control
  - Technical limits in a SCADA system
- Class room training
- Staff dealing with operating control
- Up to 30 lessons in different modules

### 4.4 Training Topic: 1) Water Resources – Water Treatment - Training for shift operation managers and foremen

- The participants are aware of their role. They know about leadership and motivation and can documents work processes properly.
- Essentials of human resources management
  - Motivators in daily business
  - Leadership styles and executive functions
  - Documentation of work processes
  - Occupational health and safety tasks
- Workshops
- Operation managers and foremen
- Up to 30 lessons in different modules

### 4.5 Training Topic: 1) Water Resources – Water Treatment - Crisis and emergency management

- The participants have gained a good knowledge on crisis management.
- The element surprise in a crisis
  - Methods to respond to reality and perception of crises
  - Metrics to define what scenarios constitute a crisis
  - Triggering of necessary response mechanisms
  - Development of emergency management scenarios
  - Dealing with threats before, during, after occurrence
  - Issuing of emergency documents
- Workshops
  - Case-studies
  - Simulations
- Managers on all levels dealing with operations
- Up to 30 lessons in different modules
## 4 Operation and Maintenance

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| **4.6 Training Topic: 1) Water Resources – Water Treatment -** | Task force training to manage the handing over of projects to operations | - Basics of monitoring and supervision  
- Criteria for checking the quality of a training  
- Design of consultancy to training providers  
- Tools for checking training qualities  
- Assessment of further training needs  
- Develop alternative approach for handing over  
- Negotiation skills  
- Reporting | - Class room  
- Simulations  
- Training-on-the-job | - Highly skilled experts with very good background knowledge | - Up to 60 lessons in different modules over a longer period |
| **4.7 Training Topic: 2) Transmission Mains – Reservoirs – Networks –** | Use and revision of GIS | - Functional basis of a GIS  
- Key data quality issues involved in use of GIS  
- Strategies to implement an effective GIS  
- Facilitation of data collection  
- Efficient data storage | - Class room training  
- Simulations | - Employees supervising operation and maintenance of transmission mains | - Up to 30 lessons in different modules over a longer period |
| **4.8 Training Topic: 2) Transmission Mains – Reservoirs – Networks –** | Steer the strategy to reduce non-revenue-water (NRW) | - Ideas of new utility developments – challenges  
- Water loss cycle  
- Design of a water balance  
- Understanding of physical losses  
- Quantification of physical losses  
- Important performance indicators  
- Reduction of commercial losses  
- Reduction of physical losses  
- Management of NRW reduction programs | - Class room training  
- Workshops  
- International conferences and colloquia (e.g. IWA) | - Employees assigned to Divisions and Sections in Head Office dealing with water supply | - Up to 320 lessons in different modules over a longer period |

Employees assigned to Divisions and Sections in Head Office dealing with water supply.
### 4 Operation and Maintenance

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<tr>
<td><strong>4.9 Training Topic: 2) Transmission Mains – Reservoirs – Networks – Maintain a closed water reservoir</strong></td>
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</table>
| - The participants have increased their awareness about risks for pollution. The know how to properly apply maintenance and cleaning techniques. | - Risks for pollution – accruement of bacteria  
- Properties of construction materials used  
- Cleaning techniques - disinfection means, chemicals  
- Bacteriological control  
- Review of current work organization  
- Accessories, instrumentation, control equipment  
- Occupational health and safety issues  
- Modern standards for reservoir operation and maintenance according to ISO-Standard | - Class room  
- Training-on-the-job | - Employees, foremen, workers busy with reservoir maintenance | - Up to 20 lessons in different modules over a longer period |

| **4.10 Training Topic: 2) Transmission Mains – Reservoirs – Networks - Network operation and maintenance from the source to the house connection** | | | | |
| - The participants have developed an in-depth and holistic understanding of network operation and maintenance.  
- Operation engineers have developed an understanding of the IWA concept of a water balance for the operation of water supply systems. | - Exploitation of water sources  
- Operation / maintenance of headwork  
- Water treatment and chlorination facilities  
- Main feeders and reservoirs  
- Secondary and tertiary water distribution  
- NRW monitoring and control, leak detection and repair  
- Water meter checking and calibration  
- Hydraulic requirements for components of the system  
- Water balance for efficient operation of systems:  
  - Components: water production / water supplied, authorized consumption, apparent / real losses, revenue / non-revenue water, billed and unbilled water  
  - Data gathering: bulk and customer water metering, use of mobile flow meter, estimation methods  
  - Audit software: definitions, instructions, reporting worksheet, water balance | - Class room trainings  
- Simulations  
- International conferences and colloquia (e.g. IWA) | - Engineers dealing with operations of water supply facilities | - Up to 50 lessons in different modules over a longer period |
4. **Operation and Maintenance**

<table>
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**4.11 Training Topic: 2) Transmission Mains – Reservoirs – Networks - Operation and maintenance of transmission mains**

- The participants have gained knowledge about operation and maintenance of water transmission mains and are in a position to manage the work accordingly.
- Flushing and removal of residues in new / existing mains
  - Methods of flushing - arising problems
- Leakages in water mains
  - Corrosive soils - quality of material / workmanship
  - Ground movement - water hammer
  - Corrosive water - age of mains - services
- Leakage control: reasons and methods
- Operation/maintenance of valves and pumps
  - Faults - remedial action - trouble shooting
  - Factors affect. maintenance - preventive maintenance
- Operation / maintenance of compressors
  - Type of compressor (piston / rotary)
  - Inspection before operating
  - Functionality, operation, maintenance of meters
  - Methods to organize major repair works
  - Handling of illegal connections
- Class room trainings
- Simulations and case studies
- On-site-visits
- Employees and workers dealing with operation and maintenance of transmission mains
- Up to 30 lessons in different modules over a longer period


- The participants are familiar with the concept of NRW-Revenue Water Management and know how to assign the different components of the program to each other.
- Indicators for non-revenue water management
  - Annual real losses, unavoidable real losses
  - Infrastructure Leakage Index (ILI) - interpret ILI values
- Non-Revenue Water Management Options
  - District Metering Areas (DMA) –match with billing zones
  - Measurement: points, devices, data processing
  - Active leakages control - preventive leak detection
  - Speed / quality of repair
  - Pipeline checking - asset management - documentation
- Class room training
- Training-on-the-job
- Colloquia
- International conferences (IWA)
- Employees of subsidiary companies dealing with water losses
- Up to 60 lessons in different modules
## Operation and Maintenance

<table>
<thead>
<tr>
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</table>
| 4.13 Training Topic: 3) Wastewater and Rainwater Management - Monitoring and supervision of wastewater treatment processes | - NRW management strategies  
  - Installation of Steering Group – definition of targets  
  - Set-up and calibrate hydraulic model  
  - Data measurement, recording, fathering  
  - Change management principles | - Class room training  
  - On-site visits  
  - Study tours to Europe etc. | - Employees in charge of monitoring wastewater treatment processes | - Up to 80 lessons in different modules |

| 4.14 Training Topic: 3) Wastewater and Rainwater Management - Inspection of sewerages via Closed Circuit Television (CCTV) | - Analysis of prevailing problems in sewerages  
  - Definition of maintenance intervals  
  - Operational inspection and cleaning processes  
  - Definition of cleaning intensities  
  - Evaluation of videos to assess sewerage conditions  
  - Definition of need for repair and rehabilitation | - Training-on-the-job  
  - Class room training | - Team in the head office dealing with sewerage inspections | - Up to 120 lessons in different modules |

| 4.15 Training Topic: 3) Wastewater and Rainwater Management - Operation and maintenance of rain water collectors | - Cleaning with mobile suction and jetting vehicles  
  - Maintenance of suction and jetting vehicle  
  - Regular inspection of pipe sections  
  - Repair of broken pipes - machinery and equipment  
  - Reporting and record holding  
  - Occupational health and safety matters | - On the job training  
  - Class room training | - Head of units and sewer staff | - Up to 40 lessons in different modules |
### 4 Operation and Maintenance

#### Objectives

<table>
<thead>
<tr>
<th>Outline of Contents</th>
<th>Training Format</th>
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<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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#### 4.16 Training Topic: 3) Wastewater and Rainwater Management - Operation and maintenance of sewerage collectors

- The participants know how to operate all equipment necessary for the sewerage collectors’ maintenance.
- Preparatory works for inspection of sewerage systems
- Organization and support of inspections
- Cleaning with mechanical and mobile equipment
- Repair / rehabilitation of network incl. manholes
- Maintenance of equipment
- Reporting and record holding
- Occupational health and safety matters

- On the job training
- Class room training
- Head of units and sewer staff
- Up to 60 lessons in different modules

#### 4.17 Training Topic: 3) Wastewater and Rainwater Management – Functionality of wastewater treatment plants

- The participants know the different treatment steps of wastewater in a plant.
- Mechanical treatment
- Biological treatment
- Nitrogen and phosphate elimination
- Sludge treatment
- Sludge drying
- Sludge disposal

- On-the-job trainings
- Class room trainings
- Employees working in wastewater treatment plants
- Design engineers
- Construction supervisors
- Managers of plants
- Up to 60 lessons in different modules

#### 4.18 Training Topic: 3) Wastewater and Rainwater Management – Manage, operate and maintain wastewater treatment plants

- The participants are aware of all issues related to management, operation, maintenance of wastewater treatment plants and know to properly apply this knowledge.
- Resources and capacity utilization
- Optimization potentials of a treatment plant
- Management of adaptation and renewals
- Planning of operations, maintenance, staff assignments
- Anticipating and strategic way of thinking
- Management of unpredictable events
- Environmental protection issues

- On-the-job trainings
- Class room trainings
- Study tours to Europe etc.
- Managers, deputies and foremen of wastewater treatment plants
- Up to 150 lessons in different modules
- Up to six months, carried out intermittently
## 4.19 Training Topic: 3) Wastewater and Rainwater Management – Wastewater treatment processes in the case of unexpected events

- The participants know how to react in case of unexpected events regarding wastewater treatment plant operation and maintenance.
  - Standards and deviations from standards
  - Classification of possible deviations: declining outlet standards, higher volumes, specific contaminations etc.
  - Design of different scenarios that may occur
  - Decision making under unpredictable events
  - Role of flexibility, creativity and communication
  - Occupational health and safety matters

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<thead>
<tr>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
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<tbody>
<tr>
<td>On-the-job trainings</td>
<td>Managers, deputies of wastewater treatment plants</td>
<td>Up to 60 lessons in different modules</td>
</tr>
<tr>
<td>Class room trainings</td>
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</table>

## 4.20 Training Topic: 3) Wastewater and Rainwater Management – Operation and preventive maintenance of wastewater pumping stations

- The participants know how to handle all operation and maintenance matters related to wastewater pumping stations.
  - Functions and properties of pumps
  - Functions and properties of motors
  - Operation of electrical panels
  - Operation and flow and measurement devices
  - Handling of electrical equipment
  - Application of SCADA systems
  - Occupational health and safety matters

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<tr>
<th>Training Format</th>
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<tbody>
<tr>
<td>On-the-job training</td>
<td>All employees dealing with wastewater pumping stations</td>
<td>Up to 40 lessons in different modules</td>
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<tr>
<td>Class room trainings</td>
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## 4.21 Training Topic: 3) Wastewater and Rainwater Management – Industrial discharge control

- The participants are aware of the specifics of industrial discharges and know how to deal with them.
  - Legal basis and background
  - Practical approaches for industrial discharge control
  - Parameter for a cadastre
  - Creation of cadastre
  - Self-declarations by industrial dischargers
  - Sampling and analysis
  - Procedures /activities in case of exceeded limit values

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<th>Time Frame</th>
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<tbody>
<tr>
<td>On-the-job training</td>
<td>All employees dealing with wastewater analysis</td>
<td>Up to 40 lessons in different modules</td>
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<tr>
<td>Class room trainings</td>
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## 4 Operation and Maintenance

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<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
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</thead>
</table>
| **4.22 Training Topic: 4) Mechanics – Electrical Equipment - Set up and monitor a simplified quality management system** | - Self-steering processes in subsidiary companies  
- Equipment to be considered  
- Definition of required standards to meet  
- Definition of qualitative and quantitative indicators  
- Digitalized maintenance plans  
- Planning of repair works - reporting | - On-the-job trainings  
- Class room trainings  
- Study tours | - All employees dealing with monitoring of mechanics and electrical equipment | - Up to 40 lessons in different modules |
| **4.23 Training Topic: 4) Mechanics – Electrical Equipment - Application of a simplified quality management system** | - Equipment to be considered  
- Definition of required standards to meet  
- Definition of qualitative and quantitative indicators  
- Digitalized maintenance plans  
- Planning of repair works  
- Technical specifications ("passport")  
- Creativity in the approach to work - reporting | - On-the-job trainings  
- Class room trainings  
- Study tours | - Employees dealing with mechanics and electrical equipment | - Up to 40 lessons in different modules |
- Frequency converters  
- Operation and maintenance of Generator  
- Knowledge about electrical components  
- Installation / operation of electrical / mechanical devices  
- Ways to analyze a dysfunctionality  
- Fault finding and rectification  
- Documentation of faults/repairs  
- Occupational health and safety matters | - On-the-job training | - Employees dealing with mechanical and electrical equipment | - Up to 40 lessons in different modules |
## 4 Operation and Maintenance

<table>
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<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
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</table>
| **4.25 Training Topic: 5) Occupational Health & Safety – Environmental Protection** - Basic training on occupational health and safety | - The participants are aware of all occupational health and safety issues and know how to apply given standards.  
  - Safety requirements - risk assessments  
  - Essentials of the OHSAS 18001 standards  
  - Application of OHSAS 18001 in work flow management  
  - Preventive measures (e.g. dealing with consumables)  
  - Awareness raising and minimizing risks for accidents  
  - Actions to be taken in case of an emergency  
  - Legislative requirements to update occupational safety  
  - Test of staff knowledge on health and occupational safety | - Class room training  
  - On-the-job training | - Employees explicitly dealing with occupational health and safety issues | - Up to 70 lessons in different modules |
| **4.26 Training Topic: 5) Occupational Health & Safety – Environmental Protection** - Use and disposal of harmful substances | - The participants are aware of properties and effects of harmful substances and know how to deal with them.  
  - Disinfectants: characteristics and effects  
  - Application of different harmful substances (chlorines etc.)  
  - Material safety data sheet  
  - Health protection issues – preventive measures  
  - Storage and maintenance of equipment and substances  
  - Lifespan and environmentally sound disposal  
  - Action taking in case of an emergency | - Class room training  
  - On-the-job training | - Employees explicitly dealing with any harmful substances | - Up to 30 lessons in different modules |
| **4.27 Training Topic: 5) Occupational Health & Safety – Environmental Protection** - Basic training on environmental issues | - The participants are aware of environmental issues and know how to consider them in the context of their work.  
  - Safety legislations of the Azerbaijani Republic  
  - Environmental management standards  
  - WHO standard requirements  
  - Characteristics surface water, ground water  
  - Indicators for public health - waterborne diseases  
  - Sources of contamination in the supply system  
  - Measures to be taken to foster environmental awareness | - Class room training  
  - Simulations  
  - Case studies  
  - International conferences | - Employees explicitly dealing with water qualities, wastewater disposal and environmental protection issues | - Up to 50 lessons in different modules |
### 4. Operation and Maintenance

#### Objectives

**4.28 Training Topic: 5) Occupational Health & Safety – Environmental Protection - EU-Code and EU Water Convention**

- The participants know the EU water convention and know how to assess implications for their own work.

**Outline of Contents**

- History and background of EU water convention
- Comparison to further water documents
- Central aims, essentials and definitions
- Concepts to protect and ensure the quantity, quality and sustainable use of trans-boundary water resources
- Holistic approach and ecosystem
- Legal stipulations
- Implications f. design, supervision, operations, laboratories

**Training Format**

- Workshops
- Case studies
- International conferences

**Target Audience**

- Employees explicitly dealing with water qualities, wastewater disposal and environmental protection issues
- Lawyers

**Time Frame**

- Up to 40 lessons in different modules

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**4.29 Training Topic: 5) Occupational Health & Safety – Environmental Protection - Set up and management of an Ecological Monitoring System**

- The participants are aware of the need of an Ecological Monitoring Systems and have the skills to apply related standards and procedures.

**Outline of Contents**

- Reasons for an Ecological Monitoring System
- Expected output and outcome at mid- and long term
- How to characterise / monitor the environment’s quality
- Preconditions - standards – parameters - indicators
- Steps of an environmental impact assessment
- Organization and procedures – reporting

**Training Format**

- Class room training
- Workshops

**Target Audience**

- Employees explicitly dealing with water qualities, wastewater disposal and environmental protection issues
- Lawyers

**Time Frame**

- Up to 60 lessons in different modules

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**4.30 Training Topic: 6) Instrumentation and Remote Control - Structure and guide conversations with customers**

- The participants know how to plan, structure and handle direct communication with customers.

**Outline of Contents**

- Considerations of customers as “a group”
- Customers’ needs and interests
- The difference between natural communication and professionally structured communication
- Guided conversations and information to be provided
- How to balance facts and interests
- How to handle emotions
- How to conclude a guided conversation

**Training Format**

- Class room training
- On-the-job training
- Simulations

**Target Audience**

- Employees explicitly dealing with customers

**Time Frame**

- Up to 60 lessons in different modules
### 4 Operation and Maintenance

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.31 Training Topic: 6) Instrumentation and Remote Control – Monitor frequency and objects of samplings and testing</strong></td>
<td>• The participants know how to monitor and supervise the laboratories in line with new standards and parameters.</td>
<td>• Workshop</td>
<td>• Employees of the Head Office supervising laboratories</td>
<td>• Up to 40 lessons in different modules</td>
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<tr>
<td>• National and international standards</td>
<td>• Suite of parameters to consider</td>
<td>• Case studies</td>
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<td>• Evaluation of results</td>
<td>• Definition of instructions for decision making</td>
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<td>• Supervisory methods</td>
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<tr>
<td><strong>4.32 Training Topic: 7) Control over technical processes and water quality - Modern standards of water quality control in laboratories</strong></td>
<td>• The participants are aware of modern standards in water quality control and know how to apply given standards.</td>
<td>• Class room training</td>
<td>• Employees working in laboratories</td>
<td>• Up to 60 lessons in different modules</td>
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<tr>
<td>• Properties of new equipment - use and maintenance</td>
<td>• Routines for application of standard methods</td>
<td>• Training-on-the-job</td>
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<tr>
<td>• Introduction and logical path of work steps</td>
<td>• Parameters to be considered (incl. European standards)</td>
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<tr>
<td>• Hygienically sound work conditions for their application</td>
<td>• Sampling, preservation and storage</td>
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<td>• Microbiological tests – parameters / frequencies</td>
<td>• Identification of pipe water and ground water</td>
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<tr>
<td>• Physical and chemical tests – parameters / frequencies</td>
<td>• Comparative analysis - conclusions for actions to be taken</td>
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<tr>
<td>• Identification of pipe water and ground water</td>
<td>• Health and safety issues</td>
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<tr>
<td>• Sampling, preservation and storage</td>
<td>• Reporting</td>
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<tr>
<td><strong>4.33 Training Topic: 8) Transport and Special Techniques - Modern standards of car and vehicle maintenance</strong></td>
<td>• The participants know how to handle maintenance intervals and specifics of vehicles and machineries.</td>
<td>• Training-on-the-job</td>
<td>• Employees working with car and vehicle maintenance</td>
<td>• Up to 30 lessons in different modules</td>
</tr>
<tr>
<td>• Functioning of existing machineries</td>
<td>• Introduction to new vehicles and machines</td>
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<tr>
<td>• Maintenance intervals</td>
<td>• Use and storage of consumables</td>
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<tr>
<td>• Use of maintenance and repair equipment</td>
<td>• Occupational health and safety matters</td>
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</table>

MACS / CPL  
March 2013  
151
## 5 Accounting and Financial Management

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
</tr>
</thead>
</table>
| **5.1 Training Topic: 1) Commercials - Upgrade of knowledge for commercial staff** | • Commercial staff in subsidiary organizations is able to comprehend the significance of billing procedures and apply related work steps | • Meaning of billing procedure for financial performances  
• Receiving new customers / application forms  
• Connection fee and installation of new service connection  
• Meter reading and calculation of water bills  
• Signing of water bills  
• Filing and bookkeeping  
• Payment of water bills  
• Reminders and complaints management  
• Sanctions options in case of unpaid bills | • Class room trainings  
• On-the-job-trainings  
• Simulations | • Commercial Staff in Subsidiary companies dealing with the billing procedures | • Up to 3 - 4 modules of 2 days each |

**5.2 Training Topic: 2) Economic analyses - Water pricing and tariff systems**

| • Understand the issue of water pricing and Tariff systems | • Different goals of tariff systems (day 1)  
  ▪ Economic - Ecologic – Social  
  ▪ Political - Organizational  
  ▪ Consideration of supply conditions (day 1)  
  ▪ Customer groups - Type of connection  
  ▪ Quantity of consumption  
  ▪ Link customer groups, connection, consumption  
  ▪ Tariff structures for water supply services (day 2)  
  ▪ Rationale of fixed and variable components  
  ▪ Charges based on per capita or other norms  
  ▪ Constant volumetric rates  
  ▪ Block tariff:  
  ▪ Cap Price and Revenue Cap tariff approach  
  ▪ Pro-Poor Considerations  
  ▪ Tariff Structures for sanitation services (day 2)  
  ▪ Rationale, basis for calculation: volumetric - pollution | • Class room trainings | • Economists in Head Office dealing with financial forecasting and tariff designs | • Up to 2 x 2 days |
## 5 Accounting and Financial Management

### Objectives

<table>
<thead>
<tr>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
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</tr>
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<tbody>
<tr>
<td>5.3 Training Topic: 2) Economic analyses - Strategic asset management</td>
<td>Class room trainings</td>
<td>Economists and Engineers in Head Office and subsidiary companies dealing with asset management</td>
<td>Up to 3 x 2 days</td>
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<tr>
<td>- Introduction into a comprehensive state of the art methodology to establish priorities regarding Azersu’s management of assets needed for service delivery</td>
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<tr>
<td>- Definition of Strategic Asset Management</td>
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<tr>
<td>- Levels of asset management</td>
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<tr>
<td>- Government strategies to set policies, to establish priorities and monitor outcomes</td>
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<tr>
<td>- Azersu strategies to meet service delivery responsibilities through effectiveness of investments, management of processes, control over functions</td>
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<td>- Facilities organization of day to day management of assets to minimize (life) costs</td>
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<tr>
<td>- Conduct of works of day to day services associated with specific assets (e.g. maintenance)</td>
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<tr>
<td>- Life-cycle approach:</td>
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<tr>
<td>- Planning - examine all options to achieve service delivery objectives;</td>
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<tr>
<td>- Procurement - evaluate decisions at the earliest stages of a proposal, prior to any investment in new or replacement assets or refurbishment.</td>
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<tr>
<td>- Maintenance and management – minimize cost and risk of ownership with maintenance strategies and procedures, management of use, operational costs;</td>
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<tr>
<td>- Divestment - regularly evaluate the Azersu investment in assets to identify functional or physical obsolescence, financial viability &amp; unacceptable risk</td>
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<tr>
<td>- Incorporation of risk assessment:</td>
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<td>- Critical to determining the appropriate proactive level of attention to give that asset</td>
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<td>- The higher the consequences of failure), the more expense can be justified in assessments undertaken to ensure the asset does not fail</td>
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## 5 Accounting and Financial Management

<table>
<thead>
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<th><strong>Objectives</strong></th>
<th><strong>Outline of Contents</strong></th>
<th><strong>Training Format</strong></th>
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<tbody>
<tr>
<td></td>
<td>▪ Forecasting methodologies for asset failures</td>
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<td>▪ Mitigation of risk through advanced technologies: pipeline technology, materials, laying techniques, failure detection technologies</td>
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<td>▪ Customers demand from the service provider</td>
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<td>▪ Willingness to pay for service level improvements</td>
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<td>▪ Compensations for reductions in performance level</td>
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<td>▪ Methodologies to influence customer demand (demand management)</td>
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<td>▪ Organizational requirements and improved management systems - Management needs to consider:</td>
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<td></td>
<td>▪ <strong>Organizational structures and processes:</strong> Consider extent to which asset management responsibilities and functions within the framework should be centralized or decentralized</td>
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<td></td>
<td>▪ <strong>Staff skills:</strong> Consider skills and knowledge to perform and manage the asset functions</td>
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<td></td>
<td>▪ <strong>Sufficient resources:</strong> Provide / allocate financial and human resources, systems, tools necessary for asset management and delivery of asset service</td>
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<td></td>
<td>▪ <strong>Adequate management information:</strong> Ensure availability and quality of information supporting decisions and assessment of outcomes</td>
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### 5.4 Training Topic: 2) Economic analyses - Business Planning

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<thead>
<tr>
<th><strong>Objectives</strong></th>
<th><strong>Outline of Contents</strong></th>
<th><strong>Training Format</strong></th>
<th><strong>Target Audience</strong></th>
<th><strong>Time Frame</strong></th>
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<tbody>
<tr>
<td></td>
<td>▪ Understand the benefit of business planning</td>
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<td>▪ Purpose for Shareholders - Management - Financiers</td>
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<td></td>
<td>▪ <strong>Timing:</strong> Budget year - Project Cycle - Updating</td>
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<td>▪ <strong>Design:</strong> Structural developments and changes</td>
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<td>▪ Products and services: development levels</td>
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<td>▪ Clients and Markets: estimation of market potential according to products and client groups</td>
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<td></td>
<td>▪ <strong>Class room training</strong></td>
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<td></td>
<td>▪ Economists in Head Office and subsidiary companies</td>
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<td>▪ Up to 3 x 3 days</td>
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### Accounting and Financial Management

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<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
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<tbody>
<tr>
<td></td>
<td>• Finances: forecast of revenue &amp; expenditures, capital needs for investment and acquisitions, liquidity planning and reserves, impact on Balance Sheet</td>
<td>Class room trainings</td>
<td>Managers and high-level employees of dealing with monitoring and performance analyses</td>
<td>Up to 2x 3 days</td>
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<td>• Risks and chances analyses</td>
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<td>• Strategies: development needs for 1,3,5 years, steps to be taken</td>
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<td></td>
<td>• Implementation and Monitoring</td>
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<td>• Approval of proposed measures and budgets by shareholders</td>
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<td>• Transfer of Business Plan to Action Plan</td>
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<td>• Monitoring Procedures and Adjustments</td>
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#### 5.5 Training Topic: 2) Economic analyses - Performance assessment and benchmarking

- Understand the benefit of Performance Assessment of water supply services and the introduction in the IWA Methodology
- Need for performance assessment
  - Current challenges of the water industry
  - Benefits for different bodies
- Current best practice in Performance Assessment and Benchmarking Activities (IWA system)
  - The International Benchmarking Network for Water and Sanitation Utilities (IBNET)
  - The International Water Association (IWA) system
  - The Example of England and Wales (Ofwat)
- Practical Introduction in the IWA system of Performance Indicators (PI)
  - Data elements and Variables
  - Performance Indicators - explanatory factors
  - Context Information
- Issues to consider for the Implementation of a PI system
  - Definition of objectives and strategies
  - Establishment of critical success factors
  - Definition of a PI policy
  - Selection of Performance Indicators to be assessed Assessment of Performance Indicators
## 5 Accounting and Financial Management

### Objectives

<table>
<thead>
<tr>
<th>Training Topic</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
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<tbody>
<tr>
<td>5.6 Economic analyses - Introductory training and training updates on financial forecasting for economists</td>
<td>Staff in charge is in a position to adequately contribute to financial forecasting activities</td>
<td>Introductory training for new staff: Data processing as legwork for financial forecasting, Economic analysis, Training Updates for existing staff: Economic analysis, Exchange of experience, study tours, colloquia, Measures to gain new optimism and take initiative</td>
<td>Staff in the Forecasting Division in the Head Office</td>
<td>Repeatedly required due to high turnover of staff</td>
</tr>
<tr>
<td>5.7 Economic analyses - International Finance Reporting Standards (IFRS)</td>
<td>Participants are in a position to apply requested standards of the system</td>
<td>- Content according to required standards -</td>
<td>Accountants in the Head Office and in all subsidiary companies</td>
<td></td>
</tr>
<tr>
<td>5.8 Economic analyses - Economic analysis for Sukanal and OJSC Organizations</td>
<td>Participants are able to carry out economic analysis and manage consolidations according to required standards</td>
<td>Structure of data, accounts and sub-accounts, Legal requirements to be considered, Booking processes, additional items, Tax-relevant issues, Procedures how to consolidate all data, Reporting standards</td>
<td>Economists in Sukanal and OJSC Organizations dealing with economic analysis and consolidations</td>
<td>Up to 5x 3 days</td>
</tr>
<tr>
<td>5.9 Logistics - Procurement - Efficient procurement processes</td>
<td>The participants are aware of new rules on procurement and know how to facilitate the</td>
<td>Analysis of current procedures, Legal requirements to be met, Stock control, check of minimum stocks</td>
<td>Procurement experts in the Head Office</td>
<td>Up to 2x 3 days</td>
</tr>
</tbody>
</table>
### 5 Accounting and Financial Management

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outline of Contents</th>
<th>Training Format</th>
<th>Target Audience</th>
<th>Time Frame</th>
</tr>
</thead>
</table>
| process    | • Preparation of list for requesting material and supplies  
             • Acceleration of the approval process  
             • Negotiations with / selection of suppliers  
             • Issuing materials and supplies to the subsidiary organizations  
             • Registration and depreciation issues | | Experts in subsidiary companies | |

#### 5.10 Training Topic: 3) Logistics - Procurement - Data base for warehouse management

- The participants are in a position to properly manager
- Hardware and programs in use and their features  
  Registration of issued materials and supplies  
  Control of depreciation periods  
  Linkage of different warehouses and stocks  
  Control of distribution’s  
  Storage time of spare parts, consumables and goods  
  Reporting issues
- Class room training in combination with training-on-the-job
- All employees involved in procurement and warehouse management  
  IT experts
- Up to 2x 3 days
D.5 Training Cluster and Training Areas

It is the intention of Azersu to broadly distribute trainings to all staff members and hierarchic levels: all staff members of Azersu shall benefit from the training programme. In terms of content and methodologies training planning shall reflect international developments in water sector reforms. We respond to this requirement by way of considering IWA investigations and approaches.

Generally there is willingness of staff to be trained. It is recommendable to start with trainings on a management level – so that managers will be encouraged to motivate their staff to participate in training modules. It is a concern of Azersu to cover expertise training and general skills training. Following the Terms of Reference for this assignment, we cluster the trainings outlined in the Training Plan into four groups as follows:

- Training on **forthcoming challenges** includes new challenges to impart “knowledge and skills on absolutely new areas related with recent changes at work environment.”

- Training on **qualification improvements** shall prepare for new developments “to better implement … work responsibilities with exposure to new developments and best international practices.”

- Training on **current operations** focus on the improvement of ongoing challenges in daily operations: “changes at work environment that would create demand for improving knowledge and skills.”

- Training on **general skills** is designed to “equip the staff with … skills required both at work environment and in contemporary life”.

Figure 10 assigns the employees of Azersu and subsidiary companies to five levels and suggests related training topics and training methods.

*Figure 10: Training and Coaching on five levels*
Cluster of trainings according to four criteria

### I) Training on forthcoming challenges

<table>
<thead>
<tr>
<th>Train. number</th>
<th>Management and Customer Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4</td>
<td>Management: Transfer Competence for middle management</td>
</tr>
<tr>
<td>1.6</td>
<td>Management: Strategic thinking and creativity at work for management</td>
</tr>
<tr>
<td>1.8</td>
<td>Management: Commercial goals for managers</td>
</tr>
<tr>
<td>1.9</td>
<td>Management: Principles of effective management</td>
</tr>
<tr>
<td>1.11</td>
<td>Management: Self-monitoring as a manager</td>
</tr>
<tr>
<td>1.13</td>
<td>Management: Professional Design of Planning Processes</td>
</tr>
<tr>
<td>1.14</td>
<td>HRD: Human resources development planning</td>
</tr>
<tr>
<td>1.15</td>
<td>HRD: Career path management</td>
</tr>
<tr>
<td>1.16</td>
<td>HRD: Internal professional trainers’ pool via a train-the-trainers concept (ToT)</td>
</tr>
<tr>
<td>1.18</td>
<td>HRD: Essentials of human resources development</td>
</tr>
<tr>
<td>1.22</td>
<td>Customer Communication: Marketing concept for future oriented customer communication</td>
</tr>
<tr>
<td>1.28</td>
<td>Legal Provision of Projects and Contracts: Handle disputes via mediation</td>
</tr>
<tr>
<td>1.33</td>
<td>Information Technologies: Management Information System (MIS)</td>
</tr>
<tr>
<td>2.7</td>
<td>Strategic Development: New technologies for water treatment / wastewater treatment</td>
</tr>
<tr>
<td>2.9</td>
<td>Strategic Development: Introduce operative engineers in pre-operation phase</td>
</tr>
<tr>
<td>2.14</td>
<td>Scientific Research / Design Institute: Training for the design of all kind of tunnels</td>
</tr>
<tr>
<td>2.15</td>
<td>Scientific Research / Design Institute: Modern technologies (EU Standard) in WWTP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Train. number</th>
<th>Water and Sanitation Investments</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5</td>
<td>Construction Supervision – Performance Improvement in construction supervision</td>
</tr>
<tr>
<td>3.6</td>
<td>Construction Supervision - Effective and in-time construction supervision</td>
</tr>
</tbody>
</table>

### Operation and Maintenance

<table>
<thead>
<tr>
<th>Train. number</th>
<th>Water Resources – Treatment - Introductory / basic training in operation/ maintenance WWTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.6</td>
<td>Water Resources – Treatment - Task force / manage handing over of projects to operations</td>
</tr>
<tr>
<td>4.8</td>
<td>Mains – Reservoirs – Networks – Steer the strategy to reduce non-revenue-water (NRW)</td>
</tr>
<tr>
<td>4.12</td>
<td>Mains – Reservoirs – Networks - Water loss reduction in networks – the NRW approach</td>
</tr>
<tr>
<td>4.13</td>
<td>Wastewater Management - Monitoring and supervision of wastewater treatment processes</td>
</tr>
<tr>
<td>4.14</td>
<td>Wastewater Management - Inspection of sewerages via Closed Circuit Television (CCTV)</td>
</tr>
<tr>
<td>4.17</td>
<td>Wastewater Management – Functionality of wastewater treatment plants</td>
</tr>
</tbody>
</table>
## I) Training on forthcoming challenges

<table>
<thead>
<tr>
<th>Train. number</th>
<th>Training Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.18</td>
<td><em>Wastewater Management</em> – Manage, operate and maintain wastewater treatment plants</td>
</tr>
<tr>
<td>4.19</td>
<td><em>Wastewater Management</em> – Wastewater treatment processes in the case of unexpected events</td>
</tr>
<tr>
<td>4.21</td>
<td><em>Wastewater Management</em> – Industrial discharge control</td>
</tr>
<tr>
<td>4.22</td>
<td><em>Mechanics – Electrical</em> - Set up and monitor a simplified quality management system</td>
</tr>
<tr>
<td>4.23</td>
<td><em>Mechanics – Electrical</em> - Application of a simplified quality management system</td>
</tr>
<tr>
<td>4.27</td>
<td><em>Health &amp; Safety – Environmental</em> - Basic training on environmental issues</td>
</tr>
<tr>
<td>4.28</td>
<td><em>Health &amp; Safety – Environmental</em> - EU-Code and EU Water Convention</td>
</tr>
<tr>
<td>4.29</td>
<td><em>Health &amp; Safety – Environmental</em> - Set up / management of an Ecological Monitoring System</td>
</tr>
<tr>
<td>5.2</td>
<td><em>Economic analyses</em> - Water pricing and tariff systems</td>
</tr>
<tr>
<td>5.4</td>
<td><em>Economic analyses</em> - Business Planning</td>
</tr>
<tr>
<td>5.5</td>
<td><em>Economic analyses</em> - Performance assessment and benchmarking</td>
</tr>
<tr>
<td>5.7</td>
<td><em>Economic analyses</em> - International Finance Reporting Standards (IFRS)</td>
</tr>
<tr>
<td>5.8</td>
<td><em>Economic analyses</em> - Economic analysis for Sukanal and OJSC Organizations</td>
</tr>
</tbody>
</table>

### Accounting and Financial Management

<table>
<thead>
<tr>
<th>Train. number</th>
<th>Training Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.21</td>
<td><em>Mechanics – Electrical</em> - Set up and monitor a simplified quality management system</td>
</tr>
<tr>
<td>4.22</td>
<td><em>Mechanics – Electrical</em> - Application of a simplified quality management system</td>
</tr>
<tr>
<td>4.23</td>
<td><em>Health &amp; Safety – Environmental</em> - Basic training on environmental issues</td>
</tr>
<tr>
<td>4.27</td>
<td><em>Health &amp; Safety – Environmental</em> - EU-Code and EU Water Convention</td>
</tr>
<tr>
<td>4.28</td>
<td><em>Health &amp; Safety – Environmental</em> - Set up / management of an Ecological Monitoring System</td>
</tr>
<tr>
<td>4.29</td>
<td><em>Health &amp; Safety – Environmental</em> - Basic training on environmental issues</td>
</tr>
<tr>
<td>5.2</td>
<td><em>Economic analyses</em> - Water pricing and tariff systems</td>
</tr>
<tr>
<td>5.4</td>
<td><em>Economic analyses</em> - Business Planning</td>
</tr>
<tr>
<td>5.5</td>
<td><em>Economic analyses</em> - Performance assessment and benchmarking</td>
</tr>
<tr>
<td>5.7</td>
<td><em>Economic analyses</em> - International Finance Reporting Standards (IFRS)</td>
</tr>
<tr>
<td>5.8</td>
<td><em>Economic analyses</em> - Economic analysis for Sukanal and OJSC Organizations</td>
</tr>
</tbody>
</table>

## II) Training on qualification improvements

<table>
<thead>
<tr>
<th>Train. number</th>
<th>Training Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td><em>Management</em>: Organizational development for top management and second level management</td>
</tr>
<tr>
<td>1.2</td>
<td><em>Management</em>: Water sector policies for top management and second level management</td>
</tr>
<tr>
<td>1.3</td>
<td><em>Management</em>: Middle Management Level – Middle Management Development Program</td>
</tr>
<tr>
<td>1.5</td>
<td><em>Management</em>: Management and leadership for third level management</td>
</tr>
<tr>
<td>1.7</td>
<td><em>Management</em>: Modern work techniques for managers</td>
</tr>
<tr>
<td>1.10</td>
<td><em>Management</em>: Water supply operation and monitoring for managers</td>
</tr>
<tr>
<td>1.12</td>
<td><em>Management</em>: Communication and reporting as a manager</td>
</tr>
<tr>
<td>1.21</td>
<td><em>Training Center</em>: Basic training concept and training management cycle</td>
</tr>
<tr>
<td>1.24</td>
<td><em>Customer Communication</em>: Customer information management</td>
</tr>
<tr>
<td>1.26</td>
<td><em>Archive – Knowledge Management</em>: Digitalization of archive administration</td>
</tr>
<tr>
<td>1.27</td>
<td><em>Archive – Knowledge Management</em>: Archiving / filing methods with knowledge management</td>
</tr>
</tbody>
</table>
### II) Training on qualification improvements

<table>
<thead>
<tr>
<th>Train. number</th>
<th>Training Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Information Technologies:</strong> Operation of Oracle</td>
</tr>
<tr>
<td></td>
<td><strong>Information Technologies:</strong> Management of CISCO</td>
</tr>
</tbody>
</table>

**Water and Sanitation Investments**
- 2.1
- 2.2
- 2.3
- 2.6
- 2.11
- 2.12

**Strategic Development:**
- Management of project
- Examination and evaluation of planning documents
- Design of interconnections: older and new infrastructural facilities
- Modeling of water supply networks
- Project implementation cycle - part 1
- Project implementation cycle - part 2

**Water and Sewerage Constructions**
- 3.2
- 3.3
- 3.4

**Investments**
- Contract management and supervision - FIDIC standards and applications
- Procurement according to IFA standards
- Adapt projects to new conditions

**Operation and Maintenance**
- 4.2
- 4.3
- 4.24
- 4.32

**Water Resources – Treatment**
- Surface and groundwater development
- Contents and requirements of a SCADA system

**Mechanics – Electrical**
- Introductory training / crisis management - mechanics / electricians

**Control technical - water quality**
- Modern standards of water quality control in laboratories

**Accounting and Financial Management**
- 5.3
- 5.10

**Economic analyses** – Strategic asset management
**Logistics – Procurement** – Data base for warehouse management

### III) Training on current operations

<table>
<thead>
<tr>
<th>Train. number</th>
<th>Training Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>HRD:</strong> Review and extension of job profiles</td>
</tr>
<tr>
<td></td>
<td><strong>HRD:</strong> Definition of labor arrangements and work force planning</td>
</tr>
<tr>
<td></td>
<td><strong>HRD:</strong> Legislative issues in the field of human resources management</td>
</tr>
<tr>
<td></td>
<td><strong>Customer Communication:</strong> Customer complaints management</td>
</tr>
<tr>
<td></td>
<td><strong>Information Technologies:</strong> Maintain hardware facilities</td>
</tr>
<tr>
<td></td>
<td><strong>Information Technologies:</strong> IT Applications</td>
</tr>
<tr>
<td></td>
<td><strong>Information Technologies:</strong> Application of software in the field of GIS</td>
</tr>
</tbody>
</table>
### III) Training on current operations

<table>
<thead>
<tr>
<th>Train. number</th>
<th>Training Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.35</td>
<td>Information Technologies: Application of software in the field of SCADA</td>
</tr>
<tr>
<td>1.36</td>
<td>Information Technologies: GPS-training for operating staff</td>
</tr>
<tr>
<td>2.4</td>
<td>Strategic Development: Understanding of different standards</td>
</tr>
<tr>
<td>2.5</td>
<td>Strategic Development: Update of know-how to formulate Terms of Reference</td>
</tr>
<tr>
<td>2.8</td>
<td>Strategic Development: Use of updated drawing programs</td>
</tr>
<tr>
<td>2.10</td>
<td>Strategic Development: Operation / maintenance for designers, supervisors</td>
</tr>
<tr>
<td>3.1</td>
<td>Constructions – Project Management: Management of small scale construction works</td>
</tr>
<tr>
<td>4.4</td>
<td>Water Resources – Treatment: Training for shift operation managers and foremen</td>
</tr>
<tr>
<td>4.5</td>
<td>Water Resources – Treatment: Crisis and emergency management</td>
</tr>
<tr>
<td>4.7</td>
<td>Mains – Reservoirs – Networks: Use and revision of GIS</td>
</tr>
<tr>
<td>4.9</td>
<td>Mains – Reservoirs – Networks: Maintain a closed water reservoir</td>
</tr>
<tr>
<td>4.10</td>
<td>Mains – Reservoirs – Networks: Network operation and maintenance from source to house</td>
</tr>
<tr>
<td>4.11</td>
<td>Mains – Reservoirs – Networks: Operation and maintenance of transmission mains</td>
</tr>
<tr>
<td>4.15</td>
<td>Wastewater Management: Operation / maintenance of rain water collectors</td>
</tr>
<tr>
<td>4.16</td>
<td>Wastewater Management: Operation / maintenance of sewerage collectors</td>
</tr>
<tr>
<td>4.20</td>
<td>Wastewater Management: Operation / preventive maintenance wastewater pumping stations</td>
</tr>
<tr>
<td>4.25</td>
<td>Health &amp; Safety – Environmental: Basic training on occupational health and safety</td>
</tr>
<tr>
<td>4.26</td>
<td>Health &amp; Safety – Environmental: Use and disposal of harmful substances</td>
</tr>
<tr>
<td>4.31</td>
<td>Instrumentation – Remote Control: Monitor frequency and objects of samplings and testing</td>
</tr>
<tr>
<td>4.33</td>
<td>Transport and Special Techniques: Modern standards of car and vehicle maintenance</td>
</tr>
<tr>
<td>5.1</td>
<td>Commercials: Upgrade of knowledge for commercial staff</td>
</tr>
<tr>
<td>5.6</td>
<td>Economic analyses: Introductory training / updates on financial forecasting for economists</td>
</tr>
<tr>
<td>5.9</td>
<td>Logistics – Procurement: Efficient procurement processes</td>
</tr>
</tbody>
</table>
### IV) Training on general skills

<table>
<thead>
<tr>
<th>Train. number</th>
<th>Training Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Management and Customer Orientation</strong></td>
<td>1.23</td>
</tr>
<tr>
<td><strong>Water and Sanitation Investments</strong></td>
<td>2.13</td>
</tr>
<tr>
<td><strong>Water and Sewerage Constructions</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Operation and Maintenance</strong></td>
<td>4.30</td>
</tr>
<tr>
<td><strong>Accounting and Financial Management</strong></td>
<td></td>
</tr>
</tbody>
</table>
E. TERMS OF REFERENCE FOR PRIORITIZED TRAININGS

This chapter is devoted to the main products that shall help tendering trainings by the Section Human Resources of Azersu: the Terms of Reference for prioritized trainings. Subsequently we elaborate

- criteria to be applied to foster the decision making process on the trainings which are most important and which are most urgent – or those that are both at the same time;
- a structure for Terms of Reference that help identifying the most suitable training provider, and which may facilitate the evaluation process of incoming proposals;
- an example how the structure can be applied to real Terms of Reference.

E.1 Criteria for the prioritization of trainings

Criteria shall facilitate decision making on training-issues. We suggest considering nine criteria to facilitate the decision making process on the trainings to be prioritized:

- Importance, as in a mid and long-term run the training will contribute to strategic capacity building of Azersu as a whole; those trainings are embedded in the broader context – in terms of contributing to the organizational development of the company;
- Urgency, as the training may meet immediate qualification needs for striking, concretely defined operational tasks where competencies are urgently lacking;
- Outcome orientation, as the training issues correspond to working and learning habits of those to be trained and promises a positive outcome;
- Central significance, as the training may cover parts of the central gap that exists between the implementation of the company’s business policy and weak qualification levels of staff;
- Market orientation, as it will be easy to identify appropriate training providers who can easily be identified and whose trainers meet the qualification requirements (standards outlined in the Terms of Reference);
- Interest, as the training issue meets prevailing interests of people working in Azersu;
- Implementation, as the infrastructure in Azersu to apply newly acquired knowledge, skills and competencies is already in place and functions well;
- Process orientation, as the training issue can be the starting point for future trainings to build on this basis knowledge gained during the first trainings;
- Formalization, as the training issue may contribute to a following certifications process, hence also a formalized significance of the training is to be supposed.
E.2 Structure of Terms of Reference for prioritized trainings

In this section we present the structure of the Terms of Reference for the trainings to be prioritized as follows:

- **Title of Assignment**

  The Title of the assignment covers the content of the training to be tendered. It clearly and without ambiguity states the issues to be covered in the training, aimed at attracting the attention of potential training providers.

- **Background Information**

  The background information provides for an introduction into the context of the training to be tendered. It is important to emphasize:
  - recent developments in the water and sanitation sector,
  - set-up and development stage of Azersu,
  - the launching of the Public Investment Capacity Building Project (PICBP),
  - the study on Training Needs Assessment leading to the Terms of Reference, and
  - background information for funding the tendered training.

- **Objectives and Contents of Assignment**

  The objectives of the assignment outline the expected impact of the training at long-term. The section will have to define different learning targets under the respective training format. Finally a summary of training contents – with reference to the Training Needs Assessment – is mandatory in order to provide for orientation and to put potential training providers in a position to identify the suitable trainer for their proposal.

- **Identification of Target Group and Time Frame**

  Target group and time frame are related to each other, as the time frame has to consider learning capacities and learning curves of the group of participants. The questions to be asked is: “*Who can acquire what skills, knowledge and competencies in what time frame – how long can the learning curve last?”*

- **Main Tasks and Responsibilities of Training Providers**

  In this section the applying training provider is requested to present a preliminary outline of the curriculum to be applied. He will have to present a couple of methodologies considered to be eligible for the training implementation. A preliminary and simplified training script will be required as well. Specific emphasis will have to be put on the concept on how to safeguard the transfer of new knowledge, skills and competencies to the own professional work environment in Azerbaijan. The elaboration of suitable training materials - including handouts and self-learning options for the participants – will have to be described, as well as the evaluation approach for the training – during and after its implementation. Lastly – if applicable - any preparation for exams shall be defined, specifically if there is any link to the country’s certification system.
Institutional Arrangements

The section on Institutional Arrangements outlines, with whom the training provider will have to cooperate when preparing the training, while implementing it and during the follow up phases. Usually it shall be mandatory to coordinate the activities with the Section Human Resources of Azersu: also in conclusion of the training in order to generally provide for feedback and to deduce lessons learned for future trainings – in terms of training formats, training contents, target groups and in terms of training organization.

Training Provider's qualifications, expertise and experience

The training provider will be requested to present the qualifications that qualify him for the tendered training. The training provider will also be invited to prove the expertise he can offer for the assignment. A table that indicates experience with similar assignments may help to get a picture of the applicant’s history.

Requested Structure of Proposal to be submitted

In this section the applying training provider will be requested to present the team of trainers that shall be deployed. The documents to be submitted facilitate the evaluation process.

In a first step the applying training provider will be requested to submit a brief company profile that outlines scope of work and that also includes a list of trainings pertinent to the training to be tendered.

In a second step an assignment matrix, in which the applying provider specifies expertise and experience of trainers relevant to the training helps to identify – at a glance – strengths and weaknesses of the proposed trainers. Suitable might me the following table format:

<table>
<thead>
<tr>
<th>No</th>
<th>Training module</th>
<th>Suggested Trainer</th>
<th>Relevant expertise</th>
<th>Relevant experience</th>
</tr>
</thead>
</table>

Finally Curriculae Vitae shall prove the formulated expertise and experience in a comprehensive, logical order.
### E.3 Terms of Reference for selected training modules

In this section we provide an overview of the Terms of Reference. The presented draft of Terms of Reference focuses on a fellowship training, as agreed in a meeting between the Ministry of Education and the MACS representative.

<table>
<thead>
<tr>
<th>TITLE OF ASSIGNMENT:</th>
<th>- OVERSEAS TRAINING PROGRAM -</th>
</tr>
</thead>
<tbody>
<tr>
<td>BACKGROUND:</td>
<td>FUTURE ORIENTED PLANNING PROCESSES IN THE WATER SECTOR</td>
</tr>
</tbody>
</table>

1. **Developments in the water and sanitation sector of Azerbaijan**

   The infrastructure sectors in Azerbaijan have experienced dramatic changes during the period since Azerbaijan’s regained independence in 1991, and especially since 2000.

   To respond to development needs in the country’s water and sanitation infrastructure comprehensive investments have been finalized, are still ongoing or are in the planning process.

   Plenty of projects in the country cover the reconstruction of technical facilities in all Rayons. They mostly refer to the entire water cycle: from water production and treatment, to water transmission and distribution up to waste water collection and treatment.

   Projects are funded by financial resources from the Azerbaijani State Budget and from international donors, such as The World Bank, KfW, ADB, JAICA, IDB, and SECO and KOICA.

2. **Set up of Azersu**

   In order to cope with the huge development need in the water and sanitation sector the state organization Azersu has been set up as an Open Joint Stock Company in 2004 to improve the "Management in Water Supply Sector in the Azerbaijan Republic".

   The company is responsible for all water supply and sanitation issues - in terms of planning and supervising sector investments, and in terms of safeguarding operational water supply and wastewater disposal services in the country, apart from the autonomous Republic of Nakhchivan.

   In October Azersu has a total of 10,502 staff members assigned to the Head Office in Baku and 72 subsidiary organizations - Sukanals or Joint Stock Companies located in towns and villages. They are in charge of covering operational water and sanitation services on a regional and local level.

3. **Launching of a Public Investment Capacity Building Project (PICBP)**

   Similar to the water and sanitation sector comprehensive investments have been made – or are in an implementation phase – also in other Azerbaijani infrastructure sectors, such as the one for roads and transportation.
Due to gaps between the requirement to properly manage large investments in infrastructure - and to operate and maintain new facilities adequately - and the demands towards capacities among government agencies and other stakeholders, the Public Investment Capacity Building Project (PICBP) has been launched.

The Government of the Republic of Azerbaijan has received a credit from the International Development Association for the implementation of PICBP. The objective is to improve the quality and efficiency of preparation and implementation of investment projects in key priority sectors - especially in infrastructure. The PICBP has four components:

- Component 1: Thematic Capacity Building
- Component 2: Sector-Specific Capacity Building
- Component 3: Activities in support of Capacity Building
- Component 4: Project Implementation

One of the components of the PICBP is the Activities in support of Capacity Building (Component 3), which aims to provide technical assistance for improving effectiveness of the training and capacity development activities under the Project.

4. Study on Training Needs Assessment for Azersu

Under Component 3 the PICBP has contracted an international consultant to (1) inquire Training Needs in all organizations that form Azersu, to (2) design a Training Plan that assembles training formats which respond to identified training needs, and to (3) design Terms of Reference for trainings that have been prioritized in an interactive process by employees of Azersu. Aimed at covering all work areas of Azersu, the study focused on the following:

1. Management & Customer Communication
2. Water & Sanitation Investments
3. Water & Sewerage Systems Constructions
4. Operation & Maintenance, Water Quality
5. Accounting & Financial Management

Structured interviews with staff on all levels in Azersu were held, complemented by on-site visits and various interviews with members of the donor community in Azerbaijan.

The study has identified training needs in all above areas with major focus on strategic developments (new challenges) and on a better management of daily business.

5. Funding of the tendered training

Currently Azersu is supported in the process of improving its capacities in the above mentioned areas. On this background the PICBP will finance the trainings tendered in these Terms of Reference.
## OBJECTIVES AND CONTENTS OF THE ASSIGNMENT:

<table>
<thead>
<tr>
<th><strong>Training Format:</strong></th>
<th>OVERSEAS TRAINING PROGRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title of Training Program:</strong></td>
<td>FUTURE ORIENTED PLANNING PROCESSES IN THE WATER SECTOR</td>
</tr>
<tr>
<td><strong>Objectives of the Training Programme:</strong></td>
<td>The overall objective of the training program is to gain a helicopter view on most important planning processes in the water and sanitation sector. A new view / perception shall enable the participants to better understand and improve business processes. In detail, the participant after the training program shall be in a position to:</td>
</tr>
<tr>
<td></td>
<td>- Better understand the interdependency of different planning processes in the water and sanitation sector;</td>
</tr>
<tr>
<td></td>
<td>- Critically review planning processes in Azersu and make suggestions for improvement;</td>
</tr>
<tr>
<td></td>
<td>- Apply new approaches in planning processes to their own work-environment;</td>
</tr>
<tr>
<td></td>
<td>- Encourage coordination and communication between different sections of Azersu;</td>
</tr>
<tr>
<td></td>
<td>- Share new knowledge with colleagues and superiors;</td>
</tr>
<tr>
<td></td>
<td>- Implement a small project in the field of planning processes.</td>
</tr>
<tr>
<td><strong>Content of Training Programme:</strong></td>
<td>The Training Programme should cover – but not be limited to – the following topics relevant for planning processes in the water and sanitation sector:</td>
</tr>
<tr>
<td></td>
<td>- Getting acquainted with water management in developed countries;</td>
</tr>
<tr>
<td></td>
<td>- Principles of planning processes – Principle Planning Techniques</td>
</tr>
<tr>
<td></td>
<td>- Strategic Planning – Strategic Asset Management</td>
</tr>
<tr>
<td></td>
<td>- General Management – Organizational Diagnosis – Care for Objectives – Plan &amp; Organize workflow – Monitor &amp; Evaluate work</td>
</tr>
<tr>
<td></td>
<td>- Knowledge Management – Data, Information, Knowledge – Identification of Knowledge Networks – Elements of a Knowledge Management System – Reporting &amp; Documentation</td>
</tr>
<tr>
<td>IDENTIFICATION OF TARGET GROUPS</td>
<td>SUGGESTED TIME FRAME</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td></td>
<td><strong>Group of participants:</strong>&lt;br&gt;The participants of the Training Programme will be an interdisciplinary group (economists, engineers, social scientists and others) of 5 to 12 persons. They have a professional experience from 5 to 12 years.</td>
</tr>
<tr>
<td></td>
<td><strong>Suggested Time Frame:</strong>&lt;br&gt;The suggested time frame is 9 modules of 3 to 4 days each. The total duration of the programme can be estimated at approximately 6 - 8 months.</td>
</tr>
</tbody>
</table>

The programme shall be structured in (1) a preparation phase in Azerbaijan, in the context of which one or two modules can already be implemented, (2) a presence phase in an European country of 2 to 3 months, in the context of which the major part of the modules will be implemented, (3) a follow up / transfer phase in Azerbaijan, in the context of which an final (or more) module(s) will be implemented, coinciding with a coaching process in order to support the participants in the transfer of newly acquired (further developed) skills, knowledge and competencies in the context of the own professional work environment.

<table>
<thead>
<tr>
<th>MAIN TASKS AND RESPONSIBILITIES OF TRAINING PROGRAM PROVIDER:</th>
<th>The Training Program Provider will work in close collaboration with the Client to carry out the following tasks and sub-tasks:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Develop a draft detailed training program reflecting the program agenda, weekly distribution of program content, as well as sub-topics to be included into the agenda according to the above-mentioned objectives and topics of the program.</td>
</tr>
<tr>
<td></td>
<td>• Submit a draft training program proposal to the Client for review and comments; revise the program based on the results of review and return it to the Client along with the list of proposed program sites; finalize the plan of the training program based on cooperation with MoE and Azersu.</td>
</tr>
<tr>
<td></td>
<td>• The training program shall cover also prepared and evaluated visit tours to the water management agencies, meetings with guest experts and sharing their faculty, project experiences and research.</td>
</tr>
<tr>
<td></td>
<td>• Define learning targets for different modules including a reasonable suite of sub-targets for training sessions;</td>
</tr>
</tbody>
</table>
Develop an open (or problem based) curriculum for the training, which considers: (1) a small needs assessment, (2) inquiry / reflection of participants’ experiences, (3) participatory problem analysis pertinent to training topics, (4) provision / input of new knowledge, (5) encouragement of capabilities for problem solving, (6) kind of (time frame for) training different modules to be provided;

Work target group oriented; intermittently evaluate implemented trainings together with the participants and take care for modifications if required;

Document the training modules for the participants, for Azersu (contribute to the company’s knowledge management system to be set up) and for the Ministry of Education;

Provide access to library, internet and other research and information resources to make sure the participant(s) will have access to relevant information and data in the host country;

Identify a group’s speaker for the duration of the program period and agree with Azersu;

Completely arrange all organizational issues related to implementation of the program;

Conduct the training program according to the agreed program schedule and conditions of the contract; ensure ongoing coordination and cooperation with the MoE and Azersu.

Ensure the following administrative arrangements:

- Arrange and cover costs for visa for the participant(s);
- Arrange and cover costs for health and medical insurance for the participant(s);
- Arrange and cover costs for international and domestic travel for the participant(s);
- Arrange and cover costs for accommodation for the participant(s) within walking distance from the main training site during the overseas training program in the host country. If accommodation site is not within walking distance of training sites, then providing transportation arrangements or allowances between accommodation site and training sites;
- Fix and pay subsistence allowances for the participant(s) during the overseas training program in the host country;
- Provide a pre-departure briefing to the participant(s) to explain all programmatic, as well as administrative and technical aspects of the program;
- Provide all the necessary stationary, training materials in hard and soft copies and all the necessary equipment for the overseas training program;
- Grant certificate to the participant(s) based on the final assessment results;
- Use questionnaire (feedback form) at the end of the overseas training program to receive feedback from the participant(s) on the relevance and quality of the training materials, and the advisor/supervisor and or other involved trainers, as well as recommendations for future overseas training programs;
- Reporting: (1) prepare progress reports of a max. of 3 pages after each module, (2) elaborate an intermediate report after half time of the program to describe the participant(s)’s advancement throughout the program, in general the progress of the program itself; (3) elaborate a second report after finalization of the presence phase in an European country, and (4) elaborate a Final Report with focus on presence phase, transfer phase in Azerbaijan, lessons learned and recommendations for future training programs of similar kind.

### INSTITUTIONAL ARRANGEMENTS:

1) On the Client’s side, Mr. Araz Pashayev, Training Advisor for the Project Coordination Unit (PCU) of the PICBP at the Ministry of Education (MOE) is the coordinating official for the Training Program Provider within the project and the MOE.

2) All reports, other documents and deliverables resulting from work under this TOR should be submitted to him. The Training Program Provider is expected to coordinate closely with the Training Coordinator for Water and Sanitation Sector within PICBP, on the Client’s side.

3) The Client will ensure that the participant adhere to the conditions of the program in a duly manner.

4) The Training Program shall be conducted in one of the languages which will be the participant(s)’s instruction language as indicated in the Training Program Participant Section of the TOR.

5) While preparing and implementing the training, the provider will cooperate with the Human Resources Department of Azersu. The same is true for the follow up phase in conclusion of the training program in order to generally provide for feedback and to deduce lessons learned for future trainings – in terms of training formats, training contents, target groups and in terms of training organization.

### OVERSEAS TRAINING PROGRAM PROVIDER’S QUALIFICATIONS:

- The Training Program Provider shall be a reputable educational institution or any other organization with good experience in providing education and training programs in the related field subject;
- The Training Program Provider’s trainer(s) must have appropriate educational background and at least 5 years of experience and good track record in the related field subject;
- The Training Program Provider’s trainer(s) shall have fluency in the participant(s)’s selected instruction language (Please refer to the Overseas Training Program Participant Section of the TOR);
- Readiness to consider the local context of water supply / sanitation and / or public services in Azerbaijan or countries under similar conditions of development; to become acquainted with the context the training program refers to a visit to Azersu shall precede the fine-tuning and planning of the training program;
- Readiness to further fine-tune the elaborated training program prior to implementation in cooperation with the Human Resources Department of Azersu and the MoE.

<table>
<thead>
<tr>
<th>REQUESTED STRUCTURE OF THE PROPOSAL TO BE SUBMITTED</th>
<th>Technical Proposal:</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Explain the own understanding of the assignment, give an interpretation of training objectives (optionally also to add sub-objectives) and make critical amendments.</td>
<td>▪ Elaborate a preliminary, simplified training script which outlines how training modules shall be implemented (a representative couple of modules) with focus on time, objectives, focus / questions, training methods and materials (curriculum);</td>
</tr>
<tr>
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<td>▪ Include a variation of (interactive) training methodologies (plenary, group works, individual reflections, lectures) considered to be eligible for the implementation of the training;</td>
</tr>
<tr>
<td>▪ Include a variation of (interactive) training methodologies (plenary, group works, individual reflections, lectures) considered to be eligible for the implementation of the training;</td>
<td>▪ Provide for an explanation on how to link theoretical and practical components of the training, namely define role and purposes of onsite-visits and study tours;</td>
</tr>
<tr>
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<td>▪ Present a concept how to implement preparatory and follow-up phases of the training program and how to safeguard the transfer of new knowledge, skills and competencies to the participants professional work environment.</td>
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<tr>
<td>▪ Present a concept how to implement preparatory and follow-up phases of the training program and how to safeguard the transfer of new knowledge, skills and competencies to the participants professional work environment.</td>
<td>▪ Prepare a brief description of (and overview on) training materials to be provided, including handouts and self-learning options for the participants;</td>
</tr>
<tr>
<td>▪ Prepare a brief description of (and overview on) training materials to be provided, including handouts and self-learning options for the participants;</td>
<td>▪ Define the duties and responsibilities of the participants (pre, during and post overseas training program duties and responsibilities).</td>
</tr>
<tr>
<td>▪ Define the duties and responsibilities of the participants (pre, during and post overseas training program duties and responsibilities).</td>
<td>▪ Explain how and to what extend case studies may be considered in the context of implementation of the training program;</td>
</tr>
<tr>
<td>▪ Explain how and to what extend case studies may be considered in the context of implementation of the training program;</td>
<td>▪ Present a brief concept on how to monitor and evaluate the training program (formative and summative evaluation) and how to safeguard the quality of the training program over the period of its implementation;</td>
</tr>
<tr>
<td>▪ Present a brief concept on how to monitor and evaluate the training program (formative and summative evaluation) and how to safeguard the quality of the training program over the period of its implementation;</td>
<td>▪ Present a structure of administrative arrangements;</td>
</tr>
<tr>
<td>▪ Present a structure of administrative arrangements;</td>
<td>▪ Present the applying company (or companies in case of a cooperation) including a brief profile (max, 3 pages) and a set of references pertinent to the tendered training (max. 3 pages);</td>
</tr>
</tbody>
</table>
Present staffing suggested structure in terms of an assignment matrix in which the applying provider specifies expertise and experience of trainers relevant to the training (see following example), CV if all suggested trainers;

<table>
<thead>
<tr>
<th>No</th>
<th>Training module</th>
<th>Suggested Trainer</th>
<th>Relevant expertise</th>
<th>Relevant experience</th>
</tr>
</thead>
</table>

Financial Proposal:

- Daily fee for trainings
- Daily fees for preparation of trainings and reporting
- Cost for training materials
- All costs related to travelling and allowances for participants in Europe
- Costs for translations
F. **Next Steps**

The last chapter of this study outlines the next steps to be taken, such as the elaboration of Terms of Reference for most prominent training areas, the elaboration of suggestions for an Accreditation and Certification System, the design of guidelines for a Cooperation & Twinning Agreement, the Planning of a Workshop for the prioritization of trainings and - finally - the structure of a Training plan Report for 2013 that can support Azersu’s Section for Human Resources in the planning process of the trainings to be tendered.

- **Terms of Reference for most prominent training areas**

  To support the Section Human Resources of “Azersu” OJSC in the tendering process in 2013, it is recommended to conduct oversea trainings and to elaborate Terms of Reference in the field of the following four training areas that promise the best multiplying effect regarding the development of “Azersu” OJSC:

  1. Water loss reduction in distribution networks - the NRW approach,
  2. Commercial goals for managers,
  3. Human resources, general management issues and psychology of leadership,

  Those areas may support Azersu’s development towards the commercialization of water and sanitation services. Study tours and fellowship trainings may help to understand and critically assess lessons learned from other countries.

- **Accreditation & Certification System**

  A certification system gives value to the trainings carried out. The certification system will help standardizing certain training contents, as they need to be repeatedly available for the identified target group in need. This way a group of people may share the same knowledge, skills and competencies which are required to meet the request of certain positions in Azersu, respectively in corresponding subsidiary companies.

  A single certificate will encourage the motivation of the trainees to attend training courses, even more if different learning levels can be reflected in different certificates. It is understood that getting a certificate needs to coincide with new professional options and a salary increase at mid-term.

- **Cooperation & Twinning Agreement**

  It will be of utmost importance to closely link a cooperation and twinning agreement to a Training Plan in force. We believe that this link is essential to make cooperation and twinning successful. The benefit can be the following:

  - **Official visits** on a high management levels may pave the way to future cooperation.
  - A **Memorandum of Understanding** signed by both cooperating partners can outline the vision and the objectives that both partners share. The memorandum may also outline the scope of cooperation.
• Direct cooperation between different Departments, Divisions and subsidiary companies may encourage commitment and help fostering direct communication in daily business.

• A yearly common Event has a motivating effect on the program.

• It is advisable to have a Division that is in charge of facilitating the practical cooperation, as experience shows that a twinning agreement usually does not work by itself.

• Based on the training needs assessment, main topics to be covered can be (1) strategic planning, (2) business planning, (3) technical maintenance planning, (4) operation of wastewater treatment plants, (5) water analyses in a laboratory, and (6) human resources development.

The Asian Development Bank (ADB) has launched a twinning agreement with the Lisbon Water Company. Experiences and lessons learned should be included in further considerations regarding an agreement between Azersu and other companies in the world.

Planning of a Workshop for the prioritization of trainings

A workshop with different stakeholders may support the prioritization process of trainings, on the basis of which Terms of Reference for prioritized trainings can be elaborated. Notwithstanding further preparatory discussions, we suggest considering the following items:

• Review of the capacity building and training needs assessment presented in this report with regard to completeness.

• Review of the training plan presented in this report with respect to training contents and appropriateness of suggested training formats and time horizon.

• Review of indicators for the prioritization process of trainings.

• Prioritize the trainings, for which Terms of Reference shall be elaborated.

• Review of the suggested structure of the Terms of Reference for trainings to be tendered.

• Any other issues considered to be important for a future training concept that can support Azersu and the subsidiary companies on their way to the future.

Training plan report for 2013

The Training Plan Report for 2013 may support the Section Human Resources in Azersu’s Head Office in the planning of trainings. The basis will be the Training Plan to be adopted in a workshop with stakeholders, as it may provide the basis for trainings to be tendered.

The Training Plan Report can be structured as follows:

• Prioritized trainings for the year

• Total number of trainings

• Kind of trainings (assignment to cluster and topic)

• Target groups: positions, qualifications, quantity of persons
- Training format (e.g. class room, study tour, fellowship etc.)
- Time horizon: number and duration of training modules
- Assigned budget
- Needs for follow up

On this basis the Section Human Resources will be in a position to organize the trainings in 2013, considering also the Terms of Reference presented in the next chapter.

Frankfurt am Main, Germany
March 18, 2013

Joachim Breul
Annex 1

Findings of a Questionnaire submitted to Subsidiary Organization of Azersu in July 1012
STUDY: TRAINING NEEDS ASSESSMENT FOR AZERSU

RE: Preparation phase of the study
TO: HR Division of Azersu
CC: Heads of Departments
FROM: Joachim Breul, MACS
DATE: 29.06.2012
PLACE: Baku

CONTENT:

» Introduction
» List of helpful material for the desk study according to action area
» Next planning steps

» INTRODUCTION

MoE of Azerbaijan has tendered a study to carry out training needs and capacity building needs assessment for “Azersu” JSC. The German training company – MACS was contracted by the MoE to carry out these needs assessment. The study is carried by Joachim Breul who is a social scientist with experience in training needs assessment in the water and sanitation sector. MACS Company is located in Frankfurt, Germany. The study has initiated on June 25th with interviews carried out with heads of divisions and departments of “Azersu” JSC. In a first step, our interviews focused on the scope of work, the challenges and the training needs. The findings of these interviews provide the base for more detailed inquires which will be carried by engineers and an economist end of July and early in August. On these bases again, we will elaborate a training then, and we will have to formulate terms of reference for prioritized trainings. Those ToR are the bases for trainings to be tendered end of 2012 and 2013. Now we would like also to inquiry how Sukanals see the training needs they have. For that purpose, we have prepared a small questionnaire which you find in this document. We would be very happy, if you could answer those questions and send them back to the following e-mail:
1. Please briefly explain what is your current scope of work?

<table>
<thead>
<tr>
<th>Scope of Work</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Agdash-Sukanal:</td>
<td>Supply population with drinking water</td>
</tr>
<tr>
<td>2) Gadabay-Sukanal:</td>
<td>Providing population with quality water.</td>
</tr>
<tr>
<td>3) Gakh-Sukanal:</td>
<td>Supply population with water, maintenance of water pipes in the city, villages and transmission mains, repairing accidents in water pipes and money collection</td>
</tr>
<tr>
<td>4) Gazakh-Sukanal:</td>
<td>Providing water supply and sanitation services to population.</td>
</tr>
<tr>
<td>5) Goychay: &quot;Goychay Sukanal&quot; JSC is in charge of water supply and sanitation services for population and other consumers.</td>
<td></td>
</tr>
<tr>
<td>6) Hajigabul-Sukanal:</td>
<td>Hajigabul Sukanal provides water supply of population.</td>
</tr>
<tr>
<td>7) Jeyranbatan water pipelines dept.:</td>
<td>The main function of Jeyranbatan Water Pipes Utility is to take water from Jeyranbatan Lake, treat it and supply Baku and Sumgait cities, including settlements and villages of Absheron rayon.</td>
</tr>
<tr>
<td>8) Masalli-Sukanal:</td>
<td>Providing water supply and discharge of waste water of population.</td>
</tr>
<tr>
<td>9) Mingechevir-Sukanal:</td>
<td>Providing of water supply and sanitation services, current and heavy maintenance of equipment, pipelines and facilities.</td>
</tr>
<tr>
<td>10) Not defined 1:</td>
<td>To keep functioning of the Utility due to profit gained from water sale</td>
</tr>
<tr>
<td>11) Not defined 2:</td>
<td>The main aim of the Utility is to help carrying out logistics and goods exchange of utilities under the Company and holding commercial, broker marketing and storage services.</td>
</tr>
<tr>
<td>12) Not defined 3:</td>
<td>Our work includes: Repair works, restoration works, drilling of wells and installation of water meters.</td>
</tr>
</tbody>
</table>

2. What are current challenges you have to deal with?

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Agdash-Sukanal:</td>
<td>We have deficiencies on water supply of population in summer months.</td>
</tr>
<tr>
<td>2) Gadabay-Sukanal:</td>
<td>Water pipes are old. There is no sewerage system in Rayon. Population is not provided with water completely.</td>
</tr>
<tr>
<td>3) Gakh-Sukanal:</td>
<td>As existing water and sewerage are old, there are often accidents and we are lacking on equipment and facilities in order to get rid of accidents. The other difficulty is money collection from population.</td>
</tr>
<tr>
<td>4) Gazakh-Sukanal:</td>
<td>Water and waste water pipes are old and they do not meet modern requirements. We don’t have necessary equipment and facilities.</td>
</tr>
<tr>
<td>5) Goychay:</td>
<td>Goychay rayon is supplied with drinking water from 3 sources (Goychay river, artesian wells and springs). The water treatment facilities situated in Goychay river have been destroyed for 20 years as a result of floods. Water pipes are filled with silt for a long years as river water directly supplied to the network of the city. Therefore, there are often accidents in the network. Pipes in the network are old, their lifespan have already ended and majority of pipes are ductile iron; that’s why we have difficulties in service. Besides, silty water damages sewerage system. The sewerage system also filled with silt and there are a lot of accidents. As the city population supplied with silty water, we have problems on money collection.</td>
</tr>
<tr>
<td>6) Hajigabul-Sukanal:</td>
<td>We have problems on staff leaving. Especially, it is needed to increase number of “controller” positions.</td>
</tr>
<tr>
<td>7) Jeyranbatan water pipelines dept.:</td>
<td>The main challenges are illegal constructions on transmission pipes; if we have an accident in these areas, then we have problems to get rid of it.</td>
</tr>
<tr>
<td>8) Masalli-Sukanal:</td>
<td>Collection of bills, sewerage pipes are old, corks inside of pipes and accidents with electrical motors.</td>
</tr>
</tbody>
</table>
9) Mingechevir-Sukanal: Pipes are old and we have many pipe bursts. And we have complaints from population about quality of water, because water treatment facilities are old. Also, installed water meters get wrong and population complain.

10) Not defined 1: Pipes and facilities are already old as a result of long-term usage

11) Not defined 2: There are difficulties on application of scientific-research innovations to production

12) Not defined 3: We are lacking on information resources related with application of new technologies both to production side and management.

3. What are future challenges to be met and scope future investments (construction works)?

1) Agdash-Sukanal: -

2) Gadabay-Sukanal: As relief of Rayon is mountainous, there might be difficulties in construction works in future.

3) Gakh-Sukanal: At the moment, renovation works related with water and waste water systems are carried out according to the state budget. Besides, construction of administrative building is considered.

4) Gazakh-Sukanal: Reconstruction of water and sewerage systems.

5) Goychay: Reconstruction of Water Supply and Sanitation Services Project is considered according to the contract signed between Asia Development Bank and Azerbaijan Government. The project is already being implemented. As future challenges we will have difficulties on acceptance of artesian wells as water sources in the project. Because, prime cost of water produced by artesian wells is high. Besides, as future challenges, supplying of villages of Goychay rayon with drinking water can also be mentioned. It would better to implement new projects (construction works) in order to get rid of these problems in future.

6) Hajigabul-Sukanal: -

7) Jeyranbatan water pipelines dept.: Our future challenges will be as following: as a result of long-term operation water treatment facilities will face with etching, and the equipment will not meet the requirements of modern demands. Therefore, the project on new ultra filtration facilities with 6,0 m3/s yield is carried out. Also, it is considered to implement reconstruction works in existing water treatment facilities that meet the requirements of demands.

8) Masalli-Sukanal: -

9) Mingechevir-Sukanal: As it is known, Reconstruction of Water Supply and Sanitation Services Project is being implemented at the moment.

10) Not defined 1: Renovation of water pipes and transmission facilities in the village

11) Not defined 2: Nothing is considered up to now

12) Not defined 3: The classification is difficult. At the same time, information about future investments is not enough.
4. How do you define training needs for staff in your Sukanal (JSC)?

1) Agdash-Sukanal: -
2) Gadabay-Sukanal: -
3) Gakh-Sukanal: -
4) Gazakh-Sukanal: -
5) Goychay: Today construction works according to the project are implemented in Goychay rayon. As these works are implanted in modern way, we need staff meeting the modern requirements. Therefore, we need trainings on all departments (divisions).
6) Hajigabul-Sukanal: -
7) Jeyranbatan water pipelines dept.: It has to be considered to carry out certain trainings related with automated operation systems while implementing modern reconstruction works in water treatment facilities. Either administrative staff or specialists working with equipment have to be able to operate this equipment. Otherwise, the equipment could become non-functional immediately.
8) Masalli-Sukanal: -
9) Mingechevir-Sukanal: During work.
10) Not defined 1: Procuring of new equipment during rehabilitation of water and sewerage pipelines
11) Not defined 2: We discuss situations occurred during working process with department heads
12) Not defined 3: There are no formalized methodology and mechanisms for defining training needs for the Utility. At the same time, decisions about training needs are made according to the comments and observations of the management.

4.1. Expert knowledge in the field of technical operations?

1) Agdash-Sukanal: Satisfactory
2) Gadabay-Sukanal: Satisfactory
3) Gakh-Sukanal: normal
4) Gazakh-Sukanal: Satisfactory
5) Goychay: Specialists’ production experiences are normal. But their theoretical knowledge is weak.
6) Hajigabul-Sukanal: Our tractor is old. Our truck is in non-functional situation. We need a new tractor and truck.
7) Jeyranbatan water pipelines dept.: Expert knowledge in the field of technical operations is normal.
8) Masalli-Sukanal: Satisfactory
9) Mingechevir-Sukanal: Normal
10) Not defined 1: It is considered not-satisfactory for operating of water and sewerage facilities newly installed
11) Not defined 2: Although, our specialists have enough knowledge but we need to learn innovations
12) Not defined 3: Normal

4.2.
4.3. Expert knowledge in the field of financial operations?

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1)</td>
<td>Agdash-Sukanal: Satisfactory</td>
</tr>
<tr>
<td>2)</td>
<td>Gadabay-Sukanal: good</td>
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<tr>
<td>3)</td>
<td>Gakh-Sukanal: normal</td>
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<tr>
<td>4)</td>
<td>Gazakh-Sukanal: Good</td>
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<tr>
<td>5)</td>
<td>Goychay: However calculation of profits and other financial issues are normal, but the staff (especially work in commercial group) has weak knowledge. Learning of IFRS and improving knowledge on accounting is necessary.</td>
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<td>6)</td>
<td>Hajigabul-Sukanal: -</td>
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<td>7)</td>
<td>Jeyranbatan water pipelines dept.: We have specialists on calculation of fixed and turnover assets and their knowledge is normal. Calculation of benefits is executed by “Sukanal” offices.</td>
</tr>
<tr>
<td>8)</td>
<td>Masalli-Sukanal: Satisfactory</td>
</tr>
<tr>
<td>9)</td>
<td>Mingechevir-Sukanal: Satisfactory</td>
</tr>
<tr>
<td>10)</td>
<td>Not defined 1: It is considered satisfactory as financial issues are carried out in centralized form</td>
</tr>
<tr>
<td>11)</td>
<td>Not defined 2: Accountants need to improve their knowledge on International Standards in order carrying out financial reports on IFRS</td>
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<td>12)</td>
<td>Not defined 3: Normal</td>
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4.4. Expert knowledge in the field of procurement and storage?

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<thead>
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<tbody>
<tr>
<td>1)</td>
<td>Agdash-Sukanal: -</td>
</tr>
<tr>
<td>2)</td>
<td>Gadabay-Sukanal: satisfactory</td>
</tr>
<tr>
<td>3)</td>
<td>Gakh-Sukanal: We do not have procurement and storage in the Utility</td>
</tr>
<tr>
<td>4)</td>
<td>Gazakh-Sukanal: Normal</td>
</tr>
<tr>
<td>5)</td>
<td>Goychay: Learning of material supply and establishing of resource base.</td>
</tr>
<tr>
<td>6)</td>
<td>Hajigabul-Sukanal: -</td>
</tr>
<tr>
<td>7)</td>
<td>Jeyranbatan water pipelines dept.: Procurement issues are carried out by “Azersu” JSC. Logistics specialists have normal knowledge.</td>
</tr>
<tr>
<td>8)</td>
<td>Masalli-Sukanal: Satisfactory</td>
</tr>
<tr>
<td>9)</td>
<td>Mingechevir-Sukanal: We have no procurement. We have only one warehouseman and his knowledge is normal.</td>
</tr>
<tr>
<td>10)</td>
<td>Not defined 1: Procurement and storage is carried out by “Azersu” JSC and “Joint Sukanal” LLC</td>
</tr>
<tr>
<td>11)</td>
<td>Not defined 2: Specialists’ activities on this field are satisfactory, but it is advisable to provide information about innovations</td>
</tr>
<tr>
<td>12)</td>
<td>Not defined 3: Normal</td>
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</tbody>
</table>
4.5. Expert knowledge in the field of customer communication?

1) Agdash-Sukanal: -
2) Gadabay-Sukanal: Satisfactory
3) Gakh-Sukanal: Normal
4) Gazakh-Sukanal: -
6) Hajigabul-Sukanal: -
7) Jeyranbatan water pipelines dept.: We do not have any communication with customers. We only treat water and transmit. "Sukanal" offices communicate with customers.
8) Masalli-Sukanal: Satisfactory
9) Mingechevir-Sukanal: Normal
10) Not defined 1: It is considered satisfactory
11) Not defined 2: The office has mutual relations with the Company, preparations on this field are enough
12) Not defined 3: We are not in charge of direct customer service.

4.6. Expert knowledge in the field of staff administration?

1) Agdash-Sukanal: Satisfactory
2) Gadabay-Sukanal: Good
3) Gakh-Sukanal: Normal
4) Gazakh-Sukanal: Good
5) Goychay: Improvement of staff management manners.
6) Hajigabul-Sukanal: We need trainings on staff administration.
7) Jeyranbatan water pipelines dept.: Expert knowledge in the field of staff administration is normal.
8) Masalli-Sukanal: Satisfactory
9) Mingechevir-Sukanal: Satisfactory
10) Not defined 1: It is considered satisfactory
11) Not defined 2: The situation is satisfactory on this field, but psychological trainings are needed
12) Not defined 3: Normal

4.7. Cooperation, coordination and communication?

1) Agdash-Sukanal: -
2) Gadabay-Sukanal: -
3) Gakh-Sukanal: -
4) Gazakh-Sukanal: -
5) Goychay: Establishing of communication networks with other authorities.
6) Hajigabul-Sukanal: -
7) Jeyranbatan water pipelines dept.: In case of accidents in transmission pipes from Jeyranbatan Water Pipes, the employees act in cooperation.
8) Masalli-Sukanal: -
9) **Mingechevir-Sukanal**: We have cooperation with “Joint Sukanal” LLC

10) **Not defined 1:** -

11) **Not defined 2:** Mutual activities among departments have positive impact on quality of work. Works are carried out connected in this field

12) **Not defined 3:** In order to establish and improve works on cooperation, coordination and communication issues, we need to create local network, electronic circulation of documents and “one employee – one computer” for having internet access for all employees.

### 4.8. Management and leadership?

1) **Agdash-Sukanal**: Selecting of worthy staff and avoiding staff leaving from the Utility.

2) **Gadabay-Sukanal**: -

3) **Gakh-Sukanal**: -

4) **Gazakh-Sukanal**: -

5) **Goychay**: Improving of attitude to staff and service level to customers.

6) **Hajigabul-Sukanal**: -

7) **Jeyranbatan water pipelines dept.**: Regular meetings are carried out between management and employees, and management is ready to solve any raised problem and etc.

8) **Masalli-Sukanal**: -

9) **Mingechevir-Sukanal**: -

10) **Not defined 1**: -

11) **Not defined 2**: Management is implemented on horizontal line

12) **Not defined 3**: -

### 4.9. Strategies and strategic thinking?

1) **Agdash-Sukanal**: -

2) **Gadabay-Sukanal**: -

3) **Gakh-Sukanal**: -

4) **Gazakh-Sukanal**: -

5) **Goychay**: Establishing of modern service.

6) **Hajigabul-Sukanal**: -

7) **Jeyranbatan water pipelines dept.**: Plans are implemented on the base of prepared strategy according to the “Azersu” JSC mission.

8) **Masalli-Sukanal**: -

9) **Mingechevir-Sukanal**: -

10) **Not defined 1**: To achieve high goals in supplying of population with quality water and money collection

11) **Not defined 2**: It is considered to extend our activities and open new departments, and trainings might be needed for improving of new staff’s knowledge

12) **Not defined 3**: -

### 4.10.
4.11. Any other?

1) Agdash-Sukanal: -
2) Gadabay-Sukanal: -
3) Gakh-Sukanal: -
4) Gazakh-Sukanal: -
5) Goychay: Establishing of material-technical resources in order to function independently in the future.
6) Hajigabul-Sukanal: -
7) Jeyranbatan water pipelines dept.: -
8) Masalli-Sukanal: -
9) Mingechevir-Sukanal: -
10) Not defined 1: -
11) Not defined 2: -
12) Not defined 3: -

5. What are indicators for successful training (what makes training successful)?

1) Agdash-Sukanal: -
2) Gadabay-Sukanal: -
3) Gakh-Sukanal: -
4) Gazakh-Sukanal: -
5) Goychay: Applying of learnt knowledge to practice.
6) Hajigabul-Sukanal: -
7) Jeyranbatan water pipelines dept.: Development of specialists that have normal knowledge is the indicator of successful training.
8) Masalli-Sukanal: -
9) Mingechevir-Sukanal: Training organizers could answer this question.
10) Not defined 1: To apply knowledge to practice
11) Not defined 2: Implementing trainings connected with practice
12) Not defined 3: We can consider successful training like this: If an employee participated in trainings is able to apply learnt ideas and skills to his work, then we can say the training is successful.

6. What do you expect from an eligible training provider?

1) Agdash-Sukanal: -
2) Gadabay-Sukanal: -
3) Gakh-Sukanal: -
4) Gazakh-Sukanal: -
5) Goychay: Teaching of modern knowledge on all areas.
6) Hajigabul-Sukanal: -
7) Jeyranbatan water pipelines dept.: An eligible training provider has to demonstrate his skills and abilities in order to carry out his prepared plans for supplying of existing systems with new equipments and facilities and has to do his best to improve the staff according to the technological development.
8) Masalli-Sukanal: -
9) Mingechevir-Sukanal: -
10) Not defined 1: High knowledge, close relation with trainees and showing recommendations visually
11) Not defined 2: Improving working quality after trainings
12) Not defined 3: A training specialist should stimulate trainees and share his/her experience widely with participants.

7. What are suitable training formats (classroom, on the job, time-frame, intervals)?

1) Agdash-Sukanal: -
2) Gadabay-Sukanal: -
3) Gakh-Sukanal: -
4) Gazakh-Sukanal: -
5) Goychay: We need trainings on all formats.
6) Hajigabul-Sukanal: -
7) Jeyranbatan water pipelines dept.: On the job training is the best one to gain experience
8) Masalli-Sukanal: -
9) Mingechevir-Sukanal: Training organizers should define the training formats.
10) Not defined 1: Classroom and on the job
11) Not defined 2: Intervals
12) Not defined 3:

8. Any other suggestions to be considered in the scope of future training programs in “Azersu” JSC?

1) Agdash-Sukanal: -
2) Gadabay-Sukanal: -
3) Gakh-Sukanal: -
4) Gazakh-Sukanal: Increasing information and knowledge about applied new technologies might be considered.
5) Goychay: We need to improve knowledge of technical personal (as smart-card type water meters are being installed), engineers and computer operators on commercial department.
6) Hajigabul-Sukanal: -
7) Jeyranbatan water pipelines dept.: In the scope of future training programs we may consider the followings: Accounting and bookkeeping department – learning of international accounting; Staff administration – knowledge improvement on staff development; Labor organization, economic analysis and forecasting department – learning new methods on labor organization and processing rules of annual plans; Logistics (Supply) department – improvement the official duty and etc.
8) Masalli-Sukanal: -
9) Mingechevir-Sukanal: -
10) Not defined 1: -
11) Not defined 2: -
12) Not defined 3: To send specialists on every field to foreign countries for training courses and experience exchange with foreign specialists

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