

# SHORT TERM AND KEY QUALIFICATION COURSES FOR PERSONNEL OF URBAN WATER AND SANITATION CORPORATIONS



Compiled by: Mohamed Al-Moayad and Peter Herrmann

October 2007

## **A. Introduction to the Catalogue of National Training Opportunities**

## **B. List of National Training Opportunities**

### **1. Management**

- 1.1. The Basic Concepts of Management (Mgmt. Cluster)
- 1.2. Administration & Managing of Salaries & Wages (Mgmt. Cluster)
- 1.3. Management of Human Resources (Mgmt. Cluster)
- 1.4. Water Production & Distribution
- 1.5. Business Planning
- 1.6. Finance Management for non Finance Managers
- 1.7. Management of Work Safety
- 1.8. Training of Trainers

### **2. Technical**

- 2.1. Basic Course in Water Production (wells, pumps, motors; Cluster WPO)
- 2.2. Chlorination (Cluster WPO)
- 2.3. Maintenance of Water Production Equipment (Cluster WPO)
- 2.4. Advanced Course in Water Production (Cluster WPO)
- 2.5. Water Distribution (basic; Cluster WDO)
- 2.6. Water Leakage Detection (Cluster WDO)
- 2.7. Water Distribution Networks (advanced course; Cluster WDO)
- 2.8. Water Chemistry and Quality Standards
- 2.9. Ground Water, Maintenance and Re-qualification of Water Wells (advanced course)
- 2.10. Maintenance and Operating of Wells, Motors, Water Reservoirs and Water Networks
- 2.11. Operation and Maintenance of Electric Motors
- 2.12. Operation and Maintenance of Diesel Generators (diesel power stations)
- 2.13. Collection and Treatment of Wastewater and Sludge
- 2.14. Treatment and Canalization of Wastewater and Sludge

### **3. Administration & Finance**

- 3.1. Customer Relations (Cluster Customers & Revenues)
- 3.2. Water Meter Reading (Cluster Customer & Revenues)
- 3.3. Purchasing and Procurement Management (Cluster Logistics)
- 3.4. Store Management and Accounting (Cluster Logistics)
- 3.5. Commercial Accounting (Cluster Finance & Administration)
- 3.6. Cost Accounting (Cluster Finance & Administration)
- 3.7. Planning and Control of Budgets (Cluster Finance & Administration)

## C. Administrative Challenges

### Abbreviations:

GTZ	Gesellschaft fuer Technische Zusammenarbeit
LC	Local Corporation
MGMT	Management
MWE	Ministry of Water and Environment
NIAS	National Institute for Administrative Sciences
NWSA	National Water and Sanitation Authority
NWSSIP	National Water Sector Strategy and Investment Programme
TATC	Technical & Administrative Training Centre
WEC	Water & Environment Centre
WDO	Water Distribution Operation
WPO	Water Production Operation

## **A. Introduction to the Catalogue of National Training Opportunities**

The National Water Sector Strategy and Investment Program 2005-2009 (NWSSIP) considers the “shortage of qualified human resources.....the biggest constraint to building the capacities necessary for sound water management”.

In order to overcome this shortage, a number of avenues for qualifying staff have to be pursued. One avenue is the provision of short term (in-service) training of existing staff of Local Corporations. This means sending employees for a short training course or even arranging a short course at the place of work.

Over the last five years, 29 short courses have been developed by the Department of Organisation and Training of NWSA in collaboration with German Technical Cooperation (GTZ). These courses, with a duration between three and five days are readily available and on offer to further qualify personnel of water utilities. They cover essential managerial, technical and administrative/financial topics. Eight courses cover managerial topics, 14 technical topics and seven administrative and financial subjects.

A number of these short courses are arranged and implemented as series or in clusters aiming at particular key qualifications in the water sector. For example a series of four subsequent courses (Basic Water Production, Chlorination, Maintenance of Water Production Equipment and Advanced Water Production) are tailored to the demands of Water Production Operators. Similarly there is another cluster comprising three short courses which addresses the needs of Water Distribution Operators. Wherever short courses are part of a cluster it is most advisable to ensure that the same trainees participate in all the courses of the cluster. Therefore, in the application process for advanced courses, priority is given to candidates who attended the previous course(s).

However, the majority of short courses are not yet part of clusters and are open to any applicant from the targeted group of personnel.

The particular advantage of these courses lies in their concise design, their adjustment to the needs of water utilities and their implementation within the country. As a result these courses are fairly inexpensive and they do not interfere with the work assignment of staff for more than a few days.

These courses are co-ordinated by the Department of Organisation and Training of NWSA and implemented by reputable national training providers like the Water & Environment Centre (WEC) of Sana'a University, the Technical and Administrative Training Centre (TATC) of the Hail Saeed Companies in Taiz, the National Institute for Administrative Sciences (NIAS) or the Dhahban Technical Institute in Sana'a.

In order to share information about these readily available courses, this informative document has been compiled to assist Human Resources Departments, Training Officers and Managers of water utilities as well as donor organizations in choosing appropriate training opportunities in line with the demand of their staff.

Personnel Development in the Urban  
Water Supply and Sanitation Sector

So far no dates have been set for the listed courses in this catalogue. They shall be arranged in accordance to the demand from LCs, water utilities and branches. As soon as a sufficient demand – about 20 nominees per event - for a particular course has been raised, NWSA as the co-ordinating body will make arrangements and select dates suitable for the nominated participants.

Therefore any LC, water utility or branch interested in any course should forward the nomination to:

NWSA-Department of Organisation and Training  
P.O.Box 104  
Tel. 250179/711655908  
Fax: 250167

## أولاً: مقدمة عن كتالوج فرص التدريب المحلي

الإستراتيجية الوطنية والبرنامج الإستثماري 2005-2009 لقطاع المياه تؤكد أن " القصور في الموارد البشرية المؤهلة .... هو المعوق الأساسي لبناء القدرات المطلوبة للإدارة السليمة للمياه " .

للتغلب على ذلك القصور يجب اتخاذ عدة سبل لتأهيل العاملين في قطاع المياه. أحد تلك السبل التي تمثل في توفير الدورات التدريبية القصيرة لتأهيل الكادر العامل في المؤسسات المحلية (التأهيل أثناء الخدمة) ، وهذا يعني إرسال الموظفين للمشاركة في دورات تدريبية قصيرة أو حتى ترتيب دورات تدريبية في موقع العمل.

على مدى الخمس السنوات الماضية تم تطوير 29 برنامج تدريبي من قبل الإدارة العامة للتدريب بالمؤسسة العامة للمياه والصرف الصحي بالتعاون مع المؤسسة الألمانية للتعاون الفني (GTZ). وهذه الدورات التي تعقد عادة لفترة ثلاثة إلى خمسة أيام متوفرة ومعروضة للتأهيل المستمر للكادر العامل في مرافق المياه والصرف الصحي. تغطي تلك الدورات التدريبية مواضيع أساسية في مجالات الإدارة والمجالات الفنية والإدارة المالية.

عدد من تلك الدورات التدريبية يتم تنظيمها وتنفيذها على شكل سلسلة أو مجموعات تدريبية تستهدف، وبشكل خاص، التأهيل الأساسي في قطاع المياه والصرف الصحي. فعلى سبيل المثال مجموعة تتكون من أربع دورات تدريبية تنفذ بشكل متعاقب (أساسيات إنتاج المياه، الكلور، صيانة معدات إنتاج المياه، دورة متقدمة في إنتاج المياه) تم تطويرها لتغطي احتياجات المشغلين في مجال إنتاج المياه. وبالمثل هناك مجموعة دورات تدريبية أخرى تتكون من ثلاث دورات تدريبية قصيرة تتناسب مع احتياجات فنيي توزيع المياه. وحيثما كانت الدورات القصيرة جزءاً من مجموعة تدريبية فينصح بالتأكيد على مشاركة نفس المتدربين في كل الدورات في هذه المجموعة التدريبية. وعليه تعطى الأولوية عند عملية التقدم للدورات المتقدمة، للمرشحين الذين سبق وأن شاركوا في الدورات السابقة.

ومع ذلك فأغلب الدورات القصيرة ليست مرتبة كلياً، حتى الآن، ضمن مجموعات أو رزم تدريبية وهي متاحة لكل متقدم من الفئات المستهدفة للعاملين.

والميزة الخاصة لهذه الدورات تكمن في تصميمها المختصر وامكانية موازمتها مع احتياجات مرافق المياه والصرف الصحي وكذا في تنفيذها في البلاد (داخلياً). ونتيجة ذلك قلة تكلفة تنفيذها وعدم تضاربها مع عمل الكادر إلا لبضعة أيام.

يتم التنسيق للدورات التدريبية من قبل الإدارة العامة للتدريب بالمؤسسة العامة للمياه والصرف الصحي وتنفذ في مؤسسات تدريبية مرموقة مثل مركز المياه والبيئة التابع لكلية الهندسة بجامعة صنعاء ، ومركز التدريب الفني والإداري التابع لشركات هائل سعيد بمدينة تعز والمعهد الوطني للعلوم الإدارية وكذا المعهد الصناعي / ذهبان - صنعاء.

وبهدف تشارك المعلومات حول الدورات التدريبية المتاحة حالياً تم إعداد هذه الوثيقة المعلوماتية لمساعدة إدارة التنمية البشرية ومسؤولي ومديري التدريب في مرافق المياه والصرف الصحي وكذا منظمات المانحين في اختيار فرص التدريب المناسبة لإحتياجات العاملين لديهم.

حتى الآن ليس هناك محددات زمنية لتنفيذ مثل تلك الدورات. حيث يتم الترتيب لها حسب طلب المؤسسات المحلية ومرافق المياه والفروع. وحالما يظهر الطلب المناسب لعقد الدورة القصيرة ذات العلاقة - حوالي 20 مشارك لكل دورة - تقوم المؤسسة العامة للمياه والصرف الصحي كونها جهة التنسيق بالترتيب واختيار التاريخ المناسب للمشاركين الذين تم تحديدهم.

وعلى هذا فأى مؤسسة محلية أو مرفق المياه أو فرع مؤسسة ترغب في أية دورة عليها أن ترفع أسماء مشاركيها إلى:

المؤسسة العامة للمياه والصرف الصحي  
الإدارة العامة للتنظيم والتدريب  
ص.ب. 104 صنعاء

ت: 711655908/250179

فاكس: 250167

**PART B:**

**List of National Training Opportunities:**

**Description of Courses**

ثانيا : قوائم فرص التدريب المحلي

شرح موجز للدورات التدريبية

### 1.1. The Basic Concepts of Management

Name of Institution	National Institute for Administrative Sciences (NIAS)
Location	Sana`a, Al-Adl street
Contact	Hamoud Al-Sayaghi, Tel: 711139623
Course title	<b>The Basic Concepts of Management</b>
<b>0 Management</b> 0 Technical 0 Administration/Finance	Management
Main Topics	<ul style="list-style-type: none"> <li>• Terms of organization with management</li> <li>• Management process and management tasks,</li> <li>• Planning: importance &amp; demand,</li> <li>• Sorts of planning &amp; planes,</li> <li>• Problem analysis, decision,</li> <li>• Communication and leadership,</li> <li>• Concepts of controlling and control system.</li> </ul>
Language	Arabic
Duration	5 days
Entry Qualification/ target group	Board of directors, member of supervising committees, directors and heads of dep.
Exit Certificates	Certificate of participation
Costs	
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	This course is implemented in combination with course 1.2. and 1.3. as part of the Management Cluster

## 1.2. Administration and Management of Salaries and Wages

Name of Institution	National Institute for Administrative Sciences (NIAS)
Location	Sana`a, Al-Adl street
Contact	Hamoud Al-Sayaghi, Tel: 711139623
Course title	<b>Administration and Management of Salaries and Wages</b>
0 Management 0 Technical 0 Administration/Finance	Management
Main Topics	<ul style="list-style-type: none"> <li>• Collecting information resources related to subject (laws, regulation)</li> <li>• Employment system and cadre affaire,</li> <li>• Employment, termination and transfer of personnel,</li> <li>• Administrative discipline,</li> <li>• Employment documents.</li> </ul>
Language	Arabic
Duration	5 days
Entry Qualification	Administrative director, personnel director, director for finance.
Exit Certificates	Certificate of participation
Costs	
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	This course is implemented in combination with course 1.1. and 1.3. as part of the Management Cluster

### 1.3. Management of Human Resources

Name of Institution	National Institute for Administrative Sciences (NIAS)
Location	Sana`a, Al-Adl street
Contact	Hamoud Al-Sayaghi, Tel: 711139623
Course title	<b>Management of Human Resources</b>
0 Management 0 Technical 0 Administration/Finance	Management
Main Topics	<ul style="list-style-type: none"> <li>• Importance of human resource management,</li> <li>• Types of activities for human resource management,</li> <li>• How to connect human resource development and management with the strategy of the corporation,</li> <li>• Preparing a human resource plan,</li> <li>• Selection the employees according to job description,</li> <li>• Determination of 4 essential approaches for assessment and how to evaluate this assessment,</li> <li>• Technique of the interview with the applicants.</li> </ul>
Language	Arabic
Duration	5 days
Entry Qualification	Directors of LCs, Directors of the branches, heads of departments
Exit Certificates	Certificate of participation
Costs	
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	(Part of management Cluster together with 1.1 and 1.2)

#### 1.4. Water Production & Distribution

Name of Institution	The Water & Environment Centre (WEC)/ Sana'a University
Location	Sana'a, Sana'a University/ Faculty of Engineering
Contact	Dr. Fadhl Al-Nozaily, <a href="tel:0146436067">Tel: 01 464360/6/7</a> Fax: 01 464 367 E-Mail: <a href="mailto:wec@y.net.ye">wec@y.net.ye</a> / <a href="mailto:wec2@yemen.net.ye">wec2@yemen.net.ye</a> <a href="http://www.wec.edu.ye">www.wec.edu.ye</a>
Course title	<b>Water Production &amp; Distribution</b>
0 Management 0 Technical 0 Administration/Finance	Management
Main Topics	<ul style="list-style-type: none"> <li>• Strategy of water preservation in Yemen</li> <li>• Overview on water production and quality of drink water in Yemen</li> <li>• Maintaining the water network</li> <li>• Methods on wastewater collection and treatment</li> <li>• Influence of wastewater on our environment and our health.</li> </ul>
Language	Arabic
Duration	4 days
Entry Qualification/ target group	Directors, heads of section (not technical personnel), member of LC boards, branches or Local Councils
Exit Certificates	Certificate of participation
Costs	
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	To be included in future Cluster on water distribution

## 1.5. Business Planning

Name of Institution	National Institute for Administrative Sciences (NIAS)
Location	Sana`a, Al-Adl street
Contact	Hamoud Al-Sayaghi, Tel: 711139623
Course title	<b>Business Planning</b>
<b>0 Management</b> 0 Technical 0 Administration/Finance	Management
Main Topics	<ul style="list-style-type: none"> <li>• Calculate the cost of water using various methods,</li> <li>• Compare the effects of the various water costing methods on revenue and service,</li> <li>• Project growth in service demand,</li> <li>• Identify bottlenecks in service provision,</li> <li>• Identify, analyze and prioritize capital investment projects,</li> <li>• Develop an initial plan for branches.</li> </ul>
Language	Arabic
Duration	4days
Entry Qualification/ target group	All personnel involved in business planning activities in NWSA and branches.
Exit Certificates	Certificate of participation
Costs	
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

### 1.6. Finance Management for non Finance Managers

Name of Institution	National Institute for Administrative Sciences (NIAS)
Location	Sana`a, Al-Adl street
Contact	Hamoud Al-Sayaghi, Tel: 711139623
Course title  0 Management 0 Technical 0 Administration/Finance	<b>Finance Management for non Finance Managers</b>  Management
Main Topics	<ul style="list-style-type: none"> <li>• Finance management and accounting systems,</li> <li>• Accounting as a information system for the finance management,</li> <li>• Finance management and accounts controlling,</li> <li>• Analysis of optimum points, external revision of accounting documents.</li> </ul>
Language	Arabic
Duration	5 days
Entry Qualification/ target group	Member of supervision committee, directors of branches, director of dep. (except the finance directors).
Exit Certificates	Certificate of participation
Costs	
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

### 1.7. Management of Work Safety

Name of Institution	Technical & Administrative Training Center (TATC) / Hail Saeed Companies, Taiz
Location	Taiz, Al-Houban / Hail Saeed Companies
Contact	Eng. Jameel A. Al-Kadassi, Director P.O.Box 5302, Taiz <a href="tel:04-218587">Tel: 04-218587</a> , Fax: 04-218586 Mail:jameelalkadassi@yahoo.com
Course title	<b>Management of Work Safety</b>
0 Management 0 Technical 0 Administration/Finance	Management
Main Topics	<ul style="list-style-type: none"> <li>• Definition of planned maintenance,</li> <li>• Convincing the participants with the statement: maintenance lead to costs reduction,</li> <li>• Check all factors related to the maintenance tasks, submit simple procedures to planning and monitoring the maintenance tasks,</li> <li>• Importance of store function to enable the maintenance duties,</li> <li>• Instruction about work risks in the utilities of water and sanitation sector,</li> <li>• Legislations of work safety in the institution,</li> <li>• Application of the work safety equipment.</li> </ul>
Language	Arabic
Duration	5 days
Entry Qualification/ target group	Directors of the branches, technical directors, heads of technical dep.
Exit Certificates	Certificate of participation
Costs	Ca. 37,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

### 1.8. Training of Trainers (ToT)

Name of Institution	National Institute for Administrative Sciences (NIAS)
Location	Sana`a, Al-Adl street
Contact	Hamoud Al-Sayaghi, Tel: 711139623
Course title	<b>Training of Trainers (ToT)</b>
<b>0 Management</b> 0 Technical 0 Administration/Finance	Management
Main Topics	<ul style="list-style-type: none"> <li>• Comprehend the principles of adult education and effective communication,</li> <li>• Command the effective presentation skills,</li> <li>• Face the audience,</li> <li>• Use the training aids effectively,</li> <li>• Avoid common errors in conducting training,</li> <li>• Communication, convincing and persuading the audience by utilizing all principles of adult education, effective communication and visualization.</li> </ul>
Language	Arabic
Duration	5 days
Entry Qualification/ target group	Potential trainers, manager and supervisors involved in the coaching of their subordinates; teachers
Exit Certificates	Certificate of participation
Costs	
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

## 2.1. Basic Course on Water Production (wells, pumps, motors)

Name of Institution	Technical & Administrative Training Center (TATC) / Hail Saeed Companies, Taiz
Location	Taiz, Al-Houban / Hail Saeed Companies
Contact	Eng. Jameel A. Al-Kadassi, Director P.O.Box 5302, Taiz <a href="tel:04-218587">Tel: 04-218587</a> , Fax: 04-218586 Mail:jameelalkadassi@yahoo.com
Course title 0 Management <b>0 Technical</b> 0 Admin/Finance	<b>Basic Course on Water Production</b> (wells, pumps, motors)  Technical
Main Topics	<ul style="list-style-type: none"> <li>• Basic principles about operating the internal combustion engines, especially the diesel motor,</li> <li>• Clarify the components of the drink water pump station (pumps; electro motors; diesel generator),</li> <li>• Operating water production form the wells (centrifugal pumps),</li> <li>• Observation of all meters/gauges and realizing the abnormal appearances in the system (water level, pressure, water flow, motor voltages, electrical current, lubrication...),</li> <li>• Proper steps to produce water with good quality,</li> <li>• Log books,</li> <li>• House installation of water network.</li> </ul>
Language	Arabic
Duration	3 days
Entry Qualification	Technical personnel in the pump stations (al least secondary school certificate, with min 2 years work experience)
Exit Certificates	Certificate of participation
Costs	Ca. 25,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	First part of Cluster for Water Production Operator

## 2.2. Chlorination

Name of Institution	Technical & Administrative Training Center (TATC) / Hail Saeed Companies, Taiz
Location	Taiz, Al-Houban / Hail Saeed Companies
Contact	Eng. Jameel A. Al-Kadassi, Director P.O.Box 5302, Taiz <a href="tel:04-218587">Tel: 04-218587</a> , Fax: 04-218586 Mail:jameelalkadassi@yahoo.com
Course title	<b>Chlorination</b>
0 Management <b>0 Technical</b> 0 Administration/Finance	Technical
Main Topics	<ul style="list-style-type: none"> <li>• Purpose of chlorination,</li> <li>• Dosage of chlorination,</li> <li>• Preparation of field examination sample,</li> <li>• Controlling the supply of chlorine powder and chlorine gas,</li> <li>• Control the dosage proportion of the chlorine,</li> <li>• Apply the safety regulations,</li> <li>• Apply the regulations for emergency cases.</li> </ul>
Language	Arabic
Duration	4 days
Entry Qualification	Directors of the branches, technical directors, heads of technical dep..
Exit Certificates	Certificate of participation
Costs	Ca. 30,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	Second part of Cluster for Water Production Operator

### 2.3. Maintenance of Water Production Equipment

Name of Institution	Technical & Administrative Training Center (TATC) / Hail Saeed Companies, Taiz
Location	Taiz, Al-Houban / Hail Saeed Companies
Contact	Eng. Jameel A. Al-Kadassi, Director P.O.Box 5302, Taiz <a href="tel:04-218587">Tel: 04-218587</a> , Fax: 04-218586 Mail:jameelalkadassi@yahoo.com
Course title	<b>Maintenance of Water Production Equipment</b>
0 Management <b>0 Technical</b> 0 Administration/Finance	Technical
Main Topics	<ul style="list-style-type: none"> <li>• Principles of maintenance of diesel motors,</li> <li>• The common failure of the equipment</li> <li>• Log books of the pump station,</li> <li>• Operating and maintenance of water reservoirs,</li> <li>• Chlorinating and water quality control, registration in log books,</li> <li>• Allocating the leakage and repair, care of pipes.</li> </ul>
Language	Arabic
Duration	3 days
Entry Qualification/ target group	Technical personnel in water production (at least secondary school certificate and min 2 years experience.
Exit Certificates	Certificate of participation
Costs	Ca. 25,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	Third part of cluster for Water Production Operator

## 2.4. Water Production (advanced course)

Name of Institution	The Water & Environment Centre (WEC)/ Sana'a University
Location	Sana'a, Sana'a University/ Faculty of Engineering
Contact	Dr. Fadhl Al-Nozaily, <a href="tel:0146436067">Tel: 01 464360/6/7</a> Fax: 01 464 367 E-Mail: <a href="mailto:wec@y.net.ye">wec@y.net.ye</a> / <a href="mailto:wec2@yemen.net.ye">wec2@yemen.net.ye</a> <a href="http://www.wec.edu.ye">www.wec.edu.ye</a>
Course title 0 Management <b>0 Technical</b> 0 Admin/Finance	<b>Water Production (advanced course)</b>  Technical
Main Topics	<ul style="list-style-type: none"> <li>• Measure draw down of water level (static and pumping/dynamic),</li> <li>• Record power consumption for each well,</li> <li>• Check sanitary seal of production well,</li> <li>• Prepare and maintain all chlorination operation (incl. Injectors, cylinders etc.); prepare reports and records and implement chlorine safety precaution,</li> <li>• Check and report on piping and appurtenances for wear, tear, and leakage,</li> <li>• Inspect and report on the functioning of valves, water level indicators, the high level alarm, the overflow alarm and the washout</li> <li>• Check and clean the outlet of the overflow, the washout line and the float valves,</li> <li>• Check the reservoir for leakage, structural damages and sediment accumulation, organize and implement corrective action,</li> <li>• Take and record instrument reading of reservoir level indicators, flow meters, ammeters, pressure gauge, electric meters, etc.</li> <li>• Apply reservoir safety and security measures.</li> </ul>
Language	Arabic
Duration	4 days
Entry Qualification	Water production personnel
Exit Certificates	Certificate of participation
Costs	
Application procedure	through NWSA-Department of Training P.O.Box 104 , Tel. 250179/711655908 Fax: 250167
Comments	Fourth course of Cluster for Water Production Operator

## 2.5. Water Distribution Networks (basic water distribution)

Name of Institution	Technical & Administrative Training Center (TATC) / Hail Saeed Companies, Taiz
Location	Taiz, Al-Houban / Hail Saeed Companies
Contact	Eng. Jameel A. Al-Kadassi, Director P.O.Box 5302, Taiz <a href="tel:04-218587">Tel: 04-218587</a> , Fax: 04-218586 Mail:jameelalkadassi@yahoo.com
Course title	<b>Water Distribution Networks</b> (basic water distribution)
0 Management <b>0 Technical</b> 0 Administration/Finance	Technical
Main Topics	<ul style="list-style-type: none"> <li>• Make distinction between different networks,</li> <li>• Be acquainted with the different hydraulic pipes,</li> <li>• Maintenance of hydraulic pipes and reduction of the friction in these pipes,</li> <li>• Be acquainted with the different valves and steps for related maintenance,</li> <li>• Operation of meter in the hydraulic system,</li> <li>• Function principles of the meters,</li> <li>• Calculation of non-revenue water.</li> </ul>
Language	Arabic
Duration	3 days
Entry Qualification	Heads of distribution dep. and water network supervisors.
Exit Certificates	Certificate of participation
Costs	Ca. 25,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	First course of Cluster for Water Distribution Operator

## 2.6. Water Leakage Detection and Repair Techniques

Name of Institution	The Water & Environment Centre (WEC)/ Sana'a University
Location	Sana'a, Sana`a University/ Faculty of Engineering
Contact	Dr. Fadhl Al-Nozaily, <a href="tel:0146436067">Tel: 01 464360/6/7</a> Fax: 01 464 367 E-Mail: <a href="mailto:wec@y.net.ye">wec@y.net.ye</a> / <a href="mailto:wec2@yemen.net.ye">wec2@yemen.net.ye</a> <a href="http://www.wec.edu.ye">www.wec.edu.ye</a>
Course title	<b>Water Leakage Detection and Repair Techniques</b>
0 Management <b>0 Technical</b> 0 Administration/Finance	Technical
Main Topics	<ul style="list-style-type: none"> <li>• Six reasons for water leakage,</li> <li>• Detecting leakages,</li> <li>• Defining the possible controlling methods,</li> <li>• Decision on the proper methods (related to situation) of repair.</li> </ul>
Language	Arabic
Duration	4 days , March 2004
Entry Qualification	Directors, heads of section (not technical personnel), board member of LCs and branches.
Exit Certificates	Certificate of participation
Costs	Ca. 32,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	Second course of Cluster for Water Distribution Operator

## 2.7. Water Distribution (advanced)

Name of Institution	Technical & Administrative Training Center (TATC) / Hail Saeed Companies, Taiz
Location	Taiz, Al-Houban / Hail Saeed Companies
Contact	Eng. Jameel A. Al-Kadassi, Director P.O.Box 5302, Taiz <a href="tel:04-218587">Tel: 04-218587</a> , Fax: 04-218586 Mail:jameelalkadassi@yahoo.com
Course title	<b>Water Distribution</b> (advanced)
0 Management <b>0 Technical</b> 0 Administration/Finance	Technical
Main Topics	<ul style="list-style-type: none"> <li>• Laying down the required pipes (material &amp; dimensions)</li> <li>• Calculation of diameters of required pips,</li> <li>• Repair all kind of pipes,</li> <li>• Mechanical repair of the valves,</li> <li>• Storage of pipes and fitting the PVC pips,</li> <li>• Operating and maintenance of water meters</li> <li>• Trouble shooting and calibration of water meter,</li> <li>• Ascertaining the leakage using the suitable instruments and tools.</li> </ul>
Language	Arabic
Duration	3 days
Entry Qualification/ target group	Heads of distribution dep. and network supervisor.
Exit Certificates	Certificate of participation
Costs	Ca. 25,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	Third course of Cluster for Water Distribution Operator

## 2.8. Water Chemistry and Quality Standards

Name of Institution	The Water & Environment Centre (WEC)/ Sana'a University
Location	Sana'a, Sana`a University/ Faculty of Engineering
Contact	Dr. Fadhl Al-Nozaily, <a href="tel:0146436067">Tel: 01 464360/6/7</a> Fax: 01 464 367 E-Mail: <a href="mailto:wec@y.net.ye">wec@y.net.ye</a> / <a href="mailto:wec2@yemen.net.ye">wec2@yemen.net.ye</a> <a href="http://www.wec.edu.ye">www.wec.edu.ye</a>
Course title  0 Management <b>0 Technical</b> 0 Administration/Finance	<b>Water Chemistry and Quality Standards</b>  Technical
Main Topics	<ul style="list-style-type: none"> <li>• Definition of water</li> <li>• Property of water</li> <li>• Locations of water storage,</li> <li>• Definition of drink water (quality standards),</li> <li>• Composition of drink water.</li> </ul>
Language	Arabic
Duration	4days
Entry Qualification	Lab technicians and their assistants.
Exit Certificates	Certificate of participation
Costs	Ca. 32,000 per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

## 2.9. Ground Water - Maintenance and Re-qualification of Water Wells (advanced training course)

Name of Institution	The Water & Environment Centre (WEC)/ Sana'a University
Location	Sana'a, Sana`a University/ Faculty of Engineering
Contact	Dr. Fadhl Al-Nozaily, Tel: 01 464360/6/7 Fax: 01 464 367 E-Mail: <a href="mailto:wec@y.net.ye">wec@y.net.ye</a> / <a href="mailto:wec2@yemen.net.ye">wec2@yemen.net.ye</a> <a href="http://www.wec.edu.ye">www.wec.edu.ye</a>
Course title	<b>Ground Water - Maintenance and Re-qualification of Water Wells</b> (advanced training course)
0 Management <b>0 Technical</b> 0 Administration/Finance	Technical
Main Topics	<ul style="list-style-type: none"> <li>• Water basins</li> <li>• Water wells</li> <li>• Dynamics of ground water</li> <li>• Wells drilling</li> <li>• Well building</li> <li>• Operation and maintenance of the wells</li> <li>• Types of ground water.</li> </ul>
Language	Arabic
Duration	5 days
Entry Qualification	Directors of LCs, Directors of the branches, technical directors, heads of technical dep. of water production, specialists working in requalification of water well.
Exit Certificates	Certificate of participation
Costs	Ca. 40,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

## 2.10. Maintenance and Operating of Wells, Pumps, Motors, Water Reservoirs and Water Networks

Name of Institution	Technical & Administrative Training Center (TATC) / Hail Saeed Companies, Taiz
Location	Taiz, Al-Houban / Hail Saeed Companies
Contact	Eng. Jameel A. Al-Kadassi, Director P.O.Box 5302, Taiz <a href="tel:04-218587">Tel: 04-218587</a> , Fax: 04-218586 Mail:jameelalkadassi@yahoo.com
Course title 0 Management 0 Technical 0 Admin/Finance	<b>Maintenance and Operating of Wells, Pumps, Motors, Water Reservoirs and Water Networks</b> <b>Technical</b>
Main Topics	<ul style="list-style-type: none"> <li>• Operating internal combustion engines (incl. diesel eng.)</li> <li>• Components of pump station</li> <li>• Water production from the wells (centrifugal pumps driven by electro motor or diesel generator),</li> <li>• Observation of all meters, gauges and realizing abnormal appearances in the system,</li> <li>• Steps to produce water with good quality,</li> <li>• Measurement of rust in the metal reservoirs,</li> <li>• Clarify process of material cutting (PVC, metal) and pipe fitting,</li> <li>• Maintenance and good keeping of instruments and tools,</li> <li>• Allocation and repair of leakage in underground pipes,</li> <li>• Types of valves, and how to fit them in water network,</li> <li>• log book entries.</li> </ul>
Language	Arabic
Duration	6 days
Entry Qualification	Heads of maintenance and repair workshop (mechanic and electric), technical worker in the workshop for electric and mechanic, technicians in chlorinating dep., responsible persons for operating the water reservoirs & pumps. At least sec. school & min 2 years experience.
Exit Certificates	Certificate of participation
Costs	Ca. 43,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167

## 2.11. Operation and Maintenance of Electric Motors

Name of Institution	VTC Dhahban,
Location	Sana`a
Contact	Ahmed Sa`ad Hadi, tel: 777329991
Course title 0 Management <b>0 Technical</b> 0 Administration/Finance	<b>Operation and Maintenance of Electric Motors</b>  Technical
Main Topics	<ul style="list-style-type: none"> <li>• Energy for electric motors of water pumps,</li> <li>• knowledge about main parameter of motors and water pumps,</li> <li>• managing and monitoring the operation process,</li> <li>• knowledge about the preventive maintenance,</li> <li>• troubleshooting and systematical repair,</li> <li>• application of log book</li> </ul>
Language	Arabic
Duration	6 days
Entry Qualification/ target group	All technical staff related to the technical operating and maintenance of electro motors and water pumps, focusing on participation of technical directors and heads of technical dep.
Exit Certificates	Certificate of participation
Costs	
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

## 2.12. Operating and Maintenance of Diesel Generators (diesel power stations)

Name of Institution	Technical & Administrative Training Center (TATC) / Hail Saeed Companies, Taiz
Location	Taiz, Al-Houban / Hail Saeed Companies
Contact	Eng. Jameel A. Al-Kadassi, Director P.O.Box 5302, Taiz <a href="tel:04-218587">Tel: 04-218587</a> , Fax: 04-218586 Mail:jameelalkadassi@yahoo.com
Course title	<b>Operation and Maintenance of Diesel Generators</b> (diesel power stations)
0 Management	
<b>0 Technical</b>	Technical
0 Administration/Finance	
Main Topics	<ul style="list-style-type: none"> <li>• Theory of generating electricity,</li> <li>• Components of generator units,</li> <li>• Diesel aggregate and operating system,</li> <li>• Safety at operating the diesel machines,</li> <li>• Preventive maintenance of diesel machines,</li> <li>• Log books and writing reports,</li> <li>• Operating the diesel machines (start and down),</li> <li>• Dealing with the related instruments and tools,</li> <li>• Troubleshooting</li> </ul>
Language	Arabic
Duration	7 days
Entry Qualification	Maintenance personnel (Engineers and Technicians)
Exit Certificates	Certificate of participation
Costs	Ca. 52,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

### 2.13. Wastewater Collection, Discharge and Sludge Handling

Name of Institution	Technical & Administrative Training Center (TATC) / Hail Saeed Companies, Taiz
Location	Taiz, Al-Houban / Hail Saeed Companies
Contact	Eng. Jameel A. Al-Kadassi, Director P.O.Box 5302, Taiz <a href="tel:04-218587">Tel: 04-218587</a> , Fax: 04-218586 Mail:jameelalkadassi@yahoo.com
Course title	<b>Wastewater Collection, Discharge and Sludge Handling</b>
0 Management <b>0 Technical</b> 0 Administration/Finance	Technical
Main Topics	<ul style="list-style-type: none"> <li>• Collecting the wastewater</li> <li>• Pumping stations</li> <li>• Operating and maintenance of the related systems</li> <li>• Treatment steps of sludge</li> <li>• Disposal of sludge</li> </ul>
Language	Arabic
Duration	3 days
Entry Qualification/ target group	Engineers and technical personnel working in sewerage and sewage field.
Exit Certificates	Certificate of participation
Costs	Ca. 25,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

## 2.14. Treatment and Canalization of Wastewater and Sludge

Name of Institution	The Water & Environment Centre (WEC)/ Sana'a University
Location	Sana'a, Sana`a University/ Faculty of Engineering
Contact	Dr. Fadhl Al-Nozaily, Tel: 01 464360/6/7 Fax: 01 464 367 E-Mail: <a href="mailto:wec@y.net.ye">wec@y.net.ye</a> / <a href="mailto:wec2@yemen.net.ye">wec2@yemen.net.ye</a> <a href="http://www.wec.edu.ye">www.wec.edu.ye</a>
Course title	<b>Treatment and Canalization of Wastewater and Sludge</b>
0 Management <b>0 Technical</b> 0 Administration/Finance	Technical
Main Topics	<ul style="list-style-type: none"> <li>• Different system of wastewater treatment in general and what applied in Yemen,</li> <li>• Variety of treatment stations, how to select the proper one,</li> <li>• Preparing and implementing the operation and maintenance programs,</li> <li>• Determining the composition of the sludge,</li> <li>• Operating and maintaining the apparatus for sludge treatment,</li> <li>• Safety regulation related to work subjects.</li> </ul>
Language	Arabic
Duration	3 days
Entry Qualification/ target group	Technicians and engineers working in the wastewater treatment dep.
Exit Certificates	Certificate of participation
Costs	Ca. 28,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

### 3.1. Customer Relations

Name of Institution	Technical & Administrative Training Center (TATC) / Hail Saeed Companies, Taiz
Location	Taiz, Al-Houban / Hail Saeed Companies
Contact	Eng. Jameel A. Al-Kadassi, Director P.O.Box 5302, Taiz <a href="tel:04-218587">Tel: 04-218587</a> , Fax: 04-218586 Mail:jameelalkadassi@yahoo.com
Course title	<b>Customer Relations</b>
0 Management 0 Technical <b>0 Administration/Finance</b>	Admin/Finance
Main Topics	<ul style="list-style-type: none"> <li>• Main concepts of marketing in field of water supply and sanitation,</li> <li>• Active communication with customer,</li> <li>• Dealing with the customer complaints (roll plying),</li> <li>• Customer survey,</li> <li>• Dealing with media.</li> </ul>
Language	Arabic
Duration	5 days
Entry Qualification/ target group	Customer relation officers
Exit Certificates	Certificate of participation
Costs	Ca. 37,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

### 3.2. Water Meter Reading

Name of Institution	Technical & Administrative Training Center (TATC) / Hail Saeed Companies, Taiz
Location	Taiz, Al-Houban / Hail Saeed Companies
Contact	Eng. Jameel A. Al-Kadassi, Director P.O.Box 5302, Taiz <a href="tel:04-218587">Tel: 04-218587</a> , Fax: 04-218586 Mail:jameelalkadassi@yahoo.com
Course title	<b>Water Meter Reading</b>
0 Management 0 Technical <b>0 Administration/Finance</b>	Admin/Finance
Main Topics	<ul style="list-style-type: none"> <li>• Purpose of water meter reading</li> <li>• Common types of meters</li> <li>• Regulations for water meter reading</li> <li>• Common mistakes in reading</li> <li>• Applying proper meter reading procedures</li> </ul>
Language	Arabic
Duration	3 days
Entry Qualification	Directors, heads of section of client services (subscribers), accounting personnel, water meter readers.
Exit Certificates	Certificate of participation
Costs	Ca. 25,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comment	

### 3.3. Purchasing and Procurement Management

Name of Institution	Technical & Administrative Training Center (TATC) / Hail Saeed Companies, Taiz
Location	Taiz, Al-Houban / Hail Saeed Companies
Contact	Eng. Jameel A. Al-Kadassi, Director P.O.Box 5302, Taiz <a href="tel:04-218587">Tel: 04-218587</a> , Fax: 04-218586 Mail:jameelalkadassi@yahoo.com
Course title	<b>Purchasing and Procurement Management</b>
0 Management 0 Technical <b>0 Administration/Finance</b>	Admin/Finance
Main Topics	<ul style="list-style-type: none"> <li>• Basic terms of purchasing,</li> <li>• Purchasing regulation and purchasing accounting,</li> <li>• Sort of application forms for registration of purchasing items,</li> <li>• Importance of decision on purchasing</li> </ul>
Language	Arabic
Duration	5 days
Entry Qualification	Administrative and finance directors, heads of accounting dep., heads of purchasing and procurement, purchasing officers.
Exit Certificates	Certificate of participation
Costs	Ca. 37,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

### 3.4. Store Management and Accounting

Name of Institution	Technical & Administrative Training Center (TATC) / Hail Saeed Companies, Taiz
Location	Taiz, Al-Houban / Hail Saeed Companies
Contact	Eng. Jameel A. Al-Kadassi, Director P.O.Box 5302, Taiz <a href="tel:04-218587">Tel: 04-218587</a> , Fax: 04-218586 Mail:jameelalkadassi@yahoo.com
Course title	<b>Store Management and Accounting</b>
0 Management 0 Technical <b>0 Administration/Finance</b>	Admin/Finance
Main Topics	<ul style="list-style-type: none"> <li>• Administrative and finance provisions of storekeeping,</li> <li>• Stock control</li> <li>• Stock inventory and evaluation</li> <li>• Application of the administrative and finance provisions of storekeeping</li> <li>• Using computers in stores work</li> </ul>
Language	Arabic
Duration	4 days
Entry Qualification	Administrative directors, heads of accounting dep., heads of storekeeping dep., storekeepers.
Exit Certificates	Certificate of participation
Costs	Ca. 30,000 YER per person without travel, accommodation and allowances
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

### 3.5. Commercial Accounting

Name of Institution	National Institute for administrative sciences (NIAS)
Location	Sana`a, Al-Adl street
Contact	Hamoud Al-Sayaghi, Tel: 711139623
Course title	<b>Commercial Accounting</b>
0 Management 0 Technical <b>0 Administration/Finance</b>	Admin/Finance
Main Topics	<ul style="list-style-type: none"> <li>• Principles and terms of the commercial accounting,</li> <li>• Preparing lists and reports that help for performance assessment,</li> <li>• Measurement for money flow in the LCs.</li> </ul>
Language	Arabic
Duration	5 days
Entry Qualification	Staff working in finance departments; heads of accounting dep., accountants who possess diploma in accounting or have experiences and working in accounting field.
Exit Certificates	Certificate of participation
Costs	
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

### 3.6. Cost Accounting

Name of Institution	National Institute for Administrative Sciences (NIAS)
Location	Sana`a, Al-Adl street
Contact	Hamoud Al-Sayaghi, Tel: 711139623
Course title	<b>Cost Accounting</b> (F -19)
0 Management 0 Technical <b>0 Administration/Finance</b>	Admin/Finance Trainer guide (F-19-1)
Main Topics	<ul style="list-style-type: none"> <li>• Cost accounting systems</li> <li>• Finance regulations</li> <li>• Preparing costs lists</li> <li>• Indirect costs and direct costs</li> <li>• Accounting cycle for cost accounting system,</li> <li>• Preparing the cost accounting in the LCs,</li> <li>• Main criteria of the internal monitoring system</li> </ul>
Language	Arabic
Duration	3 days
Entry Qualification/ target group	Finance directors, heads of accounting dep., accountants in the LCs.
Exit Certificates	Certificate of participation
Costs	
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

### 3.7. Planning & Control of Budgets

Name of Institution	National Institute for Administrative Sciences (NIAS)
Location	Sana`a, Al-Adl street
Contact	Hamoud Al-Sayaghi, Tel: 711139623
Course title	<b>Planning and Control of Budgets</b>
0 Management 0 Technical <b>0 Administration/Finance</b>	Admin/Finance
Main Topics	<ul style="list-style-type: none"> <li>• Principles of setting the budget,</li> <li>• Evaluation of the performance of the finance activities,</li> <li>• Application of modern approaches on supervising the planned budgets.</li> </ul>
Language	Arabic
Duration	5 days
Entry Qualification	Director of the branches, directors for finance dep., directors for planning.
Exit Certificates	Certificate of participation
Costs	2500,-\$
Application procedure	through NWSA-Department of Training P.O.Box 104 Tel. 250179/711655908 Fax: 250167
Comments	

### **C. Administrative Challenges**

During the five months between April and August 2007 a respectable number of 13 courses were successfully implemented. This can be considered as an indication for the ongoing strong demand and high appreciation for these courses.

The continued demand for these courses demonstrates that even the recently introduced system of cost sharing has not discouraged water utilities to send their staff for qualification measures. Since the beginning of 2007, GTZ is no longer covering the entire costs for training, and as a result has discontinued payments of travel costs and allowances, which are now borne by the utilities as the beneficiaries of the training.

In order to enhance a gradual increase of the utilities' proportion in footing training costs, it is absolutely vital to keep training economical and make it fully demand oriented. Training of staff as part of personnel development has to be regarded by water utilities as an INVESTMENT in human capacities, just like investments in machinery, equipments, installations or buildings. It is obvious, that a technical cooperation agency like GTZ cannot continue to cover the entire training costs for an unlimited period of time.

This is also in line with the current broader approach of the Personnel Development Component that goes far beyond training activities and includes personnel development in a holistic sense. Therefore, the establishment of a National Personnel Development Coordination Unit at the Ministry of Water and Environment as a focal point will be supported by GTZ.

To overcome the shortage of qualified human resources, it is evident that solutions and remedies cannot be solely left to external supporters or the Skills Development Fund – currently being re-organised -, but must become integral components of each water utility's management and budget planning. Therefore it also becomes absolutely necessary for each and every water utility to establish a sufficient budget line for personnel development including training.

With reference to experience elsewhere, training budgets of at least 3% to 5% of the total personnel emoluments should be put into consideration.

For most short term courses, training fees per participant have been kept at a reasonable level ranging between about YER 25,000 for a three-day' course, and YER 40,000 for a five-day course depending on the nature of the topic as well as the training provider. However these costs do not include travel to and from the venue, accommodation and allowances.

So far, most courses were implemented either in Taiz or Sana'a. This has benefited in particular participants from these locations, as travelling costs have not been a burden. In future, however, efforts will be made to bring training offers closer to other locations and Governorates in order to reduce or eliminate the costs for travelling and allowances from outside Sana'a and Taiz. For this purpose, local training facilities shall be identified and qualified resource persons and lecturers of institutions like TATC or WEC will be hired for implementing the courses.

On the part of LCs, water utilities and NWSA branches, it is important that the responsibility of personnel development is clearly defined, and assigned to a special department, unit or at least a training officer being fully responsible for all

Personnel Development in the Urban  
Water Supply and Sanitation Sector

qualification measures. Even small water establishments which cannot maintain a personnel development department or a full time training officer, should assign the tasks related to personnel development or staff qualification to one senior officer who acts as a focal point in the institution.

Last but not least, it should be mentioned that at present a tracer study is carried out on participants in key qualification and other short courses to find out their relevance to the working environment and to obtain suggestions for improvements or amendments.

Personnel Development Component  
Yemeni-German Water Sector Program GTZ (GOPA-Engicon)  
P.O. Box 692  
Sana'a  
Tel. 231412

### ثالثاً: التحديات المالية

خلال فترة الخمسة شهور من أبريل حتى أغسطس 2007 تم تنفيذ عدد 13 دورة تدريبية بنجاح . وهذا مؤشر قوي على الإحتياج الحالي القائم وعلى التقييم العالي لتلك الدورات.

والإحتياج المستمر للدورات التدريبية يوضح أنه حتى عند إدخال نظام تشارك تكلفة التدريب لم تتوان مرافق المياه والصرف الصحي في إرسال كادر للمشاركة في إجراءات التأهيل. فمنذ بداية 2007 لم تعد المؤسسة الألمانية للتعاون الفني تغطي كامل تكاليف التدريب، ونتيجة لهذا الإجراء لم تعد تغطي مصاريف الإقامة وبدل السفر للمشاركين وأصبح هذا من الآن وصاعداً مسؤولية مرافق المياه كمنتفعين من التدريب.

وبهدف تعزيز الرفع التدريجي لمساهمة المؤسسات في مواجهة تكاليف التدريب يجب أن يكون التدريب إقتصادياً وموجهاً بالشكل الكامل نحو الإحتياجات الفعلية. وتدريب الكادر كجزء من تطوير العاملين، يجب أن يكون من مسؤولية المرافق، وهو استثمار في القدرات البشرية شأنه شأن الاستثمار في الإمكانيات والمعدات والتركيبات أو حتى كإستثمار في الأبنية. من الواضح أن الدعم المقدم من المنظمات مثل المؤسسة الألمانية للتعاون الفني GTZ لتغطية تكاليف التدريب لا يمكن أن يستمر على مدى غير محدود. وهذا يأتي تماشياً من النهج العريض لمكون تطوير القوى البشرية الذي يتعدى أنشطة التدريب ويشمل تطوير العاملين بمفهوم كلي.

والأمر واضح هنا أن موضوع التغلب على القصور في الموارد البشرية والحلول والمعالجات لا يمكن تركه على مسؤولية الدعم الخارجي أو صندوق تنمية المهارات - الذي يتم حالياً إعادة تنظيمه - بشكل حصري وإنما يجب أن يكون عبارة عن مكونات مدمجة ضمن الإدارة والتخطيط المالي (الموازنة) في كل مرفق مياه. وعلى هذا يصبح الموضوع أيضاً ضرورة ملحة لكل مؤسسة من مؤسسات خدمات المياه لوضع ميزانية تخص تطوير القوى البشرية بما في ذلك التدريب.

استناداً إلى التجارب في مواقع أخرى فإن ميزانية التدريب يجب أن تحسب 3-5% من مجموع استحقاقات العاملين على أقل تقدير.

بالنسبة لأغلب الدورات القصيرة يبلغ معدل تكلفة الشخص المشارك حوالي 25000 ريال لدورات الثلاثة أيام ، 40000 لدورات خمسة أيام وهذا مبلغ معقول ومقبول ، وهذا حسب مواضيع التدريب وكذا حسب مقدمي خدمات التدريب. وهذه التكاليف لا تشمل بدلات السفر والتنقل والإقامة.

وحتى الآن تنفذ أغلب الدورات التدريبية في صنعاء أو تعز. وهذا الوضع يستفيد منه المشاركون من كلا الموقعين (صنعاء أو تعز) كون تكاليف السفر لا تشكل عبئاً. وفي المستقبل ستبذل جهود لجعل التدريب في أماكن قريبة من مواقع محافظات أخرى بهدف التقليل من تكاليف السفر من مناطق خارج صنعاء وتعز أو حتى اختزالها نهائياً. ولهذا الغرض سوف يتم تحديد مرافق تدريب وسيتم استخدام مدربين ومدرسين مؤهلين من مؤسسات كمركز التدريب الفني والإداري بتعز أو مركز المياه والبيئة محافظة صنعاء لتنفيذ الدورات التدريبية.

بالنسبة للمؤسسات المحلية ومرافق العامة للمياه والصرف الصحي يجب أن توكل مسؤولية تطوير القوى العاملة بشكل واضح إلى إدارة مختصة أو وحدة أو على الأقل إلى مسئول تدريب يكون مسئول مسؤولية كاملة عن كل إجراءات التأهيل. حتى مؤسسات المياه صغيرة الحجم والتي لا تستطيع تخصيص إدارة لتطوير القوى البشرية أو تدريب الكادر يجب أن توكل تلك المهمة إلى مختص يمثل نقطة اتصال وتواصل بالمؤسسة.

في الأخير وليس أخيراً ، تجدر الإشارة إلى انه تجرى حالياً دراسة حول المشاركين في التأهيلات الأساسية والدورات القصيرة الأخرى لاستيضاح مدى ارتباطها ببيئة العمل والحصول على اقتراحات حول تحسينها أو تعديلها.

مكون تطوير القوى البشرية

البرنامج اليمني – الألماني لقطاع المياه

ص. ب. 692، صنعاء