LEARNING EXCHANGE ON WATER, SANITATION AND HYGIENE (WASH)

9 – 10 December 2013
ASSA-2 Guesthouse, Kabul

Hosted by
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EXECUTIVE SUMMARY

DACAAR is a non-governmental, humanitarian organization that supports sustainable development in Afghanistan through promoting the ability of local communities to decide upon and manage their own development process. Activities are implemented in co-operation with civil society organizations, the private sector and governmental institutions with a particular emphasis on poverty reduction and assistance toward the return and re-integration of internally displaced people.

DACAAR has been working exclusively in Afghanistan, focusing on long-term sustainable development of water and sanitation services, particularly in rural communities since 2005. The Danish organization attempts to respond to the conditions in Afghanistan with innovative approaches, such as utilizing solar-powered water pumps and household water treatment technology. DACAAR established the Water Expertise and Training Centre (WET Centre) in 2010, as a hub for data, information and research as well as a vehicle for training and technical support to government agencies, NGOs and the private sector in order to accelerate capacity building in the WASH sector.

DACAAR WET Centre has been providing services on the following issues:
- WASH related training
- Awareness raising to create demand in water and sanitation
- Technical consulting support
- Water quality testing
- Action research

WET Centre has 16 clients in different government organizations and 80 clients in international and national non-government organizations in 2013.

This learning exchange 2013 report was prepared by DACAR WET Centre based on the 10 presentations made by different international non-government organizations and UNICEF. The prime objective of the WASH learning exchange 2013 was sharing information on WASH issues among each others. This report captures all presentation slides and floor discussions for the reference of WASH project implementers. The main points and highlights of the learning exchange are as follows:

Support on Water Quality in Afghanistan & Introduction to Water Safety Plan-UNICEF

UNICEF focused on the quality of drinking water in Afghanistan. He informed that Afghanistan government has been published National Water Quality Standards 2013. There are two national water quality testing laboratories in the Ministry of Public Health and the Ministry of Rural Rehabilitation and Development which can test 28 parameters. Three regional mini-labs are also established in the regions. UNICEF in cooperation with DACAAR conducting a pilot study on Arsenic and Fluoride contamination in surface and ground
water sources of Balkh and Panjsher provinces. He focused on the six steps of water safety planning cycle at the community level.

1. Engage the community and assess a water safety plan team.
2. Describe community water supply and risks
3. Identify and assess hazards, risks and existing control measures
4. Develop and implement an incremental community based improvement plan.
5. Monitor and control measures and verify the effectiveness of water safety plan
6. Document review and improve all aspects of water supply project implementation.

Practices in Hygiene Education - DACAAR
DACAAR initiated WatSan activities since 1991 in Afghanistan and added hygiene education component since 1996. DACAAR has a provision to conduct hygiene education session at 3-4 visits for all user groups. Radio broad casting episode is a famous event in hygiene education. They developed different education messages, hygiene kits, posters and booklets to bringing awareness and behavior changes in hygiene and environmental sanitation practices. Facing challenges of insecurity to do regular field visit, abject poverty in the working communities people do not adopting safe hygiene practices.

Kanchan Biosand Filter and Arsenic Removal - DACAAR
Arsenic is a chemical element found naturally in rocks in the earth crust which recognized as a slow poison. Sympton of exposure to high levels of arsenic may include stomach pain, vomiting, diarrhea and impair nerve function that may results in "pin and needles" sensation in hands and feet. A Kanchan Biosand Filter is also a simple technology which remove arsenic from the contaminated water.

Experiences in School WASH-Tear Fund
Rehabilitating and improving water supply facilities, providing BSF and jerry cans in the communities. Two thousand liters capacity of water storage tanks at school, menstrual hygiene training, hand-washing, solid waste management were provided at school. Now schools intervened by Tear Fund are declared as an open defecation free zone. The experience of Tear Fund is rapport building and getting cooperation is difficult to work in school. INGO's work on WASH is taking an additional works for school administration. Menstrual hygiene management is also a sensitive topic due to socio-culture issue in Afghanistan.

Ground Water Quality Database & Database Info System-DACAAR
DACAAR Ground Water Monitoring Unit is well equipped to conduct monitoring survey in Afghanistan. Lowering ground water table, depletion of ground water storage, contamination of salinity, hardness, Arsenic, fluoride and biological contamination are monitored. DACAAR database indicated "early warning signal" in the situation of Afghanistan; therefore pragmatic
ground water policy is essential for the government and non-government agencies working in WASH sector.

The Metal Biosand Filter Project in Afghanistan - ACTED,
ACTED trained 26 youths and developed as a filter entrepreneurs to produce and sell the metal biosand filter in three districts under the vocational training program. The weight of the metal biosand filter is 15-20 kgs and its production costs about Afghan rupees 1,100. ACTED successfully developed the biosand filter entrepreneurs in Almar, Qaisar and Kohstan districts. ACTED had an experience to get difficulty to find screen mesh (0.07mm) in the local market of Afghanistan. It is necessary to develop a measure of quality control and certification of the filter producers is also crucial to maintain standard quality control of the products.

Action Research on Solar Pumping Water Supply- DACAAR
DACAAR installed 23 solar pumping systems in Nangarhar and Laghman. Based on research average 70% end users are satisfied with the quantity and quality of water. About 45% system have an operation problems such as valve broken, pumps and solar panel stolen. About 39% solar water systems are non functional, therefore to implement solar water supply system detailed feasibility study should be carried out.

WASH Impacts on Mothers and Children in Developing Countries- CAWST
- Maternal mortality= 330
- under 5 years child mortality: 101
- Infant mortality:73
- At least one woman dies every two hours.
- Mother and children have risk of water related diseases such as hepatitis E, schistosomiasis, giardia which can be prevented by effective WASH facilities and practices.

WASH Activity in Urban Informal Settlement-Solidarites International
Solidarity International working for the provision of basic relief assistance to cover the essential needs of vulnerable communities living Kabul informal settlements (KIS). The successes are provided water facilities, latrines and solid waste management in Kabul informal settlements. The huge challenge is lacking a strong coordination with different humanitarian working groups and related government authorities.
Materials Distributed in the Learning Exchange

The Learning Exchange on WASH was chaired by M. Azeem Barat, WET Centre Manager who presented the agenda to the participants and provided folder with agenda, DACAAR Annual Report 2012, Biosand Filter Best Practices in Afghanistan, Brochure on DACAAR WET Centre, Learning Exchange CD, notebook and pen to each participant.

The minute of the Learning Exchange was taken by Ashiqullah Akbari, WET Centre Senior Translator, and the proceeding is prepared by M. Azeem Barat.

Contents of the Learning Exchange CD:

- WETC Learning Exchange Agenda
- ACTED - Bio Sand filter Use
- CAWST - Maternal & Child Health_2013-12
- DACAAR - Action Research on Solar Pumping System-101213
- DACAAR - Overview of Solar System
- DACAAR - Afghanistan Ground Water Quality & Database Info System in DACAAR
- DACAAR - Kanchan Arsenic Filter-091213
- DACAAR - Practices in Hygiene Education-091213
- DACAAR - WETC Services, Goal, Vision, Mission & Achievements-091213
- Solidarites-WASH in urban contexts KIS Afghanistan
- Tearfund Experiences in School WASH ppt 09122013
- UNICEF WQ support to Government of Afghanistan and Introduction to WSP
Welcome & Opening Address by:

Eng. Shah Wali, Head of Program, DACAAR

The workshop was inaugurated by Eng. Shah Wali, Head of Program, DACAAR. After welcoming to the participants from different organizations, he told DACAAR is pleased and have the honor to have you in this hall today. He added that this learning exchange will be a little bit different than the previous years. There will be not only presentations, but will be many different topics and some tough discussions as well. Some colleagues from other organizations like UNICEF, ACTED, Solidarity and Tearfund will also give their presentations. Also there will be some people from DACAAR to present whatever they have learned, whatever they have done and will be shared with all of you.

You are all kindly requested and encouraged to be more active and participatory in discussions. Here we are learning from each other. There is no way to say that we are presenting and other should accept it. This is a good platform to share experience and lessons learned. The things that we have learned so far, there will be something which will not be working properly. We should also think about that, how to make those things working and the topics are a little bit different this year. There will be some different topics and some of them will be very interesting. The new topic will be findings on solar pumping system and business; we cannot claim that the business is 100% successful. But how we should make that successful, we should look those ways as well. Some of our colleagues will present the removal of Arsenic which is something new.

At the end we should also look the way forward what will be the next plan and how we should plan the next learning exchange. If we start thinking from today, then we will have a fruitful discussion after a year. A proper planning is necessary and vital for all successful implementation of the business. I am kindly requesting you to be more proactive and engaged. The floor will be always open, but it doesn’t mean that we should not speak and not share our ideas. Ideas should be shared. Nothing will be right and nothing will be wrong. We will share our ideas, listen to each other and will learn from each other. The next learning exchange should also be discussed tomorrow.

At the end Eng. Shah Wali once again requested all participants to have more active participation, share their ideas, and wished them two days of fruitful discussions.
Participants Introduction

Mr. Suneel Rajavaram, CAWST International Technical Advisor, asked each participant to take a piece of paper and write two fact statements and one false statement about themselves without writing their name on the paper. Then the papers were collected and re-distributed among the group as nobody received their own paper. By reading the paper everyone tried to identify the one who wrote the statements, interviewed each other and at the end introduced each others.

The list below presents the participants in the Learning Exchange:

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Position</th>
<th>Organization</th>
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<tbody>
<tr>
<td>1</td>
<td>Chidambaram CT</td>
<td>Head of Programs</td>
<td>ACTED</td>
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<td>2</td>
<td>Sayed Najeebullah Balkhi</td>
<td>Livelihoods Officer</td>
<td>ACTED</td>
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<td>3</td>
<td>Ahmad Zia Noori</td>
<td>WASH Assessment and Monitoring Manager</td>
<td>ACF</td>
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<td>4</td>
<td>Sayed Nasrullah</td>
<td>WASH Program Manager</td>
<td>ACF</td>
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<td>5</td>
<td>Masouma Mirzaei</td>
<td>M&amp;E Officer</td>
<td>BORDA</td>
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<td>6</td>
<td>Suneel Rajavaram</td>
<td>International Advisor</td>
<td>CAWST</td>
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<td>7</td>
<td>Enzo Vecchio</td>
<td>Director</td>
<td>DACAAR</td>
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<td>8</td>
<td>Shah Wali</td>
<td>Head of Program</td>
<td>DACAAR</td>
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<td>9</td>
<td>Irshad Alamyar</td>
<td>Head of Fundraising &amp; Communications</td>
<td>DACAAR</td>
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<td>10</td>
<td>Khalid</td>
<td>Head of Human Resources</td>
<td>DACAAR</td>
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<td>11</td>
<td>Ajmal Qani</td>
<td>Head of Finance &amp; Administration</td>
<td>DACAAR</td>
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<td>12</td>
<td>Leendert Vijselaar</td>
<td>WASH Cluster Co-Lead Coordinator</td>
<td>DACAAR</td>
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<td>13</td>
<td>Betman Bhandari</td>
<td>WASH Advisor</td>
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<td>14</td>
<td>Azeem Barat</td>
<td>WET Center Manager</td>
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<td>15</td>
<td>Shir Ahmad</td>
<td>WET Centre Deputy Manager</td>
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<td>16</td>
<td>Muska Meeran</td>
<td>WET Centre Trainer</td>
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<td>17</td>
<td>Shir Habib</td>
<td>WET Centre Trainer</td>
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<td>18</td>
<td>Zahidullah Zahid</td>
<td>WET Centre Trainer</td>
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<td>Sohrab Kakar</td>
<td>WET Centre Trainer</td>
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<td>Zalmai Alizai</td>
<td>WET Centre Trainer</td>
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<td>Sediquullah</td>
<td>HE Coordinator</td>
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<td>22</td>
<td>M. Hassan</td>
<td>Senior Hydrogeologist</td>
<td>DACAAR</td>
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<td>Ahmad Rameen</td>
<td>Communication Officer</td>
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<td>24</td>
<td>Abdul Wasay</td>
<td>Senior Design Engineer</td>
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<td>25</td>
<td>Ashiqullah Akbari</td>
<td>Senior officer</td>
<td>DACAAR</td>
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<td>26</td>
<td>Mohammad Tahir Khalil</td>
<td>Regional Manager East</td>
<td>FGA</td>
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<td>27</td>
<td>Mohammad Jebran &quot;Mudaser&quot;</td>
<td>General Director</td>
<td>HUDA</td>
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<td>28</td>
<td>Hasina Haseem</td>
<td>Health Program Director</td>
<td>HUDA</td>
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<td>29</td>
<td>Garry Mayhew</td>
<td>Development Director</td>
<td>IAM</td>
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<td>30</td>
<td>Nasreen Jasim Hadid</td>
<td>WASH Program Director</td>
<td>JDA</td>
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<tr>
<td>31</td>
<td>Abdul Qayyum Karim</td>
<td>Associate Prof. and Vice Dean of Faculty of Engineering</td>
<td>Kabul University</td>
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<td>32</td>
<td>Ghulam Qadir</td>
<td>Executive Director RuWatSIP</td>
<td>MRRD</td>
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<td>33</td>
<td>Ahmad Shah Ahmadi</td>
<td>Engineering Department WatSan Unit Head</td>
<td>MRRD/NSP</td>
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<td>34</td>
<td>Ahmad Saboor Arya</td>
<td>Engineering Department, Renewable Alternative Energy Unit Head</td>
<td>MRRD/NSP</td>
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<td>35</td>
<td>Dr. Bayan</td>
<td>Senior Health Officer</td>
<td>NAC</td>
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<td>Mohammad Basir</td>
<td>Program Manager</td>
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<td>Namatullah Wasiq</td>
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<td>Najibullah</td>
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<td>Solidarities Int’l</td>
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<td>Munyaradzi Charuka</td>
<td>WASH Advisor</td>
<td>Tearfund Afghanistan</td>
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<td>40</td>
<td>Dur Mohammad</td>
<td>CEO</td>
<td>Time Express Logistic &amp; Supply Services</td>
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<td>41</td>
<td>Abdus Saboor</td>
<td>WQ Consultant</td>
<td>UNICEF</td>
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<td>42</td>
<td>Abdul Manan Aziz</td>
<td>Manager Hygiene Education Project</td>
<td>Womanity Foundation (WF)</td>
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UNICEF Support on Water Quality in Afghanistan & Introduction to Water Safety Plans
Presented by
Abdus Saboor, Water Quality Consultant, UNICEF

UNICEF Support to Afghanistan WQ sector (MRRD, MoPH & MoE)
&
Introduction to Water Safety Plan

National Policies/Regulation/Evidence Building

1. SOPs for water quality analysis 2012
2. National As/F mitigation policy 2013
4. Establishments of Labs 2012-13
   i) 2 National WQ Labs MoPH/MRRD (28 parameters), 3 Regional Mini Labs (18 parameters)
   ii) (Provision of Wagtech kit in all provinces) with capacity building by MRRD
5. Capacity building programs/Manuals
6. Pilot study on Arsenic and Fluoride (Cooperation with DACAAR)
7. National Water Quality Monitoring Program for MoPH
8. MoU on WQ b/w MoPH & MoE for Schools
9. MoU on WQ b/w MRRD/MoPH for clarifying role and responsibilities (Draft)

Water Safety

Water Quality: (photo)
Refers more to the chemical, physical and biological properties of water. It tells the situation with the properties at a time "t". It is subject to change as it is influenced by microorganisms such as viruses and bacteria, industrial activities, agricultural activities, human behavior, etc.

Water Safety Plans (WSP):
It is an improved risk management tool designed to ensure the safety of drinking water through the use of a comprehensive risk assessment and risk management approach that encompasses all steps in water supply from catchment to consumer. It is a way to ensure safe drinking-water by:
1. Knowing the system thoroughly
2. Identifying where and how problems could arise
3. Putting barriers and management systems in place to stop the problems before they happen
4. Making sure all parts of the system work properly

Risk factor matrix

Water quality, Water safety & Water Safety Plan (WSP)

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Water Safety Planning Cycle (at the community level)

1. Engage the community & assemble a water safety plan team
2. Describe the community water supply elements (drawings, maps, photos, water quality records)
3. Identify and assess hazards, risks and existing control measures (improved awareness + behavior change)
4. Develop and implement an incremental community-based improvement plan e.g. HHWT and safe storage
5. Monitor control measures and verify the effectiveness of the water safety plan

Describe the Community Water Supply (elements)

At every step, there is the need to identify:
- Regulator
- Producer (duty bearer)
- Beneficiary

WATER SAFETY – The big picture

At every step, there is the need to identify:
- Regulator
- Producer (duty bearer)
- Beneficiary

WATER SAFETY – The big picture

At every step, there is the need to identify:
- Regulator
- Producer (duty bearer)
- Beneficiary

WATER SAFETY – The big picture
**The plan (iterative process)**

- New risks? Uncontrolled risks?
  - Amend plan
- Develop plan
  - Short Medium Long term
- Implement plan
  - Evaluate plan
- Update the WSP
- Recalculate the risks

**Monitor control measures and verify the effectiveness of the WSP**

- Define and validate the monitoring of control measures
- Assess if the control measures are working
- Know what corrective actions are needed when things go wrong

**Verify WSP**

- Monitor against set limits/targets
  - Need corrective actions in place
  - Frequency of monitoring varies
  - Regime frequently reviewed

**Actions**

- Complainance monitoring
  - Regulatory authority
  - Qualified auditors
  - Assessment & compliance
  - Frequency varies
- Consumer satisfaction checks
  - Discourage use of unsafe alternatives

**HWTS as part of Water safety**

- HWTS is one of the primary mitigating measures in WSPs that ensures safe water at the point of consumption – thereby completing the cycle
- HWTS so far implemented as pilot projects - that have never been scaled up
- Helps the consumer to be aware and responsible for the quality of water being consumed
- Most often implemented through the sale of products, but it needs to be more about behavior change => life style!

**How does HWTS fit into Water Safety Plans?**

- Natural water sources
  - Water Transport: Tanker trucks, Carts, Carrying water, etc.
- Safe drinking water at the community level
- Storage and Consumption of safe water
- Household level solutions: Disinfection, pasteurization, Safe storage, etc.
- Community level solutions: Treatment plants, Spring protection, Mechanized systems, etc.
- Flooding
- Poorly maintained and leaking pipe network
- Poor handling behavior

**The Water Safety Agenda - How do we do that?**

- Upstream work based on evidence
  - Build national consensus and government lead to develop a national water safety framework that will be part of the WASH sustainability
- M&E should be the center of the framework
  - Proper monitoring and use of results will determine the success of the water safety agenda
- Surveillance: Include water quality measurements in national surveys
  - This will cut down cost when compared to creating a stand alone survey
  - Build upon existing strategies and guideline provided by WHO
  - No need to re-invent the wheel
  - WSP is a community-based behavior change programme
  - It can therefore easily be integrated into existing WASH and health interventions (such as Community Approaches to Total Sanitation CATS)
**Proposed framework for WSP in UNICEF**

**Challenges**

1. HWTS----No clear lead ministry, No clear targets.
2. WQ Labs have not been accredited.
3. Local market for lab supplies is not reliable.
4. Overall government has shown little attention to water quality issues.
5. Other UN agencies e.g. UNEP (United Nations Environment Program) WHO didn’t shows much interest.

**Way Forward**

- National strategy for WATER SAFETY PLAN to be developed.
- A national technical working group on HWTS to be established.
- Advocacy to raise profile for water quality monitoring system
- Partnership broadening and increase involvement of WHO/UNEP/NGOs/Community.
- Capacity building
- Fund raising

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**Available key materials and resources**

- Drinking-water quality guidelines, 4th edition 2011
- Water Safety Plan Quality Assurance Tool
- Water safety planning for small community water supplies (Step-by-step risk management guidance for drinking-water supplies in small communities)
  [http://whqlibdoc.who.int/publications/2012/9789241544427_eng.pdf](http://whqlibdoc.who.int/publications/2012/9789241544427_eng.pdf)
- Water Safety Plans and public health
  [http://www.who.int/water_sanitation_health/dwq/thinkbig_small.pdf](http://www.who.int/water_sanitation_health/dwq/thinkbig_small.pdf)
- Developing Water Safety Plans involving schools
- A road map to support country-level implementation of WSP (Think big, start small, scale up)
  [http://www.who.int/water_sanitation_health/dwq/thinkbig_small.pdf](http://www.who.int/water_sanitation_health/dwq/thinkbig_small.pdf)
Question by Munyaradzi Charuka (WASH Advisor, Tearfund):

When we are taking water samples for testing to the MRRD or MoPH Laboratories, they say that water are not collected in a right sample container, and we are going to do it our self which take time. So I would like to have your comment about.

Answer by Abdul Saboor (Water Quality Consultant, UNICEF):

MRRD have no concerns normally and being as a WASH support program, they collect right samples, but they have no question to ask you about the sample containers, because they need just to do water sample testing, and whatever bottle you bring for them, they will do the water sample testing. But if you have a kind of cooperation of free testing or if you are doing it together, then they may ask you that your samples are not good and bring some other samples to do it. But if they are private samples, then you just go and submit the samples to any of MoPH or MRRD laboratory. I know they are doing it, because I always go and visit them. I never heard about such type of problem with the people. But if you still faced with such issue, you can just tell me and I can coordinate with the laboratory or office you have faced with this issue.

Question by Munyaradzi Charuka (WASH Advisor, Tearfund):

I would like to have your comment about the water safety plan in villages and involvement of partners.

Answer by Abdul Saboor (Water Quality Consultant, UNICEF):

As I mentioned this is not a standalone activity; there are many activities to be the part of this activity, and is like the CLTS project or the ODF different types that you or other partners are doing in the regions and so that can be implement as an integrated package with the already existing projects.

Regarding partners, there is a limited cooperation between the partners and this is a challenge in Afghanistan. We have very limited partners and they are working in specific and limited areas. We cannot use the whole country through the partners. UNICEF or other UN organizations, working through partners, would involve partners as usual.
Comments by Betman Bhandari (WASH Advisor, DACAAR):

Thanks to Abdus Saboor for his very informative and nice presentation and I would like to add few more things. Actually all these steps in water safety plan are not new for the experts working in water and sanitation, but the thing whatever in the presentation is mainly psycho therapy or behavior change. Anyway, water safety plan is from source to mouth. Even if the source is clean and safe but the water could have the chance of contamination at the time when taking water from the source to mouth. Let we work first for outsource water treatment which is the main thing. There are some challenges and the number one is that there is no policy for outsource water treatment, and we are not promoting too much outsource water treatments. If we work on water treatment in different geographical location, then water safety plan will work.

Question by Nasreen (WASH Program Director, JDA):

What is the cost effective price for a private person to test water quality?

Answer by Abdul Saboor (Water Quality Consultant, UNICEF):

MRRD has a water quality testing lab in Kabul and similarly MoPH has lab in Kabul, Kandahar, Herat and Mazar and analysis a water sample for 24 parameters at 1,500 Afghanis. DACAAR also have the water quality testing lab only in Kabul and the prices are not similar and charges for a complete test (40 parameters) at USD100.

Question by Abdul Saboor (Water Quality Consultant, UNICEF):

As DACAAR testing chemical quality of many water samples every year, are Arsenic tests are included in these chemical parameters?

Answer by Azeem Barat (WET Centre Manager, DACAAR):

Testing of Arsenic and Fluoride is part of these parameters. All DACAAR completed water points are 100% tested for bacteriological and physical qualities and 10% for chemical qualities. Testing of water samples from external clients depends on whether they want to test only bacteriological, physical or chemical qualities but mostly ask for complete test.
**Question by Nasreen (WASH Program Director, JDA):**

I know DACAAR is implementing Biosand filter projects and distributing Biosand filters to the needy people in the regions.

Are you monitoring it? And how? Is the monitoring is on a yearly base, six-month or three-month bases or what?

What are the results of the monitoring? Was it good? Did you find something wrong about?

**Answer by Azeem Barat (WET Centre Manager, DACAAR):**

DACAAR implement biosand filter projects and distribute three to four thousands filters per year. WET Centre evaluates all DACAAR completed Biosand filter projects around six months to one year after project completion. Evaluation reports which include findings and recommendation are submitted to DACAAR program management. Sometime the management of DACAAR program asks WET Centre team to go to the regions and provide project staff on-job support in order to solve the problem(s). For example during Badakhshan Biosand filter evaluation it was found that some of the filters produced by project staff had cracks. Then WET Centre teams went there and worked with the project production staff and resolved the problem.

The effectiveness of the Biosand filter in removal of bacteria and turbidity is also checked during evaluations. Bacteriological and physical water qualities of a sample of 50 to 60 randomly selected filters in a project are checked. Bacteriological and physical water qualities of each Biosand filter in the selected sample checked for Water In (water poured in the filter), Water Out (water coming out of filter) and Storage Water (the water in the storage container).

**Comment by Suneel Rajavaram, Int’l Technical Advisor, CAWST:**

DACAAR WET Centre and CAWST (WET Centre partner) are willing to provide free field support, free marking, consulting and technical support. The support also includes Biosand filter project implementation and community health promotion.
How Knowledge managed & disseminated?

Disseminate through Workshops, Meetings, Learning Exchanges, Seminars, Emails and Websites

How capacity of organizations increase?

On-going access of org. to knowledge, skills, info, technical & consulting support through workshops, seminars, meetings, learning exchanges, websites, email, & phone calls

Increase knowledge & skills in a range of WASH subjects

Document

WET Centre Achievement

<table>
<thead>
<tr>
<th>WASH Workshop 2012</th>
<th>DACAAR HR Workshop in 2012</th>
<th>WASH Workshop 2013</th>
<th>WASH Awareness 2012</th>
<th>WASH Awareness 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>91</td>
<td>181</td>
<td>245</td>
<td>86</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. of Workshop</th>
<th>No. of Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>91</td>
<td>181</td>
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</table>

WET Centre Clients

<table>
<thead>
<tr>
<th>NGOs/ UN/ Institution/ Private Sector</th>
<th>Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>30</td>
</tr>
<tr>
<td>83</td>
<td>16</td>
</tr>
</tbody>
</table>

WET Centre Achievement

<table>
<thead>
<tr>
<th>No. of Water Samples Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Test</td>
</tr>
<tr>
<td>1,695</td>
</tr>
<tr>
<td>2012</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Parameter</th>
<th>No. of Samples Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Test</td>
<td>1,695</td>
</tr>
<tr>
<td>Bacteriological Test</td>
<td>1,695</td>
</tr>
<tr>
<td>Chemical Test</td>
<td>1,339</td>
</tr>
<tr>
<td>2012</td>
<td>2013</td>
</tr>
</tbody>
</table>
Discussion (Question and Answers Session)  
On  
WET Centre Services, Goal, Vision, Mission & Achievements

**Question by Abdul Saboor (Water Quality Consultant, UNICEF):**

1. Are the government organizations are interested to attend the WET Centre WASH training workshops?
2. What is the reason that the number of the government staff participation decreased in 2013?

**Answer by Azeem Barat (WET Centre Manager, DACAAR):**

2. At central level (in Kabul), a limited number of people are attending WET Centre WASH training workshops but at regional level many of the invited government staff are attending. The issue is that the government invited staff are asking for DSA and other allowance to attend training workshops and DACAAR do not providing DSA but only provide some cash (250 AFS/ day) for the transportation of government staff in regions.

3. DACAAR is not insisting on the number of participants, but rather looks that the participants, who turn back to their organizations and being able to train and transfer the knowledge, skills and attitudes to their other colleagues in the organization.
1. Background of Hygiene Education

- In 1991, WATSAN initiated in Afghanistan
- In 1996, Hygiene Education was added to WATSAN → WASH

2. Activity Procedure (Strategy)

- Recruitment of Hygiene Educators and their supervisors (if possible, locally)
- Training of Hygiene Educators and their supervisors (theoretically, practically and in the field work)
- Taking part in site selection for water points
- Conducting knowledge, attitude and practices surveys

Activity Procedure…con’t.

- Conducting hygiene education sessions in three to four visits for all user groups:
  1. door to door for women and children
  2. at common places for men and children
- Conducting hygiene education sessions in schools

Activity Procedure…con’t.

- Regular supervision and monitoring
- Delivery of hygiene kits, posters, booklets, note books, pens and school bags as reminder for hygienic practices

Activity Procedure…con’t.

- Conducting hygiene education sessions in three to four visits for all user groups:
  1. door to door for women and children
  2. at common places for men and children
- Conducting hygiene education sessions in schools

- Regular supervision and monitoring
- Delivery of hygiene kits, posters, booklets, note books, pens and school bags as reminder for hygienic practices
Activity Procedure…con’t.

- Radio broadcasting episodes for hygiene education messages
- Impact assessment through conducting Follow up KAP Survey
- Report to relevant department

3. Key Messages

- Safe drinking water (taking, keeping, using)
- Food safety (preparing, handling, using)
- Personal hygiene (Including hand washing)
- Environmental hygiene and sanitation
- Rehydration therapy to treat diarrhea

4. Delivery of Hygiene Kit as hygienic Practices reminder

- Hygiene kit:
  - Soap
  - Shampoo
  - Tooth brush
  - Tooth paste
  - Nail cutter
  - Comb
  - Towel
  - Sanitary pad
  - Bag with printed messages

Hygiene Bag (for Hygiene Kit)

5. Illustrative materials as hygienic Practices reminders

- Poster: Distributed and Installed on public gathering places

Illustrative materials as hygienic Practices reminders (con’d.)

- Booklet, note book, pen and school bag: Distributed to school going children after conducting hygiene session in the schools.
5. Illustrative materials as hygienic Practices reminders

- Poster: Distributed and Installed on public gathering places

Illustrative materials as hygienic Practices reminders (con’d.)

- Booklet, note book, pen and school bag: Distributed to school going children after conducting hygiene session in the schools.

Knowledge Improvement After Hygiene Education

<table>
<thead>
<tr>
<th>Practices</th>
<th>Knowledge</th>
<th>Baseline KAP Survey</th>
<th>Follow up KAP Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>People who know benefits of using safe drinking water</td>
<td>57%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>People know how to prepare and store food</td>
<td>24.2%</td>
<td>94.2%</td>
<td></td>
</tr>
<tr>
<td>Individuals know how to treat diarrhea in their homes (with ORS, WSS)</td>
<td>5.5%</td>
<td>98.7%</td>
<td></td>
</tr>
</tbody>
</table>

Practices Improvement After Hygiene Education

<table>
<thead>
<tr>
<th>Practices</th>
<th>Baseline KAP Survey</th>
<th>Follow up KAP Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>People cover their drinking water</td>
<td>34.1%</td>
<td>97.8%</td>
</tr>
<tr>
<td>People wash their hands with soap (demonstration)</td>
<td>19.3%</td>
<td>90.9%</td>
</tr>
<tr>
<td>People cover or bury night soil for disposing</td>
<td>40%</td>
<td>98.4%</td>
</tr>
</tbody>
</table>

6. Initiatives in Hygiene Education

- Including community-led total sanitation (CLTS) in hygiene education
- Including menstrual hygiene education and sanitary pads

Impact of initiatives

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Baseline</th>
<th>Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>People have constructed sanitary latrines (CLTS)</td>
<td>65.5%</td>
<td>99%</td>
</tr>
<tr>
<td>No. of women using sanitary pads/clean cloth during monthly period</td>
<td>93%</td>
<td>100%</td>
</tr>
<tr>
<td>Women wash the cloth and reuse it</td>
<td>98.7%</td>
<td>91.4%</td>
</tr>
</tbody>
</table>
Future plan

- Updating hygiene education messages
- Development of video dramas
- Expansion of hygiene education in schools

Challenges

1. Insecurity (threats esp. for female educators)
2. Poverty (not allowing for safe practices)
3. Illiteracy (Can’t read messages)
4. Cultural limitation (persistence to changes)
5. Qualified Hygiene educator couples in locality

Any question or comment please!
Discussion (Question and Answers Session)
On
DACAAR Practices in Hygiene Education

*Question by Abdul Saboor (Water Quality Consultant, UNICEF):*

Could other NGOs have access to DACAAR radio broadcasting hygiene education messages in the future?
The Answer was yes they can.

*Answer by Siddequllah Sayed (Hygiene & Sanitation Coordinator, DACAAR):*

Yes, they can.

*Question by Nasreen (WASH Program Director, JDA):*

As you mentioned that DACAAR is providing hygiene training as well as distributing hygiene kits to school children. Could you please explain that, is it distributed once a year or once after six months or what?

*Answer by Siddequllah Sayed (Hygiene & Sanitation Coordinator, DACAAR):*

The hygiene kit is distributed just one time during the project implementation.

*Suggestion by the floor:*

Beside provision of training and hygiene kits to the school children, provision of water pots with taps should also be considered for schools.

The answer was that it is the responsibility of UNICEF to consider it.
Question by the floor:

How to treat drinking water in rural areas?

Answer by Azeem Barat (WET Centre Manager, DACAAR):

Water for drinking can be treated through:
1. Biosand filters
2. Chlorenization
3. Boiling of water
4. SODIS – Solar disinfection

Question by Niamatullah Wasiq (Senior Master Trainer, Relief International):

Some of the urban areas in Kabul city also needs water quality safety plan. Is DACAAR or any other organization could take care or consider it in their programme?

Answer by Azeem Barat (WET Centre Manager, DACAAR):

DACAAR is not working in cities and urban areas, based on its policy. DACAAR is rather working at district level in Kabul such as in Paghman, Dehsabz, Bagrami, Qarabagh and other districts. There are several other NGOs working in Kabul urban areas along with the government and municipality.
## Kanchan Filter and Arsenic Removal

**Presented by**
Dr. Betman Bhandari, WASH Advisor, DACAAR

### Presentation Outline
- What is Arsenic?
- Environmental Health Concerns
- Sources of Arsenic
- Intro. of Kanchan Arsenic Filter
- Filter Components
- Recommendations

### What is Arsenic (As)?
- Arsenic is a chemical element found naturally in rocks in the earth’s crust.
- Arsenic is recognized as a slow poison and cancer causing substance (carcinogen).
- It occurs within organic compounds (combined with hydrogen and carbon), and within inorganic compounds (combined within sulphur, chlorine or oxygen).

### What are the known sources of Arsenic?
The most common sources of elevated arsenic levels in groundwater are:
- Weathering of arsenic bearing minerals and ores.
- Infiltration or runoff from locations of past mining activities.

### What are the environmental health concerns?
- Symptoms of exposure to high levels of arsenic may include stomach pain, vomiting, diarrhea and impaired nerve function that may result in “pins and needles” sensation in hands and feet.
- Arsenic can also produce a pattern of changes in your skin which includes darkening of wart-like growths – most frequently found on the palms or soles.

### What are the environmental health concerns?
Melanosis is the first symptom of drinking arsenic contaminated water over a few years. Melanosis is light or dark spots on people’s skin, often on the chest, back, or palms.
The next step is that hardening skin bulges develop on people's palms and feet – called Keratosis.

What are the environmental health concerns?

Skin lesions on palms and soles due to chronic arsenic poisoning.

Drinking high amounts of arsenic for a longer time may cause cancer in the lungs, bladder, kidney, skin, liver, and prostate.

What are the environmental health concerns?

Cause cancer

Introduction of Kanchan Filter

Filter Components
- Diffuser Basin
- Lid
- Container
- Pipe
- Brick chips or Plate
- Iron Nails
- Water
- Fine Sand
- Coarse Sand
- Gravel

Specifications:
- PVC pipes: 4, 10, 10 inches long
  ½ inch pipe
- PVC fittings:
  3 elbows
  2 rubber washers
  1 check nut
  1 end cap
  1 plastic clip

Fittings for Kanchan Filter
- Elbow
- Cap
- Washers
- Check Nut
- Plastic Clip

Media for the Kanchan Filter
Specifications:
- Fine Sand
  20 to 22 Liters
  less than 1mm diameter
- Coarse Sand
  4 Liters
  3 to 6 mm diameter
- Gravel
  6 Liters
  6 to 12 mm diameter

Media for Kanchan Filter
Specifications:
- Iron nails
  5 kg
  smallest size is best
  length < 20mm
  must be non-galvanized (must rust)
- Brick chips
  any brick is fine
  about 5 to 10 cm diameter
- Plate
  any perforated plate that can protect the iron nails
**Version 10 Biosand Filter**

**Arsenic Removal Mechanism**
- Iron nails in the diffuser basin will quickly rust after contact with water and air.
- Iron rust (ferric hydroxide) is an excellent adsorbent for arsenic.
- Arsenic may stay in the diffuser box (i.e. adsorbed to the surface of the rusted nails in the box), or the arsenic-loaded iron particles can be flushed down and trapped on top of fine sand.

**KAF Technical Performance Summary**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Typical Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic Removal</td>
<td>85% to 95%</td>
</tr>
<tr>
<td>Iron Removal</td>
<td>93% to 95+%</td>
</tr>
<tr>
<td>Coliform Removal</td>
<td>60% to 100%</td>
</tr>
<tr>
<td>Turbidity Removal</td>
<td>80% to 95+%</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>15-20 L/hr</td>
</tr>
<tr>
<td>Iron Nails Life</td>
<td>At least 3 years</td>
</tr>
</tbody>
</table>

**Alternative Arsenic-safe Sources**
- Safe tube wells (testing)
- Improved Dugwells
- Deep Tube wells
- Rainwater Harvesting
- Piped water supply

**Arsenic Removal Technologies**
- e.g. Arsenic removal filter(s)

**Recommendations**
- Many technologies have been using for arsenic removal from water sources but none of them have 100% effectiveness to remove arsenic.
- New technology adopting without pilot project is also not reliable due to different water chemistry.
- Time to time changing media or chemical package of the filter is also not practical in rural communities.

**Recommendations**
- Using surface water with household water treatment technology would be the good combination for the mitigation of arsenic.
- Water sources which have contamination of arsenic below national standard (less than 50 ppb) would be good to use arsenic removal filter.
Discussion (Question and Answers Session)
On
Kanchan Filter and Arsenic Removal

*Question by Chidambaram CT (Head of Programs, ACTED):*

What are health concerns of Arsenic? And is there any manual for the Arsenic protection?

*Answer by Betman Bhandari (WASH Advisor, DACAAR):*

As indicated in the presentation, Melanosis is the first symptom of drinking arsenic contaminated water over a few years. Melanosis is light or dark spots on people’s skin, often on the chest, back, or palms. The next step is that hardening skin bulges develop on people’s palms and feet – called Keratosis. Drinking high amounts of arsenic for a longer time may cause cancer in the lungs, bladder, kidney, skin, liver, and prostate.

Several technologies can be used for Arsenic removal and protection. CAWST have fact sheets on the following technologies which can be used for Arsenic removal:

- Kanchan Arsenic Filter
- Passive Oxidation
- Solar Oxidation
- Asia Arsenic Network Filter
- Bucket Treatment Unit (BTU)
- Kolshi Filter
- Sono Filter
- Magc-Alcan Filter
- Shapla Filter

*Question by Nasreen (WASH Program Director, JDA):*

As you told that nails are used in diffuser basin for Arsenic removal. Is it possible to remove salt by filtration?

*Answer by Betman Bhandari (WASH Advisor, DACAAR):*

It is not possible through this kind of technology. There are other technologies for removing salt from water which are expensive and are not affordable for the households. Filtration removes just turbidity, bacteria and Iron as well.
<table>
<thead>
<tr>
<th>Tearfund Experiences in School WASH</th>
<th>Interventions</th>
<th>School Latrine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tearfund Experiences in School WASH</td>
<td><strong>Interventions</strong></td>
<td></td>
</tr>
</tbody>
</table>
| National Learning Exchange on WASH 9-10 December 2013 | 1. Improving access to safe drinking water facilities through -  
2. Rehabilitating or improving existing water supply infrastructure  
4. Training of teachers on WASH facility operation and maintenance  
5. Provision of jerry cans | |
| Interventions Continued | 2. Improving hygiene and sanitation practices by—  
1. Rehabilitating or constructing appropriate latrines, including facilities for disabled students  
2. Training of Trainers on improved hygiene and sanitation practices  
3. Menstrual hygiene training  
4. Providing hand washing facilities  
5. Excavating solid waste disposal pits | 2000L Water Storage Tank at a School |
| 2. Improving hygiene and sanitation practices by—  
1. Rehabilitating or constructing appropriate latrines, including facilities for disabled students  
2. Training of Trainers on improved hygiene and sanitation practices  
3. Menstrual hygiene training  
4. Providing hand washing facilities  
5. Excavating solid waste disposal pits | Impact | |
| 2. Improving hygiene and sanitation practices by—  
1. Rehabilitating or constructing appropriate latrines, including facilities for disabled students  
2. Training of Trainers on improved hygiene and sanitation practices  
3. Menstrual hygiene training  
4. Providing hand washing facilities  
5. Excavating solid waste disposal pits | • Improved knowledge on health and hygiene  
• Reduced incidence of diarrhoeal diseases.  
• Increased attendance.  
• School Environment enhanced.  
• 103 new latrines constructed.  
• 6 rehabilitated  
• Schools now Open Defecation Free. | |
### Challenges

- WASH not part of staff’s key result areas
- More time invested in getting cooperation.
- Sources of water variables
- School/community capacity to replace worn out equipment.
- Skills Migration of trained BSF Technicians.
- Menstrual Hygiene Management a sensitive topic.

### Mitigation

- Lobbying MoE to incorporate/adapt WASH as KRA for staff.
- Training Teachers as focal persons for WASH and headmasters for skills retention.
- Training of school management committees.
- Establishing school health and hygiene clubs.
- Linking School with Community activities.

THANK YOU
Discussion (Question and Answers Session)
On
Tearfund Experiences in School WASH

*Question by Suneel Rajavaram (Int'l Technical Advisor, CAWST):*

Tearfund have WASH teacher training program in schools and WET Centre also currently have the same program. WET Centre in Kabul are working with schools on educating the teachers. So would you like to utilize those services? Will it be helpful to you?

*Answer by Munyaradzi Charuka (WASH Advisor, Tearfund):*

Yes, it will be very helpful.

*Question by Shir Ahmad (WET Centre Deputy Manager, DACAAR):*

You mentioned that as an impact of your WASH project in school, knowledge improved, skill improved, enrollment of student increased and absence of students have decreased, so how you have measure these changes?

*Answer by Munyaradzi Charuka (WASH Advisor, Tearfund):*

Unfortunately I did not provide the statistics, but according to our survey which we did in these schools, I can say that the enrollment of student increased is much increased.

*Question by Gareth Mayhew (Development Director, IAM):*

Is there any dialog happening with the ministry of education and mainstreaming some of this into curriculum?

*Answer by Munyaradzi Charuka (WASH Advisor, Tearfund):*

We did dialogue with the education director, but I think UNICEF is very influential in the adoption of WASH issue.
Ground Water Quality Database & Database Info System in DACAAR
Presented by:
Eng. M. Hassan Safi, Senior Hydrogeologist, DACAAR

DACAAR National Groundwater Monitoring Wells Network Database Information System Major Finding and Lesson Learning
09 December, 2013
M. Hassan Safi

Database and data information system
• Water points information system (WIS)
• National Groundwater Monitoring Wells network database (WSG_SWL) and data information system

Which equipment and tools are we using for data collection?

Diver/Data logger for automatic recording of the ground water level and temperature over a long time.
Physical parameters measurement devices:

Bacteriological analysis devices

PoETAET measures Fecal Coliform and Total Coliform

Chemical analysis measurement devices

Equipment and Tools for Geophysical Survey

Field Geophysical Survey for Data Collection
Flow Meter for measurement of Surface Water Flow Rate

Filed data Collection by Flow Meter

Collection of Soil Samples for Soil Analysis

How to provide Water Samples for WQ analysis?

Which Software/tools are we using for data management, analysis, interpretation, mapping and reporting?
IPI2win software
IPI2win software is used for vertical Electrical Sounding (VES) data management and graphic evaluation for finding physical parameters.

Res2dinvx32 software
Res2dinvx32 software is used for electrical profile (electrical resistivity) data management and graphic evaluation for finding physical parameters of subsurface.

Geographical information system (GIS)
Geographical information system (GIS) is a set of tools for collecting, storing, retrieving, transferring and mapping of water points and GMWs data.
Discussion (Question and Answers Session)
On
Ground Water Quality Database & Database Info System in DACAAR

Question by Ahmad Zia Noori (WASH Assessment & Monitoring Manager, ACF):
For which province do you have geophysical data?

Answer by Eng. M. Hassan (Senior Hydro geologist, DACAAR):
We have geophysical study in Tangi of Behsood district of Nangarhar province, and in Chamtala of Khugiani district of Nangarhar province and as well as in Shulgarah district of Balkh province.

Now we are working in problematic areas, where we have no data and the ground water table is deep. Also we have performed the geophysical study in Faryab province.
Bio Sand Filter Use
Presented by:
Chidambaram CT, Head of Programs, ACTED, Kabul

Outline of presentation
- ACTED’s Work on wash
- What we do differently from DACAAR in WASH?
- When did we started its use?
- Out Present works of BSF
- Benefit felt by beneficiaries
- Challenges and problems
- Suggestion for improvement
- Questions and discussion

ACTED’s Work on WASH
- Drinking water supply programmes under NSP, UNHCR – Deep and shallow well and supply system
- Sanitation Programs – as part of Shelter program - USAID, OFDA, Norwegian Embassy, BPRM – Latrine, Solid waste management and sewage system
- Hygiene programs
  - Personal Hygiene
  - House hold hygiene
  - Environmental hygiene
- Main activities under Hygiene promotion
  - KAP surveys
  - House hold level group training
  - Community level training
  - Training for school teacher
  - Posters and leaflets
  - Community drinking water cleaning – Chlorination
  - FM radio – operation for Hygiene and health messages

What we do differently from DACAAR in WASH?
- Women centred activities – Vaccination promotion, breast feeding , ORT
- Referral services – TB and other diseases
- Bio-sand filter vocational training linked to Youth development program
- Training for Community base organisations – SHGs, Agricoops, WUA
- Adolescent hygiene training through Youth development

When We Started its use Bio Sand filter?
- 2011 – Drought
  - Many Children and adult died in Almar district of Faryab due to Acute water diarrhea
  - WHO rushed it team for treatment
  - Our Hygiene promotion team promoted concept of safe drinking water (Disinfect by boiling)
  - People informed about use of turbid water
  - Finally after several weeks we found BSF as useful
  - But ...... we could not start immediately. Because no trainers for that at that time...... Only at beginning of 2012 we started with help of DACAAR training

Present work of BSF
- As on 31 July BSF distribution
  - Almar District – 800
  - Qaisar District – 800
  - Kohistan District – 600
- Produced by some youth trained by ACTED Hygiene worker trained by DACAAR
- BSF production has been promoted as vocational training – 26 youth from 3 districts trained
- Cost of production of one BSF 1100 Afg and sales price 1500 Afg
- Rate of production one BSF per day by one person
Benefits Felt by the Beneficiaries

- After arrival and use of BSF the DoPH reports fewer cases of Diarrhea from the target places
- People feel that the water they use for drinking is clean, because it is not turbid or coloured. So healthy to use
- Cheap and affordable filter even to low income and poor people (2 – 3 days wages is enough)
- Can be produced with locally available materials no costly or imported or city or company dependent materials required
- Durable – Works for long time with less maintenance
- No operational cost – No electricity or chemicals needed

Benefits (Continued)

- Taste, smell and appearance of water is better
- Once given information and trained, even children can use it
- Supplies safe water enough for a normal family of 8 persons
- 95% of the beneficiaries interviewed at the project evaluation informed that they will recommend it to others
- Has long life – 10 or more years if non-rusting container used (not knocked down or cracked)

Challenges and issues

- Fine sand (<0.05mm) availability is very limited
- Transport of metal BSF (15 – 20 kg) to remote areas poses problem – the setup get dismantled. Need to redo the BSF
- Repeated use of turbid water slows down the flow and people’s motivation to use BSF also goes down
- People think that BSF removes 100% of harmful organisms and fail to use disinfection (Boiling or Solar heating etc) – Misconception that it is a magic machine that can turn any water to drinkable water

Challenges

- Needs to be in use continuously, if stopped it requires some time to restart.
- Ignorance leads people to use water before pass period. One person learns and if he or she leave the place due non-communication people use the water directly for drinking without disinfecting
- Diarrhea even during use of BSF, makes people think that it is not useful (May be due to non-sterilizations or after filter contamination)
- Accidental knocking down and improper replacement (needs more education) – cracked layer, misplace diffuser lid

Suggestion for improvements

- Simple suggestions for making BSF use to produce clean water with less pathogens (such as use same source of water, correct pass period, how to deduct malfunctioning etc.)
- List common mistakes that community people make and recommend remedies
- Promotion of Entrepreneurs to produce quality BSFs – rather than project promoted BSF
- Should be complimented with use of H₂S testing kits
- Efficiency of purification goes down over time. How to detect and correct
- Quality control of BSF at production and use site –
  - Certified BSF producers
  - Certified BSF trainers

Thanks

Any questions???
Discussion (Question and Answers Session) On Bio Sand filter Use

**Question by Eng. Najibullah (PM Assistant, Solidarites International):**
Which size of sand can be used in Bio Sand Filters?

**Answer by Azeem Barat (WET Centre Manager, DACAAR):**
Actually the filtration sand should be sieved through 0.7 mm mesh. Before selection of a sand source, sieve analysis of the sand from the source needed in order to know whether the selected sand is good or not. If the sand has small particles and waste more than the limit, then another sand source could be analyzed.

**Question by Dr. Sediqullah (Hygiene & Sanitation Coordinator, DACAAR):**
Are Tuberculoses or other diseases included in your hygiene procedure?

**Answer by Chidambaram CT (Head of Programs, ACTED, Kabul):**
No. But mother and childcare are also part of the ACTED WASH activities.

**Question by Dr. Shir Ahmad (WET Centre Deputy Manager, DACAAR):**
Is ACTED work in community health activities?

**Answer by Chidambaram CT (Head of Programs, ACTED, Kabul):**
ACTED has a set of hygiene promoters employed by ACTED. Sometimes they are giving special trainings regarding the water security.
Suggestion by Suneel Rajavaram (Int'l Technical Advisor, CAWST):

Suneel asked ACTED to visit DACAAR for required help and cooperation regarding Biosand filter project implementation as making and using of Biosand filters is not easy and people should be trained about how to use and maintain Biosand filters. So please visit DACAAR for relevant help and cooperation.

Comment by Eng. Azeem Barat (WET Centre Manager, DACAAR):

DACAAR WET Centre every year evaluates 2 to 3 Biosand filter projects. The evaluations reveal that Biosand filters are efficient in removal of about 95% micro biological contamination. The perceptions of users were always good, they like it, they use it and they recommend it to others. They like the taste and they like the clean appearance of filtered water. We can share all the results with those organizations that they need it.

Comment by Abdul Qayeum Karim (Associate Professor & Vice Dean of Faculty of Engineering, Kabul University):

Each year DACAAR evaluate 2 to 3 Biosand filters implemented projects and the perception of the users' was always good as they like it, using it and recommending it to others.
Action Research on solar pumping water supply  
Presented by:  
Dr. Shir Ahmad, Deputy Manager, WET Centre, DACAAR  
Eng. Leendert Vijselaar, WASH Cluster Co-Lead Coordinator, DACAAR

Objectives
- Identify the users perception and suggestion for improvement of the system
- Identify the efficiency of solar pumping system in different weather condition
- Identify the efficiency of solar pump system made by different manufacturers

Cont...
- Identify the efficiency of tracking system in comparison with non tracking system
- Identify the community based operation and maintenance system for the solar pumping system

Methodology
- Three solar pumping system were identified from different manufacturers, locations, depth and different tracking system.
- Flow Meters were installed on all three solar pumping system.
- Flow meter was read at least four times a day and once in a week
- A responsible person read the flow meter and entered the data in readily made formats and then entered into Excel sheets for analysis.
Data Collection From HHS
- The data collected from 28 to 31 February 2013 in Nangarhar and Laghman.
- 23 solar pumping systems were assessed, of which 14 fixed, 5 with manual tracking and 4 with automatic tracking systems.
- 93 families were interviewed.

Cont...
- Six persons interviewed per system, three women and three men.
- One person was interviewed for a nonfunctional system.
- Systems that were older than 10 months were included.

Findings
Demography
- 1,247 people in 93 households.
- Average of 13 people per HH.
- Minimum 2 people per household.
- Maximum 35 people per household.
- Families served by solar systems:
  1. Maximum 300.
  2. Minimum 60.
  3. Average 157.

Current Water Sources
- Functional system:
  1. Taps: 92.5%.
- Nonfunctional systems:
  1. Neighboring taps.
  2. Hand pumps.
  3. Rivers and streams.
- Daily amount of water:
  1. Average 188 liters.
  2. Minimum 30 liters.
  3. Maximum 600 liters.

Water Collection
- Female 57%.
- Male 43%.
- Time spent for water collection:
  1. Average 23 minutes.
  2. Minimum 8 minutes.
  3. Maximum 60 minutes.
- Usage of water:
  1. Drinking.
  2. Food preparation.
  3. Washing, bathing.
  4. Watering of plants and vegetables.

Water Sources Before System
- 59.6% hand pumps.
- 23.6% tankers.
- 17.7% rivers and streams.
- only 1.1% taps.
Satisfaction with the system
- Provision of enough water for all the purposes?
  1. Yes: 71%
  2. No: 29%
- How do you fulfill your need?
  1. 70% hand pumps,
  2. 10% from neighboring taps
  3. 13.3% from rivers and
  4. 6.7% from tankers

O&M System
- O&M system emplaced for the solar systems installed in the end of 2011 and in 2012
- Collected money from families, paid for guard and saved for system O&M
- All the systems had a guard paid by community
- Salary range was from 5,000 to 12,000 rupees.

Cloudy and Rainy Weather
- Does the system work in cloudy and rainy weather?
  1. No: 93.5% and Yes: 6.5%
- Alternative sources of water
  1. 89.9% nearby hand pumps,
  2. 9% rivers and streams and
  3. 1.1% tankers.
- Water collecting time from alternative sources
  1. Average 53 minutes
  2. Minimum 4 minutes
  3. Maximum 120 minutes.

Users Perception
- Like the system?
  - Yes: 98.9%
- Why do you like the system?
  1. Save of time and money
  2. Privacy for women
  3. Provision of safe water
  4. Easy access
  5. Improvement in health

Flow Meter Reading

Output
Problems in Systems

- Problem in systems:
  1. Yes: 44.6%
  2. No: 55.4%

- Magnitude of the problems:
  1. Damage to pipe or valve
  2. Submersible was burnt
  3. Panels were stolen

- Duration of the problem:
  1. Few days to a month
  2. Months to years

Active and Non Active Systems

- A total of 23 solar pumping systems were assessed
- 9 solar pumping systems were nonfunctional
- The main reason was problem of submersible as mentioned by almost all the interviewees
- Submersible is not repairable
- Procurement of new one was not affordable for the community.

Solution by Community

- In three solar system out of the nine, community bought & installed an electric submersible in the tube well which was powered by generator and the fuel for generator was provided by community.
- In one system people connected 12 batteries to panels and then connected the batteries to the inverter, which convert DC to AC and an electric submersible installed in the tube well, but it worked for a month and then failed to work and people called technician to repair it again.

Solution by DACAAR

- Technical team visited all failed systems and identified issues.
- Finally all system made operational with community contribution.
- Panels provided by community.
- Submersible and other small things provided by DACAAR.
- Established a strong O&M community based committee for each system.

Challenges

1. Costing
2. Operation and Maintenance
3. Community Contribution for operation of system
4. Spare parts
5. Lose of efficiency

Recommendations

- Take time to find out if the providers have the technical expertise, spares, workshops, technical personnel and projects that have lasted over three years and if they can give a warranty of three years for the installed systems.
- A generator to be provided during the inauguration of solar pumping system to be used in case of rainy and cloudy weather and if the solar system fail to work.
- During the system installation make sure that a management committee for cash collection for operation and maintenance of the system has been established.
Find solution for solar submersible pump repair
Another solution might be to send someone somewhere to be trained on repair of submersible systems.
Select a provider who is able to educate the design team on the criteria for the selection of pumps and outputs that can be expected.
Provision of a spare pump might have to be taken into the costing so that by pump failure the community does not have to go long distances to find a suitable pump.

For optimal functioning of the solar panels dust must be removed, but in such a manner that the panels will not get scratched or damaged in any other manner.
The best system is the automatic tracking system, but the manual tracking system is a better option then the year fixed system.
Layout design ensures that no shadow falls on the panels.

Technical Issues
- Layout
- Design
- Management
- Costing
- Panels Quality

Thanks
Discussion (Question and Answers Session)
On
Action Research on solar pumping water supply

Comment by Eng. Ahmad Shah Ahmadi (Unit Head WatSan Engineering Dept, MRRD/NSP):
NSP also considering solar pumps for NSP but there are some disadvantages with the solar pumping system. Good quality solar panels are not available in market of Afghanistan.

Comment by Dr. Shir Ahmad (WET Centre Deputy Manager, DACAAR):
There will be lose in efficiency in solar pumps for uplift of water quantity. But we have to monitor that how long and how much is the duration of loses. At least we have to monitor this system for 6 months. Because we need to know the lose percentage per year. Within one year we may have 2% to 4% loses in solar system. This system is to be designed for 20 years and also there might be no technical mechanic to repair the non-working solar pumps. For example if a solar submersible pump is damaged, then it will be difficult to repair.

Question by Ahmad Zia Noori (WASH Assessment & Monitoring Manager, ACF):
What about those days that are cloudy or rainy and there will be water demand but solar pump could not provide the demand?

Answer by Leendert Vijselaar (WASH Cluster Co-Lead Coordinator, DACAAR):
Of course the days in Afghanistan are different over the whole year, from December till March the performance and production of solar pumps are very low, because the sunshines are weak and the season is rainy, but in summer (June, July and August) due to the shiny days, the production is very high. Although the solar pumps will be working in cloudy days as well but the production and performance will be low.

Question by Eng. Najibullah (PM Assistant, Solidarites International):
Is the info on solar pumping system shared with MRRD or not? Because MRRD have NSP programe, implementation capacity and budget, and can implement these type of projects for communities and as it will be acceptable for the commuities and Shoras.

Answer by Eng. Azeem Barat (WET Centre Manager, DACAAR):
The action research on solar pumping system was recently completed and we are sharing it now. The shortcomings and limitations of the system identified and recommendations on the system is shared. Now we can claim that we have got expertise and are ready to provide consultation to other organizations.
**Question by Nasreen (WASH Program Director, JDA):**
Who is responsible for the maintenance of solar pumping system? Who pay salary for the maintenance worker and for how long they are paid?

**Answer by Dr. Shir Ahmad (WET Centre Deputy Manager, DACAAR):**
Community is responsible for the maintenance and paying salary to the maintenance worker. The users in community are collecting money on monthly basis. They are keeping some money for the maintenance of solar system and also paying the cost and salary from the collected money.

**Question by Eng. Najibullah (PM Assistant, Solidarites International):**
1. If in a rainy or cloudy day, a solar pump is not working, then on the next sunny day, do solar pumps work automatically or do air blockages occur in the system?
2. For how much depth, can we use the solar pump and what will be your recommendation?

**Answer by Dr. Shir Ahmad (WET Centre Deputy Manager, DACAAR):**
1. There will be no air blockage problem and pumps will work properly.
2. Solar pumps work the same as other submersible pumps. DACAAR used solar pumps for lifting water from a depth of up to 160 meters.
WASH Impacts on Mothers and Children in Developing Countries
Presented by:
Suneel Rajavaram, International Technical Advisor, CAWST

Water, Hygiene and Sanitation (WASH) Impacts on Mothers and Children in Developing Countries

Learning Expectations

• Discuss why diarrheal diseases have a significant impact on mothers and children.
• Discuss specific water-related diseases and conditions that contribute to maternal and child mortality.
• Describe the impact of poor WASH on mothers and children.

Key Words

• Malnutrition – body does not get enough vitamins, minerals and nutrients.
• Malabsorption – reduced absorption of nutrients
• Weight for age - weight for age (WAZ) or “underweight” is a shorter-term measurement of malnutrition.
• Stunting – a longer-term measure of malnutrition. Measured as height/length for age (HAZ).
• Cognitive development – way our brains develop to acquire knowledge / learn.

Water Related Disease and Health

• Familiar statistics:
  – Diarrhea kills an estimated 1.4 million children each year, caused mainly by unsafe water and poor sanitation (WHO)
  – Children living in households with no toilet are twice as likely to get diarrhea as those with a toilet (WEDC)
  – At any one time, half of the developing world’s hospital beds are occupied by patients suffering from diarrhea (UNDP)

Water Related Disease and Health

• Increasing attention is being paid to other issues and impacts:
  – WASH, diarrhea & malnutrition
  – WASH and childhood development
  – Maternal, newborn and child health
  – Specific pathogens & diseases, and their impacts
Maternal & Child Mortality

What are the rates in Afghanistan?

WHO – Global Health Observatory

Afghanistan Specific Information

• Maternal mortality 2011 (reported) = 330
• At least one woman dies every two hours
• Child mortality = Under 5 – 101 (2011)
• Ranked (for mortality) 23rd in the world
• Infant mortality rate (under 1) 2011 = 73
• Neonatal mortality rate = 36

Maternal and Child Mortality Rates

• What do mortality rates tell us?
  – If mortality is high, then general morbidity and ill health are also likely to be high
• In countries where access to water and sanitation is high, maternal and child mortality are low.


Maternal and Child Mortality Rates

• What issues contribute to these high rates?
  – Access to, and quality of healthcare
  – Education, particularly of mothers
  – Access to safe water and sanitation
  – Nutrition

Effects of Diarrhea

• Diarrhea increases the risk of Acute Lower Respiratory Infections (ALRI) in children
  – 2 to 3 times greater risk
  – Leading immediate cause of death in children
• Diarrhea and impaired intestinal function is responsible for a large proportion of global malnutrition

Diarrhea and Malnutrition

• Diarrhea contributes greatly to malnutrition
• Malnutrition increases susceptibility to, and severity of, infections

Adapted from: “Tackling the silent killer, The case for sanitation” by WaterAid (2008).
Diarrhea and Malnutrition

Malnutrition is indirectly responsible for about half of all deaths in young children. The risk of death is directly related to the level of malnutrition.

Review

- A tell B
  - What contributes to high rates of mortality in mothers and children?

- B tell A
  - What are some of the effects of diarrhea in children?

Specific Water Related Diseases of Concern

- Cryptosporidium
- Giardia
- Non-typhoid Salmonella
- Schistosomiasis
- Hepatitis E
- Toxic Plasmosis

Specific Maternal Risks

- Maternal undernutrition
  - Low birth weight
  - Infections and asphyxia of newborns
  - Increased infant mortality

- Schistosomiasis
  - Severe anemia
  - Low birth weight
  - Increased infant and maternal mortality
  - Higher rate of spontaneous abortions and a higher risk for ectopic pregnancies

Specific Maternal Risks

- Hepatitis E
  - Important pathogen in developing countries (probably underdiagnosed)
  - Mortality in pregnancy can rise from the norm of 1-4% to 20%

Review

With a partner:
1. Name 2 water-related diseases that impact the health of mothers and children.
2. Name 2 other conditions that impact the health of mothers and children and are related to WASH.
3. Discuss ways to integrate this knowledge into our training materials.
WASH Activity in Urban Context
Presented by:
Najibullah, Kabul WASH Program Manager Assistant, Solidarites Int’l

“Provision of basic relief assistance to cover the essential needs of vulnerable communities living in Kabul Informal settlements (KIS)”
Kabul, Afghanistan

DACAAR Learning Exchange
WASH activity in Kabul Informal Settlement (KIS): urban contexts
December 9th - 10th 2013

Historical and main reasons that has led to implement the project
- Afghans have been displaced by armed conflict more than 3 decades (since 1970s). On-going political instability, recurrent natural disasters and on-going urbanization in Kabul City.
- Solidarités International, as a neutral organisation working over 30 years in Afghanistan.
- Since 2005 SI has implemented WASH projects in Kabul city and its outskirts areas.
- Current consortium project (with ACF, WHH), funded by ECHO since June 2012, is a basic emergency program with lifesaving oriented activities among 21 KIS settlements targeted refugee returnees and IDP.
- WASH project aims at provision of safe water access at household and community level, improvement of environmental sanitation conditions of KIS settlements.
- The interventions are necessary and pertinent according to the urban contexts and to decrease the WASH vulnerability.

Presentation of Kabul (urban) context
Main characteristic of Kabul (urban) context
- Security related to political instability and natural disasters e.g. security incidence from Armed Opposition Groups (AOGs), flooding, drought, extreme weather conditions etc... Refugees, Returnees, IDPs.
- Returnees & IDPs without land ownership, area of origin, assets, etc... National IDP policy is not applied yet.
- Continuous waves of migration (new returnees and IDPs) to Kabul city. Population size versus infrastructure’s availability e.g. limited access to basic needs (water, healthcare, sanitation, etc.).

Presentation of Kabul (urban) context
- Displaced population is usually located in the bad condition areas in the city.
- Socio-economic and livelihood difficulties in Kabul city e.g. limited job opportunities in and the city.
- On-going city’s infrastructure development e.g. planned and unplanned areas.
- Pressure from resources sharing, large amount of people VS limited facilities more contamination, pollution (garbage, waste, etc.)
- Tensions created between KIS settlements and host communities, authorities.

Presentation of the urban context
WASH activity implemented
- Water points securing e.g. hand pumps rehabilitation (pump, spare part, borehole cleaning, maintenance training, jerry can distribution etc...) and water quality monitoring.
- Household latrines and bathrooms upgrading through portable materials distribution.
- Basic drainage improvement and garbage cleaning campaign.
- Cattle management.
- Hygiene promotion sessions for men, women and children.
- Hygiene kit distribution.

Constraints of activity implementation
- Security incidence
- Authorization for construction related activities due to concerning of long term staying in KIS settlement.
- Far from sustainability e.g. difficulty in integration of targeted population into Kabul municipality plan, IDP policy, etc...
- Mobilized population.
- Practical exit strategy for NGOs in KIS settlements???
WASH and activities implemented in 21 KIS settlements with estimated 12,900 individuals in Kabul city context

Positive and negative impacts of the urban context on the project

Positive:
- Logistical management.
- Quick coordination with authorities and stakeholders.
- Accessibility to targeted population area.
- Activity monitoring.
- Relevant project activities.

Negative:
- Dense population settlements, therefore limited choices for WASH activities e.g. latrine design, garbage management.
- Tensions between KIS settlements and host communities if public facilities are inadequate.
- Multi-level of authorities/entities for coordination versus time limitation.
- Security restriction in Kabul city.

Lesson learnt

- Capacity building is significant for KIS population in hand pump repairing and maintenance.
- Strengthening host community acceptance is essential.
- Need of strong coordination with different humanitarian working groups and authorities.
- Challenges in defining technical solutions related to WASH due to authorization limitation.
- All solutions should be adapted to rules and procedures of local administration.

Recommendations for future projects to be implemented in a similar context

- Strengthening collaboration with MoRR and MoPH in parallel with others.
- Encouraging community participation versus livelihood difficulties to take into consideration for activity implementation.

Thank you
**Discussion (Question and Answers Session)**

**On**

**WASH activity in urban context**

**Question by Eng. Niamatullah Wasiq (Senior Master Trainer, Relieve International):**

Have you ever found that there are some people who have good houses in Kabul or other areas, but still have a tent and live in camps in order to get some aids or other things?

**Answer by Eng. Najibullah (WASH PM Assistant, Solidarites International):**

Yes, it is true that there are some families who have their own houses in the city. They stay in camps during day time but disappear during night and are returning to their own house. Because they are getting aids from NGOs and maybe thinking that they will get a piece of land from the government in future.

Relieve International has discussed the issue with UNHCR and ministry of returnees to find a permanent solution for their settlement. Then MoRR have distributed them land in Parwan province, but due to the job opportunity in Kabul, they didn’t go to Parwan.

**Comment & Question by Eng. Shah Wali, Program Head, DACAAR):**

I am in doubt about Mr. Najibullah’s opinion that coordination in Kabul is much quicker than coordination in regional or provincial level. Eng. Shah Wali told that for him coordination in Kabul is much difficult than coordination in provinces, what is your opinion about?

**Answer by Eng. Najibullah (WASH PM Assistant, Solidarites International):**

I am in agreement with Eng. Shah Wali, but since high level of authorities are located in Kabul, if it is necessary to have Memorandum of Understanding or any agreement with them, then it is easy to access them but in provinces, it takes a longer time to process it.

**Question by Dr. Betman Bahandari (WASH Advisor, DACAAR):**

In your presentation you mentioned that your organization did a lot of relief activities which are good. You mentioned that municipality authorities say that informal settlement is not legal settlement and NGOs and INGOs are working for them and supporting them for the informal settlement. In that sense, do you have any activities in advocacy, because they are not implementing NGOs rule and policies about IDPs. That means you have to enforce the government, so do your organization has that kind of advocacy or not?

**Answer by Eng. Najibullah (WASH PM Assistant, Solidarites International):**

Yes. During this project, Solidarites had two meetings about the issue. We invited humanitarian and relevant government authorities to the advocacy meeting and all responsible people and Shoras were there to explain their own problems.
Plenary Session

Project Implemented in 2013/ Planning for 2014 / Workshop Evaluation

The discussion led by: Eng. Azeem Barat, WET Centre Manager, DACAAR and Suneel Rajavaram, International Technical Advisor, CAWST

The discussion was about the way forward, the plan for 2014th and the WET Centre services. Mr. Suneel said “What we will do now is a kind of plenary to provide info on what we were doing last year, what kind of plan we have for the next year, either in water treatment or in water supply, sanitation and hygiene education”.

Dr. Betman Bhandari, DACAAR WASH Advisor, mentioned that only the implementation of Biosand filter is not important but emphasize on its monitoring is important that whether the filter is working properly or not? Betman asked other organizations that, since DACAAR is expert in Biosand filter, therefore please contact DACAAR for your Biosand filter and any relevant technical support or for monitoring services.

Mr. Suneel Rajavaram introduced the following websites for getting CAWST information:

- [www.resources.cawst.org](http://www.resources.cawst.org)
- [www.Biosandfilter.info](http://www.Biosandfilter.info)
- [www.cawst.org](http://www.cawst.org)

Azeem Barat distributed the workshop evaluation forms to all participants. They were requested to fill in the forms. The evaluation forms also included questions about the WASH projects implemented by organization in 2013 and the plan for WASH projects implementation in 2014.
Concluding Remarks
By
Eng. Ghulam Qadir, Executive Director, RuWatSIP, MRRD

Eng. Ghulam Qadir started the conclusion remarks with telling a joke of Mola Nasruddin about, who know, who don’t know and some know and some don’t know, as an energizer.

Then he thanked all those organizations who participated in learning exchange workshop. He told that according to the information several thousands of new wells are establish during the current year in Afghanistan. He told that indeed taking safe water from the water point to the mouth needs much effort.

Eng. Ghulam Qadir added that sharing the learned information and knowledge from the workshop with other people will be the responsibility of each participant.

Mr. Abdul Saboor from UNICEF asked him that in such workshops, why the participation of government organizations is very low?

Eng. Ghulam Qadir accepted the comment of Abdul Saboor and promised that he himself and other relevant governmental authorities will take part in such coming learning exchanges workshops. He mentioned that such workshops should be organized regularly and continuously in future.

At the end Mr. Enzo Vecchio, Director of DACAAR, thanked all participants in learning exchange workshop. He thanked MRRD and other partners who worked closely together in WASH sector and thanked them for sharing their knowledge and information with each other.
## Organizations Updates on WASH Projects Implementation, Challenges and Lessons Learned

For Current or Completed WASH Projects in 2013

**Tearfund:** Munyaradzi Charuka, WASH Advisor

<table>
<thead>
<tr>
<th>WASH Projects Implemented in 2013</th>
<th>Location (District/province)</th>
<th>Source(s) of funding</th>
<th>Challenges</th>
<th>Lessons Learned:</th>
<th>Other info</th>
</tr>
</thead>
</table>
| 800 BSF                          | Jawzjan: Andkhoy, Sheberghan, Aqhcha | Bureau for Population Refuge and Migration (BPRM) | 1. Migration of trained BSF technicians  
2. Migrant population complain that the BSF unit is too heavy, hence often left behind on relocation | Need to increase the number of trained BSF technicians in same community | 1. We are implementation WASH in schools where we learnt that training teacher as focal persons for school WASH help in sustaining the project |
<p>| 700 BSF                          | Kandahar: Arghandab, Dand, Daman |                      |            |                  | 2. WASH not key result area for teachers, head masters and education officers, therefore we are lobbying Ministry of Education to adopt wash key result areas for staff. |
| 30 BSF                           | Kandahar: Kokoran            |                      |            |                  |                |</p>
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</table>
| 864 Tube wells                   | Kabul, Nangarhar, Laghman, Kunar, Balkh, Faryab, Badakhshan, Takhar, Kunduz | SIDA, DANIDA, SDC, ECHO, RNE |  • Dealing with Government Ministries and local authority as well high bureaucracy.  
• Weak analysis system of field data and reporting information.  
• Local and social conflict among the community.  
• Rotation of staff in some area (Faryab).  
• Work load and using of high budget then planned.  
• Insecurity and kidnapped of DACAAR staff.  
• Remoteness and difficulties in Accessibility in some areas.  
• Unavailability of project materials with good quality in Afghanistan.  
• Covered easy and nearest areas, now DACAAR is working in problematic areas (high salinity, hard strata, deep static water level and remoteness.  
• Using of cost effective and new technology.  
• Sign of MOU with all relevant ministries.  
• Review of WASH implementation manual. |  • To reduce the risk, DACAAR staff should travel via air to the ROs.  
• Avoid project implementation in insecure areas.  
• DACAAR should provide additional stock of project material on regional level.  
• Project sites (availability of water source) and community needs should be evaluate before starting any WASH activity.  
• Using of cost effective and new technology.  
• Sign of MOU with all relevant ministries.  
• Review of WASH implementation manual. |
### ACTED: Sayed Najeeb, Livelihood Officer

<table>
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</table>
| 2,200 BSF since 2012 till now    | Almar, Qaisar and Kohistan districts of Faryab province | Sustainable Rural Development Programs (SRDP) and Norwegian Committee | 1. Finding filtration sand  
2. Transport of metallic BSF to remote areas  
3. Repealed use of turbid water slow down BSF outflow which de-motivate people and use of Biosand filter  
4. Diarrhea event during use of BSF is visible | Implementation through vocational training center and youth programs are very useful and has direct effects on the program objectives. | ACTED added WASH and hygiene training within its vocational training program and youth development program and also in our self help group. The result was very good as mostly our participants of the above mentioned programs are house wives or responsible members of the family. |

### ACF: Sayed Nasrullah, Kabul WASH Project Manager  
Zia Noori, WASH Assessment and Monitoring Manager

<table>
<thead>
<tr>
<th>WASH Projects Implemented in 2013</th>
<th>Location (District/province)</th>
<th>Source(s) of funding</th>
<th>Challenges</th>
<th>Lessons Learned:</th>
<th>Other info</th>
</tr>
</thead>
</table>
| Biosand Filter (BSF) # ?         | Dara-e-Suf District of Samangan Province | SIDA | 1. Finding 0.7mm filtration sand  
2. Local long term monitoring after completion of the project  
3. Lack of appropriate place for BSF installations  
4. Use of highly muddy water in the BSF | 1. Provide awareness for the targeted family  
2. Select of suitable space for production site for BSF to have access to water and drainage.  
3. Considering suitable climate for BSF production process  
4. Committee involvement in BSF training | |
<table>
<thead>
<tr>
<th>RCDC: Mohammad Basir, Program Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WASH Projects Implemented in 2013</strong></td>
</tr>
<tr>
<td>20 BSF in 2011</td>
</tr>
<tr>
<td>20 BSF in 2012</td>
</tr>
<tr>
<td>20 BSF 2013</td>
</tr>
</tbody>
</table>

**Solidarities International:** Najibullah, Project Manager Assistant

| Around 250 Ceramic Candle Filter | PD 4 & 8, Kabul Province | ECHO | Candle of the filter is not available in Kabul. | |

**NAC: Dr. Bayan, Senior Health Officer**

<p>| <strong>WASH Projects Implemented in 2013</strong> | <strong>Location (District/province)</strong> | <strong>Source(s) of funding</strong> | <strong>Challenges</strong> | <strong>Lessons Learned:</strong> | <strong>Other info</strong> |
| 25 Hygiene Washing Kits for schools in Ghazni | 25 schools in Jaghori and Malistan district of Ghazni province in 2012 | | 1. Security 2. Coordination of community with the program to implement like women education | conducting of workshop is important to share experience with each other | NAC had WASH education training for school teachers to pass the hygiene massages to student Also conducted training for community elders to pass hygiene massages to community after training |
| 25 Hygiene Washing Kit for schools in Badakhshan | 25 schools in Badakhshan province in 2012 | | | | |</p>
<table>
<thead>
<tr>
<th>IAM: Garry Mayhew, Development Director</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>WASH Projects Implemented in 2013</th>
<th>Location (District/province)</th>
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<th>Challenges</th>
<th>Lessons Learned:</th>
<th>Other info</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 BSF on average per year</td>
<td>Maimana City, Pashton Kot, and Kwaja Sabz Posh in Faryab province</td>
<td>AUSAID Tearfund UK, TEAR Australia</td>
<td>1. Monitoring and evaluating filter 2. BSF are heavy to transport</td>
<td>We have set up a private business to produce the biosand filter however if we subsidize the BSF it creates problem of sustainability for the private business</td>
<td>We also have WASH programming in Ghor and Badakhshan province. This includes hygiene training, latrine building, water supply, hygiene kits, irrigation supply, etc. However we are currently only doing Biosand filters in Faryab province.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NSP (Engineering Department)/MRRD: Ahmad Shah Ahmadi, Water Sanitation Unit Head</th>
</tr>
</thead>
</table>

| NSP activities are planned based on community need and priorities | All provinces in Afghanistan | World Bank | | | NSP through communities management implemented about 1000 subproject in WASH like water supply networks, reservoirs, wells, filtration systems, handpump for the communities. |

<table>
<thead>
<tr>
<th>HUDA Development Organization: M. Jebran Mudasier, General Director Hasina Haseem, Health Program director</th>
</tr>
</thead>
</table>

<p>| | | | Malnutrition and diarrhea caused by unsafe water. | | We are working in Kabul, Herat, Kandahar Jowzjan. We work in woman empowerment (legal rights) and also we had refresher health training such as EOC, COC, family planning and nutrition. |</p>
<table>
<thead>
<tr>
<th>WASH Projects Implemented in 2013</th>
<th>Location (District/province)</th>
<th>Source(s) of funding</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td>HUDA activities also includes provision of hand washing facilities for schools, renovation and provision of WASH facilities like hand washing places, water tanks, and decentralized waste water treatment system (DEWATS) for schools and SME’s.</td>
</tr>
</tbody>
</table>

**Relief International:** Nematullah Wasiq, Senior Master Trainer

| RI had several ECHO funded projects in Nimroz that included WASH components such as Biosand filters distribution, latrine and washroom construction, new wells installation and existing wells rehabilitation. |
## Organizations Planned WASH Project in 2014

**Tearfund:** Munyaradzi Charuka, WASH Advisor

<table>
<thead>
<tr>
<th>WASH Projects Planned in 2014</th>
<th>Location (District/province)</th>
<th>Source(s) of funding</th>
<th>Other info</th>
</tr>
</thead>
<tbody>
<tr>
<td>550 BSF</td>
<td>Kandahar</td>
<td>BPRM</td>
<td></td>
</tr>
<tr>
<td>450 BSF</td>
<td>Jawzjan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>250 BSF</td>
<td>Faryab</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ACTED:** Sayed Najeeb, Livelihood Officer

- Distribution of around 2000 to 2500 more Biosand filter to households
  - Almar, Qaisar and Kohistan and maybe at Ghermaj districts of Faryab province
  - Sustainable Rural Development Programs (SRDP) and Norwegian Committee
  - Hygiene and WASH promotion programs through vocational training programs and youth development program and self help group.

**ACF:**

- Sayed Nasrullah, Kabul WASH Project Manager
- Zia Noori, WASH Assessment and Monitoring Manager

<table>
<thead>
<tr>
<th>WASH Project Planned in 2014</th>
<th>Location (District/province)</th>
<th>Source(s) of funding</th>
<th>Other info</th>
</tr>
</thead>
<tbody>
<tr>
<td>600 BSF</td>
<td>Chaghcharan in Ghor Province</td>
<td>SIDA</td>
<td>Important to have access to 0.7mm sand finding</td>
</tr>
</tbody>
</table>

**RCDC:** Mohammad Basir, Program Manager

- In 2014, RCDC will continue the 2013 WASH program that was not completed due to cold weather

**Solidarities International:** Najibullah, Project Manager Assistant

- Non-Food Items Distribution
  - Kabul Informal Settlement (KIS)
  - ECHO
  - Candle of filter is not available in Kabul
<table>
<thead>
<tr>
<th>WASH Projects Planned in 2014</th>
<th>Location (District/province)</th>
<th>Source(s) of funding</th>
<th>Other info</th>
</tr>
</thead>
</table>
| WASH, Nutrition, Sanitation and Hygiene | Ghazni, Badakhshan and Faryab provinces | | 1. Construction of some new wells in schools  
2. Rehabilitation/repair of wells in schools  
3. Delivery of health messages  
4. DRR  
5. Etc |

**IAM: Garry Mayhew, Development Director**

### 300 Biosand Filter
- **Location:** Pashton kot district in Faryab province
- **Source(s) of funding:** Mostly AUS Aid
- **Other info:** Our WASH programming in Faryab, Ghor and Badakhshan is part of a wider holistic community development program which includes activities such as food security livelihood development, maternal health training, etc.

**NSP (Engineering Department)/MRRD: Ahmad Shah Ahmadi, Water Sanitation Unit Head**

- **Project selection is based on communities needs and priorities**
- **Location:** All provinces in Afghanistan
- **Source(s) of funding:** MRRD / Word Bank
- **Other info:** Since project types are selected by communities and therefore project types cannot be specified in advance. NSP will implement a lot of WASH subprojects like piped networks, wells, reservoirs, filtration systems, etc.

**Relief International: Nematullah Wasiq, Senior Master Trainer**

- **Other info:** As part of emergency response program for drought, RI is currently implementing hygiene education, distribution of hygiene kits, construction of new wells and rehabilitation of existing wells in Nimroz province.

**Womanity Foundation: Abdul Manan Aziz, Manager Hygiene Education Project**

- **Other info:** Currently 9 schools are under coverage which will reach to 19 during 2014. In the schools under coverage, in addition to other programs, water supply, sanitation and hygiene education are included such as safe water provision, hand washing facilities installations, safe latrine construction and hygiene education promotion.
<table>
<thead>
<tr>
<th>WASH Projects Planned in 2014</th>
<th>Location (District/province)</th>
<th>Source(s) of funding</th>
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</tr>
</thead>
</table>
| 880 Tube wells                 | Kabul, Nangarhar, Laghman, Kunar, Balkh, Faryab, Badakhshan, Takhar, Kunduz | SIDA, DANIDA (ROI), SDC, ECHO, RNE | For sustainability of water supply project the following need to be considered:  
  - Train of care taker, pipe scheme operator and mechanic.  
  - Establish of WMC  
  - Establish of community base O&M system.  
  - Formal hand over of projects to community.  
  - Follow up all water points (WPs) by water Supply Inspection Team (WIT) and coordination and cooperation with community, mechanic and pipe scheme operator.  
  
DACAAR follows the following working methodology for implementation:  
  - Coordination with relevant ministries, local authorities & district Shora.  
  - Sing of MOU.  
  - Coordination and mobilization of community  
  - Site selection of new water points at less 30% jointly with women.  
  - Construction of WPs, latrines and delivery of HE & DRR messages.  
  
Cross cutting issue considered in current WASH program:  
  - Disaster Risk Reduction (DRR)  
  - Gender Marker (GM)  
  - Environmental Marker (EM) |
Learning Exchange Evaluation

The following are a summary of the results of the evaluation distributed to participants at the end of the Learning Exchange which there were 22 evaluations returned back.

1. Did the learning exchange workshop meet your expectations?

- There were good number of participants and many presenters.
- This workshop refreshed our experience and we have got new knowledge as well.
- Yes, most of the sessions were very helpful.
- The workshop was very relevant to my job.
- I gained good information about DACAAR and WET Centre activities and some other organizations and in different part of sanitation projects.
- I learned many things about NGOs and WASH.
- For solar pumping system we need more information on actual planning and implementation.
- Other organizations did not explain any initiative issue and their impact regarding HE.
- The reason is that I am not WASH expert, therefore I need more workshops about the discussed topics.
- We learned the limitation and challenges of the project.
- WASH learning exchange workshop did not include discussing issues of working with universities, as universities and academia can play important role in all research activities and teaching young generation.
- I thing in the learning exchange we should have more action researches and researches on education but here we have had just one and others were just giving reports as reports can be shared through emails.
- The presented topics had linkage with our work as one of the sector in our department is WASH.
I think the workshop was beneficial for us because I got a lot of knowledge from the workshop. These workshops are beneficial for the staff working in WASH to support people of Afghanistan to get access to clean and filtered water.

The workshop was conducted in its planned time.

Yes, most of the presentations were in the right amount of time.

All the agenda points were met within the allocated time in this workshop.

It was very suitable, longer, also difficult to participants due to the end of the year reporting and planning for the new year.

All presentations explained clearly and appropriate answers for participants’ questions were provided.

Topics were relevant to the sector and Afghan context and also the participants’ professional capacity.

All issues relevant to WASH was discussed.

The time allocation for the workshop was just perfect.

We should continue the learning exchange for 2 days.

Most of the presenters were only able to read from slides without explanation because of the short of time.
3. How relevant was the workshop to your organization or projects needs?

<table>
<thead>
<tr>
<th>Level</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Relevant</td>
<td>16</td>
</tr>
<tr>
<td>Somewhat Relevant</td>
<td>5</td>
</tr>
<tr>
<td>Not Relevant</td>
<td>1</td>
</tr>
</tbody>
</table>

- Mostly there were WASH related topics
- The topics in the learning exchange were very relevant to WASH activities.
- All issues were consistent with our WASH programming.
- All the topics specifically the Biosand filter, solar pumping water supply, hygiene education were relevant to our daily work and activities.
- All workshop information was important and relevant for me.
- BORDA's projects are mainly DEWATS that is Decentralized Waste Water Treatment System and of course these are WASH projects.
- We were involved with many of the subjects that were presented.
- In our programs we have components relevant to the mentioned topics.
- The whole workshop was very relevant and effective for my work and I got very useful information.
- We do not work in this field but we have interest to work in this sector as well.
- Most the workshop focus was on WASH.
- The workshop was very useful for sharing and exchange of experiences and also to learn more and transfer the provided information to my colleague for next and upcoming project.
- When I saw the presentation on solar pump in the agenda, it attracted my attention and I put all my duties in office and participated in the workshop.
- Most of the topics was related and focused to WASH activity.

4. Which portion of the workshop was the most useful? Please explain.

- All topics and information especially the exchange of information was really useful for me.
- Most of the presentations were useful for me.
- Kanchan filter for arsenic removal was useful, because this filter can be used as Biosand filter as well as for arsenic removal.
- All parts were useful such as removal of arsenic, use of BSF, solar water pumping system and information on DACAAR WET Centre activities.
- Kanchan filter for arsenic removal and WASH impacts on mother and children health.
- The entire workshop was useful for new comers to the learning exchange.
- Solar pumping water supply and ground water quality database
- For me the water quality and solar pumping were very interesting and more effective to deal with such problems if faced.
- All of the presentations and trainers were very good.
- All parts of the workshop were useful.
- The networking with other NGOs was most helpful.
- The participatory part was really interesting.
- WASH impacts on mother and children health
- All topics of the workshop were useful.
- Solar pumping system, DACAAR ground water quality database and filter for arsenic removal
- Action research
- All the topics were relevant.
- Water safety plan by UNICE as it is the core of WASH.
- All the parts of the workshop were excellent.
- All

5. Which portion of the workshop was the least useful? How would we improve this portion?

- There was no less useful topic.
- None of them.
- Social game was interesting in the beginning of the workshop. It was really helpful for the participants to feel comfortable to communicate and ask questions.
- As solar pump issue is in pilot stage and getting improvement, and it’s needed to find negative points and make it positive in future to take another step from pilot to development project.
- Every topic in the workshop as always were useful.
- Hygiene education
- I didn’t see any less useful part, all were very interesting and valuable.
- Just giving reports of organizations, I think is not enough, we should discuss much more new things.
- None of them
- None.
- None.
- The water supply part of the workshop was weak, it is suggest to improve in next workshop.
- The evaluation forms didn’t included other topics other than BSF.
- Some subjects of NGOs presenting their activities was not so helpful (i.e. Solidarities)
- We have set up a private business to produce the BSF, however if we subsidize the BSF it creates problem of sustainability for the private business.
6. Other comments about the workshop, WETC or other issues in general. Please explain.

- Thanks a lot for all efforts of WET Centre for improvement and contribution in capacity development of local NGOs staff. I think all workshops and trainings are very necessary and needed for every organization.
- The information that has been transferred were so rich. It would be nice if more information are provided for the participants on the CDs.
- Thanks from DACAAR for providing such opportunity. For next time if two or more than two days are considered, it would be good.
- In next Learning Exchange if you ask organization to send someone who has no linguistic problem or they have one translator with presenter will have good result in my opinion. So please bear in mind this for the next learning exchange.
- If possible, it would be better to continue such workshops.
- No comments, but thanks DACAAR and other organizations that provided the opportunity to share experience and improve weakness and provide safe water to all.
- We need work jointly with DACAAR in areas that we also have experience like woman empowerment and some health training.
- It is suggest to have more focus on action research, technical initiatives and WASH related issue alternative solutions.
- If we move the time frame of the learning exchange to January or move backward from December, so we will get higher level of participants and decision makers.
- This workshop was very useful and I wish similar workshops to held in the future.
- Whenever we implement a new project we should get the related information from other sources who have experience in the field.
- Thanks from WET Center for preparing this learning exchange workshop.
- Faculty of Engineering is exploring possibilities of establishing a water quality lab to enable the faculty to present young engineers to the society who are familiar with this business. Contacts have been made with DACAAR WET Centre and UNICEF and expectation is that the WASH members study possibilities of their support to be extended to the faculty of engineering during 2014 in their field. Faculty of engineering has already planned to incorporate the knowledge and experiences gained from the learning exchange program and other CAWST and DACAAR WET Centre workshops into the courses content of water supply, water quality, wastewater engineering, hydrology and hydraulics. In addition, engineering faculty will be happy to build and enhance its professional contribution to WASH projects as much as possible.
- Thanks from DACAAR WET Centre for conducting such type of training workshops.
- I request from DACAAR WET Centre colleagues to include their solar pump research issue in their plan as research training for other organization because of the today need of the community.
**AGENDA**

**DACAAR Water Expertise and Training Centre (WETC)**

**Learning Exchange**

9th and 10th December 2013

ASSA2 Guesthouse, Shahr-e-Naw, Kabul

**Day 1 - Monday, 9th December, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter / Facilitator</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30</td>
<td>Registration</td>
<td>Muska Meeran / Shir Habib</td>
</tr>
<tr>
<td>09:10</td>
<td>Prayer</td>
<td></td>
</tr>
<tr>
<td>09:15</td>
<td>Welcome &amp; Opening Address</td>
<td>Eng. Shah Wali, Head of Program, DACAAR</td>
</tr>
<tr>
<td>09:25</td>
<td>Self introduction</td>
<td>Suneel Rajavaram, International Technical Advisor, CAWST</td>
</tr>
<tr>
<td>10:00</td>
<td>Tea Break</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Introduction to Water Safety Plans</td>
<td></td>
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<tr>
<td>11:00</td>
<td>WET Centre Services, Goal, Vision, Mission &amp; Achievements</td>
<td>Eng. Azeem Barat, Manager WET Centre, DACAAR</td>
</tr>
<tr>
<td>11:20</td>
<td>DACAAR Practices in Hygiene Education</td>
<td>Dr. Siddequllah Sayed Hygiene &amp; Sanitation Coordinator, DACAAR</td>
</tr>
<tr>
<td>11:45</td>
<td>Kanchan Filter and Arsenic Removal</td>
<td>Dr. Betman Bhandari, WASH Advisor, DACAAR</td>
</tr>
<tr>
<td>12:30</td>
<td>Lunch Break</td>
<td></td>
</tr>
<tr>
<td>13:30</td>
<td>WASH in School</td>
<td>Munyaradzi Charuka, WASH Advisor, Tearfund Afghanistan</td>
</tr>
<tr>
<td>14:10</td>
<td>Ground Water Quality Database &amp; Database Info System in DACAAR</td>
<td>Eng. M. Hassan Safi, Senior Hydrogeologist, DACAAR</td>
</tr>
<tr>
<td>14:50 – 15:30</td>
<td>Metal Biosand Filters Use in Afghanistan</td>
<td>Chidambaram. CT Head of programs, ACTED, Kabul</td>
</tr>
<tr>
<td>Time</td>
<td>Activity</td>
<td>Presenter / Facilitator</td>
</tr>
<tr>
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<td>------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>09.00</td>
<td>Opening and Review of Day 1</td>
<td>Eng. Azeem Barat, Manager WET Centre, DACAAR</td>
</tr>
<tr>
<td>09:15</td>
<td>Action Research on Solar Pumping Water Supply</td>
<td>Dr. Shir Ahmad, Deputy Manager, WET Centre, DACAAR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eng. Leendert Vjlselaar, WASH Cluster Co-Lead Coordinator, DACAAR</td>
</tr>
<tr>
<td>09:55</td>
<td>WASH Impacts on Mothers and Children in Developing Countries</td>
<td>Suneel Rajavaram, International Technical Advisor, CAWST</td>
</tr>
<tr>
<td>10:35</td>
<td>Tea Break</td>
<td></td>
</tr>
<tr>
<td>10:55</td>
<td>WASH Activity in Urban Informal Sector</td>
<td>Najibullah Amad Jan, Kabul WASH Program Manager Assistant, Solidarites Int’l</td>
</tr>
<tr>
<td>11:30</td>
<td>Planning for 2014 and WET Centre Services</td>
<td>Eng. Azeem Barat WET Centre Manager, DACAAR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suneel Rajavaram, International Technical Advisor, CAWST</td>
</tr>
<tr>
<td>12:10</td>
<td>Workshop Evaluation</td>
<td>Dr. Shir Ahmad, Dy. Manager, WET Centre, DACAAR</td>
</tr>
<tr>
<td>12:30</td>
<td>Concluding Remarks</td>
<td>Eng. Ghulam Qadir, Director, RuWatSIP, MRRD</td>
</tr>
<tr>
<td>12:40</td>
<td>Lunch</td>
<td></td>
</tr>
</tbody>
</table>
Some Photos of the Learning Exchange on WASH
9 -10 December 2013