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DIRECTION GENERALE POUR L'AIDE HUMANITAIRE & LA PROTECTION CIVILE
Regional Support Office for East and Southern Africa (Nairobi)

RAPPORT DE MISSION

Subject: **Djibouti WASH RO NBO Mission**
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Date: **From 22th to 27th May, 2016**

Visited sites list:

- Markazi camp
- Ali Haddeh camp
- Hol hol camp
- Gobetto locality

Main partners:

- NRC: Sandra Hu (Program Manager); Moussa Dahab (WASH Manager); Ahmed Waiss (WASH Officer)
- EU: Jose Puiga (1st Advisor in charge of cooperation); Kaisha Petersson (Program Assistant)
- WFP: Jacques Higgins (Representative)
- FAO: Leone MagliocchettiLombi (WASH Specialist)
- UNHCR: Paul Ndaitouroum (Representative) and his team

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- 1: Note on Djibouti mission: Improvement of water access in Obock

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1. EXECUTIVE SUMMARY

All the camps visited have been affected by the drought, with especially very limited access to water during the drought peak in Hol hol camp where the water source is mainly constituted by shallow well very sensitive to rainfall.

Luckily, strong rains have occurred the week prior to our visit in Ali Haddeh and Hol hol which replenish the shallow aquifer, but still no rain in Obock/Markazi. On the other hand, the run off from the rainfall and the strong wind have been sweeping away numerous shelter (mainly tents), especially in Hol hol, once again.

The level of service with regards to water supply is more or less adequate in terms of water availability per capita and per day, and as well in terms of number of taps and distance to water point. The main problem concerns the schedule of the water point. In most of the camp, there is no more than 2 hrs to fetch water at water point. In addition to that, the water supply is still sectorized in Ali Hadded, but it is not very clear if this is due to the limited quantity of water available or to the lack of hydraulic regulation of the system.

In Obock/Markazi, NRC is still waiting for ONEAD to complete the connexion from the main town's storage tank to the camp necessary to phase out the water trucking. In addition to the very slow rhythm of work, the set-up of equipment by ONEAD seems also to be improper and will likely affect the level of performance of the water supply. Then, the partner was urged to asap envisage an alternative solution to the ONEAD implementation.
Despite of all the pledge from non-traditional donors such as King Suleiman Foundation, etc… to invest in improvement of water access in Obock, nothing has been started so far. It seems that former commitment are not going to happen, whereas the main bottleneck to improve water access in Obock is the replacement of the main pipeline between the water sources and the main town's storage tank (about 11km).
The situation remains still quite confused in terms of funding notably due to the pledge and involvement of non-traditional donors and a lack of leadership and clear vision from the local government to direct funding.
Only FAO who pledged that they will build the 3rd water source (BH), complete his commitment, but so far ONEAD who was supposed to connect this 3rd water source to the main pipeline (1km) withdrew also his commitment. The funding of a basic technical study, the main pressure pipeline replacement, a collecting chamber (at water source) and a pump station (at collecting chamber) should interest the delegation and would be very complementary of ECHO funding.

The main problem with regards to sanitation seems to be the solid waste management and some nuisance generate by standing grey water next to the shower attracting all bugs and vermins from this such arid environment. The cleanness of the jerricane is also a clear concern highlighted by the visit. In addition to that, the partners have been also urged to develop an economic analysis of their latrine/shower design and the management of latrine (relocation when the pit is filled up), and identify rooms to save resources keeping more or less the same level of achievement.

The level of performance of the partners taking into account the context is more or less acceptable, but still there are many areas needing improvement. There are some very appreciable output from NRC response (the design of the water supply system in Markazi, the implementation of latrine that can be relocated, the attempt to re-use some of the materials from old facilities not in used anymore…) and good improvement (most latrine fitted with cap on the drophole and mosquito net on the vents pipe…) in many aspects of the intervention.

Still the main needs of improvement focus on:

- The management of chlorination
- The hydraulic regulation of water supply
- The monitoring in general and notably: water quality monitoring, larine status, water production, solar powered direct pumping system output, fuel consumption, ground water table (crucial in such dry environment)…
- The design and installation of some of solar asset

- Ensuring backup system/equipment (pump, generator…) to avoid water shortage, which is a serious threat in such dry environment.
- Capacity building of the staff with: clear instruction/guidelines/protocol; check list of regular and irregular task to do with their frequencies; individual detailed planning of activities for management/supervision staffs,
- Hygiene promotion approach (notably with regards to cleaness of the jerricance and use of unsafe water for drinking by the refugees…).

The visit of Gobetto, small locality which triple its population with idp's (semi nomadic) looking for water access for themselves and their cattle during the drought (they spent 6 months in this locality), remind us the importance to take into account the local population when supporting idp's/refugee's.

2. CAPACITY OF THE PARTNERS

The level of performance of NRC is in general acceptable.

Although, there is still many room for improvement, NRC already achieved better level of service and achievement performance than assessed during the previous monitoring visit (*1 year ago*).

The WASH manager sharing is time with Ethiopia, seems to be adequately proficient and committed but still he needs to better formalized especially the daily tasks of his team and in particular the water quality aspect. In addition to that, given the limited resources for this response, there is need also to improve the technico-ecnomical analysis of the response in its implementation and its management.

The WASH officer seems to be committed but with very low proficiency in water quality and sub optimal organization of his work. This staff needs strong and regular supervision and capacity building from the WASH manager. The WASH manager needs also to produce clear and accurate instruction for him to ensure that he is following a relevant technical framework.

The level of proficiency of the local staff is quite low in general. Then, the monitoring needs to be clearly formalize with for instance production of clear and accurate check list with timeline. Meanwhile, the capacity building of the WASH staff needs to be substantially improved. A capacity building plan should be developed and implement by NRC.

3. MAIN FINDINGS AND DISCUSSION HELD

3.1. Obock and Markazi camp:

3.1.1. Water supply:

When 6 012 pp have been registered so far as refugees in Markazi camp, the current population based on the last WFP distribution is about 1 900 persons. About 700 people went back to Yemen in last weeks. Actually, last year the *Khamsin* swept away most of the tents of the camps, and many refugees fear that such situation happen again in addition to the very high temperature.

The water supply of the camp is still performed by water trucking. The truck fills the bladders of the camp everyday about 7pm. The water points are open from 7 to 10am every day, which is quite limited in terms of time of access. 60m3 are supposed to be available every day for the camp population which would give a rate of 30L/pp/day, and about 52 persons per water taps.

When NRC was supposed to achieve the connexion to the main Obock storage tank as well as the distribution network and water point, actually, ONEAD decide to do it themselves with their own resources. The camp water distribution network and the water point each one fitted with 10m3 fiber glass water tank have been implemented by NRC. NRC plan to implement water meter at all strategic location to ensure appropriate control of the equipment and contribute also to mitigate conflict related to the water demands of the camp with the local population. The problem remains the connexion to the main town water tank to enable phasing out of the water trucking.

The water quality monitoring is quite weak and need formalization.

Actually ONEAD apparently implement the pipeline and the booster pump but it is not yet connected to the water tank. In addition to that, the booster pump location is wrong (about 400m from the tank which is located about 2m under the camp). This situation will affect the sucking section of the pump and then the level of performance as well as lifespan (risk of cavitation). As ONEAD is not ready to hear any comments or suggestion on their work, it has been requested from the partner to start considering an alternative solution in case ONEAD is failing at 1st stage.

When ONEAD used to provide water to the camp free of charge, they are now considering asking payment for this service unless investments on the Obock water supply system are secured.

The main storage tank still needs to be cleaned up by NRC and a dosing pump for chlorine injection should also be implemented.

Obock water supply system:

FAO completed the 3rd deep BH plan to be connected to the Obock water supply system and to also supply the local rural population living in the neighborhood of the BH. The FAO project originally focus on rural population, but aware of the tricky situation of Obock in terms of water access and the pressure of ONEAD to foster implementation of 3rd BH, they commit themselves to achieve this BH. The problem, they face today is that whether ONEAD commit themselves to implement the connexion between the 3rd BH and the main pressure pipeline (between water sources and Obock storage tank) with Saoudian fund, they finally withdraw their commitment as they did not get the Saoudian Fund. The same fund was expected to be used to renew the whole pipeline between the water sources and the main town storage tank as well as to build a new storage tank and pump station at water sources locations. Such work/action is essential in order to rationalize the system and improve the lifespan of its component as well as reducing operating cost.

For more information regarding the water supply system of Obock *see precedent report from December 2015*.

Apparently, the EU water consultant recommends the delegation to invest in building an elevated storage tank of 500m3 within the Obock town to improve the regulation of the system. The orientation of the consultant took also into account the commitment from Saoudian still consider as valid during his mission. It was not possible to get the final report of the consultant, a formal request will be sent to the delegation.

Disruption of the water service is expected to happen during the coming summer. Obock did not get any rain since 10 years when they used to get some every year before that.

Additional information: the delegation informed us that they have been approach and encourage by the government to invest in developing/increasing the water access in the Obock and Tadjoura region, apparently to support a project of touristic infrastructure development. Having faced a negative answer from the delegation, the government might plan a game at some point to push/orient partners in order to develop water resources in those regions using the reason/excuse of the refugees presence… Of course, this statement is just an assumption and should be taken with caution.

3.1.2. Sanitation:

The latrine visited and especially the new ones were quite adequate and clean. The structure is supposed to be removable. The pits are quite shallow (about 2-3m) as the ground is very rocky. When NRC is now building shower as well, people used to take their shower in the latrine which affect a lot the lifespan of the pit as the seeping capacity of the ground is pretty poor. Now, NRC shifts from communal latrines to family share (4 HH sharing 1 stance). The lifespan of the latrine pit is expected to last 1 or 2 years. Most of the latrines visited were fitted with cap on drophole and mosquito net on the vents pipe, which is very rare and then very appreciable.

The size of the latrine is quite big 1,2m*1.2m and could be reduced to save some of the resources unless such size is necessary to cope with potential disabilities. As NRC used a lot for mortar around the removable slab, it has been requested from the partners to analyze the cost of latrine relocation to identify potential room of cost reduction and enable to plan budget to manage latrine at mid-term.

The price of a latrine stance is about 410 USD, which is quite high but reasonable in the region.

The bathing units present some problem as NRC try to ensure re use of waste water and then implement a small water tank next to each shower. The problem is that in such arid place, any sources of water attract badly all the bugs and vermin's around as complain by the refugees. The same save on the construction materials could be applied as well to the ***bathing unit***, as they are even more costly than the latrine (***550USD/unit***).

3.1.3. Hygiene promotion:

The solid waste management seems to be the main problem of the camp with regards to sanitation and hygiene promotion. A lot of garbage are dropped anyhow and then are spread out around the camp, with sometime risk of injury for children. NRC struggles to mobilize the refugees to at least drop their garbage in the designated location within the camp, the disposal being done by NRC incentive staff. The garbage disposal site would also need a bit of equipment and a clear procedure to

The hygiene promotion is a very small component of the project and not very relevant. The distribution of hygiene kit planned in the current project with NRC, still need to be completed.

3.1.4. Shelter:

The khamsin wind is supposed to occurs during the summer and can it can blows up to 80km/hrs. This is a serious threat for the shelter. UNHCR implement a donation from the Qatari development agency of IKEA shelter called RSU unit. Those units seem to don't be adapted to such warm climate, and then refugees start to remove some part to improve the ventilation but this will end as a serious issue when the sand storm will occurs. To improve the ventilation inside the shelter, UNHCR envisaged implementing solar ventilators which seem to be quite relevant, but it would needs to be done asap. Although, the positive point is that those type of shelter are supposed to have been tested to resists to a ***wind speed of 70km/hrs (Khamsin wind speed estimate at 80km/hrs).***

The problem is that whether you had good ventilation in the shelter and then high risk of sand intrusion during sand storm or you have a structure better protected against sand intrusion and then you have very high temperature inside.

Saoudian commitment (*King Suleiman Foundation*) is supposed to support the implementation of 600 shelters supposed to be adapted to the climate, but no information regarding the specificities and types of shelter as well as about the implementation timeline.

3.2. ALI HADDEH:

3.2.1. Water supply:

The population of the camp is about 11 000 people. Whether some people returns mainly to Somalia central, new comers from Oromo in Ethiopia have been hosted in the recent past weeks (about 100 families).

The water supply of the sector 4 has been completed by NRC, which led to an improvement of the water supply of all the sections between 1 and 4.

The water supply is still sectorized in Ali Haddeh, which should mean that the water availability is still insufficient or/and that hydraulic regulation is the water supply system is not well done. The rate of water availability per user is about 12-15L/pp/day according the solar irradiation as there are numerous stand-alone solar direct pumping system. The water points are supposed to be open about 2 to 3 hours per day with different schedule as the supply is sectorized. In the meantime, some of the users meet at water point including care taker told us that if they need more water they can get. There are numerous hand pump fitted on shallow well that are not working. In the camp, there is today 24 water point with 6 taps each (144 taps) and 2 hand pumps in used (about 75 persons per water tap). Many taps are broken, but NRC plan and already made the procurement to replace all the ones broken down.

In any way as for Markazi and Hol hol the schedule of water point should be adapted to the Ramadan period and then discussed with relevant sample of the population prior to any change in the set up.

The main findings of the visit are:

- In general the population of the camp does not like the taste of water as a bit salty and then as soon as water in the wadi bed is available people will dig small hole in the wadi bed to fetch unprotected water with animals around and then high risk of contamination of the resources.
    - This issue is serious and should be addressed by hygiene promotion and camp management.
- There are no HTH 70% chlorine available in the country, then NRC used javel solution 25 % and now 5,5% to perform chlorination. Instead of to prepare a mother solution at 1% to keep always the same dosage, NRC staff inject directly the javel in the water, but it is not clear at which moment they do so. Sometime they do it since the water tank is already full, which hamper necessary appropriate mixing.
    - The chlorination protocol and proficiency of staff have to be clearly reviewed.
- The monitoring in general has to be drastically improved by NRC, notably on water quality (2 persons in charge), water production, solar output and outcome, maintenance of the equipment… NRC perform water quality test (FRC test only) at water point and sometime at HH level, but there is a clear lack of formalization.
- There is only an old pump with low performance as backup pump at booster station from Nakad water source.
- It is difficult to date to assess the level of water production and relevancy of the production of solar powered pump as NRC still wait to receive the water meters they are supposed to install on all the main pipeline.
- The generator at booster station seems quite oversized as it supposes to supply two pumps of 1,5kW and 5,5kW 9this one being with speed variator so could be started without additional power need). If the presence of the speed variator is confirmed by the partners the generator could have been only 11kVA which also mean less fuel consumption. The monitoring of fuel should be cross checked with the record of water production (fuel being the main asset prone to diversion).
- Problem related to solar powered direct pumping system:
    - The new BH used to supply notably the sector 4 is a stand-alone solar powered direct pumping system, but without any backup generator.
    - The solar panels haven't been installed on an elevated structure and the location of the solar array is too close to the wadi bed, which means high risk of flooding.
    - The pump to supplied section 4 is 1,5kW and the solar array is 2,4kW, which means a correction factor or about 0,7, when the new solar asset at Nakad water source have been designed with a correction factor close to 0,6 (2,85kW of solar panels and a pump of 1,5kW).
    - One of the solar pumping station is currently not working because the electrical wire connecting the pump and the pump (located in a shallow well in the middle of the wadi) have been swept away after the run off following the strong rain happen that happen the week of the 16th of May.
    - The solar panel were not cleaned which led to lose of efficiency. The very high temperature led also to significant loss of efficiency of the panel (0,4% /degree above

20; 50 degrees Celsius means a loss of 12% in efficiency). *For instance, at Nakad water source the solar panel of 2,85kWp (watt peak= production at noon, 20degrees Celsius, with optimal tilt and orientation, etc…) produce only 1,5kW at 1pm (when we should be at minimum 80% of the maximum output).* That's why, the power output/water production should be recorded along a day and along a year to better assess relevancy and design criteria for such equipment in such environment.

3.2.2. Hygiene promotion and Sanitation:

- As for Markazi, the new design of latrine seems to be adequate but still there is room to make some save on the resources with a more accurate design (size of latrine…)... Most of visited latrines were clean (about same cost as for Markazi for the new design) and some fitted with cap on the drop hole and mosquito net on the vents pipe.
- NRC install communal latrine for the new arrival. One communal block of 6 stances cost 700USD, which is quite cost efficient in the context.
- Still the management of the solid waste should be enhanced as there are huge quantity of garbage that are dropped anywhere in the camp whereas NRC implement designated location for that. According NRC a monthly cleaning campaign with volunteer from the camp is supposed to take place next month.
- Most of jerricanes were pretty dirty. There is need to improve the efficiency of hygiene promotion approach to be more targeted and adapted.
- Numerous people when water is available fetch drinking water from the wadi bed directly digging small hole. Actually, they consider the taste of water supplied by NRC as a bit salty. The problem is this water from the wadi is clearly contaminated, even small worm could be observed in the water.

3.3. HOL HOL:

3.3.1. Water supply:

NRC took over the management of all the WASH facilities from UNHCR last year. The population of the camp decrease during the last months to about 3000 people to date, including a group of single Eritrean former soldier and the new arrival of about 30 families from Oromo (Ethiopia).

The water supply in Hol hol is done from only one shallow well fitted with motorized pump. The BH is 9m deep and close to the wadi, then bacteriological test should be performed regularly to monitor the level of contamination of the BH. During the peak of the drought, the level of water dropped down into the well and NRC could not pump more than 2 hours per day (so means 8000L/day for about 3000 people, meaning less than 3L/day/pp) and then people really struggled to access water at this stage. The visit happens just few days after a heavy rain which contributes to replenish the shallow aquifer and then the wells. There is also ***no backup generator in the camp*** whereas the existing one is pretty old. Thus, in case of ***any breakdown the water supply will totally stop***. This is ***not acceptable*** in such dry

environment and need to be addressed urgently. The old generator is 22kVA when the pup is 1,5kW, so the ***generator is about 4 times oversized which means high fuel consumption***.

There are 9 water points of 6 taps each in the camp (the population has reduced in last months). So, we have about 60 people per taps, which is a good rate. The storage tank in use is clean up two times per year. The water point are open from 6h30 to 9h in the morning only which means only ***2hrs30 to access water*** per day which ***under the standard***. The water supply system seems also to have a problem of hydraulic regulation (*the camp site is located on a hilly area with steep slopes*) to ensure fair supply of each water point. 3 staffs are in charge to operate the water supply system and they all get an incentive of about 20 000DJF/month (*about 110 euros*).

According NRC staff, they normally pump 10 hours (2pm to 10pm) in the well per day with a flow rate of 4m3/hrs (*cf. NRC, the pump flow rate for the wells used to be 7m3/hrs, it is not clear whether the decreasing of the flow rate is due to the age of the equipment or to the depletion of the ground water*), which should give about 15L/pp/day. Though, as faced during the harsh drought this year, such water resources are sensitive to drought and then NRC should develop alternative solution or at least has a contingency plan in case this happen again. As UNHCR expected much more people in this camp, until the government change his mind with the vocation of the Hol hol camp, there are much more infrastructure than necessary in the camp, for instance another wells and storage tank (both storage tank are 100m3) connected to the existing and in used distribution network exists over there. The wells apparently have been taken over by an individual who consider it as his private well to date. This issue should be investigated and handle if necessary by NRC together with UNHCR.

Whereas the wells are very sensitive to the rainfall, there is no ground water monitoring.

There are also 6 hand pump existing in the camp, but none of them are working today. On few wells the manhole access doors have been removed and many things have been thrown into the well. NRC should implement manhole cover which could be closed with a lock and open up when necessary to ensure that the equipment can still provide water despite of the hand pump is broken.

Once again the main problem remains the water quality aspect of the intervention: chlorination and water quality monitoring. In Hol hol camp, there is no at all water quality monitoring, and no chlorine have been found in the water when testing. The chlorination is performed in a wrong way. Actually, the storage tank is filled up the day before and the following morning prior to distribution the operator in charge of chlorination just poor the chlorine in the storage tank already filled up from the day before (*so no mixing*), 30minutes before to open the valve (*when the contact time should be with an efficient mixing at least 2hrs*).

3.3.2. Sanitation and hygiene promotion:

Latrine:

- When old latrine made by CARE (2011) use as a communal latrine in the first phase and now as family share are getting full to date (*apparently 30 of them according NRC*), all the ones made by NRC in 2013 and more recently are still ok and in a good shape for most of them. The latrine pit

is about 4m (one area get pit 2m deep only because of the hard rock) and then shared by maximum 4 families should last about 5 to 6 years.

- Most of the latrines were clean and some fitted with cap on the drophole and mosquito net on the vents pipe. It seems that the parts of the equipment that is the most frequently damaged are the doors.
- The monitoring of latrine status (*hygienic or not; in used or not; stable or not; filled up or close to be filled up…*) is not well performed and needs strong improvement.
- As for Markazai and Ali Haddeh, NRC needs to develop an economic analysis of the latrine design and management to ensure cost efficiency and value for money of the activity.

Hygiene promotion:

- This component is very small in the action led by NRC by the lack of resources.
- All water points get a care taker (not getting incentive) who is also in charge to disseminate hygiene promotion messages.
- Most of the jerricane observed were really dirty and full of algae. There is strong need to implement cleaning campaign for jerricane at least once per month.
- The level of access to latrine in the Erytrean and new arrival part of the camp needs to be clearly improved.

3.4. Gobetto

Gobetto is a small locality that had to host many semi-nomadic people looking for a water access, feeing the drought. When the population of Gobetto is about 300 families, they had about 600 families and their cattle with whom they had to share they resource of water.

Most of the water access in Gobetto is ensure by a deep motorized BH. 20m3 per day is usually pumps to satisfy the demand of the population. The semi-nomadic people have stayed about 6 months in the locality and got some support from various partners. The pumping time and then fuel consumption have been increased during the presence of the idp's. The Gobetto population did not get any support from the partners, though they got about 2000L fuel donation in addition to the usual 400L/month they got from the district authorities. The cattle from the idp's have put a big pressure on the pasture, which led the local population to take their own cattle further way from the village.

The main fear of the local population is to see all those idp's population coming back (*as they arrived in their village sometime in September last year*) and again increase pressure on their resources with the risk to exhaust some of them.

One information provided by the representative of the population need further investigation, as they mention that the rising pipe of the BH need to be changed every 6 months because of corrosion. In this case the rising pipe should be made of HDPE instead of to be changed every 6 months (which is a non-sense).

A contingency plan including an investigation of the water resources potential in the area should be developed.

4. RECOMMENDATION AND ISSUE TO FOLLOW UP:

4.1. Miscellaneous:

- In general all old equipment/facilities as much as possible must be reused to avoid too much waste of resources
- The monitoring in general has to be clearly improved. A clear monitoring plan has to be produced and include a check list of each monitoring action to be done on daily, weekly, and monthly basis.

4.2. Water supply:

- The schedule of water point will have to be discussed and reviewed in accordance with the results of the discussion with relevant representative of the refugee's populations with regards to the coming month of Ramadan.
- Water quality monitoring should be clearly rigorously enhanced with production of clear protocol. FRC must be daily checked at closest and furthest water point from the chlorination injection location, as well as in a sample of HH. Bacteriological test should be performed on every shallow well two times per month and in a random manner at HH level when there is no chlorine in the water.
- The hand pump not in used or broken should be repaired and use again where needed to avoid waste of resources.
- Backup generators have to be available in each camp. In case of limited resources and need of several generators, a mobile unit could be implemented. All Solar powered direct pumping system must also be able to work with generator in case of any problem with the solar asset.
- Backup pump for the main water resources should also be available on site in such arid context
- The water production should be enhanced, especially in Ali Haddeh to avoid sectorized supply.
- Water meters should be installed to all main distribution pipelines and after pumping.
- The monitoring of fuel consumption should be cross checked with the monitoring of the water production.
- The schedule of the water point should be open at least 4hrs per day (ideally 6hrs).
- The chlorination process has to be reviewed and upgrade/improve in each camp to ensure efficiency to the chlorination. A clear protocol has to be produced. Such protocol should also give the outline and the framework of the water quality monitoring. FRC have to be tested on daily basis at water point (closest and furthest from the chlorine injection location) and HH level (representative sample). Bacteriological tests have to be performed at the source (shallow well) two times per month. At least once: conductivity, pH, TDS, nitrate, temperature have to be tested.
- A monitoring plan specific to the performance of the solar powered direct pumping system has to be applied. The water production (using solar) or/and the power output have to be recorded on hourly basis every day. In addition the monitoring sheet should mention as well on hourly basis the outside temperature and the main features of the weather (cloudy, very cloudy, sunny, rain…).

- The WASH manager has to improve the capacity of his staff and in particular the WASH officer in charge, with rigorous supervision of his work. Clear instructions have to be delivered to the staff and their activities have to be planned on daily, weekly and monthly basis (each management/supervision staffs have to get an individual planning…).
- The hydraulic regulation of the distribution network in Ali Haddeh and Hol hol have to be improved to ensure fair supply of each water point.
- Technical documentation (*pump technical data sheet, borehole log profile, pump test, water quality test, technical scheme of network…*) with regards to the WASH facilities that NRC took over from others partners should be collected from the partners and a copy of it should be presented on the field.

4.3. Sanitation:

- The solid waste management has to be substantially enhanced.
- NRC need to develop an economic analysis of the latrine strategy: design and latrine management. The unit cost of latrine construction and relocation (*the cost of latrine relocation to identify potential room of cost reduction and enable to plan budget to manage latrine at mid-term*) should be reduced as much as possible: size of the design, type of materials, type of fixing, community contribution…
- When decommissioning of latrine, the partners must ensure that lime of others equivalent product are used on the top of the pit and that the decommissioning happens before the level of feces in the pit come up to less than 40cm from the surface ground (*otherwise the top of the pit will be a mixed of excreta and mud…*).
- The monitoring of latrine status has also to be improved: all the latrine needs to be identified and a monitoring matrix have to be produced as well. The matrix should enable to follow up if:
    - the latrine is hygienic or not (*clean, presence of cap on drophole…);*
    - the slab is stable or not (*especially important if any rain are expected*);
    - the level of pit filling request to program decommissioning or not (*e.g.: two stick of wood could deliver to the staff in charge one with a size meaning that the pit need decommissioning right now and one longer which when the pit filling reach this level inform that the pit should be decommissioned in the next 3 or 6 months*).

  Such tools will enable to also plan timely and properly the management of latrine.

4.4. Hygiene promotion:

- Jerricane cleaning campaign should be organized every month for each water point. The access to the water this day should be conditioned by the cleaness of the jerricane. Soap and gravel put on plastic sheeting should be available this day to the user of the water point to clean their jerricane if needed.
- The approach should be much more adapted and targeted (for instance: cleanness of the jerricane and preventing people to drink unsafe water from wadi bed…)…

4.5. Specific to Obock:

- The storage tank needs to be cleaned up
- The chlorination system improve
- Given the type of set up implemented by ONEAD to connect the camp to the main storage tank and their very slow rhythm of work, NRC have to envisage alternative solution in case of the final supplied is not matching the demands and/or the performance of the system are sub optimal.
- The waste water coming from the shower should be stored in an open tank in order to avoid it attract various vermins… The waste water should infiltrate directly in the ground (*using drain or sand filter…*). Small gardens could be tested where the water infiltrates (*the soap particles will be anyway filtrate by the ground…*).
- Shade should be implemented on each storing facilities of the water point.