Final Report

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External Evaluation of Norwegian Church Aid's Emergency WASH-kit

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PREFACE

The report in hand covers an external evaluation ("the Evaluation") of the:

Norwegian Church Aid's (NCA's) Emergency Water, Sanitation and Hygiene Kit

(hereafter referred to as the "WASH-kit"). The Evaluation was undertaken during the period February-April 2015 by Mr Tore Laugerud, a senior consultant from Nordic Consulting Group (NCG) Norway (referred to as "the Consultant").

The special focus of the Evaluation was on the effectiveness of the use of the WASH-kit in emergency operations. This involved looking into the history and use of the kit in addition to the practicalities related to the technical components of the field use. The Evaluation Report is especially meant for the International Department of NCA in Oslo, but will be available also to the donors funding the WASH-kit and other relevant stakeholders.

The Draft Report was submitted 20 March 2015, and the final version was prepared based on comments from NCA staff, mainly on factual errors and misunderstandings. These comments are included in *Appendix 6* to this Final Report.

The Consultant wants to thank the NCA staff and partners for their open and kind contribution. Especially, the NCA WASH Advisors *Paulos* in South Sudan and *Ihsan* in Pakistan should be commended for their never-ending patience and forthcomingness towards an active and insistent Consultant during the field visits.

15 April 2015
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(Front cover photo: Women have lined up and are patiently waiting for the afternoon filling of their water containers, after the NCA operator in Gumuruk Village, South Sudan has pumped water through the water treatment unit and filled up of the elevated bladder tank (both seen in the background).
(Photo: Tore Laugerud, NCG Norway).

The conclusions and recommendations in this report are clearly those of the Consultant, and do not necessarily reflect the opinion of Norwegian Church Aid or any of the individual persons or stakeholder institutions consulted.

LIST OF ACRONYMS AND ABBREVIATIONS

ACF	-	"Action Contre La Faim"/Action Against Hunger (official name: "ACF International")
ACT	-	Action by Churches Together
ADB	-	Asian Development Bank
AR	-	Annual Report
CARD	-	Community Agency for Research and Development (a South Sudanese NGO)
CD	-	Compact disc
CoI	-	Conflict of Interest
DAC	-	Development Assistance Committee
DAT	-	Delivery at terminal
DAP	-	Delivery at port
ECHO	-	EU Humanitarian Aid and Civil Protection Department
GLS	-	Global Strategy
GPS	-	Geographic Positioning System
GWC	-	Global WASH Cluster
HAP	-	Human Accountability Partnership
hr	-	hour
HQs	-	Headquarters
ID	-	Identification
IDP	-	Internal displaced person
IFRC	-	International Federation of Red Cross
Lupro	-	Lunner Produkter AS
LWF	-	Lutheran World Federation
MFA	-	Ministry of Foreign Affairs (Norway)
MIS	-	Management Information System
MoU	-	Memorandum of Understanding
MSF	-	Medicines sans Frontiers
NCA	-	Norwegian Church Aid
NCG	-	Nordic Consulting Group
NGO	-	Non-Governmental Organisation
NOREPS	-	Norwegian Emergency Preparedness System
ppm	-	Parts per million (e.g. mg/kg or ml/l)
O&M	-	Operation and maintenance
IOM	-	International Organisation for Migration
OGB	-	Oxfam Great Britain
ORD	-	Oral rehydration salt
OSHA	-	UN Office for the Coordination of Humanitarian
RDF	-	Research and Development Foundation
RECA	-	Regional Emergency Coordination Advisor
RTT	-	Rapid Response Team
SKYPE	-	Internet telephone
SUFEM	-	Sudanese Fellowship Mission (a South Sudanese NGO)
TL	-	Team Leader
ToC	-	Table of Contents
ToR	-	Terms of Reference
UNDAC	-	UN Disaster Assessment& Coordination Team
UNHCR	-	United Nations High Commissioner for Refugees
UNHRD	-	United Nations Humanitarian Response Depot
UNICEF	-	United Nations Children's Fund (initially: UN International Children's Emergency Fund)
UN	-	United Nations
USD	-	United States dollars
WASH	-	Water, Sanitation and Hygiene
WATSAN	-	Water and sanitation
WCC	-	World Council of Churches
WHO	-	World Health Organisation

EXECUTIVE SUMMARY

1. Introduction and Background

1. Norwegian Church Aid (NCA) started engaging in the water sector in the 70s (South Sudan), and these activities continued in more countries through the 80s, with e.g. community participation and hygiene education in development programmes (financed by Norad).
2. NCA became a partner of Norwegian Emergency Preparedness System (NOREPS) in 1993/94, and gradually specialised in water and sanitation emergency projects, becoming the most prominent NGO in the sector in Norway.
3. In second half of the 90s, NCA established storage facilities for water & sanitation (WATSAN) equipment outside Oslo, assembling kits for deployment to emergencies, purchasing items from various suppliers.
4. In 2013, a 3-year agreement with Lunner Production AS (Lupro) was signed, for assembling and packing of water, sanitation and hygiene (WASH) kits according to a catalogue prepared by NCA, based on standard components agreed to in the Global WASH Cluster (GWC), where NCA is an active member.
5. GWC, a platform/arena for WASH organisations, was established in 2005, and UNICEF maintains the coordinating function. GWC is active in countries of emergency and on the global arena.
6. Discussions in a working group of the so-called Stockpiling Project under GWC on the contents, modalities around purchase, deployment and use of the WASH-kits came to a halt in 2010, due to several reasons, amongst others seemingly individual “agendas” pursued by the institutions.. The main contents of the WASH-kit were however agreed to.
7. NCA then went along with its own equipment catalogue and operation modalities, being the only reasonable thing to do, as the other organisations in the GWC did the same.
8. NCA intended to have 10-12 WASH-kits ready for shipment on an annual basis from warehouses in Norway, Dubai and Malaysia (the two latter operated by UN Human Response Depot (UNHRD)). Due to the yearly funding mechanism and partly long delivery times from Lupro the number of kits in the warehouse has varied. 3 kits per year are earmarked UNHCR. The kits are pre-paid by the Ministry of Foreign Affairs (MFA) through NOREPS and are (normally) given away as in-kind contribution in emergencies.
9. A consultant from NCG Norway was contracted to undertake the Evaluation during February-April 2015, which included useful field visits to South Sudan and Pakistan, where the kits are in use/have been used. The Evaluation Report contains appendices with illustration photos from the field visits, being an important and integral part of the report.
10. NCA is interacting actively with both UNHCR and UNICEF (GWC) on the deployment and use of the WASH-kits. In South Sudan, GWC is very active both at central and field levels, with 50 organisations being members. NCA is leading/coordinating a (regional) WASH Cluster in Eastern Equatorial in the country.
11. UNHCR is making own assessments prior to requesting WASH-kits from NCA, and use its own partners (and sub-partners) to implement WASH emergencies (but rarely uses NCA as partner). NCA staff however, installs and commissions the NCA WASH-kits in the field. There have been some misunderstandings and confusion related to the roles and responsibilities of the various parties in the field.
12. NCA has developed a new Global Strategy, where WASH is the key element.

2. History, Use and Effectiveness of the WASH-kit

1. 25 complete WASH-kits (all 4 modules) have been deployed by NCA since 2011, plus some individual modules, 20% from the warehouse in Dubai, 8% from Malaysia and the rest from Norway. 16% have been sent by sea, which of course is much cheaper than by air. 50% of the kits have been sent to Africa, 35% to Asia and the rest to the Middle East.
2. 3 shipments were received/cleared in the Philippines and Turkey by logistics staff deployed from the NCA HQs, which was a successful move (faster and less equipment lost).
3. The main logistical challenges are to ship the kits as soon as possible to the emergency area and clear it through customs. Mostly airfreight or chartered planes are required, and the NCA Logistic Dept. is always getting at least 3 quotations from different freighters. The effectiveness of the shipment by NCA is considered very good.
4. NCA undertakes the clearance in countries with NCA offices, and UNHCR takes responsibility where it is the consignee. Ethiopia is by far the slowest country of clearance, possibly due to the fact that the emergencies relate to South Sudanese refugees (and not “own” people).
5. It is difficult, without time-consuming detailed studies, to get a statistical overview of how many kits have been used according to the plan initiating the shipment in the first place, or which items/parts have been used at difference locations. However, the Consultant concludes, based on interviews with the various NCA staff, that equipment has at large been used as intended in the first emergency stage, although not all items sent have been used at the time.
6. There is a notorious lack of feedback/reports regarding the whereabouts of the WASH-kits given to UNHCR, which is unacceptable. (Seemingly, NCA is not very eagerly requesting such reporting either).

7. It is very difficult to get an overview of the effect/impact of the kits in *quantitative* terms, partly due to lack of reporting (UNHCR) and partly due to difficulties in singling out individual effects by the NCA kits where also other organisations undertake WASH activities. Reporting should however surely be improved.
8. In *qualitative* terms however, there is a unanimous feedback that the kits are very useful to the beneficiaries.
9. The average cost of airfreight is 36% of the value of the kits, whereas sea freight cost in average is 6.5%.
10. As airfreight is mostly required to "save human lives", and as NCA is finding the cheapest option at any time (being similar costs as other emergency organisations), the Consultant concludes that the cost-effectiveness of the kits is acceptable, under the prevalent circumstances.
11. As it is difficult to predict where the next emergency will be, and as kits once inside a country could be difficult thereafter to deploy to another country (an exception is equipment from Zambia to Malawi in 2015), it is *not* advisable to pre-store kits in a specific country. (However, in case NCA decides on geographical concentration to a limited number of countries for future operations, some kits *could* be pre-stored in those).
12. NCA has decided to discontinue the storage in Subang, Malaysia, as geographical proximity to Asian countries is no longer a comparative advantage in emergencies. The Consultant supports this decision. The quick airfreight possibilities and frequency from a warehouse anywhere in the world is much more important, even if the airfreight costs would be higher. Storage in Dubai and Norway should continue, and storage in Copenhagen could be considered (from where the UNICEF system has frequent freight possibilities).
13. The WASH-kit contents are based on experience and lessons learned by prominent organisations in the GWC. Also, before the kits are deployed, needs assessment in the field is carried out. The kits are therefore "by default" *relevant*, especially to areas where virtually nothing could be purchased locally.
14. The Consultant however agrees to the statement that the WASH-kit is mostly an "Africa-kit", especially related to the Sanitation and Hygiene modules.
15. Due to the varying local socio-cultural conditions from country to country, not all items are suitable in every country, and in general therefore even more flexibility in the composition of the shipments should be enhanced. (In areas with relatively high standard of living, e.g. Middle East, the requirements are different from rural Africa).
16. It is believed that a kit can serve up to 5,000 people, given certain conditions (population located in walking distance from the water source; high population concentration in the area; and proper operations in turbid water).
17. Experience, especially from Pakistan and partly from South Sudan, shows that the capacity of the Water Treatment module is reduced significantly after weeks with turbid water, even when the operators claim the operational procedures were followed, with pre-treatment before filtration.
18. In order to establish a proper (and much required) relationship between turbidity of water and the supply capacity, more comprehensive testing of the Water Treatment module in highly turbid water should be undertaken over a certain period of time under controlled operational conditions.
19. The other international organisations that can deliver similar kits as NCA (but of different makes, from various suppliers) are, according to information given to the Consultant, mostly: Oxfam Great Britain (OGB), International Federation of Red Cross (IFRC), UNICEF, Action Against Hunger (ACF International, "Action contre La Faim"), Medicines Sans Frontiers (MSF), and IOM (International Organisation for Migration).
20. These large organisations are self-supplied and never ask for assistance from others in the field. The possibility of in-kind gift from NCA of its kits is not very well known amongst other organisations.
21. Most kits from such other organisations are supplied on a cost-recovery basis (donors to pay for the kits are approached *after* emergency has occurred). The pre-paid, pre-packed kits from NCA, quick to send, are rare in this context and therefore very much appreciated by UNICEF and UNHCR.

3. Performance in the Field and Technical Components

1. The contents of the four modules of the WASH-kit (Water Treatment, Water Supply, Sanitation and Hygiene) are all listed in a NCA catalogue (last version is from April 2014) in an orderly and logical system. NCA should nevertheless review the system and *consider* updating it together with package labelling.
2. However, the *numbering* of the NCA cases/pallets is in parts confusing, as it has been revised over time with the contents of the kits changing.
3. It seems that no one in NCA today are capable of updating the Microsoft Access programme, being the platform of the NCA Catalogue. Either such expertise must be procured or may be a simpler system should be installed (EXCEL?).
4. The situation on site in emergency areas changes rapidly, and parts of the equipment requested from NCA one week could be non-relevant two weeks later, as e.g. another organisation has provided the items in the meantime. NCA equipment is sometimes cannibalised by other (smaller) organisations in the field upon arrival.
5. Previously, the kits were deployed with all 4 modules, but from first half 2014 NCA has started to send

individual modules (and in exceptional instances individual cases), which is commendable, as not all items in a shipment are normally used, and therefore from now on less items will be wasted/idling. Flexibility must be exercised.

6. Both the beneficiaries and the WASH operators are at large very satisfied with the *quality of materials* in the kit components, with a few serious shortcomings (see below).
7. Based on feedback from operators and beneficiaries of the WASH-kits, the Consultant has listed some possible *modifications* to the existing modules that *could* be considered by the NCA (marked "a)"), and some possible *add-on items* (marked "b)") that *could* be considered supplied on special request from the WASH advisors:
8. Water Treatment Module:

a) Containers for transport of chemicals on site; material to mark/protect the area around the filters units in operation; dismounting or protective device for the chlorination unit during transport; making sure that the "red-top" coagulation/flocculation units are supplied (not the "black-top").
b) Residual Chlorine digital meter; household water treatment units for schools/health centres ("table-type" gravity ceramic filter); more training of local operators.
- Should NCA consider dropping the automatic chlorination unit and use manual direct chlorination into the bladder tanks, which is anyway practiced several places today?
- A design for a trailer to transport the treatment equipment in the field could be made, to be welded/mounted locally.

9. Water Supply Module:

a) The black and white PVC taps seems to be of inferior quality (in South Sudan 60% had broken after some months of use) and should be considered changed to metal (at least in "rough" conditions, although they might be attractive to steal); a couple of the pumps should have larger capacity; a jerry can with motor oil should be supplied (as supplied with the Water Treatment module); rubber boots for the operator; improved repair kit for bladder tank (longer strips); plastic buckets are of inferior quality and must be more sturdy; the 5 l hand-washing containers could be taken out of the module (normally not used).
b) 4" inlet pipe for use in muddy water; a couple of deep motorised borehole pumps; a large capacity pump for emptying water wells; large spanner for dismantling handpumps (Africa); microbiological testing kit; Arsenic testing kit (in relevant areas only); salinity measuring equipment (in relevant areas only).
- Turbidity in water seems to be a common problem in some areas, and proper operation is required. Sufficient training of operators is thus needed.
- The 5 m^3 bladder tanks in Pakistan are not used, as they do not fit local smaller vehicles (for "water trucking" on mud roads during rainy season). Purchase of smaller tanks locally or from other organisations in such countries? (Before 2011, NCA had 3.5 m^3 tank in the standard Catalogue, used with success in e.g. Pakistan).

10. Sanitation Module:

a) The latrine superstructure should be ventilated, so structural modifications to allow for vent pipe is required; potties for children are rarely used, unless in urban areas, and could be taken out; materials for doll theatre could be taken out, as they are rarely used.
b) Toilets for elderly/disabled of the "peepoo" type; sitting toilet chairs to be mounted on standard slab (areas with higher standard of living); pour flush adaptor (available in limited numbers also today); a shower/bathing slab to standard superstructure; material for quick erection of washing/bathing shed; sludge pump to empty septic pits; additional digging tools for latrines.
- Lighting of the latrines is continuously discussed, with many solutions available. Must be adapted to local conditions. In areas with several latrines concentrated solar-powered lights mounted on poles with integrated battery could be used. Individual household solar lamps or el-aggregating torches are alternatives in other areas.
- Hand-washing facilities outside latrines are discussed, also here with several solutions existing, adapted to the local conditions. One solution could be mixing detergent with water in a lockable tank on site, but then probably clean water for rinsing afterwards is needed. Small soap pieces and soap in mesh are also successful in some places.

11. Hygiene Module:

a) "Cloth Multipurpose" is simply a towel (for no other use!); more training of (technical) WASH advisors in hygiene required; should Oral Rehydration Salt be taken out of the module?
b) Small portable projector on battery; washable sanitary pads for women; washable nickers for women.

12. Other relevant issues related to the WASH-kits: all reference books, manuals and reporting templates should be put on memory stick to be sent with WASH advisors; magnetic NCA car stickers to be provided; hand-held GPS should be available (not all places); posters of more general nature should be put up in emergency areas (produced locally); proper labelling of cases should be maintained; the English language in Lupro's Water Treatment manual should be improved; Management Information System in NCA should be improved, with proper back-up facilities; a new GWC meeting could be arranged, with exchange of lessons learned with the kits so far; items should be procured locally when available, but care must be taken not to distort local market; preparedness survey/market assessment should be undertaken in

advance of emergencies in relevant areas; and again - regular refresher courses for advisors and operators should be available.

13. NCA has been significantly strengthened on WASH since 2011, with 10 staff today in the WASH & Humanitarian Response Team, where some still express that they are under-staffed.
14. The internal decision-procedure in NCA is largely appropriate, but the kits given to UNHCR are seemingly "gone forever", with no accountability. NCA staff must always make own assessments of the needs on site prior to deploying the kit. There should always be a second assessment on requests from UNHCR.
15. The legal framework between NCA and UNHCR comprises a Framework Agreement from 2001, a Memorandum of Understanding (MoU) from 2007 (now in the process of being renewed/revised), and individual Agreements for the kits given in-kind (the term "MoU" must be avoided for such agreements).
16. Experience, notably from Gambella in Ethiopia shows that the Agreements should be specified in more detail, especially when it comes to the obligations of UNHCR to cater for/assist NCA staff in the field.
17. UNHCR must significantly improve their routines of informing the local and field level staff of the contents of the agreements signed with NCA.
18. UNHCR must clearly honour the reporting requirement in the Agreements, and NCA must more vividly request such reporting.
19. NCA is signing agreements with local partners in the use of the kits. The last agreement from South Sudan seem to be the most orderly and could be used as a template for NCA in all countries.

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1. INTRODUCTION AND BACKGROUND

1.1 Background and the Global WASH Cluster Backdrop

The Norwegian Church Aid (NCA) is a non-governmental and ecumenical organisation that works to ensure the individual's basic rights, and to eradicate poverty and injustice. Anchored in the Christian faith, NCA supports the poorest of the poor, regardless of gender, political conviction, religious affiliation and ethnicity. NCA is a partner in the *Action by Churches Together* (ACT[1]) Alliance.

The background and history of NCA's Water, Sanitation and Hygiene kit (the "WASH-kit"), and the organisation's water sector involvement in general, is assumed largely known to the readers. Just a brief introduction is therefore included below.

1.1.1 NCA's Long History in the WASH Sector

NCA started involvement in the water sector already in the 70s in South Sudan. The activities continued through the 1980s, when NCA amongst others was responsible for the soft components of larger water supply and sanitation programmes financed by Norad and run by Norwegian consulting companies[2], which involved significant components of hygiene education and community awareness raising/participation. (NCA did a commendable job in this respect and should take part of the credit for e.g. so many of the water schemes in Rukwa Region in Tanzania still being in operation today). Through first half of the 90s, NCA's involvement in emergency and development projects in the water/sanitation sector gained momentum. Based on its project record and sector experience, NCA eventually took a leading role amongst Norwegian NGOs in the water/sanitation sector related to emergency, and became also gradually more involved in long-term sector development interventions.

In 1991 Norwegian Emergency Preparedness System (NOREPS[3]) was established, and from 1993/94 also NCA became an active partner, focussing on "services packages" within water supply, with sanitation and hygiene components coming on board gradually. (It is noted that for several years the common term used was "WATSAN" – water and sanitation, and later it was changed to "WASH" – with also hygiene being highlighted in the term. However as mentioned, NCA had included hygiene awareness raising in their projects long before it became commonly recognised). NOREPS is financed by the Ministry of Foreign Affairs (MFA), and have since 1991 pre-stored a lot of emergency equipment in Norway, and later also in other selected locations (see below), for quick dispatching to emergency situations. In 1993/94 NCA's Emergency Preparedness Roster ("Beredskapsgruppa"[4], also referred to as "the NCA Roster") of external resource personnel was established, with a significant number of staff having WASH background.

During the last half of the 90s, NCA had a storage facility for emergency equipment, jointly with Norwegian Red Cross, at Fornebu outside Oslo, where packages were assembled according to needs when arising. Later, an arrangement with the companies Plast-Tec, Fiskars, a-aqua and Lunner Producter AS ("Lupro" [5]) was instigated, and from mid-2013 a 3-year agreement with Lupro alone was signed, following an open tender. Lupro assembles and packs WASH modules with fixed contents according to an agreed catalogue, ready to be shipped on short notice. Lupro produces and/or assembles some main components themselves,

[1] ACT Alliance is a coalition of more than 140 churches and affiliated organisations working together in over 140 countries to create sustainable change in the lives of poor and marginalized people regardless of their religion, politics, gender, sexual orientation, race or nationality, in keeping with the highest international codes and standards. ACT Alliance is supported by 25,000 staff from member organisations and mobilizes about USD1.5 billion for its work each year in three targeted areas: humanitarian aid; development; and advocacy. The ACT Coordinating Office is based with the World Council of Churches (WCC) and the Lutheran World Federation (LWF) in Switzerland.

[2] Like e.g. Norconsult in their rural water supply and sanitation implementation in Rukwa Region, Tanzania, during the international Water Decade 1981-91.

[3] "*NOREPS provides products, personnel and service packages for relief operations worldwide. Operates on a standby and pre-packed basis. NOREPS can respond to humanitarian emergencies immediately, thereby strengthening the international response*" (From the NOREPS web-site).

[4] There are at present around 84 members of the Roster, being individual experts that have "normal" jobs outside NCA, but who are on permanent stand-by to travel to disaster areas at short notice when the need arises (72 hours). Group members have expertise within the following areas: Water, sanitation and hygiene; Finance Coordination and management; Logistics and administration; Psychosocial work; Programme development; Protection security.

[5] Located 60 km north of Oslo, producing/assembling various WASH accessories. The company employs a high number of persons who suffer from disabilities and thus would face several challenges entering the labour market, locally as well as nationwide.

but purchases the bulk of the equipment in the modules from around the world, being of different makes from various producers.

1.1.2 NCA, the Global Wash Cluster and the "Troublesome Birth" of the WASH-kit

NCA is a partner in the Global WASH Cluster (GWC[6]), which was established following the 2005 Humanitarian Reform Agenda in the UN, and where UNICEF is undertaking the secretarial and coordinating function. GWC is not a formal organisation, but merely a platform/arena where interested parties can discuss issues of common interest in the sector. GWC is active in countries of emergency and on the global arena at large. NCA was member of the GWC from 2006, not so active to begin with, but became gradually more active from 2009 onwards, when the GWC started a "Stockpiling Project". This project, run by a working group selected amongst the cluster members – NCA being one, aimed at standardising a WASH-kit to be used and instigate common and unified procedures and set-up to be activated in emergency areas by all GWC organisations.

All cluster members agreed that a WASH standardisation was required in the sector, amongst others so that equipment from various organisations could be used together and inter-mixed. The working group also largely agreed to the main hardware contents of the WASH-kits (with some minor deviations between the organisations). It however seemed to be difficult to agree to a mutual common concept of dispatch and use in all details, as some member organisations *seemingly* pursued their own (and own country's) agenda. Questions discussed were amongst others *who* should be the formal consignee ("responsible receiver") of the kits, *who* should pay for transport costs, *who* should report, etc. (Obviously, GWC itself could not be responsible as it was *not* a registered organisation, and UNICEF did not *want* to take the lead role as consignee, as the organisation does not involve in implementation on the ground, but use partners. Also, UNICEF is adding 7% administration fee, even to in-kind gifts (!), and this would create cost cover challenges for the donors and organisations).

The further work with the kits in the GWC therefore "*died by itself*", as one stakeholder expressed it. The Consultant believes this "troublesome" discussion on harmonisation of procedures amongst others reflects the prevalent tough competition amongst NGOs around the world in a steadily growing emergency market. Amongst others, the large and prominent UK-based Oxfam Great Britain (OGB) had seemingly strong opinions on the practical matters and whereabouts regarding the kits and *who* should do *what* in the stockpiling process.

The harmonisation process within the GWC thus came to a stalemate, and in November 2010, NCA did not want to wait any longer for a joint conclusion of all details, and thus decided to go along with developing its own WASH-kit, but clearly with the contents already largely agreed to in the GWC. NCA has obviously received some criticism from some other GWC members for this "solo-trip". The Consultant however concludes that the one-sided decision by NCA seems to be the only reasonable thing to do, considering the prevalent circumstances and the obvious needs of the potential beneficiaries of the kits in the emergency areas. Seemingly, the other most prominent GWC members also continued their "business as usual", using their own kits (obviously containing many of the same elements and makes as the NCA kits!), and should therefore in all honesty have refrained from criticising others. No organisation is "better" than others in this respect.

The NCA WASH-kit establishment gained proper momentum in 2011, and since then NCA has been using a specific WASH-kit for emergency situations composed of 4 *modules* (or *units*: water treatment, water supply, sanitation, and hygiene promotion). The WASH-kit is as mentioned largely in accordance with the *main* specifications outlined by the Global WASH Cluster, and minor adjustments to the kit have been made by NCA based on experience since the start. Originally it was NCA's objective to have 10-12 complete kits ready for shipment on an annual basis from the three warehouses where the equipment is pre-stored (in the store north of Oslo operated by the company Freja, and in stores operated by UN Human Response Depot - UNHRD[7] in Dubai and Malaysia). However, due to the yearly funding mechanism and long delivery times

[6] From the GWC website: "*The GWC was formed in 2006, building upon the successes of an existing Water, Sanitation and Hygiene (WASH) humanitarian sector working group. The GWC is an open and formal platform for humanitarian WASH actors to work together in partnership. The forum now consists of 32 full-members, comprising International Organisations, United Nations agencies and International NGOs. The primary purpose of the cluster is the delivery of water, sanitation and hygiene promotion assistance to affected populations during emergencies through improved coordination of the response at global and country levels. UNICEF was nominated as the lead agency of the GWC on the basis of its global network of operations, partners, resources and its recognized role in the field of emergency water and sanitation interventions*".

[7] UNHRD is a network of depots around the world that stores, manages and transports emergency items for

from Lupro, the number of kits in the warehouses has varied over time.

Of the total number of kits, and in an agreement between NOREPS, UNHCR and NCA, NCA has pre-dedicated 3 kits to UNHCR per year. The WASH-kits are owned by NCA who has paid for them with various donor funds (mostly from MFA). The kits might be given away or sold to any of the organisations in the Global WASH Cluster, but so far only NCA itself and UNHCR have used the kits. Neither has NCA used any WASH-kits from other organisations stocked in the UNHRD stores around the world, but has purchased/been given specific equipment in the field requested from others according to needs. (NCA's re-organisation, which coincided with the last years' efforts of establishing the WASH-kit and work in the GWC, is briefly introduced later in this report).

1.2 The Evaluation Consultant's Mandate and Approach

A consultant from Nordic Consulting Group (NCG) Norway ("the Consultant") was contracted to undertake the WASH-kit evaluation ("the Evaluation"), following an open tender. The Consultant should largely focus on the effectiveness of the use of the kits in emergency operations, but also cover the technical components of the kits and the practicalities related to field use of the kits. The report in hand is mainly meant for the International Department in NCA, Oslo, and would also be distributed to the NCA offices in various countries (especially South Sudan and Pakistan), and preferably to other WASH stakeholders with whom NCA is cooperating, including donors financing the WASH-kit.

During the Weeks 3-8 in 2015, the Consultant studied various background documents and undertook several interviews with relevant NCA staff in Oslo working with WASH and adjacent logistics, in addition to NOREPS. The Consultant also interviewed three members of NCA's Emergency Preparedness Roster (one per SKYPE), and had meetings with the WASH Coordinators in UNHRC and UNICEF in Geneva. The scheduled meeting with NOREPS' representative in Geneva was cancelled in the last minute, but a brief telephone conversation with the person took place afterwards.

Field visits were undertaken to South Sudan and Pakistan, where the Consultant met with NCA staff, NCA local partners and other stakeholder staff working with WASH emergency projects.

In South Sudan the Consultant got the opportunity to visit (see *Figure 1.1* in *Appendix 1*):

- Melijo Camp northwest of Nimule town (close to the border with Uganda), established in December 2013, with around 5,000 IDPs. The small NGO Community Agency for Research and Development (CARD) is the local WASH partner. Only Sanitation and Hygiene modules were supplied to the camp.
- Don Bosco Camp just outside Juba, established primo 2014, with around 900 IDPs. The NGO Sudanese Fellowship Mission (SUFEM) is the local WASH partner. Only Sanitation and Hygiene modules were supplied, but NCA also established two boreholes with handpumps for water supply, washing/bathing sheds for camp dwellers and one clothes washing shed, all with local material.
- Gumuruk town/village, 1 hour's flight from Juba, with returning villagers that during a period were IDPs. Population: unknown. Only Water Treatment and Water Distribution modules were supplied, and these were still in use as the only water supply to the village by the time of the visit[8]. In addition, NCA operated some water supply items taken over by the NGO Medair (which had installed them, but left the area in August 2013, leaving the operations to the village/NCA).

The Consultant succeeded in getting short separate meetings with the Oxfam WASH Advisor, and the Co-ordinator and Co-Coordinator of the National WASH Cluster office in Juba. In addition, the Consultant participated in a WASH Cluster meeting (with 50 participants!) in Juba. Unfortunately, the Consultant failed to get a meeting with UNHCR in Juba, as they never even responded to the query while the Consultant was in the country. However, A UNHCR WASH staff agreed to have a brief SKYPE meeting with the Consultant following his return from the field visits. The field visits in South Sudan indeed proved very useful for the Consultant's understanding of the use and contents of the WASH-kit.

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humanitarian organisations. Through this pre-storage, UN agencies, NGOs and governments can respond faster and more efficiently to people in need and disasters. The depots are strategically located near disaster-prone areas; Accra (Ghana), Dubai (UAE), Subang (Malaysia), Panama City (Panama), Las Palmas (Spain), and Brindisi (Italy). Emergency supplies are stored in all locations, ready to be deployed within 48 hours of an emergency. The depots hold emergency relief goods such as WASH-kits, medical kits, shelter items, ready-to-use food, IT equipment and operational support assets which are all designed to support emergency preparedness and response. Currently, the UNHRD Network has around 65 partners. The stores are paid by UNHRD, but with funds from donors, Norway being but one. From 2013, UNICEF has its main storage in Copenhagen as part of the UNICEF Copenhagen Supply Division.

[8] Deep boreholes for permanent water supply should be drilled within some few weeks following the visit.

In Pakistan the Consultant visited the warehouse outside Hyderabad, in which the NCA WASH-kits are stored, and had meetings with selected WASH staff that had used the kits in the field. They generously shared their experience and lessons learned with the Consultant, which was very useful, as they in parts were different from the ones from South Sudan. In addition, the main national WASH partner of NCA, Research and Development Foundation (RDF) had arranged field visits to two villages where this NGO is implementing integrated rural development projects, in addition to one primary school, all with WASH elements being key issues at stake in the interventions. (Reference is made to *Figures 1.2* and *1.3* in *Appendix 1*, showing the locations of the places visited). This proved mostly interesting, but also partly useful related to NCA's engagement in WASH in the country, and convinced the Consultant that NCA had chosen an appropriate WASH partner.

The Consultant failed to communicate with a key staff in Oxfam that had been central in the Stockpiling Project and the GWC working group on the WASH-kit, as neither the person nor the organisation ever answered the email query.

The list of persons met and consulted is enclosed in *Appendix 2* and the Consultant's Terms of Reference (ToR) is enclosed in *Appendix 3*. *Appendix 4* and *Appendix 5* comprises photos from the field visits in South Sudan and Pakistan respectively, with comments by the Consultant. These two appendices contain some information that is not necessarily repeated in the narrative text of the report, and are as such an integral and presumably useful part of the report (not only for "pleasure and entertainment")!

The Consultant has tried to follow the structure of elements in the ToR also in the report. However, in a couple of cases the elements have been moved in order to secure a more logical sequencing of issues, notably related to the technical assessment of the WASH-kits.

1.3 The Main Actors Relevant to the NCA WASH-Kit

1.3.1 General

As a (hopefully useful) backdrop to the assessment of roles, responsibilities and appropriateness of the WASH-kit itself, the Consultant takes the liberty of elaborating briefly on the main WASH actors and largely how they communicate and operate at various levels. The Consultant realises that the interactions between the stakeholders do not follow a pre-set or pre-agreed modality, as it all depends on the prevalent situation (type of emergency, nature of urgency, country-specific politics and characteristics, socio-cultural-religious settings, etc.). Also, one of the most important factors that steers the interactions and communication is related to the experience and personalities of the key staff working with WASH-related challenges, especially in the field.

Figure 1.4 in *Appendix 1* illustrates the main lines of interactions between the most relevant key actors: Norwegian Church Aid (NCA), United Nations High Commissioner for Refugees (UNHCR) and United Nations Children's Fund (UNICEF). (The positions coloured green are the most prominent ones directly involved with WASH). The figure is divided in two main levels – headquarters (HQs) and country, with the latter divided in central/capital level and field level, the latter meaning where the emergency has occurred and where the interventions and beneficiaries are located. The figure shows NCA's link with the NOREPS system, based in Oslo, but which also have a representative at the Norwegian delegation in Geneva, conveniently placed close to UNHCR and UNICEF. UNHCR and UNICEF, as part of the UN family, are responding to the needs of the UN Office for the Coordination of Humanitarian Affairs (OCHA), being coordinated by the UN Disaster Assessment & Coordination Team (the "UNDAC Team").

NCA's organisation related to WASH is described in detail in *Section 3.3.1*. The WASH Advisors in the HQs oversee the work of the WASH staff released from the NCA Roster, frequently visiting the field to collect info and give advice on site. The WASH-kits are stored in the UNHRD stores in Dubai and Subang (Malaysia) and dispatched upon order from the Team Leader at NCA HQs.

1.3.2 Role of UNICEF and the Global Wash Cluster

UNICEF, operating the platform of the Global Wash Cluster (GWC), has the WASH Cluster Coordinator sitting in the Office of Emergency Programmes (again being under the Programme Division)[9] in Geneva. The Coordinator has at his disposal around 630 WASH staff around the world, where some are permanently located at the central country level and some are also deployed to the field level. The set-up of UNICEF however varies very much from country to country. In countries where a WASH cluster has been declared (UNICEF, as GWC lead agency, has initiated 20-30 clusters operating around the world), there is a Country

[9] The Consultant will clearly not take upon himself to explain the complete set-up of UNICEF at various levels, as this indeed is bit complicated and truly not fully understood. Only the main elements are included.

WASH Cluster Coordinator under the UNICEF Representative (and Deputy Representative), whereas in countries with no cluster declared, there is a Chief of WASH being responsible for coordinating both emergency and development WASH interventions[10]. Additionally, there might be Sub-Cluster WASH Coordinators at local level (UNICEF operates 10 such sub-clusters at district levels), or there might *not* be such person, where then the centrally located person follows up also at local level. There are normally WASH Officers on the very ground coordinating the interventions, and creating an arena for exchange of information and keeping track of *who* is doing *what*, but clearly not involving in the direct implementation activities in the sector, but using partners. (It should also be noted that UNICEF is as a general "rule" involved with Internally Displaced Persons (IDPs), as opposed to UNHCR being responsible for refugees[11]).

The GWC is activating National/Country WASH Cluster Coordination Platforms when an emergency arises and stops functioning in a country when the emergency crises are over. In Pakistan for example, having no emergency at present, the WASH Cluster is dormant and replaced by a working group. On the other hand, in **South Sudan,** being in a continuous emergency state, the GWC is very active indeed. The Consultant participated in a GWC meeting in Juba, having 50 participants! The national cluster is lead by UNICEF and co-chaired by the NGO Medair, who has seconded a Co-Coordinator full time to the UNICEF team. The National Cluster coordination seemed to be very professional, as also confirmed by the NCA staff in Juba. There are almost 50 NGOs being part of the National WASH Custer (out of in total around 150 various NGOs in the country). In each of the 10 states where more than one WASH NGO is working, there is a local WASH Cluster, with one of the most prominent NGOs leading it. NCA is for example leading/coordinating the (regional) WASH cluster in Eastern Equatorial in Torit, having 10-15 active members. NCA's partner in Medijo Camp, CARD, is the local WASH cluster leader/coordinator in Nimule. Some clusters are active and some not so active, mostly depending on how active the lead NGO is.

Minutes are taken from the cluster meetings in South Sudan, and experience and lessons learned are shared at state level, but not so much at country level, as the National WASH Cluster is too large for such detailed discussions. In some states the cluster uses drop-box for sharing information. The National WASH Cluster is organising joint transport of equipment to emergency areas for the cluster members (a topic that specifically was taken up in the cluster meeting observed by the Consultant,) and arranges and pay for local storehouses for the equipment. The National Cluster has also pre-stored WASH equipment that could be requested by the members. This equipment is donated by UNICEF (75%), Oxfam (18%) and International Organisation for Migration (IOM, and inter-governmental organisation, 12%). The Consultant observed that the National WASH Cluster has an impressing website, with good maps showing the interventions of the various NGOs in the different districts around the country. *Figures 1.5* and *1.6* in *Appendix 1* show examples of such maps, indicating the total number of WASH cluster institutions in December 2014 (being 46 that had responded in that month) and the activities within sanitation around the country, respectively.

(It is noted that NCA has four persons seconded to the GWC, but not related directly to the WASH-kit: two working with the Rapid Response Team (RTT) in UNICEF in Geneva, one sitting with NCA in Nairobi, (these three have worked as Coordinators and Information Management Officers as required), and one working with the Regional Emergency Coordination Advisory (RECA) Project in South Asia (last 3 years)[12]. The RECA person in specific is aimed at capacity building of the WASH clusters in prioritised emergency countries in the region, however RECA has contributed all over the world with similar activities where other organisations have had the lead role in other regions. The four persons are financed over the framework agreement NCA has with the MFA, and is based on a clear wish by FMA than NCA should involve in the GWC work. This has given NCA a good opportunity to maintain an active participation in the GWC work, closely with other WASH actors within a network where NCA otherwise would have had difficulties in playing such key role. The Consultant believes that these secondments should continue.)

1.3.3 Role of UNHCR

UNHCR has only two full time WASH Officers in Geneva (being 35-40% of their time in the field), placed in the Division of Programme Support and Management. There are three Regional WASH Officers in Africa, respectively in Tunisia covering Northern Africa, in Nairobi covering Eastern and Southern Africa and in Kinshasa covering Western and Central Africa (spending more than 50% of their time in the field). Additionally, there are 80 WASH Officers located in various countries around the world, some being located

[10] In e.g. Iraq, there is a Cluster Coordinator sorting under a Chief of WASH, which is an exception …..!

[11] Refugee: "*One who flees, especially to another country, seeking refuge from war, political oppression, religious persecution, or a natural disaster*". Internally Displaced Person (IDP), being "*any person who has left their residence by reason of real or imagined danger but has not left the territory of their own country*". (Definitions taken from the Free Dictionary).

[12] RECA, RRT and RAT (Rapid Assessment Team) will now be merged in to a project called Field Support Team (FST), where still NCA is an active partner in the consortium.

in the capitals, with frequent travelling to the field, and some being in the field permanently. As the UNHCR have comparatively less WASH officers than e.g. UNICEF, it is not uncommon that UNICEF WASH professionals on the ground assist UNHCR as needed (e.g. in Gambella Camp in Ethiopia where UNICEF seconded a WASH officer to UNHCR). The Consultant appreciates that such arrangements are improvised and sorted out at field level, again depending on the willingness/ability/personalities of the responsible staff on ground. Flexibility in field operations is surely encouraged by UNHCR.

When an emergency occurs, a WASH officer from UNHCR is going to the field, if not being there already, undertaking a first assessment of the situation. Such assessment might be done in collaboration/ communication with other WASH staff that might be in the area already, e.g. being from NGOs operating in the area. This also might include NCA staff if present (like in Ethiopia, but not in e.g. Chad). However again, some UNHCR officers prefer to do their assessments alone, as this again is depending on the personality of the individual officer. The WASH officer prepares a brief written report describing the situation, the actors, the beneficiaries, the needs for WASH services, etc. There is no standardised Table of Contents (ToC) for such reports, but the officers are using/referring to the tools of the Global WASH Cluster as much as possible. In Africa, the assessment reports are submitted to the HQs through the Regional WASH Officers, who add comments as required.

In order to verify the information and obtain additional info the HQs staff then has teleconferences with the field staff, where amongst others potential active partners with WASH equipment in stock in the country are identified and their possible participation discussed. Thereafter, contacts are made with potential WASH partners, NCA being one, through email and telephone, and the discussions on possibilities and available equipment starts. UNHCR claims that all information they get from the field is passed on to NCA in such instances, although the Consultant noted that this has not always been the case. During this phase, the UNHCR field staff is also involved in the discussion on the technical contents of the support. Part of this stage is also to map out which equipment could be delivered/purchased locally and in the country/region, and what has to be shipped in from further away.

Once an agreement with e.g. NCA has been reach on releasing WASH-kits, a Memorandum of Understanding (MoU)/Agreement (see later section) is signed between UNHCR country office and NCA HQs, in the case UNHCR is given the kits. UNHCR HQs has been part of the preparation of such agreements, but is not a signatory. In other cases, there is a potential for NCA using the kits themselves as partners to UNHCR in implementation.

In the case UNHCR is given the kits, they are using their own partners (previously referred to as “Implementation Partners”/IPs) to implement WASH activities on the ground. These are often international NGOs that have a proven record of WASH activities and/or are working in the area/region already. These partners again often use local/national organisations (sub-partners) to do parts of the work. As NCA today is sending WASH staff to assist in setting up and commissioning the WASH-kits, being mentioned as part of the MoU, such staff will have to relate directly to the partners and sub-partners of UNHCR on the ground.

This has in some cases created additional challenges and “misunderstandings” on the ground, as the UNHCR partners/sub-partners are not aware of the contents of the agreement/MoU between UNHCR and NCA, and that NCA staff will interact with them directly on the ground. UNHCR obviously has no procedure for passing on such info down to the partners/sub-partners, and admits that their internal communication is by far good enough. One reason for such flaws is, according to the HQs UNHCR officer the Consultant met with, that the WASH staff from the top to the bottom mostly are *engineers* who are more concerned with the technical issues related to the WASH interventions than with management and coordination, with all that takes. Such managerial skills *could* be there, but then by coincident rather than by purpose. This was also the impression the Consultant got after having talked to some stakeholders.

The Consultant truly appreciates the openness of the UNHCR system in this respect, which again should have some bearings on the formulation of the MoU/Agreement on each project in which NCA is involved. As mentioned in a later section, the UNHCR obviously does not have an adequate Management Information System (MIS) to register and follow up the WASH-kits given by donors, which means the accountability is low. In South Sudan this created a lot of frustration to NCA staff, who wanted to retrieve some of the equipment for own use in 2013.

1.4 The New NCA Global Strategy

During the Evaluation, the Consultant got a copy of a presentation in NCA from January 2015, highlighting the new “Global Strategy (GLS) 2016 and beyond” for NCA. The interesting question is whether this new strategy in any way would have a bearing on the future use of the WASH-kit. Amongst the relevant points

found in the new strategy framework could be mentioned:

- "*Allow for adaptation to changing trends and to a diversity of country contexts.*
- *Communicate clearly who we are and what we do.*
- *Working in partnership – a NCA value-added.*
- *Continue with WASH as NCA's main focus in emergency work.*
- *Stronger focus on achieving and documenting impact at country level.*
- *Adjustment in geographic presences – concentrate resources and scale up.*
- *More emphasize in humanitarian response, with WASH as main response.*
- *We already have a niche in WASH, but must become much more competitive to keep it. Must either phase out or scale up.*
- *Assessing results, effectiveness of partnerships and resource use.*
- *Using evidence to reflect and learn, be accountable to stakeholders*"

Although it is understood that the new GLS does *not* mean significant changes to the present deployment and use of the WASH-kit, the points above are still important to keep in mind when giving possible recommendations to the future use of the kits.

2. HISTORY, USE AND EFFECTIVENESS OF THE WASH-KIT

2.1 Assessment of WASH-Kits Delivered

2.1.1 Overview of WASH-Kits Delivered

Table 2.1 in *Appendix 1* lists the WASH-kits that have been delivered by NCA from July 2011 through 2014. The table shows how many were delivered, from where, to whom (consignee), reasons for shipment, mode of shipment, freight cost and value of shipment. The table also shows the date of shipment, and also the dates of arrival at destination (meaning the location to which NCA retain the responsibility of the kits - DAP (Delivered At Place), or DAT (Delivered At Terminal), where such information is readily available). (As seen from the table, this information is lacking in the files of NCA for several shipments). Normally, the shipping by air only takes up to maximum one week (2-4 days).

More important is simply *when* a kit arrives the storehouse closest to the location where it is intended to be used. NCA in Oslo might receive a "Good Receiving note" by UNHCR (like in Erbil, Iraq and in Ethiopia), a "Goods Received Noted" by NCA (like in Pakistan, where also the local partner RDF signed the document), an Air Waybill, or simply an email confirmation that the goods have reached the destination. In some cases no information is submitted to NCA Oslo. There is no system for *systematic* feedback upon arrival, as it obviously depends on the orderliness of the persons receiving the kits. This is a shortcoming as it also indirectly undermines the accountability of NCA related to the WASH-kits (see below).

In two countries where NCA had no country office at the time (3 shipments, Turkey/Syria – Dec. 2012, and the Philippines – Nov. 2013); NCA Oslo sent their own logistics officer to follow up the clearance and transport of the kits once they reached the country. This seems to have been a successful move, as it secured that the clearance/customs process went faster and that less equipment was lost on the way. In this way the accountability was surely strengthened.

In total, around 25 complete WASH-kits, plus some additional individual modules, have been dispatched from NCA to the field since mid-2011, of which half of these to UNHCR (including 2 to LWF), the rest to NCA's country operations in Pakistan, Ethiopia, Turkey/Syria, the Philippines and South Sudan. Only around 20% of the kits have been sent from the warehouse in Dubai, with only 2 kits (8%) from Subang in Malaysia, the rest from the warehouse in Oslo (72%). Only 4 kits have been sent by sea (16%, from Dubai and Subang, the latter also by truck). It goes without saying that shipment by sea is much cheaper than by air freight, but it also requires longer-term planning, which might be difficult related to emergency situations. 50% of the kits have been sent to Africa, around 35% to Asia and the rest to the Middle East region.

Before mid-2011 when the first complete WASH-kits were shipped (based on the Global WASH Cluster contents), NCA also dispatched WATSAN/WASH equipment. Such equipment was e.g. sent to Pakistan in two rounds in 2010 (August – four 4m^3 water treatment units (WTUs), and September – four 6 m^3 WTUs), which caused some mix-up confusion during the discussion at the warehouse in Hyderabad with the WASH staff, see photos in *Appendix 5*). At that time, such equipment was *not* pre-packed and ready to ship, but the packages had to be put together based on the prevalent needs. However, in several cases the "*needs were not clearly spelled out/defined*", as explained by the Logistic Dept. of NCA, so with the pre-packed kits the pre-shipment handling became (by default) much simpler. It is also fair to mention that before 2012 there were only two persons in NCA working with WATSAN, and the Consultant fully understands that getting

started with pre-packed kits made life easier both for WATSAN and Logistics staff in NCA, with much more expedient shipments.

On the other hand, during first half of 2014, NCA started to send modules separately, not only complete kits, as this was found to better meet the demands in the field. The Consultant believes this was a wise move and would encourage continuing this practice.

2.1.2 Logistic Challenges Experienced. Status of the WASH-Kits and Results.

The logistic challenges related to the WASH-kits have been clearly explained to the Consultant by most of the stakeholders interviewed. For short, this is simply related to identification of quick and low-cost shipping possibilities to the country in need, and to get the kits as soon as possible through the customs clearance process in the recipient country and out to the field where the beneficiaries are (the latter formally being the consignee's responsibility, in case being different from NCA). The urgency of the shipment will decide whether to choose air freight or charter a plane for transport, where the latter is much more expensive. The Consultant notes that the logistics staff in NCA HQs is always trying to find the most cost-effective way of transporting the kits, getting at least three quotations on air freight, investigating the possibilities of sharing transport with other NGOs on e.g. chartered planes, etc. They are following the pre-set procurement rules related to shipment and are effectuating these as fast as they can. The Consultant therefore believes that this staff cannot be held responsible for any delays once the shipment has left the warehouse, and thus concludes that the effectiveness of the shipment from NCA is *very good*.

When it comes to customs clearance, obviously some countries are notorious in being slow, Ethiopia being by far the worst amongst them. In this country the overall effectiveness of delivery has been unsatisfactory due to this. The reason for this is not know to the Consultant, either the bureaucratic routines are too rigid, or the authorities are "dragging their feet" because the WASH-kits are aimed at South-Sudanese refugees in the country, a problem they have "unwillingly" got on their hands. After having spoken to many stakeholders about this, the Consultant tend to think that the latter is the most prevalent reason, but cannot substantiate this with hard evidence (and neither did the Consultant visit the country to inspect).

In countries were NCA has country offices and/or on-going activities, the NCA staff are obliged to follow up the consignment through once in the country, as the WASH-kits normally should be used by own staff or partner organisations. The Consultant has seen relevant reports from NCA WASH staff keeping track of the equipment and describing in detail how it was followed/detected and put into use. The WASH advisors from NCA HQs will assist on site with installation and commissioning of the kits, and these are submitting weekly reports, often richly illustrated, back to HQs. However, the reports are obviously, and of natural reasons, getting fewer and more infrequent when the international NCA WASH advisors leave and the local partners are left with Operation and Maintenance (O&M) of the kits.

Also when the WASH-kits are given to UNHCR, the NCA WASH advisors are installing and commissioning the equipment, and training UNHCR and partner staff in the operation, as described in the MoU/agreement between NCA and UNHCR. The challenge is however timing the visit of the WASH advisor to coincide with the arrival of the equipment in the field. From review of correspondence and talking to WASH staff, it is clear that UNHCR is not properly meeting the expectations here. There is a notorious lack of feedback and useful information from UNHCR so that NCA can plan accordingly, and it seems to be the NCA *asking* for info rather then UNHCR *giving* it voluntarily. As seen below, the Consultant believes that NCA really is taking this seriously when demanding that their own staff should install and commission the WASH kits, and this modality must indeed continue. (It is fair to mention that also UNHCR in a meeting in Oslo some years back explicitly challenged NCA to include personal with the WASH-kits).

After use, the WASH-kits used by NCA in countries where NCA has an office, can be properly accounted for, like e.g. in Pakistan. In other countries the kits are left with a local partner and the accountability might vary from this point (some report - some not). The kits given to UNHCR are clearly not being accounted for after the NCA WASH advisor have left the scene after having put the kits into operations. (The exception concerns the kits given to Chad in 2013 where a report was submitted in French and not read/understood by NCA staff). There is in fact a complete lack of reports submitted by UNHCR and its partners, although the agreement clearly requires such reporting (see below).

The whereabouts of the equipment giving in-kind to UNHCR is simply not known and even the UNHCR staff themselves seem to have incomplete record on where it is, local and definitely not centrally, unless may be by coincident in the heads of individual staff that have been operating it in the field or taken part in transport to other locations. The case with the "disappeared" kits from 2013 in South Sudan in 2014 is a typical

example of this[13]. This serious lack of follow-up on the part of UNHCR is also readily admitted by the HQs in Geneva, and the reason for such sloppiness will be merely speculation from the Consultant's side. Based on experience from *development* assistance, it is believed that similar mechanisms prevail in emergency operations: when you just receive equipment given away with no obligations, you simple do *not* get the appropriate ownership to it, opposite to what you get if the recipient paid for it and/or followed it from "cradle to grave" himself. ("*People do not take care of gifts and after 6 months the kit is forgotten*", as one stakeholder said). This is serious and unacceptable shortcoming when giving the kits to UNHCR.

It has been impossible for the Consultant to get a statistical overview of how many of the WASH-kits have been used according to the "original plan" (meaning the intention that initiated in the shipment in the first place), as such aggregated information is not readily available, and would require detailed study of numerous (weekly and monthly) progress reports from NCA staff in the field during the installation and commissioning stage for each shipment. Based on the discussions with the various WASH staff in the HQs, South Sudan and Pakistan, and advisors on the NCA Roster, the Consultant got the clear impression that the kits supplied to NCA operations were mostly used as intended during the emergency, and have not been "redirected". Some exceptions were mentioned, where equipment "came too late" and other NGOs had covered the requirement in the meantime, so the NCA equipment was partly stored or given in parts to other NGOs or redirected geographically (e.g. Ethiopia). It is understood that, following the use during the first emergency, the NCA equipment has been stored in the country or put in use in other national emergency areas. In some locations however, the equipment has been in use during an extended emergency period, in wait for more permanent service solutions to be in place. It is also difficult to get an overview of which parts of the equipment have been used *how* and *where*. As mentioned, the whereabouts of the kits given to UNHCR are not at all known.

It has been impossible for the Consultant to get an overview of the total aggregated effects of the use of the kits in *quantitative* terms, as this is only partly and indeed fragmented and non-systematically reported on, even by NCA staff when they are in the field. Also, it is a challenge to single out the effect of the NCA input alone to e.g. a camp, where there are so many other NGOs assisting, also in WASH. A typical example seen by the Consultant was the Melijo IDP camp South Sudan, where NCA has erected some latrines, but where also the NGO Plan had done the same. It is impossible to say how many people are using the various latrines. It is thus not possible to get concrete figures on the number of beneficiaries reached by the NCA interventions, as such are not reported and in fact very difficult (impossible?) to report upon (unless in exceptional cases)! And may be it is *not* so important to find this out in an *emergency* situation as it is in e.g. *development* assistance. With reference to the new NCA strategy however, NCA will put more emphasise on measuring results and impact (at country level), so the reporting from the field must surely improve.

The *qualitative* effect is however possible to measure, amongst others through interviews with the beneficiaries and direct observations in the field. This is also done by the NCA staff, who report on e.g. various complaints from the users, and make sound assessments based on own experience. At large, the WASH staff report that the kits have been very well received by the beneficiaries and have met the objectives of emergency aid. The Consultant got the same impression by talking to various stakeholders during the Evaluation.

2.2 Cost-Effectiveness of the WASH-Kit

Table 2.1 in *Appendix 1* also lists the total value of the kits and the cost of freight. The cost of airfreight/charter varies from 24% of the value of the shipment (the Philippines) to 52% (Chad). The average cost for airfreight/charter is **36%**[14]. The three shipments by sea freight/truck in average costs **6.5%** of the value (varying between 2% to Pakistan from Dubai in 2012 and 10% to South Sudan from Subang in 2012). The cost of airfreight is thus more than 5 times the cost of sea freight, which is not surprising.

Is this cost-effective? That depends on the perspective from which one is assessing the situation, and is as such subject entirely to subjective views. From a development point of view, the cost of transport is by far too high, of course. Acceptable costs should normally be in the magnitude of the ones given for sea freight, which is also the common way of sending equipment to such interventions. However, in emergency

[13] A logistics staff in UNHCR Juba responded to the request of the Consultant: "*As a matter of UNHCR Global Policy, we only keep in electronic version (MSRP) items procured by UNHCR. However if such items are donated to UNHCR with HQs approval, we can receive them electronically, POs and Item ID would have been created by HQs. Likewis storage, reporting and issuance of items electronically is done for those received in the same manner. However the warehouse maintains off line records in all the three categories (receiving, storage and dispatch)*".

[14] In three cases there are no costs given, amongst other for the freight to Iraq in 2014, where NCA filled up the available space in a Hercules aircraft, after insistent persuation from MFA.

situations there are other factors that must be included in the assessment, *time* being the most prevalent. It is implicit in the term "emergency" that time should be minimised as much as possible in order to get the aid to the target groups as soon as possible after an emergency state has been declared. As such, the question of cost-effectiveness boils down to the question of an acceptable price "to save human lives". What is an acceptably value to put on a human life in South Sudan, in Iraq and in the Philippines? The Consultant will not go into such discussion, as he is lacking the competence, and realises that any argument from anyone quickly would reflect feelings and personal sentiments.

Is NCA less cost-effective than other organisations' kits? It is believed not, although data on this do not readily exist and has not been attempted collected (which would require significant efforts far beyond the scope of this Evaluation). As other organisations have to use the same modes of transport as NCA, and as NCA Logistics Dept. at any time is *en par* with the cheapest way of transport based on quotations, it is with high probability believed that other organisations pay freight costs in the same magnitude as NCA. The Consultant therefore takes the liberty of concluding that the cost-effectiveness of the WASH-kit is acceptable, given the circumstances under which the kit is meant.

It is nevertheless true that sending kits by sea rather than by air could reduce freight costs. However, this means shipping the kits *before* the emergency situation occurs – meaning pre-storage of equipment in certain countries. Most of the stakeholders interviewed by the Consultant were of the opinion that this is *not* a viable option, simply because it is difficult to predict *where* the next emergency would emerge. The Consultant agrees with this view, and believes that the only reason for pre-storage is cost reduction. May be a secondary effect would be saving time, but with the expedient airfreight around the world today, this is hardly a valid point (with a few exceptions, Ethiopia being one). It is also understood to be difficult to take the kits out of a country once it has been imported there, in order to dispatch it in another country. One commendable exception is the sending of equipment, stored in Zambia, to Malawi first quarter of 2015 to be used in the flooding of Shire River.

This means that pre-stored equipment could in practical terms in most cases only the used in the country in which it is pre-stored, therefore being an impractical solution. In case of longer storage, it should also be reminded that the chemicals in the Water Treatment module would expire and new supply has to be airfreighted anyway. Of the reasons above, considering all checks & balances and knowing that "you cannot win them all", the Consultant therefore advices against pre-storage WASH-kits in certain countries as the value added by doing so is not worth the cost reduction in freight.

(Having said that, it is noted that in the new NCA strategy, the issue of "*Adjustment in geographic presences – concentrate resources and scale up"* is highlighted. In case this will mean NCA concentrating efforts in some specific countries and leave out of others, pre-storage of WASH-kits in those specific countries might however be an option. Until such strategic move is operationalised and the countries have been identified, the Consultant will not speculate more along these lines).

The WASH-kits are today pre-stored in Oslo, Dubai and Malaysia. The rationale behind this is clear, as the kits should be stored as close as possible to the areas in which it might be a use for them in emergency situations, with less costs of air freight. The emergency in the Philippines in 2013 however showed that this rationale does not "hold water" any more, as it was quicker to release the kits from Oslo and Dubai rather than from Malaysia (although the airfreight costs might have been higher). This has to do with the fact that it is not the geographical proximity of the warehouse that is decisive, but how quickly it is released from the store and more importantly how quick the airfreight can be provided. The Consultant believes that the distance the planes have to fly (and cost) is *not so important* as reaching the beneficiaries as quickly as possible after an emergency has occurred.

Based on this experience, NCA has decided to discontinue the storage in Subang, and the Consultant fully supports this decision. The main point will be to store the kits at a location where there are frequent flights and thus where also other organisations have stored their equipment. The chances of sharing flights and jointly charter planes are much larger in such places, again leading to reduced freight costs. Is seems practical to keep the storage in Oslo and Dubai, but may be also NCA should consider storing some kits in Copenhagen, Denmark, if this at all is possible without too high costs. Knowing that UNICEF has its main storage there, such location will surely mean many opportunities for quick shipments to emergency areas.

2.3 Relevance and Outputs

2.3.1 Relevance. Suitability of the WASH-Kit in Different Socio-Cultural Contexts

Relevance is the measure of whether the rationale and objectives of any intervention are/remain pertinent, significant and worthwhile, in relation to the identified needs and concerns. The question is however

"relevance for *whom* in relation to *what*"? The Consultant does not intend to be too semantic about the term, assuming that what is interesting is really the relevance of the kit related to the needs of the beneficiaries and the prevalent situation that they are in. As such, the relevance of the NCA WASH-kit will inevitably vary with type of emergency, location, socio-cultural characteristics, beneficiary groups, etc. In other words, the WASH-kit has a different relevance for the Syrian refugees in Turkey than for the IDPs in South Sudan. It is however fair to say that at the time of deciding to send the ready-packed WASH-kits to emergency areas, the NCA staff have already based their decision on sound assessment of the needs, and firmly believing that the kits would meet those needs. As such the kits could be said "by default" to be *relevant*.

The WASH-kits are meant for the initial phase of emergency operations as a *complete* package, in order not to spend time and efforts to purchase local material. When the emergency response has started, local procurement should as soon as possible replace importation of relief articles. The modules are also meant for areas where absolutely nothing could be bought locally, which is however rarely the case anywhere in the world. (A notable exception was the Philippines where the typhoon had swept away all infrastructure in e.g. the Tacloban area). The complete WASH-kit was composed from lessons learned by several key Global WASH Cluster members, the ones that formed the working group of the Stockpiling Project, NCA being one. As such, with the composition from an empiric basis, it is also fair to conclude that the WASH-kit at large, and again by default, is *relevant*, which was also the intention. But it is realised that this statement is still valid only to areas with acute emergency over a larger area in Africa, with little to be purchased locally. Having said that, the Consultant believes that the Water Treatment and Water Supply modules indeed are *very relevant* wherever people need clean potable water, regardless of continent, region or country.

Some people today however refer to the contents of the kit to be too much aimed at Africa, being an "Africa kit". The Consultant to a large degree agrees to this statement, when looking at the components of especially the Sanitation and Hygiene modules. These modules contain equipment that is based on the needs of refugees/IDPs that are located "in the middle of nowhere" (with a few exceptions e.g. sanitary pads), simply meeting sanitary/hygiene needs found in most of "normal" rural Africa. This is all good, but the situation is of course never exactly ideal like this, which is clear after the Consultant's interviews with all the WASH stakeholders.

There is no such thing as "one size fits all", and what is required in the kit is really depending on the local socio-cultural setting and characteristics. One typical example mentioned by several stakeholders is the latrine squatting slabs, which are not so popular, and thus not so suitable, in the Middle East. In such areas with a general higher standard of living, people might prefer a water lock on the slab to prevent insight into the pit and reduce smell, and some places they prefer a sitting toilet.

Before mid-2014, the whole WASH-kit was sent to emergency areas, containing all four modules/units (water treatment, water supply, sanitation and hygiene). In all those cases only parts of the kit were used and the rest of the equipment was stored somewhere. The equipment might have been used by NCA later, might have been given to other organisations, or might have been "lost". Nobody really knows as e.g. UNHCR and its partners never report back on the use, and even NCA seem to have a haphazardly system of regular reporting back to e.g. the HQs, at least some time after the emergency situation is over. It is therefore impossible, without significant efforts, to establish an overview of what was used and not used of the equipment, at every location. It is understood that from mid-2014, NCA have started to send individual units, but then still with the pre-defined contents. This is however a significant improvement and would lead to less equipment idling around the world. Still, there are items in the Sanitation module and especially the Hygiene module that are rarely used, according to the WASH staff (see below).

The Logistics Dept. in NCA prefers to send out whole modules, but can in exceptional cases send out individual cases within one module. They however are not prepared to split the contents of individual cases, which is fully understood by the Consultant. The solution to avoid "wastage"/idling of equipment would therefore be to make the fixed contents of the cases more relevant to the socio-cultural setting in which the units should operate. This means to introduce a higher degree of flexibility for the WASH staff to select cases that better meets the prevalent socio-cultural settings. This has to be done by NCA staff jointly, but the Consultant has only given some examples of preferable changes in the contents and add-on items that could be taken on board (see Section 3.2), but without any thorough analysis of this – merely being a start of a process that NCA has to continue internally. As seen, there are definitely relative simple ways of also making the Sanitation and Hygiene modules more relevant to various local environments.

2.3.2 Quality and Quantity of Outputs

Based on the discussions with the various stakeholders at different levels in Norway, Geneva, South Sudan and Pakistan, the Consultant believes that the WASH-kit in fact might serve up to 5,000 people, but only in an ideal situation and if certain basic conditions prevail:

- The target population should be located in reasonable walking distance to the water source, so the water could be distributed from the tap stands without using "water trucking".
- The population should be living relatively close to each other, say like a semi-urban area, otherwise the inhabitants farthest away from the distribution point are not properly supplied.
- The water should not be too turbid (meaning not having too much clay/silt particles in the water).

Related to the latter point, the Consultant got feedback from talking to the operators in Pakistan that the turbidity of the water probably was a decisive factor in how much water could be supplied. Even when the operators claimed they consistently followed the backwash procedures of the sand- and carbon filter units (were the flocks are held back[15]), and the pre-treatment in onion tanks, they claimed that the capacity of the Water Treatment module reduced to half of the design capacity (around 2 m^3/hr) after a few months of operation in turbid water. Unfortunately, the operators interviewed by the Consultant could not be more precise in their description, as the situation occurred in 2011/2012, and they only claimed the water was "*too turbid*" with no proper quantitative indication of the turbidity per se[16]. The operators said to have used alum Sulphate as pre-treatment before filtration. (It could also be that the performance of the filters has been improved since that time, which is not known)[17].

Although the information from Pakistan is not very exact, the Consultant believes that the issue on water quality and capacity should be taken seriously, as it *might* indicate that the capacity of the filters in fact are reduced over time with too turbid water. As such, it *could* be considered to include one additional bag of filter sand and one additional cartridge of carbon in the unit delivery, to replace the "clogged" ones when capacity drops below certain thresholds in locations with turbid water problems.

Another reason for the problems with turbid water could of course be that pre-treatment of water before the filtration is not effective enough (pre-sedimentation in an onion tank), which again could be due to lack of knowledge of such possibility, or simply that the recommended pre-treatment procedures were not followed by the operators (bringing the water turbidity down to less than NTU 100 (or sometimes even less than NTU 20). The reason for the reduced capacity could also be that the backwashing procedures were not followed as given in the manual, which again would require additional or more comprehensive training of the operators. The reduced supply capacity could also be a combination of these three reasons.

It is fair to mention that the Consultant also in Gumuruk observed that the local operator had by-passed the Water Treatment module, as he claimed that due to the turbid water the capacity was reduced. However, when the NCA WASH Advisor started the operation of the unit, the supply capacity was as designed. Nevertheless, also this incidence should be a reason for looking into the turbidity matter in more general terms.

The issue of *possible* reduction of capacity over time is closely connected to comments given to the Consultant by e.g. the Global WASH Cluster Coordinator in Geneva. He would like to get a better overview of the capacity and water quality delivered by the NCA water treatment unit depending on the turbidity of the raw water. Based on the feedback from the field, also the Consultant believes that such relations is important to establish, especially for the ones doing the needs assessment at the start-up of an emergency operation considering various (polluted) water supply sources. The Consultant would therefore suggest a more comprehensive testing of the filter units in the field in highly turbid water over a certain period of time under controlled operational conditions. This would give important information revealing possible weaknesses and/or shortcomings of the kit, and a more realistic expectation on how many people the kit could serve under various conditions.

2.4 Other Similar WASH-Kits on the Market

During this assignment, the Consultant has had no time to go into the details of other organisations WASH-

[15] Frequency of the backwashing will depend on the resistance in the filters, meaning the degree of clogging of the filters by flocks how much the pressure needed to push water through, on the red part in the manometer – more than 0.8 bar)

[16] The operator interviewed indicated that turbidity could have "*been in the range of 8-12 NTU*". This however, is not so high and it is not known where in the process this was measured, so the statement is of litle value.

[17] In the comments to the Draft Report, NCA states: "*This is a matter of how you operate the system. In Chad the turbidity of the raw water was >>1500 NTU. We pre-treated the raw water in the onion tanks by coagulation using the alum-sulphate from the WASH kit. The turbidity of the water entering the WTU was <50 NTU. The system was operated at a capacity of around 3,5 m3/h. The maximum capacity (4 m3/h) is a theoretical value which is difficult to obtain regardless of the turbidity. In general, the capacity over time will depend on the backwashing of the WTU".*

kits. However, it is understood from the discussions with various WASH stakeholders that several organisations have available kits with similar contents than NCA. Some of these organisations were participating in the Stockpiling Project working group, thus following the recommendation reached by the Global WASH Cluster on contents. This is good achievement, in spite of the further discussion of harmonising the procedures around the kits halting in the GWC. The organisations that can supply similar equipment as NCA in complete packages are:

- Oxfam Great Britain (OGB)
- International Federation of Red Cross (IFRC)
- UNICEF
- Action Against Hunger (ACF International, "Action contre La Faim")
- Medicines Sans Frontiers (MSF)
- IOM (International Organisation for Migration)

Also other organisations can deliver parts of such equipment, but only the listed ones can deliver complete kits. It is however clear that there is no harmonisation of the *make* of equipment used in the kits, as all have their preferred suppliers and makes, notably most often coming from the country in which the organisation has its base or main affiliation. For example, French organisations always use French equipment (e.g. AFC), both in emergency and development assistance. Oxfam prefers equipment produced/supplied in the UK, and it is noted that several items in the NCA catalogue are identical with the ones in the Oxfam catalogue, which of course in general is much more comprehensive[18]. These largest organisations are always self-supplied with equipment and never ask to borrow/lend from others. Smaller NGOs however might easily request these larger ones for support, like UNICEF coordinating the input from the GWC members often having stored equipment in the country (e.g. South Sudan) that has been given by the largest members.

There actually seems to be a "policy", or at least a "practising rule", of these large organisations not to depend on help from others. This was clearly explained to the Consultant visiting Oxfam in Juba. As such, it is not so strange that nobody has asked for the NCA kit, although it is free for all to request. Locally however, some organisations might ask for individual equipment items to supplement their own equipment. Another reason for *smaller* organisations not asking is assumed to be that they simply do not know of the possibility of getting pre-paid, pre-packed and stored WASH-kits by NCA. However, the question is *why* NCA at all should have such possibility open, when few other organisations have it, with the exception of individual items in such kits/modules that are not used and could be utilised by others on site? NCA should maybe re-consider this policy.

The NCA kit is nevertheless highly appreciated by UNHCR and UNICEF for being pre-paid and pre-stored in complete modules for 5,000 people, ready to be shipped as an "in-kind donation". Most of the other organisations, notably Oxfam, are releasing their kits based on "cost-recovery principle", meaning payment is requested from the consignee, and nothing is donated. Once the financing is secured, the kits are packed/shipped. This gives NCA an advantage, as their kits could be sent out very quickly.

In case NCA wants to continue the policy of their kits being free for all to request, this option should be used highlighted better as part of the promotion efforts of the kit, for example through the GWCs in the countries where NCA is working. This also fall well into the new strategy of "*Communicate clearly who we are and what we do" and "We already have a niche in WASH, but must become much more competitive to keep it".*

It is however also understood that NCA, at a couple of occasions, has sent out kits based on the presumed *urgent* needs of UNHCR without assessing the requirements with on own staff on the ground. The other larger organisations never do that, as they always use own assessment teams to reveal the needs. The Consultant believes that considering the prevalent situation and stiff competition in the emergency market, NCA should try to blend part of its modus operandi with those of the other large competitors, which would e.g. require a much closer follow-up of its kit from cradle to grave (se below).

3. PERFORMANCE IN THE FIELD AND TECHNICAL COMPONENTS.

3.1 Appropriateness of the WASH-Kit Components

The WASH-kit today meets most of the equipment needs related to water treatment and supply, sanitation and hygiene awareness raising required in areas of emergency. As always, the supply of clean water has the

[18] It is noted that the WASH Officer from Oxfam met with in Juba charaterised the Oxfam catalogue as beeing directed "towards Africa".

very first priority, and in principle needs to be in place a couple of days after a sudden catastrophe has happened, simply to prevent people from dying of thirst or getting seriously ill through contaminated drinking water. However, it is realised that safe disposal of human excreta and education about improved environment and personal hygiene practices, especially where many people have to live under temporary conditions in small geographic locations with no or destroyed infrastructure, must go hand in hand with the water supply. Truly so, to prevent serious epidemics like cholera, typhoid, etc., to develop and spread. The modules were therefore prior to mid-2014 normally dispatched in one shipment in complete WASH-kits to areas where all the equipment *could be* needed almost simultaneously.

The contents of the WASH-kits were largely concluded in 2010-11 by NCA staff, when NCA decided *not* to wait for a mutually joint conclusion amongst the Global WASH Cluster partners especially on the administrative/managerial modalities around the shipment and use of the WASH-kits. The kit is anticipated to cover the basic needs for 5,000 people as greed in the GWC, and an *Emergency Equipment Catalogue* was developed (the first version from 27 April 2011), listing most of the bits and pieces in the various packed pallets and cases, clearly stating under which of the modules the equipment belongs. The Catalogue has been updated a couple of times based on experience from the field and lessons learned by the NCA WASH Advisors. The last version is dated 4 April 2014. According to NCA, there are only smaller adjustments in the modules and numbering that has changed since the beginning. All items in the Catalogue are properly numbered, under Main Categories, Sub-Categories and Items. This is an orderly system.

The Consultant has compared the Catalogue with the one used by Oxfam, which is a significantly larger NGO than NCA. The Oxfam catalogue also contains many more types of items than the NCA one (amongst others groundwater supply pumps, larger water tanks, vehicles, etc.), but some of the items are identical in the two catalogues, especially in the Sanitation and Hygiene modules (e.g. plastic squatting slabs, latrine superstructure, potties, bed pans, multipurpose soaps, etc.). As Oxfam has always been the bigger brother amongst the two and has a much longer history in emergency WASH interventions, it is assumed that when NCA initially prepared its own catalogue the staff used parts of the Oxfam one. This was a commendable exercise, as there should be no need of inventing the wheel again!

As mentioned, the complete WASH-kit today comprises four main modules[19] (also referred to as "units"), with the equipment divided in the parts needed for "Start up" and what is needed for later "Operation":

1. Water Supply Unit (e.g. pumps; storage tanks; distribution taps; tool kits; fitting; chemicals for flocculation and chlorination).
2. Sanitation Unit (e.g. latrine superstructure in plastic material; plastic sheeting; digging tools; squatting slabs; potties; bed pans; disinfection sprayer)
3. Hygiene Unit (e.g. hygiene promotion kit with various material, like megaphone laminator machine, pins, needles, camera, flip chart, various books; rehydration salts; soap and towel).
4. Water Treatment Unit (for 4 m^3/hr, e.g. diesel engine, sand filter, carbon filter).

Figure 3.1 in *Appendix 1* shows the four modules and the sub-modules under each, with the identification numbers indicated.

The Consultant observed that all stakeholders interviewed believed that the WASH-kit appropriately meets the needs in the field, and normally more than that. The complete kit is clearly meant for deployment in disasters where equipment cannot be timely purchased locally, as stated in the Introduction to the Catalogue, like in sudden nature-made disaster areas (acute emergency). Recent examples are like the typhoon in the Philippines (late 2013) where everything in a certain area literally was washed and destroyed. The kit would also in principle meet the needs when setting up refugee camps in "the middle of nowhere" on virgin grounds, where no infrastructure is built. However, in the latter cases, there are most likely operating local societies (villages, towns) located in reasonable distance (by vehicles) from the camp, so some items are available locally, or at least regionally in the country.

This necessarily means that in most cases some items in the kit will not be needed and thus will not be used. (What happens to such items not being used, is another matter: is it stored, is it sent to other places in need, is it stolen and sold, or what?). There is obviously a balance between:

- which items are readily *available* to be shipped quickly?
- what should be sent that *could* be used?
- what is the *cost* of sending unnecessary equipment?

This balance is impossible to strike, as the environment in which the kits will operate is unpredictable, with new challenges coming up every day. "*It is better to send more than is needed than risking lacking*

[19] At the time of preparing this report, NCA is in the process of acquiring a Groundwater modul to be stored in Oslo.

something in the kit", as several said. This is of course the philosophy behind the composition of the kits, the pre-packing and pre-storage at certain locations around the world.

The Consultant surely agrees to this. It is however also observed that in emergency areas there are many aid organisations "pouring in" during the early phase, and duplication of equipment is obviously prevalent. The coordination by OCHA/UNHRD, ECHO and others should in principle make sure that organisations are complementary and not duplicating efforts in the same areas. Notably the Global WASH Cluster coordinated by UNICEF has taken on such an advisory/coordinating role, but the challenge is demanding especially in the very first phase of an emergency where the need one day may not be a need the next day.

This means that if NCA is reacting to a first request (from say UNHCR) of urgent shipment of the WASH-kit to serve an area with water supply, this situation might have changed at the time the kit arrives at site a couple of weeks later. At that time, some other organisation might have reached there with similar equipment before NCA, so there is no urgent need anymore. In the best case, the NCA kit is then directed to another area in the region with similar needs. Alternatively, the equipment is stored locally until further notice or is cannibalised, through the kit being split and parts given to various organisations (typical water pumps). It is the consignee at site who decides how to use the equipment and this has caused some frustration and controversy amongst the NCA WASH advisor in the field (notably the case with UNHCR in Gambella, Ethiopia). As mentioned, no readily available overview of the kits' use and whereabouts on site exists, unless in individual NCA WASH staff's progress reports on each project. The kits sent to UNHCR are never reported upon at all (the exception is Chad).

There has been an evolution from the time when NCA picked all items from a store and put together packages in each emergency case, to the sending of fully equipment pre-packed and pre-stored WASH-kits. This has been a commendable and relevant development, in fact by default. However, the experience with the use of the kits so far clearly shows that time now might be ripe for adjustments to the composition and packing of the kit. This is clearly also evidenced by NCA the last year (from mid-2014) sending just the modules that are mostly needed. This is indeed a step in the right direction.

Reference is made to *Table 3.1* in *Appendix 1*, showing the packing list for the kits, meaning how the various items are packed in cases (smaller items) or pallets (larger items). There are 21 cases and 13 pallets covering the whole kit with all four modules. Leave alone the fact that the numbering of the packages are not fully understandable or consistent (see below), NCA Logistics Dept. clearly prefers to ship complete modules, but would also accept sending specified pre-packed cases/pallets as indicated in the table. The system is however not designed to split the cases/pallets and send individual items. The cases/pallets are distributed on a "take it or leave it" basis.

The Consultant largely agrees to this approach, as extensive "pick and choose" would require too much administration and costs, and would not be very practical. Having said that, after 4 years of WASH-kit use and around 25 kits being shipped around the world, some adjustments to the kit should be considered to allow for more flexibility to meet the local socio-cultural needs. This is being elaborated upon in the next section.

3.2 Quality of the Technical Components. User feedback.

The term "users" could mean both the target population benefitting from the services provided by the kit modules, or the ones that use the modules in the operations, meaning the operators, paid by NCA (or another operator or partner institution). The latter category includes both the locally trained and employed operators, and the NCA WASH advisors (international or national) who install, commission and monitor the operations. The Consultant met representatives of both these groups but did not undertake any structured or statistical representative collection of data from the beneficiaries.

a) The beneficiaries

When interviewing the hygiene promoters/mobilisers amongst the IDPs in the two camps in South Sudan (Melijo and Don Basco), all aspect related to the technical durability and performance of the kits were discussed. In short, the following issues were taken up in the field and will all be dealt with under the individual module in the next section (see also *Appendix 4* showing photos from South Sudan):

- The capacity of the Water Treatment module is reduced in turbid water (also mentioned by the operators in Pakistan), but this could be cause by many factors, also non-compliance operational procedures.
- The buckets with lid supplied with the Water Supply module (both with and without tap) are of less good quality as the lid often breaks.
- The buckets with tap supplied with the Water Supply module are of less good quality as the tap often breaks (the return spring stops functioning properly).

- The latrines with corrugated plastic superstructure tend to have a foul smell inside (which has nothing to do with the quality of the plastic material from which the superstructure is made per se, but more related to the *design* of the latrine, thus still being mentioned here.) The Consultant believes that this could largely be attributed to the lack of ventilation of the pit, as the latrine today is not a Ventilated Improved Pit (VIP) latrine.

b) The kit operators

Feedback from the operators/WASH advisors directly related to the *quality* of the equipment material:

- The coagulation and flocculation unit with black lids (French make) is not so sturdy as the unit with red lids (from e.g. a-aqua), as the lid of the former e.g. comes off under high pressure and is difficult to fit tight again.
- The standard push-button taps in black & white PVC mounted to the distribution tap stand, being part of the Water Supply module, are of inferior quality (breaks when tightening too hard) and the return spring often stops functioning.
- The 5-liter plastic bags for hand washing are never used. ("The users do not take this serious", as one WASH Advisor said).

Apart from the item mentioned above, both the beneficiaries and the operators are at large very satisfied with the *quality* for the WASH-kit components supplied by NCA.

3.2 Possible Adjustments to the WASH-Kit

3.2.1 The Equipment Catalogue and Package Numbering System

The NCA Catalogue is prepared in the software programme *Microsoft Access*, being a database management system commonly used. The system was developed some four years back and has worked satisfactory for the first years. However, as the only person in NCA that knew how to use the system quitted, nobody seems to be able to make the necessary updating and changes to the Catalogue. (For example the paging indicates that the total number of pages is 80 - as it was earlier, but the revised version only contains 40 pages. Nobody in NCA seems to be able to change this figure, which is especially confusing for outsiders like the Consultant). In order to be able to update and supplement the Catalogue NCA must either employ a person with these skills or purchase it from a specialist company. Alternatively, they can install the Catalogue in a simpler database, e.g. EXCEL.

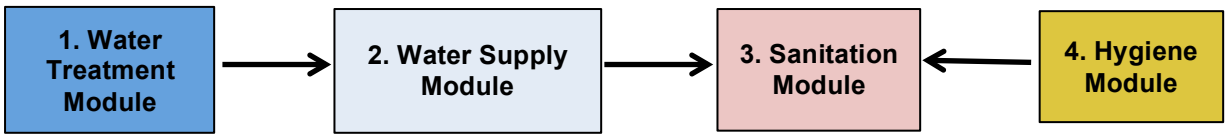
The Consultant had difficulties in navigating between the individual items, cases/pallets and modules in the packing list, simply because the numbering system is somewhat confusing. The reason seems to be that the WASH-kit contents have been changed over time and that items have been added/taken away based on experience in using the kit. Obviously, the numbering system worked fine initially with the first suppliers, but then it was distorted due to e.g. changes in the maximum *size* of the packages. The items were not necessarily packed in the "correct" sequence (meaning as they appear in the catalogue and the module overview). When an item belonging to a sub-module does not fit in the package, a new one with nomination "A", "B" etc. is added, in order to avoid re-numbering the other cases. This in general seems logical and practical.

However, the numbering of the pallets seems to be somewhat inconsistent. For example: Pallet 7 should have been labelled as Pallet 6C, as the contents belong together with 6A and 6B. Why are there Pallets 4A and 5A, when there are no pallets 4B and 5B? Additionally: Case 6 should according to the system be 6A, as there is a case 6B. Also, there are several overviews of modules (with module numbers) in circulation in NCA (the Consultant got at least four different versions from various sources), with different codes, which is very confusing[20].

NCA needs to critically review the coding and package labelling and revise it, notably so it reflects a logical and understandable consistent system, and revise all the overviews and lists accordingly. (It is imperative to *date* all such documents, which to a large degree is lacking in NCA today). The first digit in any number should, as today, indicate the main module where it belongs ("main category"). Today the items starting with "1" belongs to Water Supply, 2-Sanitation, 3-Hygiene and 4-Water Treatment, and in principle this *could* continue. Also the system with sub-categories (pumping-01, distribution-02, etc.), being the second two digits in the item number, should continue. Likewise, the sequential item numbers and the number of packages are orderly arranged.

[20] NCA in their comments to the Draft Report agrees that the numbering should be more logical. The however claim that "*the reason behind the irregular numbering, was to lower the number of cases and reduce the volume. Accordingly, some items were packed inside other cases*".

However, the Consultant would like NCA also at least to *consider* a more logical system, related to the appearance of the WASH elements in a "normal" sector set-up sequencing, which would lead to the following main/first module numbers (also referred to as "*main category indicator*"):



Notably, the Water Treatment module was initially part of Water Supply, but was later taken out as a separate module and given number 4. The division of the two modules of water was considered carefully, according to NCA, and was based on the type/quality of raw water[21]. It is now possible to deploy only the Water Supply module without Water Treatment module. They are not dependent of each other any more. The Consultant agrees fully with such division of the initial Water Supply module, but does not understand the rational behind the present *numbering*, as treatment indeed naturally belongs with the Water Supply and could easily have been given e.g. a nomination "A", where the supply part could have been given a "B". The Hygiene module is somehow influencing all the three other units, but mostly related to sanitation practices, comprising environmental and personal hygiene procedures. It is noted that NCA is in the process of acquiring a Groundwater module to be stored in Oslo.

3.2.2 Water Treatment Module

No *significant* changes to this module/unit have been identified. Following the suggestions from several NCA WASH advisors, blended with own observations, the Consultant below lists some minor items that *could* be modified/improved/added to the module, and items that could be *considered* as add-ons to the module, without necessarily being standard part of the module. Such items could be purchased beforehand and kept in store, but could also in some cases be procured locally in-country when crises arise. The list is not meant to be exhaustive, as time in this Evaluation does allow for such in-detail assessments. It is merely meant as a basis for further discussion within NCA on adjustments and add-ons to the module.

Modification of existing module:

- Containers for transporting chemicals. Aluminium sulphate ($ALSO_4$) is supplied in paper bags of 25 kgs in the standard module. This is both practical and economical as it reduces volume during shipment. However, when the bags reach the field, there is often a need to transport the chemicals around, and the bags are often exposed to rough handling, in and out of cars and boats, bumpy roads in vehicles, etc., and thus they might break easily (mentioned by several stakeholders). The bags should therefore preferably be emptied into plastic containers/buckets with lids for transport/handling on site. Such containers could be supplied with the bags and should have a proper labelling showing the chemical contents, and explaining the danger of using the container for other purposes (water and food).
- Item to protect the water treatment unit surroundings. In some places obviously people, and especially kids, might be very curious as to the treatment unit with pumps and filters, and could be tempted to temper with the equipment. In order to prevent people from coming too close to the equipment, a fence should be erected around it. In lack of suitable local materials, the module could contain as a standard for example a roll of orange plastic mesh (see photos from Gumuruk in South Sudan in *Appendix 4*) to erect around the equipment, held up by simple poles in each corner. Alternatively as an add-on for special demanding areas, a simple tent could be supplied into which the treatment units could be placed (may be together with treatment chemicals).
- Protection device for the chlorination tap during transport. The tap, through which the chlorination is supplied and from which the suction pipe into the chlorine container goes, is vulnerable and could be damaged during transport. When in the wooden box it is protected, but once it is taken out of the box to reduce the volume for transport by plane, boat or car, and to reduce weight and ease handling, the plastic tap is easily exposed to breakage. Could this be dismantled during transport or a protective device been put around it?
- In addition, it should be mentioned also in this section that the coagulation/flocculation unit should be of the "sturdy" type, like for example the one supplied by a-aqua (with red lid, ref to photos from Gumuruk) and *not* the type with black lid (ref to photos from the warehouse in Hyderabad). It is understood that

[21] NCA explained that the rational of division is simply that in the process of *de-modeling* it is natural to look at what type of raw water sources we have got (simplified categories): 1. Any water - turbidity <20 or <5 NTU - only Chlorination; 2. Surface water - low turbidity <100 but >20 NTU - possibly WTUs + Chlorination; 3. Surface water - high turbidity, >100 NTU - pre-treatment+(WTUs)+Chlorination; 4. Ground water - low turbidity, <20 or <5 NTU – Chlorination; 5. Any existing network >> (Pre-treatment) + Possibly Chlorination.

NCA earlier used several suppliers to these units, including the ones from French LMS. The red lid units from a-aqua became too expensive, so with the 3-year agreement with Lupro in mid 2013, Lupro has made the procurement and assembling of the kits, and they now purchase from the company World Water Treatment Mauritius, having another make.

Add-on items that could be shipped as needed:

- One advisor mentioned that a digital meter to quickly measure the residual chlorine ("restklor"[22]) content in the treated and disinfected water would be very handy. To day, the kit contains an item called "*Colour disks Chlorine DPD 0-1,0mg/l and 0-5mg/l*", which is a visual way of indicating the amount of Chlorine in the water. In some cases however, the Consultant agrees that an electronic meter could be more useful, and definitely more accurate. Some instruments today combine measuring turbidity and Chlorine (free and total) and are not too expensive[23].
  The Consultant however believes that such Chlorine instrument should *not* be a standard part of the package. NCA could have a couple of these instruments in their HQs and WASH advisors going to the field to work with water treatment could bring the instrument with them (in their luggage) and use it until the chlorination equipment has been calibrated/commissioned and normal operational condition has been reached, then bring it back to the HQs for future similar use.
- Household water treatment units, for example having gravity ceramic filters of the "table-type" used for camping and leisure in westerns countries. This could be used in emergency in special institutions, say schools, in individual classrooms, or in health institutions (e.g. waiting areas), covering the need for smaller amounts of drinking water. Such solutions could also exceptionally be used where the households in a village is spread out over a large area as alternative to treatment in a central place with extensive water transporting to the households.
- Also, it is mentioned by several stakeholders that more extensive training of the local module operators must be given priority. This amongst others should include training in how to dismantle and clean/repair the chlorination unit. Is should also include a general understanding of the importance and use of chlorination in water supply at large and what *could* go wrong in the field. It was especially observed in Gumuruk that the operator did not take the chlorination serious enough and consequently did not take care of the equipment the way he should (the container for chlorine solution was gone, and also the transparent plastic pipe between the tank and the tap). (In Pakistan, it was mentioned that one operator in fact could dismantle and repair the chlorination unit, but the Consultant understood that this was merely by coincident than planned).

It is noted that in Pakistan the WASH staff did not use the automatic chlorination unit at all, as they poured the chlorine solution directly into the bladder tank and let it rest for a minimum of 30 minutes before supplying the water. The staff claimed that the dosing equipment was not supplying the correct amount of chlorine and was difficult to adjust in turbid water when the pressure in the system was low[24]. The alternative direct dosing method was described as an alternative in a written manual prepared in 2010 by an NCA staff in Islamabad (Tore Schulze). In fact, the Consultant appreciates this alternative method and observed that this was also used in Gumuruk, South Sudan. May be such alternative manual method is good enough for emergency supply, and may be it could be considered to avoid the automatic chlorination unit altogether?

Additionally in Pakistan, the staff mentioned that the case of the Water Treatment module was very difficult to handle (the Consultant believes this is Case 12, weighing 325 kg), and claimed that eight people were needed to lift it on and off trucks. This is laborious work when the modules are often moved from place to place. The staff pointed out that one option could be to have a specially made trailer for the equipment (without boxes), easy to hook onto a vehicle. The Consultant believes that such trailer could easily be made

[22] Testing for Residual Chlorine is common in water disinfected by Chlorine compounds. The test measures the amount of chlorine remaining in the water sample. (For example, 2 ppm of chlorine (ml/l water) may be added to water. After a certain contact time, the test is made and indicates that 0.3 ppm chlorine is present. The 0.3 ppm is the chlorine residual. The difference between 2.0 and 0.3 ppm (1.7 ppm) chlorine, was used during the contact time in oxidizing organic matter (bacteria, vegetative matter, sewage, etc.) in the water. This is known as the "chlorine demand" for that period of time. It is important to note that due to the chlorine demand, a chlorine residual test indicating sufficient chlorine at the plant does not necessarily mean that a test at the end of a water distribution main will indicate sufficient chlorine.

[23] Sole Residue Chlorine instruments can be bought for around USD 200.

[24] The NCA staff in Pakistan explained: "*The reason for not using the auto chlorinator was that the auto chlorinator worked with same pace and specific amount of chlorine for disinfection while the pressure from the back units was sometimes high and sometime low. This high and low pressure reduce or increase the water flow. So to void the variance, a specific amount of chlorine was added to pillow tank directly*".

locally in most places, and may be a simple standard design of such trailer should be prepared by NCA HQs for local welding at the location of the emergency?

3.2.3 Water Supply Module

As for the Water Treatment module, the below list regarding the Water Supply module follows from the discussion with several NCA WASH staff blended with the Consultant's own observations.

Modification of existing module:

- The black and white PVC taps being standard on the water distribution tap stand seem to be of inferior quality, evidenced e.g. by the observations in Gumuruk and Upper Nile in South Sudan. These taps are cracking if they are tightened too hard when installing (which they often are), and the return spring is not working properly. ("*The return springs on the standard taps do not seem robust enough*" as one WASH Officer in Melut, Upper Nile expressed. "*The outlet of the tap was small and short so it was not convenient for use*", was reported from Gumuruk. "*The taps look very weak*" and "*The taps do not work in high pressure and are easily broken by children…*" one staff in Pakistan said)

  Reports from South Sudan concludes that of the 10 taps installed in Gumuruk, 9 were destroyed within 3 months of operation and was changed to metal ones. In Melut 4 out of 12 taps supplied with the tap stands were broken within 8 months of use, and were replaced by metal ones. This means that in South Sudan, 60% of the supplied plastic taps are broken at the time of reporting The taps are also reported leaking in turbid water, but it is also fair to mention that metal taps might leak in water with particles (if treatment is not appropriate), however no such statistics on leaking metal taps have been easily found. Taps of metal should be provided as they obviously are of more sturdy type, preferably of the push-up type (Talbot). In fact, this was mentioned both in South Sudan and Pakistan, and also by some staff in Norway. A problem mentioned with the metal taps in South Sudan, though, is that they are attractive to steal and sell in the local market……[25].
- 1-2 pumps in the module (out of 6 in total) with larger capacity than the present ones could be a standard part of the kit, for more heavy pumping jobs.
- The plastic buckets with lid/lid & tap seem to be of too bad quality, at least for use in the rural areas and camps in Africa, as observed in all locations visited in South Sudan[26]. The handles easily break and the taps are often broken after few days of operations due to the return spring being weak. Buckets *could* be considered as an add-on unit to the module, as in many places there is no need to send them. Buckets of similar material and/or jerry cans with the handle being an integral part of the container could often be purchased locally. (It should be mentioned that in Pakistan there was obviously no problem with the buckets in the kit, but again the Consultant believes that the handling there is not so rough as in rural Africa).
- The modules should include one jerry can with motor oil for the pumps. (Notably the Water Treatment module contains such oil, but not the Water Supply module).
- Rubber/gum boots (standard size, say 44) could preferably be included as standard in the module. It might be useful when installing and maintaining the water supply intake in shallow polluted water where wading is required (e.g. Gumuruk, where the WASH advisor used his private boots)[27].
- Improved repair kit for bladder tanks. The standard kit contains patches for repairing (circular) holes in the tank. The kit should also contain a roll of repair material (including glue), in the case the tank gets longer chamfers/holes.
- The hand washing containers (5 litres of transparent plastic to hang) do not seem to be very useful in most areas. *"People do not take them seriously*", as one advisor said. There is no culture of using such in most countries and they contain too little water, meaning they have to be filled up several times per day, easily posing a logistical challenge, as they are rarely filled according to needs. It should therefore be considered to take them out of the standard module. The exception could be to use them in hospitals/health centres where operational procedures normally are "tighter".

Add-on items that could be selected as needed:

- Some meters with 4-inch inlet pipe to the suction pump. In Gumuruk they experienced clogging of the 2"

[25] The WASH operator in Melut wrote: "*I have mostly used the Evenproducts (metal pushbutton) taps on the SWATs I have installed. Sometimes the SWATs have come with the plastic taps that push up against a foam return, but they quickly break. The kids in particular are extremely tough on them and I have found the metal push button ones are quite reliable, in fact are often stolen and on sale in the market. …*".

[26] 20 buckets were supplied to Melijo IDP Camp, and all were (claimed) broken at the Consultant's visit. The NCA WASH Advisor stated: "*This is a common problem in most places we used the bucket*".

[27] It is noted that sometimes such boots are purchased locally with the Sanitation module, like in Don Basco Camp in South Sudan.

pipe with muddy water and changed to 4". Accompanying such must also be two tapers/reduction couplings 2"-4". The supply pump must be able to handle the capacity of a 4" pipe (may be having a couple of more heavy pumps in the kit would solve such problem, as mentioned above).

- A couple of motorised deep borehole pumps could preferably be in stock for shipment on demand. NCA often rehabilitates existing deep boreholes and emptying/dewatering of such holes is sometimes required. Also motorised pumps to mount on newly drilled high capacity wells are sometimes not available locally, notably where the capacity of a handpump on the borehole does not suffice. (NCA was at the time of preparing this Final Report, in the process of establishing a Groundwater module, to be stored in Oslo. This will meet such demand).
- A large capacity pump for empting of destroyed (hand-dug) water wells should be an optional add-on. Such pump should be strong enough to pump small stones and mud, as the wells could be filled with all sorts of debris (like after the Typhoon in Tacloban, the Philippines). The necessary (few) meters of suction and pressure pipes with coupling should be supplied with the pump.
- A large spanner for dismantling & repair of handpumps should be supplied in areas where such hand pumps are to be rehabilitated (especially related to the India Mark II and Afridev pumps, commonly used in Africa).
- Kit with which one can test contents of microbiological substances (e.g. faecal coliforms). This would include incubator with battery (growing bacteria test over-night). Could be useful for testing of bacteriological water quality in boreholes, which are mostly believed to contain clean water. Should be similar to the Wagtech kit used by WHO, and also used by NCA staff in Ethiopia. Special training in the use of the kits is essential, and it must only be used by the NCA WASH advisors.
- Arsenic testing kit, only to be used by the WASH advisors in special areas and countries where arsenic is proven prevalent (e.g. Sindh State in Pakistan and countries like e.g. Bangladesh, Bolivia and Argentina).
- Salinity measuring equipment. Conductivity meter is included in the kit today, and high conductivity might *indicate* high salinity, as there is an empirical approximate correlation between the two[28]. However, in special areas with high salinity in the groundwater (brackish water), like e.g. in the coastal areas of Bangladesh and several countries in East Africa (e.g. Sudan, Somalia, Uganda), it could be useful to establish a more accurate measure of the salinity and there a simple salinity meter could also be useful (cost down to around USD 20), to be used by the WASH advisors (only).

The problem with turbid water was also specifically mentioned by the staff in Pakistan, where both the "push-up" and the plastic "push-in" taps (see above) started to leak when turbid water reached as far as the bladder tank for distribution to the tap stands. (The most preferred tap was nevertheless the one to push up!) The Consultant understands that the best way of avoiding such leaking taps is to reduce turbidity in water *before* it reaches the bladder tank. This should of course be done mostly in the pre-sedimentation step in the onion tank (after the coagulation and flocculation), but also in the filters (if such are in use!). Operating the module according "to the book" is thus essential, and sufficient training and refresher courses must be provided to keep up the awareness amongst the local operators.

In their comments to the Draft Report, NCA agrees that "*the turbid waters should not have been sent to taps and been distributed for consumption. Hence this is a mistake from the operator's side. The problem with leakages in turbid waters is not relevant*". The Consultant disagrees with the statement of this *not* being relevant, as the operators have experienced the problem and thus it is indeed relevant to be taken up. There is surely a reason for the leakage, and it *might* be the operators' lack of knowledge/understanding that causes it, but surely then that lack of operational knowledge must be dealt with (more training, making the manual clearer or may be simplifying the procedures….?).

In Pakistan there is a special challenge with the Water Supply module: the 5 m^3 standard bladder tank requires special vehicles for transport, not easily available. The staff therefore would prefer bladder tanks of smaller dimensions to easily fit on commonly used local trucks, like the ones supplied by NCA in 2010 (3.5 m^3) not any more in the standard Catalogue. Especially on "muddy" roads, smaller vehicles are used (Mazda is one type, to avoid getting stuck in the rainy season), and here tanks of around 6 feet*10 feet are preferred (around 120 ft^3=3.5 m^3). Therefore, the standard supplied 5 m^3 tanks were never used in Pakistan. The Consultant appreciates that tanks with special dimensions could be very expensive to produce in small quantities. However, obviously NCA got hold of such tanks before 2011, as this was part of the standard Catalogue! NCA could therefore may be look into the availability of purchasing such locally in the region and investigate if any other organisation supplies tank of approximately this size today, for use in Pakistan and other countries with such needs.

(Additionally, the need for water meters on the water supply side was mentioned, but this is in fact supplied as an integral part of the Water Supply module today).

[28] See e.g. http://www.fivecreeks.org/monitor/sal.shtml and http://www.appslabs.com.au/salinity.htm

3.2.4 Sanitation Module

As for the two modules above, the below list related to the Sanitation module follows from the discussion with several NCA WASH staff blended with the Consultant's own observations.

Modification of existing module:

- The latrine pit should be ventilated, amongst others to minimise foul smell. This is simple to achieve by modifying the superstructure. It should allow for a 4"/110 mm plastic pipe with a fly screen at the top to be mounted on the superstructure, and such pipe, say of length 3 meters, *could* be supplied with the kit (this is described elsewhere in the report), but is normally easy to buy locally in most places. The structure should be modified to allow for such 4" ventilation pipe to go from the pit through the superstructure into the open air. There are basically two way of doing this:
  a) The superstructure and the pit could be shifted say around 30 cm in relation to each other, allowing for the vent pipe to be mounted on the backside *outer* wall of the superstructure, going through a pre-made hole in the roof sticking out; or
  b) the vent pipe could go through pre-made holes in the squatting slab and the roof *inside* the latrine, e.g. in one of the back corners[29].
- Potties for children could be considered taken out of the standard kit, as few WASH advisors consider introduction of such potties a priority, especially in African cultures where potties are not at all common. It should be an add-on item instead, to be used in urban areas where such cultural habits are normal.
- The various materials for the dolls theatre could preferably be taken out of the standard module. There are very few examples (if any) of such being used as intended, and dolls theatre is may be not the first priority when trying to save lives in an emergency setting during the first few weeks. The idea behind it is however understandable and commendable, but it should be a possible add-on kit to be supplied on special request. Special training is needed to be able to utilise such material fully, and the WASH advisors of NCA, mostly having a technical/engineering background, are obviously not specifically geared at spending time on dolls theatre when coming to the field.

Add-on items that could be selected as needed:

- Toilets for disabled/old people. In some cases the disabled/older people with limited mobility have problems using the latrines with superstructure supplied as standard. Such special toilets could be of the chair-like design with a disposable "peepoo" bag (see Oxfam catalogue), in which the faeces are collected. It should however be emphasised that introduction of such system would require special operational procedures on site, where local hygiene promoters/family members are required to empty and dig down the bags. This means that such systems do not fit everywhere and in any case needs special awareness training and follow-up. Such toilets could also be an option for temporary campsites with very high groundwater level, and for flood plains, where polluted water from the latrine pits might flood the area.
- Sitting toilet chairs. In certain cultural settings with relatively high standard of living, people are used to sitting toilets (e.g. the Philippines and the Middle East). It is understood that with simple modifications of the standard squatting slab (straps and lockers), such sitting toilet could be mounted on the slab. NCA should, together with Lupro, develop a simple-to-use solution without delay, if not such already have been developed by another organisation (which would not be surprising). With increased crises in areas where sitting toilets are common, the demand for such design is expected to increase.
- Pour flush adaptor to standard squatting slab. This was seemingly part of the standard module earlier, but is not in the last version of the NCA Catalogue. NCA however has some in store as add-ons already. As it could be expected that more emergency situations would occur in areas with a relatively high standard of living being used to water toilets (e.g. Iraq and Middle East), it is a good idea to have an ample amount of such in stock, ready to be shipped.
- A shower/body-washing slab could be delivered with the latrine superstructure as an optional solution. In some areas (e.g. Gambella in Ethiopia was mentioned) it is *suspected* that people are using the latrines for body washing, which inevitably will fill up the pit with liquid very quickly. This slab could be made of plastic material as the standard squatting slab, but instead of the squatting hole and the foot-rests, the slab could be sloping towards a "channel" that is drained through the back wall of the superstructure. A 110 mm plastic pipe could lead the water some distance away for the washing shed, to e.g. a soak-away pit. Such solution could be an alternative where local material is not readily found to construct a traditional washing/bathing shed.
- In order to help quickly erecting an alternative washing/bathing place (in Africa), it could be useful to supply 6 poles (of metal to be hammered into the ground, or of course local trees where available) and hang up a (thick) plastic tarpaulin on the poles, width around 160-180 cm, length say 10-12 metres. (This

[29] Notably, in South Sudan some attempts had been made on site to make holes in the roof and slab, but due to lack of proper tools and craftsmanship this was not very successful. The plastic material cracked around the holes made, and as the holes were not circular leaks around them prevailed.

should be enough to construct a shed with the opening being hidden for in-sight with an L-shaped entrance).
- A sludge pump to empty septic pits. The pump should be able to suck up to 7 meters.
- More digging tools for latrines. In some cases, obviously there have been too few tools to effectively dig the required number of latrines as quickly as possible. In some cases many hands are available but the tools are too few, especially in larger camps.

Lighting of the latrine area is a never-ending discussion theme, and no organisation has found a fully satisfactory solution to this yet, in spite of this being an important security measure for women and children going to the latrine in dark. It is also realised that satisfactory solution might vary with the local environment, poverty and socio-cultural habits. The problem is that the light could easily be stolen, as people in e.g. camp areas do not even have light in their homes! There are designs with an integral battery and solar panel mounted on the roof of the latrine (e.g. the Catena type), but this is easy to steal unless modifications to the mounting device are introduced (bolts that could not be unscrewed). It is believed that a fixed sturdy metal pole with a solar panel on top and an integrated battery might be the best solution, say with one or two mounted outdoor in the latrine area. Such solution is however only suitable where the latrines are concentrated to one area (see Don Basco Camp, South Sudan), as it will be too expensive for single (double) individual household latrines spread out over a larger area. Another solution in smaller communities could be to supply each household with a solar lamp (e.g. the Bright lamp developed in Norway, cost around USD 30 for NGOs), or torch with handle/crank to produce electricity for the integrated battery. The Consultant also experienced that some camp dwellers are simply using the light on their mobile phones during dark. There seem to be no *one* solution fitting all, and the local situation must be analysed in each case.

The hand washing facility next to the latrines is also an issue being discussed, and neither here an ideal solution is found, as surely the local conditions might decide which solution is the best. There are hand soaps supplied with the standard module, and this works well as long as the soap is not stolen, which is often the case, at least in Africa. It does not help much to use "soap on a rope", as this is also easy to steel. Some uses mesh nets in which the soap is placed. Some are cutting the soap in small pieces, not too attractive to steal for household use and clothes washing (like in Melijo IDP Camp, South Sudan). A good solution might be to mix detergent/disinfectants with the water in the hand-washing container, and have a lockable lid on such containers. (This was done with 5% chlorine solution directly in the container for hand washing in Don Basco Camp, South Sudan, due to the fear of Cholera). This however requires awareness raising of the hygiene /mobilisers being responsible for filling water and cleaning the latrine, and discipline in this staff doing their job properly. (The incentives paid to them might be a motivating factor here). Another issue connected to this solution is that people in most cases have to rinse their hands in clean water afterwards to get rid of the fatty acids/lipids in the soap, so another bucket of water is needed by the latrines, or people can rinse their hands at home if reasonably close to the latrines?). The Consultant believes that the solution chosen must be based on an assessment of many factors, where e.g. the previous expereine with soap disappearing, price and availability of hand soap and liquid soaps; availability of clean water; and need to rinsing after washing, also depending on the "mildness" of the soap mixed with water.

(The issue of supplying support structure for the latrine pit in areas with collapsible soil (e.g. black cotton soil) was extensively discussion with the Consultant during the field visits). There are many ways of doing this, and testing of various materials has been carried out by e.g. Oxfam. In most cases it is possible to buy corrugated iron sheets locally to sustain the pit, and such solution should be used when possible. Also other local material, including wood, could be used, as this is a temporary measure anyway (wood is eaten by termites). Another way is to modify the design of the pit, by introducing sloping sides, but this inevitably leads to less pit volume. The Consultant believes that it is *not* required to have specific material in the kit to be shipped to sustain the latrine pit.)

3.2.5 Hygiene Module

As for the two modules above, the below list related to the Hygiene module follows from the discussion with several NCA WASH staff blended with the Consultant's own observations.

Modification of existing module
- The Cloth Multipurpose is simply a *towel* and should be named as such. Is says that it "*is mainly supplied for the purpose of women sanitary protection*", but as the cloth has edges and seams all around, it is not suitable for cutting into smaller pieces (as it will be chipped through use), and it is too large for using it for sanitary purpose without cutting. It is a cloth for drying a body when having bathed.
- Obviously, more training of the WASH advisors (both international and national) in hygiene promotion, (the WASH advisor in South Sudan specifically mentioned this), is required. This is especially relevant when the advisors should on-train to the local hygiene promoters/mobilisers. It seems that the advisors

largely focus on the water treatment/supply side while in the field (being engineers), but the hygiene/sanitation is as important.
- Is Oral Rehydration Salt required as standard in the module? With a few exceptions (Pakistan being one and one camp in South Sudan being another) the ORS bags are not normally given out to the population by the WASH staff, unless in areas with Cholera. Some WASH staff said they normally give it away to medical staff for them to keep it a give out in need. As it is assumed that such medical staff always are present in areas with Cholera, the Consultant believes that such staff are best suited to hand it out. It could be an add-on case.

Add-on items that could be selected as needed:
- A small portable projector on battery. A couple of these could be kept in the NCA office and the WASH advisors in need (e.g. the ones doing hygiene awareness raising) could simply bring one with them in the hand luggage when going to the field. This is useful where there is no generator electricity readily available on site where the community meetings should be held.
- Sanitary pads for women should be an add-on item. Such washable pads could in some places be bought locally (e.g. South Sudan), but where this is not possible it could be supplied with the module. (the multi-purpose cloth is not suitable for such use).
- Washable cotton nickers/underpants for women should also be an add-on item. This should preferably be supplied with the sanitary pads, as in some cultures women are not wearing nickers and what should hold the pad up then?

(One advisor mentioned that there is a need to produce information material adapted to the culture in which the NCA module will work, and that such material could be produced beforehand. In fact, such material is already in the present module (e.g. the CD "Where there is not artist"/"WASH. Visual Aids Library"). It also contains a digital camera and a laminator to make posters in local language with illustrations from the area, easy recognisable to the target groups. So additional material should not be necessary.)

3.2.6 Other Relevant Issues Related to the WASH-Kit

Below are mentioned some other issues of *various kinds* that were taken up with the Consultant during the evaluation, or observed by the Consultant himself in the field, and that naturally do *not* belong in any of the above sections:

a) As a standard, all the books, booklets and information material being supplied with the kit (identical hardware following all the modules) should also be supplied on a memory stick for the WASH advisors to bring with them in their laptops when going to the field. (It is understood that such stick was supplied earlier, but that the procedure stopped). Additionally, the hardware books should follow the modules for easy reference in the field, as today.

b) Such memory stick with books and reference material, should also include templates for the e.g. progress reporting from the field, as today each advisor has his/her own format. Such format could have a simple "fill-in modality" so that all advisors are reporting on the same issues from the field.

c) A couple of magnetic NCA stickers to place on cars could preferably be sent with the advisors when they go to the field the first time. It always takes some time until the NCA cars are permanently equipped with logo, (unless where NCA has a presence already). Knowing that the competition in the emergency business is stiff, it is important for NCA to show their presence in an area already from the beginning of an emergency.

d) Hand-held GPSs should be kept in the NCA HQs and could upon request be sent with the WASH advisors when going into the field. Positioning of camps, villages, water sources, latrines and other useful infrastructure will ease operations later on. It should however be noted that in some countries, the use of GPS is not allowed (e.g. Pakistan) and this has to be strictly respected. In such cases, the discreet use of the GPS function in the smart phones could be an alternative.

e) Posters of more general nature, with the NCA/ACT logos on, in addition to the local partner's name and logo. Such could be used showing the villagers general information in local language on who NCA is, who the local partner is, and who is doing what. This will include name of the advisors and telephone numbers where people can ring inn their questions and/or complaints. (A good example is shown in *Appendix 5*, where NCA's local partner RDF has made such poster in a village). This would have a clear reference to Human Accountability Partnership (HAP), with reference to the "WASH Accountability Resources" book, published by the Global WASH Cluster (2009). Such posters could be updated regularly at site. The Hygiene module contains material to make such posters on site (see above), but the other modules do not contain such materials (laminators, digital cameras, etc.). It could therefore be an add-on item for the other modules also.

f) Care should be taken to label the cases of the various modules properly. It seems that the most durable

method is to staple paper sheets in protective plastic to the cases, on at least two sides. It should also be considered to write the reference number directly on the wooden cases with permanent ink. In case paper labels are glued directly to the cases, proper glue must be used.

g) The Consultant has quickly reviewed two manuals for the Water Treatment module: "*Water treatment unit. EW402/403D. Operation and Maintenance Manual*", by Scan-Water AS (not dated); and "*Water purification unit on skid. Model: LuPro WT 4-6 (Split-skid) …. User's manual. Spare parts*", by Lunner Produkter AS (not dated). None of the WASH staff interviewed during the Evaluation could say which one is the valid one today, or if both are. Both manuals are richly illustrated with figures and photos (Lupro), and have slightly different focus. The first one also have some sections with more general introduction to water treatment in emergencies, drinking water standards, etc., whereas the latter has more illustrations of practical issues related to O&M. As such both could be useful in the field. It is however noted that the Lupro manual in some parts contains sub-standard English, e.g. using terminology that is not very common on some parts. The manual would clearly therefore benefit form a "language-wash" of one of the WASH advisors who knows the common terminology used.

h) There is no standardised and centralised MIS system for the equipment in store in South Sudan. The local Logistics Dept. pointed at the WASH Advisor and claimed that he was required to keep an updated record on the materials in store. The Consultant will not interfere in the distribution of the responsibilities in this case, but only emphasise that it is vulnerable to have such information stored only in *one* laptop, that easily could be stolen or destroyed. A backup system of important files related to the WASH-kits should be established, for example in drop-box or one of the other cloud-based storing possibilities available today for a "cheap penny". Such system could easily by used by all the NCA Offices, with access by the Logistics Dept. in the NCA HQs to get easy overview of what is available at any time around the world.

i) Five years have lapsed since the Stockpiling Project under GWC came to a halt, and the various members continued with their own WASH-kits of different makes but with largely the same components. May be it is time now for the working group to sit down again and share lessons learned and experience related to the use of the kits? As with the above suggestions on how to modify the standard modules and whether add-on item could be practical, surely the most prominent organisations have many suggestions on how to modify and improve their modules. The Consultant would therefore suggest that a workshop is held (with a practical number of participants, meaning not too big) where such experience could be shared. The GWC Coordinator in Geneva was surely in favour of such meeting. May be NCA could take the initiative to such workshop, also being a good opportunity to promote own modules?

j) The Consultant discussed in length the contents of the kit related to local supplementary procurement with the stakeholders. Except for in a very few cases, the Philippines in 2013 being one, the Consultant realises that in general a lot of "normal" everyday items can be purchased locally, either in the nearest town to the emergency or at least in the country. This has been the case for example in South Sudan, where several items in the Hygiene module could be purchased locally (soap, sanitary pads, women underwear, collapsible water containers, mosquito nets, etc.). Also in Pakistan most such smaller items were available, and in fact were procured, on local markets. The challenge of course is to avoid distorting the local market situation by creating a sudden demand for certain items. This might lead to a rise in prices when local producers/shop-owners understand that their commodity is in urgent demand, and this will again make the normal local consumer suffer. This situation must be avoided by undertaking a simple market analyses as an integral part of the rapid assessment prior to shipment of the kits[30]. NCA's own staff must always undertake this. Preferably, NCA should have an overview of possible local suppliers of useful goods in selected countries already *prior* to the emergency situation arising, dealt with below.

k) It is therefore strongly advisable that NCA, in countries and areas where there have been frequent emergency situations earlier, and where such situations are expected to occur again with large probability, undertakes simple preparedness survey/market assessments. It is believed that such market assessment should mainly include the mapping of suppliers and goods to be purchased locally, in the nearest towns and regionally. However, it should also include getting an overview of the international and national organisations that already are established in the area and in the country. This would additionally include shortlisting the organisations that NCA preferably could cooperate with if needs arise. Such organisations should have a critical minimum of staff in operation and basic infrastructure in

[30] NCA in their comments to the Draft Report writes: "*Locally Procurement of items to the Hygiene module, is highlighted. However, on a large scale emergency – like in the Philippines, the market was "vacuum-cleaned" for such items by the local population. Even UNICEF had to procure such items from Thailand. An assessment - when access to the disaster area is highly limited is rather theoretical and would hamper the immediate distribution of relief. In a recovery phase, this would be more relevant*". The Consultant of course concurs with this statement.

place to be able to introduce NCA WASH staff to the required locations quickly after an emergency has arisen, and could maintain an overview of, or at least have an overview of *where* to find, suitable local WASH staff that can assist as required.

The Consultant clearly understands that such prepared intelligence exercise cannot be undertaken in every possible corner of the world where an emergency *might* happen. It is therefore recommended that NCA should prioritise some areas, and countries, in which they have/will have a comparative advantage to work as compared to other NGOs. This might mean countries in which NCA is already established or has already been working. It might however also mean that NCA might *exclude* some areas, deciding *not* to participate in the rush when NGOs pour in to certain countries following a disaster. You simply cannot win them all! (Geographical concentration is also understood to be in line with the new NCA GL Strategy)

l) All the WASH advisors, international and national alike, should have regular refresher courses on the contents and use of the various modules.

3.3 NCA's Internal Decision Processes

3.3.1 The NCA Organisation

In 2012, NCA underwent an organisational refurbishment, moving from a "traditional" hierarchical structure into a more flat matrix structure. Before this time, the WASH Advisor had been part of the Emergency Division but now the advisors are part of the WASH and Humanitarian Response Team ("WASH & HumRes Team" or "the Team") under the Department for International Programmes, which is organised in "area and programme teams" (*Figure 3.2* in *Appendix 1* refers). Before 2012 there were only two permanently employed staff dealing with WASH at the NCA HQs, with the WASH advisors in the field coming from the Emergency Roster. From primo 2013, the Team was established with its own Team Leader (TL, coming on board in April 2013). The first TL had the position up to August 2013, when a new TL took over the functions up to October 2014, at which time a third TL took over (the present one).

Since the establishment of the Team, more permanent staff has been employed at the HQs, and at present (1st quarter 2015), the WASH & HumRes Team comprises nine persons plus the TL. As seen in *Figure 3.3* in *Appendix 1*, two advisors are specifically dedicated to long-term/country development strategies (of which one has been on the NCA HQs team since 2006, and the other from March 2014). In addition, there are two technical WASH emergency advisors (employed in January 2013 and June 2014 respectively) and one advisor specialised in hygiene promotion related to the sanitation/hygiene education activities (having a 2-year engagement at the NCA HQs, starting from January 2015). Additionally in the Team there is one Humanitarian Emergency Advisor (dealing with global networks and ACT focal point); two advisors within emergency response (working with WASH programming, being team leaders in the field, but not within technical sector); and finally one advisor on method and conflict sensitivity issues.

The Consultant observed that even with the significantly strengthened staff in the WASH and Humanitarian Response Team the last year; some staff expressed that they are too under-staffed to take care of all emerging tasks related to WASH that they really wanted to get involved in, in a growing emergency market. With the relatively high number of emergency situations around the world in which NCA are involved, the staff has been busy "fighting fires", and there has been little time to look into long-term strategies (even for the two staff dedicated to such tasks). Notably, the Evaluation in hand should initially have been undertaken by internal NCA staff, but due to other urgencies it has been postponed again and again since primo 2013, and was finally contracted to an external evaluator.

It is noted that the emergency positions in the local NCA offices in various countries are not directly linked with the WASH & HumRes Team. According to NCA these offices have Emergency Coordinators and WASH Emergency Advisors, reporting to the respective NCA Representative. The Team Leader however has the responsibility for the four staff "seconded" to the Global WASH Cluster (formally employed in NCA) and other staff employed in emergency response teams lead by the "Oslo-team" operationally (like in the Philippines - 2013/2014, Liberia - 2012, Northern Iraq - 2014/2015, Libya/Tunisia - 2011, Turkey/North Syria- 2013, etc.)

3.3.2 Introduction to NCA's Present Decision Procedures Related to the WASH-Kit

Figure 3.4 in *Appendix 1* is attempting to capture the main steps in the process of releasing and using the WASH-kits. It should be emphasised that the figure does not capture *all* possible kind of variations to the process, but is only giving the most common steps as they are explained to the Consultant by various NCA staff.

Following an arising emergency situation, NCA will (by default) consider whether they can be of assistance. This might be based on a concrete request from the country NCA office, a national partner organisation, one of the ACT partners, or simply from UNHCR; and could be accompanied by a quick assessment of the prevalent situation on site done by these applicants. In any case, the appointed advisor from the WASH & HumRes Team to deal with the matter will, through a variety of communication means, collect as much information as possible at this early stage, as basis for a decision. The NCA WASH & HumRes Team will then jointly discuss the situation, and the NCA Emergency Committee Meeting, where the TL is member, will take the decision on support. The TL will organise the appropriate response of the WASH & HumRes Team accordingly, and either send an advisor to the field to undertake a rapid assessment of the situation, revealing the needs, or will base a decision to send the WASH kit (or individual modules) on assessments by others, notably the UNHCR. The WASH-kit(s) are then shipped from one of the warehouses where they at present are stored (Oslo, Dubai or Malaysia), normally by air when urgent, alternatively by boat if the emergency situation is gradually emerging. The kits are given as in-kind contribution and have been pre-paid by the Norwegian Government (MFA) via NOREPS.

In case of urgency, or if the country in which the kits should be used have cumbersome and bureaucratic clearing procedures, and NCA does not have a local partner to assist, NCA HQs might send a person from the Logistics Dept. to facilitate clearance. This was e.g. the case in the Philippines in 2013, which surely made the clearance going faster at Cebu airport, and which secured that most of the equipment finally was found in the chaos and eventually reached the beneficiaries[31]. Also in Turkey in 2012 (Syrian refugees), NCA HQs sent a logistics person who undoubtedly also here facilitated the clearance process.

Once the WASH-kit is reported on site, NCA HQs send a couple of WASH advisor to assist in installing and commissioning the kits. NCA is also sending advisors when UNHCR is the consignee of the kits (see below), a procedure followed for all the four modules (not only the Water Treatment and Water Supply modules). Once the equipment is installed and is operating satisfactory, the NCA advisors are leaving the responsibility to local operators (NCA partners or UNHCR partners). It is noted that setting up the Water Treatment and Water Supply modules might take a day or two, with a couple of days of supervised operations; whereas the installation of latrines in the Sanitation module will inevitable take longer, and the hygiene promotion of natural reasons will take even more time (issues re-visited several times). The life-span of the modules are normally up to around 6 months, but the equipment could preferably be used longer, especially where there are no other facilities to take over (e.g. permanent water supply systems and latrines.)

When the emergency operations have ended, NCA will clean and pack their own equipment and store it in a safe place, normally with their partners (e.g. like in Pakistan). If the WASH-kits are given to UNHCR, who again have used other organisations to operate them, the kits are “gone forever”, and the whereabouts normally not accounted for. By giving the kits away to UNHCR NCA by default also loses control of the kits and overview of the later locations, if it had not been for the fact that NCA in the Agreement with UNHCR is required to get such report (see below).

3.3.3 Proposal for Improved NCA WASH-Kit Release Procedures

The procedures described above are based on experience and normal modus operandi in the NCA HQs, and as such there should be no reason to make significant changes to the procedures. NCA’s Emergency Committee Meeting comprises leaders of the relevant departments in NCA, all having the required background and sound ability to assess a prevailing emergency situation. This group would also be able to “take one step back” and un-biasedly consider the need for WASH-kits’ release, without being accused of pursuing own professional/sector interest, like a WASH group solely made up of WASH advisors surely easily *could* have been (conflict of interest).

There is however one issue that has become clear to the Consultant during the Evaluation: In a situation where NCA Emergency Committee Meeting is in favour of shipping the WASH-kit, or have received a concrete request from UNHCR (or others) to send such kit, NCA must obsoletely undertake its own assessment of the needs on site, and *not* trust the assessment from another organisation (UNHCR in particular). Even if UNHCR is “screaming “wolf””, stressing that the kit should have been sent “yesterday”, NCA must do an assessment on site with own staff. Such staff could be experienced WASH staff already being in the area or a couple of the WASH advisors from Oslo, either from the HQs or from amongst the Emergency Roster.

[31] The kits had been dropped off at various places around the runway, and by physically searching the NCA staff found the equipment. In total the following equipment dissapeared in the chaos at the airport (or was stolen, intentionally or unintentionally): NADCC tablets/Oral Rehydration Salt; bladder tank kit; and a Water Treatment module.

The reason for this strong recommendation is also explained elsewhere in the report, and is basically due to the fact that an outside organisation asking for an in-kind gift, hardly has the required ownership to the equipment, and will inevitably not treat the equipment with the same care as would NCA itself or one of the close NCA partners ("*after a couple of months the gift is forgotten*", as one stakeholder expressed it). It is also too easy to ask for complete kits in cases where actually a couple of the modules are needed. NCA's own staff would reveal such needs in a much more unbiased and realistic way.

In general, the Consultant would in principle advice against giving kits to UNHCR at all, as their record of accountability so far is far below what could be expected. It is however realised that such recommendation is politically inappropriate, and is probably impossible to implement in practical terms. In any case, the minimum requirement when deciding to give WASH-kits to UNHCR should be, in prioritised order:

- NCA, with local partners, should preferably be the implementation partner of UNHCR, if they have the capacity.
- If not being a partner, NCA must in any case send own staff to assess the needs at site, and have a firm saying in which modules should be sent to the area. NCA should never send the full WASH-kit (four modules) without a proper assessment, even if UNHCR is asking for it.

3.4 The WASH-Kit Contracts between NCA and Recipient Bodies

3.4.1 The Legal Framework Between NCA and UNHCR

a) The Framework Agreement

The "Framework Agreement for Operational Partnership" between UNHCR and NCA is signed 21 March 2001, covering all sectors of emergency. Although this agreement in principle is still valid, the document has no practical implication for today's cooperation, as it is formulated in very general non-controversial terms. The document e.g. states *"… the Agreement partners confirm their common commitment to putting in place, at the field and headquarters level, mechanisms to ensure the effectiveness of the Partnership*". The Framework Agreement also emphasises the common commitment to *"….improved mechanisms for …… information sharing; …*".

b) The Memorandum of Understanding

In 2007 (date unknown, the copy given to the Consultant was not the final signed version) NCA and UNHCR signed a Memorandum of Understanding (MoU), which was in specific related to WATSAN (water and sanitation) sector *"… with respect to the standby capacity and mobilisation of NCA's water and sanitation package*", having a clear reference to the principles in the Framework Agreement. Of other interesting clauses in the MoU are:

- "*A joint field operational review shall be carried out by NCA and UNHCR during or at the end of each operation, with the view to identify areas for improvements*". Notably, no such reviews have ever taken place so far, at least to the knowledge of the Consultant.
- The NCA equipment in stock should cover up to 20,000 people. Notably today, NCA has earmarked 3 kits for 5,000 people each in the warehouses (15,000 people in total).
- "*UNHCR and NCA shall ensure full collaboration …….. including possible participation in contingency planning exercises and in rapid needs assessment missions to define the scope…..*"; and in Annex 2: *"…[UNHCR] could request the participation of an expert from NCA to join the field assessment team an review the needs to prepare towards a deployment*". According to the knowledge of the Consultant UNHCR has not *specifically* requested such direct participation during the last four years, rather than where NCA staff by coincident has been present in the country.
- "*NCA shall mobilise the WATSAN Package in the field along with the necessary technical and non-technical staff support to manage and operate …*". NCA has clearly honoured this clause.
- "*NCA shall …….. establish a periodic monitoring system to assess the gaps in the provision of emergency WATSAN services and for eventual handover to an NGO responsible for the overall management of the respective site where applicable*". This has hardly been applicable where UNHCR has been given the kits as a gift and taken the whole responsibility for operations.
- "*UNHCR and NCA shall each be responsible for their own staff and other personnel…..*". See similar clause in the project agreements below.

It is said that the MoU should be in force for two years and then could be extended. At the time of the Evaluation, the MoU has been in force for around eight years, but it is not known to what degree the parties have legally and formally extended the MoU. In March 2015, during this Evaluation, NCA met with UNHCR in order to discuss a new MoU. At the time of submitting the Evaluation Report, the Consultant is not known with the outcome of such discussions, but surely agrees that it was high time to revise the MoU and make it *en par* with the prevalent procedures and modus operandi today. It is also noted that this MoU with NCA was

the first one used by UNHCR. Today, MoUs with other partners are also being negotiated based on the same model as with NCA.

c) Agreement for individual WASH-kits delivered to UNHCR

The Consultant has reviewed two legal documents:

- An "Agreement" related to the two WASH-kits donated to Gambella camp in Ethiopia, valid February-August 2014.
- An "MoU" related to two WASH-kits to camps in Dohuk in Kurdistan, Iraq, valid September-December 2014.

The two documents are to a large degree identical, obviously based on a template used by NCA the last years, but it must be a "slip of the pen" that one is referred to as an "MoU". An MoU is a document reflecting the *overall* will and intention to do something together, and is the first document that two organisations, or e.g. governments, sign as a start-up of cooperation. As such, an MoU is a much more general document than an *agreement* dealing with concrete delivery of listed equipment. In this case *agreement* is thus the correct term to be used[32].

The following issues are noted regarding these agreements:

- The agreements are signed between NCA HQs and the country offices of UNHCR. The UNHCR HQs in Geneva has been involved in the decisions behind the agreements and the contents of the kits, but is clearly *not* a signatory to the documents.
- "*Areas of operation are decided upon through field assessment carried out by UNHCR together with NCA*". It is understood to be exceptional that NCA staff participates in the joint assessment, however that should be an absolute requirement by NCA. No kit should be send without NCA's own staff having assessed the needs at site.
- NCA will deploy 1-2 WASH advisor(s) for a certain period of time for technical assistance to UNHCR. "*Duties will include installation of equipment and training of UNHCR WASH partners to follow up on an adequate use of the WASH-kits equipment and be available for technical assistance as called upon by the UNHCR WASH officers*" (Ethiopia Agreement). UNHCR is not implementing in the field but contracts implementing partners (mainly international organisations) working in the area (or being ready to work in the area), who again have national implementing partners. In Ethiopia, as an example, the partners of UNHCR were not aware of the detailed clauses in the agreement between UNHCR and NCA, and questioned NCA staff's presence in the Gambella area. Such behaviour is utterly unacceptable, and UNHCR must make sure that all their partners are made aware of the contents of the agreement, and honour the clauses accordingly.

  It is also noted that the agreement (Item 7) distinguishes between "*UNHCR WASH partners*" (to be trained) and "*UNHCR WASH officers*", where the latter is understood to be the permanently employed staff of UNHCR. Anything else would be unacceptable to the NCA staff, as they should of course not be "*called upon*" by staff from other NGOs, internationals or nationals alike, for technical assistance. This could in fact be made much clearer in the agreement text and it should also be specified in more detail what sort of "*technical assistance*" UNHCR staff can call NCA staff to undertake.

  Another point related to this issue is that NCA should require being an implementing partner to UNHCR in the area where NCA is supplying kits, if NCA and partners have the capacity to do this. The Consultant would *ideally*, although again probably not being "appropriate politically", advice NCA against giving away any kits to UNHCR without being able, in one way or another, to follow the operations of the kit all-through and have a saying in the use of it *after* the emergency situation has ended (storage, equipment to be given away, use somewhere else, etc.). This means that NCA staff should, if giving kits away to UNHCR, be more obliged to follow up *beyond* the installation and commissioning that is listed in the Agreement.
- In the case of Ethiopia, a detailed Terms of Reference (ToR, not dated!) was also attached and referred to in the agreement. The ToR gives more background to the prevalent refugee situation, outlines the preferred qualifications of the staff to be provided by NCA, but contain no more significant details as to the activities to be undertaken. Amongst the outputs from the NCA WASH advisors' assistance is also mentioned the submission of a *"… final report on the installation of the kit and hand-over process*". As far as the Consultant know, all NCA staff are preparing such final reports at the end of their field work, in addition to weekly progress reports underway.

[32] "Contract" could also in principle have been used, but that is construed as an even more binding document to the parties.

- The agreement states "*UNHCR will be responsible for providing field accommodation and transportation*". The experience of the NCA staff in Gambella was that they got the last priority amongst the WASH staff (UNHCR and their partners alike), both when it came to accommodation and transport ("*We did not know from one day to the next where we should sleep at night. Luckily some NHCR staff had malaria and was away so we could use their beds. The whole situation was very uncertain and unpleasant*". "*We always were given last priority on transport, and only when the other UNHCR/partner staff did not need transport*"). This is of course totally unacceptable, especially in an area where there are limited accommodation possibilities outside the UN system possibilities and where vehicle transport is *a must* for moving around at all. The agreement should specify more clearly what this statement implies, and emphasise that the NCA personnel will be given *the same priority*, both for accommodation and transport, as the UNHCR WASH staff and their partners. There should also be clearly said in the agreement which channels to use for complaints when the agreement is not honoured ("hot-lines", names and numbers).
- The agreement says: "*UNHCR will be responsible for reporting on the project to NCA. Monitoring and progress reports should be submitted to NCA. UNHCR will report on the operation and results after 3 and 6 months operation and after the end of the operation. The end of mission report should include plans for future usage of the kits and a list of destroyed equipment. The report must also include information about the location of the WASH kits and sex and age disaggregated data wherever applicable*".

  The last part of the last sentence regarding data should be better specified, as it is not defined what kind of data is required, most probably being number of people supplied, assisted or benefitting from the use of the kits, broken down on age and gender. It is however, in all fairness' sake, not easy to collect such data, at least in areas where several organisations are supplying services of similar and/or identical kind. Ideally, such reliable data would be very good to have, but the Consultant believes that it is unrealistic to expect it, although it is stated in the agreement.

  However, the reporting mentioned is much more important, and according to UNHCR themselves they have not submitted reports for any of the kits supplied by NCA, except for one report on the two kits to Chad in 2013 (in French, which could not be read by NCA staff, having limited language knowledge). This is indeed serious, and it seems that NCA has *not reminded/requested* UNHCR of such missing reports either. In fact, NCA staff interviewed by the Consultant believed that reports "*may have been submitted*", or even "*had been submitted*", but the ones that could confirm this were never present in the office at the time. There is no Management Information System (MIS) in NCA that could tell whether such reports, which is notably a *legal* obligation of NCA's partner, had been submitted or not. Needless to say, this is a weakness in the NCA system that should be improved.

  The Consultant believes that there is no use having a clause in an agreement that has no practical implications. Either the clause of reporting should be taken out or it should be much more heavily enforced. It is believed that in the name of accountability for Norwegian "taxpayers money", UNHCR must take on their obligation of reporting on the kits, and NCA should instigate a system of requesting such reports as indicated in the agreement.

  Unfortunately, experience so far with trying in 2014 to find out what happened to the kits given to UNHCR in South Sudan (supplied in 2013), indeed gives bleak prospects. Correspondence went to and fro for almost one year before NCA got a certain overview (although not complete) of what was left of the UNHCR kits, and which items could be given back to NCA for their use. Obviously UNHCR does not have a proper MIS system for the equipment either, although they keep some record of what is going in and out of their stores in the country, but obviously by far sufficient to trace items, especially those that have been requested by UNHCR at country or central level.

d) Commitment letter

In addition to the agreements, UNHCR country office also submit a "Commitment Letter" to NCA HQs, simply confirming their gratitude of receiving the kits as a gift, and repeating their obligation of taking charge of the goods upon arrival (customs clearance, storage, and transport). The letter also gives the correct address of UNHCR in the country as consignee of the goods. The Consultant frankly does not really understand the purpose of this letter, as the agreement should have sufficed as a legal binding document alone.

3.4.2 The Legal Framework with Other Recipient Bodies

For the WASH-kits that NCA uses for own operations, there are agreements signed with cooperating national partners, but there is obviously no standard format for such national agreements, evidenced by the contracts received from South Sudan and Pakistan.

In South Sudan, the Consultant reviewed the "*NCA Partner's Project Contract Agreement - PCA*" with CARD

(dated June 2014) for assistance to the Melijo IDP camp. (Leave alone the fact that a "*contract agreement*" does not make very much sense linguistically, as it is a double explanation of what it is). The agreement looks relevant as it contains all the required sections: objectives, NCA obligations, Implementing Partner's (IP's) obligations, joint obligations, project duration, reporting, special conditions, terms of payment, force majeure, termination, settlements of disputes, etc.). Another contract format was however used for the *continuation* of the services provided by CARD in the camp (dated November 2014), named "*Project Agreement*". This agreement contains basically the same issues as the previous agreement, but has been refined with a more "professional" outline and appearance. There should be no need to make significant adjustments to this project agreement format, which could also preferably be used as template for other countries.

The Consultant also received a copy of the agreement NCA signed with its partner in Pakistan, RDF, from October 2012. This document is termed a "MoU", which must also in this case be a "slip of the pen" (as "Project Agreement" is this correct term to be used, see above). The agreement deals with a total of five kits of which three had been deployed earlier, and the format of the agreement is assumed to be somewhat obsolete, although it contained the main issues at stake at the time of signature and have functioned well between good trustworthy partners so far. (It is reminded that all such agreements must have the signatories' names in block letters under the signatures). Again, it is recommended that the last format used in South Sudan is uses as a common template for all agreements of NCA in all countries.