EXECUTIVE SUMMARY

In 2013, WASH continued to play a critical role before, during and after humanitarian crises. As a result, UNICEF and sector partners contributed to saving the lives of people in multiple emergencies where national capacity continues to lag behind the growing needs for disaster risk reduction (DRR) and humanitarian preparedness and response.

Through internal and external surge deployment of 111 professionals to 63 emergencies, UNICEF addressed the urgent water and sanitation needs of over 31 million people whose lives had been affected by natural or conflict-related shocks. An estimated 24.3 million people were provided access to safe water through interventions that improved existing water supplies and created new supplies where needed; humanitarian actions supported an estimated 7.4 million people with vital sanitation services; 2.7 million children were provided access to safe water, sanitation and hygiene facilities in their learning environments; and 13.1 million people benefited from access to soap and hand washing facilities.

UNICEF, through advocacy and partnerships in the broader WASH sector, continued to work on bridging the gap between humanitarian and development WASH service provision, and promoting system sustainability and community resilience. As Global Cluster Lead Agency and a key member of the WASH cluster Strategy Advisory Group, UNICEF advocated for a focus on building national capacity for humanitarian WASH coordination, preparedness and response in urban settings. These joint efforts gained momentum in 2013 with all partners fully engaged to define a risk and resilience informed roadmap for action.

In 2013, UNICEF spent US$212 million for WASH humanitarian preparedness, response and coordination, representing 45% of total annual WASH expenditure. Global spending in WASH grew by 39% in 2013, making this the high-
est annual expenditure ever. The value of UNICEF humanitarian WASH procurement (excluding internal freight) was US$91 million, of which US$55 million was through global (Supply Division) and country-to-country channels. Local (in-country) procurement rose to US$36 million.

Rollout of the comprehensive UNICEF Cholera Toolkit in English and French played a key role in global response to cholera prevention and outbreak response. The Cholera Support Team, led by WASH and Health teams, coordinated technical advice, advocacy and support to all levels. In 2014, strengthening of regional initiatives managed by WCARO and ESARO is expected to improve capacity for prevention, coordination and response in countries where cholera is endemic.

New innovations, technologies and best process and management practices to address WASH sector challenges in humanitarian action were scaled up in 2013. Initiatives included:

- Continued promotion of pre-certified agreements and use of letters of cooperation for implementation;
- Vouchers to scale and speed up interventions;
- Re-design of the jerry can;
- Development of a simple e-coli test;
- Development of a modified latrine slab for disabled individuals;
- Redefinition of UNICEF multi sectoral support to hygiene and menstrual hygiene management;
- Continued support to broader sectoral initiatives including the Bill and Melinda Gates Foundation work on sanitation and the DFID Humanitarian Innovation Fund.
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The contexts of humanitarian crises are changing as a result of increased frequency and complexity, and the effects of these crises continue to be felt most acutely by children. In 2013, the conflict in the Syrian Arab Republic and the sub-region had grave impacts on the lives of 5.5 million children. Of the 14 million people affected by Typhoon Haiyan in the Philippines, 5.9 million were children, and in the Central African Republic (CAR), half of the entire population of 4.6 million experiencing the direct or indirect effects of the crisis are children. In South Sudan, a total of 345,661 children under 18 years have been affected since the conflict began.

Growing urbanization presents new challenges. Humanitarian actors in all sectors, especially WASH, need to increase capacity for appropriate lifesaving action, and stronger linkages with non-humanitarian urban stakeholders will help to optimise design of interventions and maximise the impact of humanitarian action.

UNICEF, recognising these challenges and the need for strategic partnerships and innovative approaches to addressing the challenges, launched the
‘Strengthening Humanitarian Action’ (SHA) initiative in 2013. SHA seeks to ensure that humanitarian actions are adapted to emerging operational contexts, that humanitarian partnerships are strengthened and expanded, and that context-specific structural actions are undertaken and investments are made that will improve coordination, preparedness and response.

The WASH sector made progress in advocating for equality, resilience, sustainability, and consideration of cross-cutting issues such as gender and disability during and after humanitarian crises in 2013. There is widespread recognition of the link between WASH and peace-building, urban and peri-urban service provision, community participation and engagement at all levels of humanitarian WASH interventions, especially sanitation and hygiene promotion.

Throughout the year, WASH services in schools, health and nutrition facilities, and safe spaces in humanitarian settings continued to offer key entry points for UNICEF programmatic interventions. More robust information and knowledge management and national commitments to humanitarian coordination, preparedness and response are essential to progress towards universal access to WASH for populations living in unstable and disaster-prone countries.

Activation of three ‘Level 3’ (L3) humanitarian actions in Syria, the Philippines and CAR in 2013 resulted in extremely high demand for emergency internal redeployment of UNICEF WASH staff. At the same time, these large-scale responses underlined the need to urgently increase external surge capacity and partnership options in order to avoid compromising existing programme commitments. Improvement in inter- and intra-agency collaboration is required to effectively and efficiently meet corporate accountability considering the scale, frequency and complexity of humanitarian crises. UNICEF is exploring expansion of existing systems and identification of new sources through which to meet humanitarian surge needs in a timely manner.

The UNICEF WASH component of the Strategic Plan 2014-2017 seeks to bridge the development and humanitarian gap with a focus on sustaining WASH results and outcomes; ensuring acceptable quality and quantity of water for children and families; and elimination of open defecation.
During 2013, UNICEF was a major contributor to humanitarian action in the WASH sector under the Corporate Emergency Activation Procedures that triggered priority global responses in three L3 emergencies in Syria, the Philippines and CAR, each differing widely in scope and scale. UNICEF humanitarian WASH also provided technical assistance and other important resources, and facilitated coordination of sector partners for those large-scale events in addition to responding to more than 60 humanitarian situations globally. Key to the UNICEF humanitarian WASH response was the procurement and distribution of critical supplies (see Section 7 on supply).

Using equity- and rights-based approaches, UNICEF WASH responses in 2013 included lifesaving interventions as well as long-term interventions for displaced people in camps and vulnerable people in host communities, in rural and urban settings, disrupted by crisis. UNICEF WASH interventions provided access to safe water to 24.3 million
people affected by humanitarian crises (99% of people targeted for support in water supply). In CAR, more than 70 water points were rehabilitated, and the national water company, the Water Distribution Society, received chemicals that supported water treatment in Bangui benefiting over 300,000 people. This support was particularly valuable after the coup d’état when service delivery systems collapsed. In South Sudan, UNICEF provided safe drinking water to over 570,500 people through temporary services such as water trucking, surface water treatment systems and critical supplies for safe water storage and treatment at point of use. In Syria, UNICEF supported NGO and government partners to reach over 440,000 displaced people with safe drinking water through humanitarian interventions.

UNICEF also supported 7.4 million people in humanitarian situations with access to appropriately designed toilets, providing privacy, safety and dignity especially for girls and women, and helping to prevent sanitation- and hygiene-related diseases. 13.1 million people also gained access to soap or other functional hand-washing facilities in situations where daily life and the comforts of home had been disrupted. 122,000 Jordanians and more than 200,000 Syrians gained access to appropriate sanitation through humanitarian interventions, as did 9 Jordanian health facilities benefiting 100,000 Syrian refugees. In Yemen and in Kenya, children, women and other community members (650,000 people in each country) received critical information and training to prevent WASH-related diseases in children and their families.

UNICEF continued to promote WASH in schools, temporary learning and other child friendly spaces to enhance the safety of children and support their education and their teachers and caregivers. Safe water, sanitation and hygiene facilities were provided to 2.7 million children in their learning environments. In South Sudan, toilet facilities were installed in 50 schools, benefitting 17,500 schoolchildren.

**BOX 1**

**WASH coordination and response to the L3 Super Typhoon Haiyan emergency**

On 8 November 2013 Super Typhoon Haiyan (locally known as Yolanda) made landfall in Eastern Visayas in the Philippines. More than a million homes were destroyed, and approximately 14 million people were affected. Preliminary figures by the government put estimates of damages and loss at close to US$13 billion.

UNICEF provided approximately 1,000,000 people with access to safe water through water trucking, water kits and piped water system repairs in partnership with local water service providers, government, and bilateral partners such as USAID. A standby partner agreement with Veolia Foundation allowed mobilisation of expertise for a detailed assessment of 21 municipal water systems and to inform repair and rehabilitation actions. UNICEF is also supporting the replacement of the desalination water plant at the largest referral hospital in Tacloban. One major challenge was the absence of Long-Term Agreements for procurement of generators, chlorinators, and replacement pumps.

In sanitation, UNICEF focused efforts in densely populated areas and evacuation centres through provision of 3,000 emergency latrines and portable toilets benefiting 80,000 people. UNICEF also worked with the city government of Tacloban, the Department of Public Works and Highways, and Oxfam GB to construct an emergency sludge treatment facility using lime stabilisation. The challenge of scaling up household sanitation was compounded by disruption of local supply chains and the private sector. Affected populations received hygiene kits and hygiene promotion messaging as part of the immediate response effort.

UNICEF worked with multiple partners including the Department of Education to re-establish group hand-washing facilities, water access points, and sanitation facilities. In addition, UNICEF provided school hygiene kits and conducted hygiene promotion activities for 450,000 school children. Choosing the mode of delivery for repairs and reconstruction—either through government, NGO partners, or communities—proved to be particularly challenging.

UNICEF will continue to lead the WASH sector towards building resilience in communities in the Philippines. The challenges that have been encountered, both in the immediate response phased and in the transition to recovery, are being documented in the expectation of increasing resilience and capacity to respond to future emergencies.
UNICEF WASH and Nutrition worked to strengthen integration, provision of services and WASH education packages to reduce wasting and stunting. Increased collaboration ensured provision of WASH services in nutrition centres supporting responses to nutritional crises in Niger, Mali and Yemen. In Niger in 2013, the WASH cluster led by UNICEF made considerable efforts to promote the ‘WASH in Nutrition’ strategy. UNICEF scaled up its ‘Wash in Nut’ interventions across the country by ensuring availability of hygiene kits and improved access to hygiene and safe water in 126 nutritional centres. This activity reached 81,000 mothers and their malnourished children in nutritional centres and at the community level.

Representing another important achievement in 2013, UNICEF WASH and Health teams finalized the Cholera Toolkit in English and French, while the Cholera Support Team continued to provide technical assistance during cholera outbreaks in Haiti and other countries in EASRO and WCARO. A total of 1,230 hard copies of the Cholera Toolkit books and 1,368 USBs with electronic versions have been distributed to UNICEF and sector partners including government counterparts, The International Federation of Red Cross and Red Crescent Societies (IFRC), donors, UN agencies, NGOs and partners in academia. More than 500 downloads of the online Cholera Toolkit and 10,000 hits were recorded during the year. In Democratic Republic of the Congo (DRC), UNICEF assisted 206,000 people in four cholera-affected provinces with an integrated WASH package (addressing access to safe drinking water and hygiene promotion), while 2.5 million people were reached with awareness raising activities on prevention of cholera and other diarrheal diseases.
UNICEF, as Cluster Lead Agency and Strategic Advisory Group member of the Global WASH Cluster, helped shape the global WASH landscape during humanitarian actions in 2013. UNICEF WASH expertise and field presence resulted in effective leadership and a co-leadership role of the WASH sector/cluster in 65 countries\(^1\) during humanitarian preparedness and response.

For example, UNICEF co-led the WASH cluster with the Government of the Philippines after Super Typhoon Haiyan, and together with UN High Commissioner for Refugees (UNHCR) continued to lead WASH sector/cluster response to the Syria crisis. UNICEF also leads the cluster in CAR and South Sudan humanitarian crises. UNICEF WASH strengthened partnerships in 2013 by facilitating coordinated action through the WASH cluster Rapid Response Coordination and Preparedness.

\(^1\) 39 of these countries were in sub-Saharan Africa and the Middle East.
Team, Rapid Assessment Team and Regional Cluster Advisors.

In keeping with the Inter-Agency Standing Committee (IASC) Transformative Agenda, UNICEF WASH teams with the support of the Global WASH Cluster Support and Advocacy Team (CAST) are assisting countries to make the transition from WASH cluster fora and coordination capacity into existing government-led national WASH sector coordination platforms. UNICEF WASH continued to work with countries to strengthen national humanitarian WASH coordination and response in order to respond to increasing frequency of emergency events and to ensure the sustainability of WASH coordination during and after humanitarian action (see Box 3). Some countries—Afghanistan, Bangladesh, Ethiopia, Ghana, Haiti, Indonesia, Kenya, Mali, the Philippines, Sudan and Zimbabwe—are taking concrete steps to strengthen national capacity for humanitarian WASH coordination, preparedness and response. Support for transition efforts in these countries were scaled up, and four of the countries presented plans and progress reports to the Global WASH Cluster members at a meeting in Indonesia. Support for similar south-south learning and mentoring opportunities is a key priority, and they will be given more focused attention in 2014–2015. UNICEF WASH, with the support of a reference group composed of donors and WASH agencies, is developing an overall typology framework of coordination platforms to provide a global support structure and a strong advocacy base for dialogue with national governments, donors and other sectors. Detailed country assessments of national humanitarian WASH coordination architecture and capacity will be conducted in Ethiopia, Haiti, Guinea (Conakry), Mali and Sudan in 2014, allowing for a clearer definition of the steps, timing and resources required to achieve meaningful coordination of transition efforts. Bridging the gap between humanitarian action and development objectives will offer opportunities for synergy within the sector and lay a strong foundation for sector-wide discussion and action on areas of mutual concern including cholera, DRR, climate change and resilience.

In 2013, UNICEF undertook a rapid WASH review of the Super Typhoon Haiyan response a month after the event, to identify what went well and areas for improvement, and to generate critical recommendations to improve UNICEF WASH responses to future Level 3 emergencies.

Over the course of the year, 65 UNICEF Country Offices led or co-led WASH sectors/clusters. Twenty-five per cent of the offices had a full-time, dedicated WASH Cluster Coordinator, and 29% of Country Offices provided the cluster with a WASH Information Manager.
**Purpose:**
To support countries that have adopted the cluster approach to gradually and progressively transition WASH cluster coordination to national WASH humanitarian coordination mechanisms, and to build the capacity of national governments to deliver effective WASH humanitarian coordination, preparedness and response.

**Expected result:**
Government coordinates, prepares and responds appropriately and in a timely manner to all emergencies with little or no external support, providing humanitarian WASH services to all affected populations, especially children and women.

**Expected outcomes:**
- National humanitarian WASH information management systems and processes improved.
- National humanitarian WASH knowledge management improved.
- National urban humanitarian WASH coordination, preparedness and response improved.
- National humanitarian WASH leadership, ownership and investment.
- Human resources capacity for national humanitarian WASH coordination, preparedness and response developed and engaged.

**Benefits of National Humanitarian WASH Coordination:**
- Government leads national humanitarian WASH coordination, preparedness and response.
- National ownership and investment in humanitarian WASH coordination preparedness and response.
- IASC/UNICEF focus limited resources on L2/L3 humanitarian WASH coordination, preparedness and response.
- Humanitarian WASH coordination is connected to development WASH coordination for the long-term sustainability of services and facilities.
- National systems and capacity in place for transitioning of WASH Cluster coordination platform into relevant institutions and processes.

**Indicators for success:**
- Number of countries that have embraced the NHWC initiative and started discussions and planning processes.
- Number of countries with government-led, stand-alone, whole sector (rural and urban) humanitarian WASH fora.
- Number of countries with national capacity to meet humanitarian WASH coordination needs.
- Number of countries where WASH cluster responsibilities have been absorbed into existing national coordination processes and systems.
- Number of countries with a functioning national Early Warning Early Action System (with a WASH component).
- Number of countries sustaining humanitarian WASH gains through improved equity and resilience-focused assessment, implementation, monitoring and reporting.
UNICEF and UNHCR jointly developed a Global Technical Guidance Note on cooperation in refugee operations, with response roles based on organizational comparative advantages and field presence. The two agencies undertook a joint WASH mission to Syria in late 2012, returning in October 2013 to Jordan, with specific attention to Za’atari and Azraq refugee camps.

With increasing concern and recognition of the need for humanitarian WASH response in urban settings, UNICEF, UN Habitat and UNHCR developed an operational framework for an urban WASH mapping exercise in 2014.

Through advocacy and partnerships in the broader WASH sector, UNICEF continued throughout 2013 to work on bridging the gap between humanitarian and development WASH service provision to ensure sustainability and resilience of systems and communities.

In collaboration with the World Health Organization (WHO), Oxfam and the Office for the Coordination of Humanitarian Affairs (OCHA), UNICEF contributed to the development of the ‘Joint Cholera Initiative for Southern Africa’, building on the validation of the Cholera Toolkit in Zimbabwe in 2012. Five countries in southern Africa—Angola, Malawi, Mozambique, Zambia, and Zimbabwe—were targeted through this initiative.

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**BOX 4**

**Using UNICEF procurement and outreach to meet complex challenges in Syria**

In early 2013, UNICEF Supply Division (SD) received a request from Syria Country Office (SCO) for the procurement of soft starter panels to help run the pumps for the water supply system in the city of Homs. After several weeks of coordination between SD, SCO and the Homs Water Authority, clarity around specific requirements was achieved, allowing SD to proceed with the procurement process. SD identified four potential suppliers, however two companies could not be considered given political restrictions. As a result, only two suppliers were invited to tender and a British company that provided the most favourable cost and shortest lead-time was awarded the contract. As the product was manufactured in the USA, export licenses and prior approval by the US government was required due to the embargo on goods to Syria. SD worked closely with the supplier, with UNICEF’s Office of Emergency Programmes (EMOPS) and with the US authorities to expedite the export licenses, which were granted after six weeks, in time for the supplier to proceed with delivery. SD, however, faced additional logistical challenges with the shipment as the designated freight forwarder had difficulties booking a shipper since the cargo originated in the US. Resolving this matter led to a further 4-week delay. SD was also requested by SCO to contract for panel installation training as commercial restrictions prevented the supplier from engaging with an entity based in Syria. Due to the ongoing conflict, training could not take place in Syria, and all parties mutually agreed an alternative location in Egypt. Eventually the soft starters were delivered, installed and commissioned in the Homs water pumping station serving an estimated 1 million people. A relatively simple procurement request became an extremely complex challenge due to the special circumstances in Syria.
UNICEF Headquarters and Regional Offices provided critical support to the three L3 emergencies and other on-going emergencies in 2013. The UNICEF WASH Humanitarian Team in New York and the WASH Cluster Advocacy and Support Team (CAST) also provided direct and remote support to all countries responding to emergency situations. Seven WASH Specialists were deployed from Regional Offices to support countries in crisis.

Humanitarian WASH surge support was streamlined in 2013 with a total of 111 people deployed, of which 44 (40%) were standby partners, 33 (30%) were internal staff and 34 (30%) were externally recruited. Of the 44 standby partner secondees, 17 were deployed as part of the Rapid Response Team (RRT) to 16 countries. Twenty of the standby partners supported programmes and 24 supported coordination functions.

The WASH eRoster was the primary source of external candidates, and it was used to identify capacity at the request of a number of INGOs and UNHCR. The UNICEF Humanitarian Support Personnel mechanism was re-activated in 2013, with two experts assigned to support the Philippines Country Office as the first action.

In addition, WASH experts on the UNICEF Immediate Response Team (IRT) deployed to Syria (Jordan and Iraq), the Philippines and CAR. Since 2012, UNICEF supported 93% of the global WASH cluster RRT field missions with deployments, with a 7% increase in direct field support employment in 2013.

Approximately 60 additional professional staff and partners participated in 3 training events in 2013 that took place in Thailand, Ethiopia and Sweden. In an effort to strengthen inter-agency collaboration and optimisation of resources, UNHCR was incorporated into the course, allowing for a cohesive “UN-WASH” orientation package to be delivered from 2014 with the aim of greater mutual understanding and improved efficiency on the ground. The joint course is expected to provide a ‘one stop’ orientation for the roster of standby partners, improving the efficiency and contribution of secondees to both UN agencies.

2 A total of 26 UNICEF WASH in Humanitarian Settings courses have been conducted since mid 2009 and a total of 311 professional staff and partners trained to date.
Funding raised against emergency appeals constituted 45% of total 2013 UNICEF WASH expenditure of US$470 million, an increase from the 2012 level of 39%. Eighty-seven per cent of the funds were emergency supplementary funding, and 13% of regular supplementary funding was diverted for humanitarian work. The largest humanitarian WASH expenditure was in Jordan (US$56 million), far higher than expenditures in any single country to date (the 2012 highest expenditure was in Pakistan at US$20 million). The figure below shows the trend in humanitarian WASH expenditure from 1990 to 2013.
WASH supply is a key component of humanitarian programme implementation: SD and WASH teams engaged at the onset of humanitarian crisis and throughout coordination, preparedness and response phases in all humanitarian crises in 2013. In this way, ‘fit for purpose’ supplies were identified, sourced, delivered and distributed in a timely and efficient manner to affected communities.

In 2013, the total value of UNICEF WASH procurement of humanitarian supplies only (excluding shipping costs) was US$91 million, of which US$55 million was a combination of global (through SD) and country-to-country procurement, with the balance of US$36 million incurred via local (in-country) procurement. WASH supplies for the Syria humanitarian crisis accounted for 75% of L3 emergency procurement through SD in 2013. Mali, Niger, Nigeria, the Philippines, South Sudan and Sudan together procured over $1 million of WASH supplies in 2013.

The WASH components of the UNICEF Emergency Supply List continued to feature in the timely delivery of lifesaving supplies within 72 hours of the onset of an emergency. Regional and local procurement and strategic contracts and other arrangements were utilised as appropriate.

A consultation between WASH, Child Protection, HIV/AIDS and SD resulted in an improved packaging and distribution model for hygiene, menstrual hygiene management, dignity and personal safety non-food items. Creation of a new WASH and Dignity Immediate Response Kit replaces the Family Water Kit and provides a generic global kit intended for immediate response. The original Adult Hygiene Kit has been superseded by a Family Hygiene and Dignity Kit with a wider array of contents for distribution in the second phase of humanitarian response. It is expected that this second kit will be locally procured after consultation with communities and only offered through offshore procurement when local markets and or logistics justify an exception.
Innovations, technologies and best process and management practices to address WASH sector challenges in humanitarian action were scaled up in 2013. The UNICEF Innovation Unit and SD continued to work with Country Offices, academic institutions and sector partners on water and sanitation product research and development.

Ongoing WASH product innovations included the following:

- UNICEF supported Programme for Appropriate Technology in Health (PATH) and Cascade Designs, Inc. in testing a novel chlorine generator in Lebanon and Uganda.
- An adapted toilet seat design was developed for use by disabled and elderly persons; the seat fits directly onto existing emergency response latrine slabs for easy integration in the field.
- Based on feedback from end-users, a new jerry can design has been developed that combines rigidity,
flexibility and packing density; this will be field tested in 2014.

• UNICEF and University of North Carolina began a research collaboration to test “proof of concept” of a potential real-time *E. coli* water quality test device.

UNICEF humanitarian WASH has demonstrated good practice, with documented benefits, through the use of pre-certified emergency agreements and incorporation of pre-certified emergency clauses within regular partnership agreements. This practice has been formalised in the L3 emergency Simplified Standard Operating Procedures (SSOPs). The value of this approach was seen in the Philippines response, validating investment in formalised humanitarian partnerships as a core preparedness action.

To accelerate transportation and distribution of supplies to beneficiaries, a simple risk management record based on mutual trust between parties, known as a Letter of Cooperation (LoC), allowed for timely lifesaving release and distribution of existing stocks by humanitarian partners. The use of LoCs in Tacloban facilitated NGOs with standing capacity to distribute UNICEF WASH supplies to affected people with immediate effect.

Innovative use of cash vouchers to support and scale up WASH coverage during and after L3 and other humanitarian situations is being tested. In Somalia, the use of vouchers has been very effective. In Lebanon, Action Contre le Faim (ACF) partnered with UNICEF to use water vouchers for Syrian refugees, and the UNICEF WASH programme in the Philippines is exploring the use of cash vouchers to scale up sanitation after Super Typhoon Haiyan, while promoting and protecting the private commercial sector.

**Box 5**

**Overcoming the chlorine transport problem**

Chlorine is a critical chemical for water treatment, which kills most disease-causing organisms commonly found in water and offers some residual protection against further recontamination. Historically, UNICEF has procured chlorine in the form of Calcium Hypochlorite (HTH). HTH has a 3–5 year lifespan and is relatively inexpensive compared to other chlorine-carrying chemicals.

Unfortunately, it is becoming increasingly difficult to transport HTH. Current International Air Transport Association (IATA) regulations allow only 450g bottles to be transported by air. Larger containers (25 kg) can be transported by sea, but specialized packaging and a specific type of transport ship are required. In the case of both air and sea transport, current regulations make it difficult for UNICEF to respond quickly in emergency situations with offshore procurement.

Localized chlorine generation based on saltwater electrolysis is not a new technology. UNICEF has experience working with such processes in the development context as part of WASH programming for household water treatment. Unfortunately, due to the complexity of the process, electrolysis devices have not been deemed suitable for emergency response as they require too much training and monitoring to be suitable in time-sensitive situations.

UNICEF SD has been working with PATH and Cascade Designs, Inc. to refine a device that will allow for local chlorine above say generation in emergency situations. The new device integrates a proprietary chip that can detect chlorine levels and allow for automatic machine shut-off. This feature has been packaged in an easy-to-use device that requires minimal formal training and little monitoring. The device accepts a broad range of qualities of water and salt, the two raw inputs, and it is currently able to produce 2 liters of a 1% chlorine solution (10,000ppm) in approximately 40 minutes. This solution can then be used, depending on dilution rates, to disinfect drinking water, to clean health centres or to sterilize medical equipment.

In 2013, field tests of the new device were conducted in Uganda and Lebanon. The learning from these tests has been used to improve the device, and 4 new versions will be field tested in 2014.
Many issues identified as challenges at the end of 2012 remained concerns at the end of 2013. Those challenges include: capacity building, addressing the needs of people with disabilities, urban humanitarian WASH, preventing and responding to cholera outbreaks, supporting menstrual hygiene management, improving WASH and Nutrition collaboration, and supporting integrated programming. UNICEF humanitarian WASH collaboration with UNHCR and UN Habitat and other key partnerships and efforts by UNICEF Country Offices to engage national governments are all helping to address sectoral and technical challenges. The 2014-17 UNICEF Strategic Plan and the recently launched SHA initiative are both expected to help address systemic and operational challenges. Nevertheless, it is important to highlight the following challenges for 2014 and beyond:

- Sustainability of the WASH cluster in the face of high costs, continuity of country-based, robust coordination mechanisms, and the need for improved accountability.
- Addressing poor drainage and solid waste management in humanitarian crises, which contribute to the risk of cholera and environmental health-related disease outbreaks.
- Documentation and sharing of quality humanitarian WASH interventions, innovations, new technology, research, and best practices.
- Financial and political commitments from governments for strengthening national humanitarian WASH coordination, preparedness and response to narrow the gap between development and humanitarian WASH.
- Using resilience and risk reduction to ensure inter-sectoral coordination and assessment and integrated programming at the onset of a humanitarian crisis.
- Demonstrating humanitarian WASH linkages between community level ‘cohesion’ and its relationship to peacebuilding at a national level.
- Streamlining sector-wide humanitarian WASH capacity building and knowledge management activities for better inter-agency programme planning, implementation, monitoring and evaluation.
- Continuing to improve inter-sectoral programming and coordination, and programme/supply integration in humanitarian situations to achieve better and timelier results.

Recognising the increased complexity and scale of humanitarian situations and the fact that the IASC and UNICEF corporate L3 activation protocols dictate the scale and commitment to coordination, preparedness and response, UNICEF has launched the largest annual humanitarian appeal to date of US$2.2 billion for 2014, targeting provision of critical assistance to an estimated 85 million people, half of whom are expected to be children. Humanitarian WASH commitments to coordination, preparedness and response will continue to increase, and demand for support is expected to exceed that of 2013.