INSARAG
Preparedness – Response

HAITI EARTHQUAKE RESPONSE

2010

12 January 2010

An After-Action Review of Response

Dedicated to the brave humanitarians from the Urban Search and Rescue Teams
who worked under difficult conditions to save the lives following the
Haiti earthquake of 12 January 2010.

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FOREWORD
By Rashid M. Khalikov

As the humanitarian coordination body of the United Nations, the mandate of Office for the Coordination of Humanitarian Affairs is to ensure efficient and coordinated response to emergencies. This mandate requires coordination amongst all the humanitarian actors, especially at the very first phase of an emergency. As one of OCHA's primary partners in the critical life-saving phase of emergency response, the International Search and Rescue Advisory Group was once again at the forefront of the international rescue and relief operations following the devastating earthquake which struck Haiti on 12 January 2010. OCHA - as the provider of the INSARAG Secretariat and custodian of many of the international community's first response tools, such as the Global Disaster Alert and Coordination System (GDACS), the Virtual On-Site Operations Coordination Centre and the United Nations Disaster Assessment & Coordination (UNDAC) team - worked around the clock to facilitate information sharing amongst all responders. OCHA immediately deployed a team of UNDAC members – many travelling to the disaster site with international urban search and rescue (USAR) teams - to support operational coordination of USAR teams on the ground throughout the rescue phase and to jump-start OCHA's humanitarian coordination activities of the international humanitarian response.

The INSARAG network grew out of lessons learned from earthquake response. The 1988 Armenia Earthquake was the trigger for its creation. International urban search and rescue teams rushed to assist the country in its rescue efforts, but there was no communication, no system of coordination. Teams worked wherever they found a need, rather than be directed to where there were priority requirements for the kinds of technical expertise and equipment they possessed. Recognising that this was not an effective way to respond, INSARAG was created in 1991, to set up a system of operational coordination, to foster minimum standards, to work to common methodology and guidelines. The work of INSARAG and its methodology was endorsed by the United Nations General Assembly Resolution 57/150 of 2002 on "Strengthening the Effectiveness and Coordination of International Urban Search and Rescue Assistance".

First on the ground, USAR teams work hand-in-hand with local response teams, bringing additional expertise and technology to assist where needed, where local resources may be lacking. In addition to search and rescue support, INSARAG USAR teams provide medical support and are often providers of the first assessments, the first information to come out of a disaster site, the first indication of needs and priorities. This information is shared with the international community, through the Virtual OSOCC and on the ground, to assist planning and targeting of international humanitarian relief efforts.

When the rescue phase draws to a close, INSARAG teams move to recovery activities, helping extract bodies for burial – so important to families and loved ones – rubble removal, structural evaluations, always in support of local teams, always in coordination with other response efforts.

INSARAG has always collectively evaluated its response, recognising the importance of sharing experience to bring improvements to the INSARAG Guidelines and methodology. Thus, the Haiti Earthquake After-Action Review Meeting took place in Switzerland on 02-03 June 2010, hosted by the Swiss Government. This publication is an example of how INSARAG methodology is taken forward as a living process, summarizing the many recommendations to come out of the USAR community's experiences in Haiti with the aim of enhancing the quality of collapsed structure disaster response.

OCHA is proud to have served as INSARAG Secretariat since its inception in 1991 and looks forward to continuing to serve the INSARAG network as it endeavours to build more effective USAR response capacity worldwide.

Rashid M. Khalikov
Director, OCHA Geneva

FOREWORD
By Toni Frisch

The Haiti Earthquake of 12 January 2010 led to one of the largest international urban search and rescue (USAR) response operations since the establishment of INSARAG. With some 60 teams from all over the world working side-by-side, with each other and with national responders, and more than 130 live rescues, it was certainly one of the most successful and visible international earthquake response operations ever. However, tragically, over 220,000 people did not survive and many thousands more suffered terrible losses in a country that remains vulnerable to many kinds of natural disaster in the future.

What became clear in Haiti, and not for the first time, is that the assistance provided by international USAR teams goes way beyond the technical USAR operations. Indeed, this assistance in saving lives "beyond the rubble" may become one of the most important areas to be addressed by INSARAG as it further develops its methodology and prepares for future challenges. Furthermore, while the benefits of the INSARAG External Classification (IEC) process in ensuring minimum international operational standards and matching needs to capacity were amply demonstrated in Haiti, the importance of introducing similar minimum standards and methodology at the national level became abundantly clear as a key to better preparedness for earthquake response.

There are important lessons to be learned from the Haiti Earthquake and it was for this reason that INSARAG decided to organise an After-Action Review meeting in Geneva on 2-3 June 2010. Representatives of more than 110 participants from 36 countries and 12 organizations came together to discuss the challenges they faced and develop recommendations to take forward in further development of INSARAG, its Guidelines and methodology. This publication captures those recommendations and aims to help both those countries that responded, and those that did not, to better understand the different aspects and phases of the response including the operational challenges, and how they may be better addressed in the future.

Both the recommendations from this meeting and experiences throughout the operations in Haiti showed us one more time that the capacity building of disaster prone countries is the key for response preparedness. Therefore, the organisational and operational standards for capacity building of national USAR teams as well as the incorporation of INSARAG Guidelines and Methodology into the national response plans in line with the United Nations General Assembly Resolution 57/150 of 2002 was recognised as one of the areas that INSARAG will focus on in the future.

The Haiti Earthquake was, very tragically, a milestone event in the history of natural disasters and of INSARAG. In the name of all those who could not be saved, in their memory, let us, as INSARAG, learn as many lessons as possible and further strengthen our methodology for the future. We have come a long way since 1991 by adapting to the changing environment of disasters and strengthening our capacity to respond effectively and coherently. This ability to learn and to constantly improve is INSARAG's strength and I feel confident that we will continue to build upon this strength in the future.

Ambassador
Toni Frisch
INSARAG Chairman

FOREWORD
By Tim Callaghan

As Chairman of the INSARAG Regional Group of the Americas, I am very proud of the success of search and rescue teams that responded to the January 2010 earthquake in Haiti.

Teams from around the world gathered in Port-au-Prince and surrounding communities united by a common purpose. Rescuers worked around the clock in difficult, dangerous conditions to save the lives of people trapped in buildings that collapsed during the severe earthquake and subsequent aftershocks.

These teams also gave support to family members awaiting news of missing loved ones, provided medical assistance to those suffering injuries, and helped to assess the structural integrity of hospitals and other vital public buildings once the active search and rescue phase had ended.

I had the privilege of witnessing the heroic efforts of these teams first hand. As the dust settled in the days and weeks that followed the earthquake, the results of the work that INSARAG does around the world to encourage international standards for search and rescue operations became evident.

As the evaluation of the Haiti response later demonstrated, most of the teams that responded to the disaster did so with the level of professionalism, expertise, and skill that international search and rescue guidelines demand. The rescue operations were deemed, overall, a great success.

At the same time, however, experiences such as the one in Haiti show clearly that our work is far from done. INSARAG and what it represents is more important than ever, in fact, and much work lies ahead.

For example, many of the smaller teams that arrived to work in Haiti are not part of the INSARAG family. Difficulties arising from the lack of coordination and understanding between INSARAG-classified teams and smaller teams not familiar with the INSARAG methodology brought to the forefront a real need to incorporate these smaller teams into INSARAG.

Careful review of the Haiti experience clearly suggests that INSARAG would do well to help prepare these teams to work alongside INSARAG-classified teams during international responses.

These smaller teams are likely to deploy in response to large-scale disasters, at least in the Americas region, and we need to work with them to develop their capacities and ensure that they understand and adhere to INSARAG guidelines and principles.

This is one of several lessons we can glean from the Haiti experience. While applauding the impressive work of the international teams, and recognizing everything that was done correctly in order to continue best practices, we have not lost sight of the opportunity the Haiti experience has given us for honest self-evaluation. This, in turn, has revealed useful information regarding how INSARAG can improve capacity building efforts, response preparedness, external classification, and support for expanded roles of search and rescue teams.

I strongly believe in the work that INSARAG supports – it is truly the key to ensuring that search and rescue teams around the world, no matter where they are from, whether large or small, national or international, have the capacity to respond to earthquakes and other disasters alongside other teams in the most effective way possible.

The earthquakes in Haiti and Chile earlier this year served as a powerful reminder that the world remains vulnerable, and today, having search and rescue teams that are prepared to respond immediately to these types of disasters in an efficient, coordinated manner is more critical than ever.

Tim Callaghan
Chairman of INSARAG Regional Group of the Americas

FOREWORD
By Marie Alta Jean-Baptiste

I like to first thank you this morning for inviting me in my capacity as Director of Civil Protection in Haiti to speak at the opening of this two-day workshop on "Haiti Earthquake - Analysis of lessons learned". I am honoured to speak today on behalf of my Government and the Minister of Interior and Local Authorities in particular, His Excellency Mr. Paul Antoine Bien-Aime. The Minister has asked me to convey his warmest greetings and congratulations for this significant initiative, which will certainly bring ideas to help us better approach the risk management and emergency response in Haiti. For my part, I am also very happy to be here to inaugurate this important event. I am convinced it is not an end in itself but an important moment of reflection on the need to provide better protection against all kinds of risks.

Let me express my deep thanks and appreciation to the International Search and Rescue Advisory Group (INSARAG) for their kind invitation and especially the support they provided Haitian government after the earthquake of January 12, 2010. I also take this opportunity to thank most sincerely on behalf of the Government of Haiti and the Haitian people, the governments and citizens from different continents around the globe, and the various UN agencies, for their contributions to help us cope with this grave humanitarian crisis. It is the testimony that Haiti is not alone and we say on behalf of the Haitian people, a big thank you. The terrifying images of earthquake in Haiti this January 12, 2010, causing death and suffering, damage and destruction of an unprecedented scale, will linger in our memories and our hearts: more than 300,000 dead, thousands injured and property losses valued at 120% of GDP. The damage and losses caused by this earthquake, nearly 8 billion U.S. dollars, are so high that they exceed the size of the economy of our country. We must learn quickly from this terrible event and its consequences, and help individuals, families, communities and societies to better prepare for future disasters that may occur anywhere and in any region of the globe.

It is now important to strengthen the National Disaster Risks Management System, by setting up proactive risk management mechanisms to lessen the impact of threats, and reduce social, economic and environmental vulnerabilities. Since it is impossible to eliminate risk, measures should be taken to protect people and assets. It requires preparedness and response activities such as: early warning, alert, alarm, response, immediate rehabilitation and reconstruction (in the medium and long term). At the same time, we recognize the need to strengthen the operational structure of the Directorate for Civil Protection (DPC), the rescue forces such as emergency fire fighters, and the Rapid Intervention Teams, to enable a more effective response to a major crisis. While the legal basis of the National Disaster and Risk Management System are being strengthened, attention should also be given to the protection of life and livelihoods, properties and investments.

While waiting for these medium and long term provisions, the Directorate of Civil Protection in Haiti and the Haitian Government must now face the 2010 hurricane season that began on 01 June and lasts until end of November. Meteorologists expect a very active hurricane season in the region. We must prepare to deal with it, in a context where more than one million victims of the earthquake are still living in tents and makeshift shelters.

We fear that the January 12 earthquake has weakened the slopes, potentially exacerbating further the problems related to flooding and landslides. The massive destructions caused by the earthquake have led to an accumulation of rubble and debris in channels of evacuation. These fragments can form ice jams during the next runoffs, causing obstruction and intensifying the flooding. The earthquake of January 12 has increased the threat and vulnerability and has weakened our resilience to face the hurricane season. The situation is not good and raises many concerns. However we are confident that with the active international solidarity, with the courage, sacrifice, solidarity and heroism displayed by the Haitians themselves, we can fill the identified gaps. We hope to achieve the following priorities in the near future:

• Develop a contingency plan for most common situations and a preparation and response plan in case of major earthquake;
• Apply seismic standards appropriate to the level of threat to all public buildings and major infrastructure, including hospitals and schools;
• Educate the public about natural hazards and ensure that natural hazards are covered in the elementary and secondary school curricula. Introduce a course on natural hazards and their management in universities;
• Disseminate the basic rules for safe construction to the mayors and the construction industry (especially the artisans);
• Develop a national program on the seismic threat;
• Establish a network of hydro meteorological observation, seismological and geodetic integrated into similar international networks in the Caribbean;
• Map the geotechnical characteristics of soil and subsoil in the major urban areas and establish a micro-detailed seismic zoning;
• Train skilled professionals (master and doctoral levels) on the topics of natural hazards and risk management policies;
• Provide relevant authorities the information necessary for decision making regarding natural threats.

Ways to move forward are well drawn. I am optimistic that with the active solidarity and the lessons and experiences that emerge from this workshop, Haiti can evolve from a country that lives in risks to a country that knows how to live with risks.

Marie Alta Jean-Baptiste
Director of Civil Protection, Ministry of Interior, Haiti

* Adapted from the opening speech at the INSARAG Haiti Earthquake After-Action Review Meeting.

CHAPTER 1:
HAITI EARTHQUAKE RESPONSE

A STORY OF HOPE.....

Late in the evening of 12 January 2010, the Officer-in-Charge of the Field Coordination Support Section (FCSS), Emergency Services Branch (ESB) of the Office for Coordination of Humanitarian Affairs (OCHA) in Geneva received an ominous telephone call. It was the Desk Officer at the headquarters of OCHA in New York who called and forwarded a message received from the Head of the OCHA office in Haiti. An earthquake had just occurred in Haiti that would require international assistance - no more information was available...

Very soon after, an automated alert was issued by the Global Disaster Assessment Coordination System (GDACS) confirming the information. A 7.2 magnitude earthquake had indeed struck Haiti. The alert went out to numerous duty officers and disaster managers around the world and one thought must have gone through most minds at that time; an earthquake of this magnitude in such a vulnerable country as Haiti would be devastating and require massive support. However, few could have imagined the sheer enormity of the operation and the complexity of the operational challenges they would face.

BACKGROUND

The earthquake hit Haiti at 16:53 local time (22:53 CET). The epicentre was located close to the town of Leogane, but the impact led to widespread destruction in the capital Port-au-Prince (PaP) where large portions of the town's buildings collapsed. Subsequent landslides added to the devastation. Later figures estimated that more than 200 000 people may have been killed and 188 383 houses destroyed . The earthquake displaced around 2.1 million people, of whom 1.3 million went to spontaneous settlements in the affected areas, and 600,000 to host families outside the affected areas . Many governmental and United Nations (UN) institutions were also severely affected by the earthquake. Key members of the UN integrated mission to Haiti, as well as their families, were either killed or reported missing.

Haiti constitutes one third of the island of Hispaniola in the Caribbean and was historically a colony under French rule serving as a hub for the slave trade from West Africa to the Americas. In 1804 it gained its independence, but it has suffered political instability and violence ever since. Today Haiti has a population of around 9 million. Insecurity, heavy deforestation, high inflation and lack of a stable economy have led to the country being the poorest country in the Western hemisphere, completely dependent on international assistance, with 80% of the population living under the poverty line and 54% for less than USD 1 per day. 65-70 % of the population is underemployed or unemployed and people support themselves with subsistence farming. Secondary consequences of the dire situation in Haiti are poor infrastructure, reduced health conditions, malnutrition, and low life expectancy. 42 % of the population has no access to clean water and as much as 81 % has no access to proper sanitation.

Haiti is situated in the middle of the hurricane belt and often suffers from severe windstorms during the Atlantic hurricane season from June to October. Flooding and landslides are also common. Haiti also lies on a strong tectonic fault line and is therefore earthquake-prone. However, there had been no earthquakes of this size in Haiti since 7 May 1842.

For years, the security situation has been dominated by violent conflict between rivalry gangs of youngsters, plus drug smuggling, abductions, looting and corruption - especially in the police force - and Haiti has suffered from the absence of a sufficiently large police force and adequate judicial system. Following an armed uprising in 2004, the UN Stabilization Mission in Haiti (MINUSTAH) was established to ensure a secure and stable environment in a tranphase towards democratic rule. As consequence of the security situation in thecountry, the UN operates underunderSecurity Phase III.

> " It's difficult to fathom what has become of Haiti and of the United Nations in this country.
> For the United Nations, this tragic event was the worst in its history".
>
> *Edmond Mullet*
> Acting Special Representative for the Secretary General, Haiti

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FIRST ACTIONS

Following the GDACS Alert, the duty officers of the Urban Search and Rescue (USAR) teams began posting information on the Virtual On-Site Operations Coordination Centre (OSOCC) where a discussion topic was immediately opened by a member of INSARAG External Classification (IEC) classified ICE-SAR USAR Team (Iceland) who is also a United Nations Disaster Assessment and Coordination (UNDAC) team member. Staff of FCSS of OCHA Geneva, in their capacity as the INSARAG Secretariat and the custodian of UNDAC system, began discussing the situation over Skype in a group conversation at 23:25 CET. An UNDAC alert was prepared and sent by FCSS at 23:33 CET, i.e., 10 minutes after receipt of the GDACS alert and upon the realization that this was most likely to become a major earthquake catastrophe. At 23:40 CET the first indications of availability for deployment from UNDAC members were registered on the Virtual OSOCC.

At 00:00 CET FCSS staff came to the office and began working on the UNDAC team mobilization. At 00:22 CET on 13 January, ICE-SAR was the first international USAR team to indicate they were preparing to deploy. All through the night, international USAR teams and other responders continued to indicate their availability on the Virtual OSOCC in accordance with the International Search and Rescue Advisory Group (INSARAG) Guidelines, indicating that they were "Mobilizing", "Deploying" or "Monitoring". By 04:29 CET, over 2 dozen international USAR teams were registered and an initial 10 UNDAC members were selected for deployment to the region.

Based on the potential humanitarian consequences and the complexity of operating in an environment like that of Haiti, it was clear that the UNDAC team had to be large, consist of members with complementary skills, and integrate partners from many organizations. The number of people in an UNDAC team varies depending on the requirements of the emergency. One major criterion for team composition for this emergency, however, was the opportunity for rapid deployment in order to initiate coordination of the expected massive influx of USAR teams.

FCSS contacted international USAR teams and on the Virtual OSOCC requested teams to indicate their availability to carry UNDAC members (those from their own country or those en route to Haiti) with their planes direct to Port-au-Prince. FCSS facilitated this process and those teams able to deploy with UNDAC members in addition to their roster, were asked to do so; subsequently UNDAC members travelled with ICE-SAR of Iceland, B-FAST of Belgium and USAID teams of the United States on 13 January. As a result, one UNDAC team member was the first to arrive in Haiti together with an international USAR team.

> 66 Having gone through an IEC just a few months earlier meant that everything was already clearly defined when it came to the deployment. Each team member knew what their role was and the Ministry of Foreign Affairs which had participated and practiced during the IEC was well aware of its responsibilities"
>
> *Gisli Olafsson*
> Team Leader, ICE-SAR, Iceland

The first UNDAC members arrived with the first two USAR teams to reach Port-au-Prince (both are IEC classified), ICE-SAR and USAID, and were on the ground in the afternoon of 13 January, at approximately 14:30 (local time). They arrived was less than 24 hours after the earthquake. The airport's structural stability was severely compromised by the earthquake and therefore, there was neither air traffic control nor ground services present at the time of their arrival. The first planes to arrive landed with no communication or guidance from the control tower since the airport personnel had evacuated the building. For example, ICE-SAR had to use ground ladders to exit the plane since there was no ground team to assist them. Fortunately, ICE-SAR had stored these ground ladders in the passenger cabin.

Once on the ground, the first UNDAC members to arrive met with an official from the Dèpartement de la Protection Civile (DPC) in Haiti, who filled the role as Local Emergency Management Agency (LEMA). With support from the USAID USAR Team, a Reception and Departure Centre (RDC) was established inside the airport. The RDC had limited Internet connectivity, but it managed to transmit the message that the airport could be used in spite of the damage suffered.

Tuesday, 12 January (CET) *
22:53 – Earthquake occurred
23:15 – FCSS/INSARAG Secretariat is alerted through internal communication channels
23:23 – Red GDACS alert by sms
~ 23:27 – Virtual OSOCC topic activated
23:30 – FCSS/ INSARAG Secretariat in touch with USA focal point and maintained link throughout the deployment phase
23:33 – UNDAC M-1 alert was prepared and sent
23:40 – First UNDAC members indicated their availability on the Virtual OSOCC
00:00 – FCSS staff came to the office and began working on UNDAC team mobilization

Wednesday, 13 January (CET) *
00:22 – ICE-SAR was the first USAR team to indicate their mobilization; also offered to pick up UNDAC members at refuelling location (Canada);USA indicated the same offer
04:29 – Over 2 dozen USAR teams already registered on the VO as monitoring, mobilizing or deploying
04:29 – An initial 10 UNDAC members were selected; later increased to 14, then 17+
05:00 – INSARAG Secretariat/first UNDAC member left for deployment (with the plane of the Swiss Advance Team)
22:30 – The first UNDAC member together with the first international USAR team arrived in Haiti and established contact with the Government of Haiti

Thursday, 14 January (Local Time) *
06:00 – The second wave of the UNDAC team arrived. At the end of the day, 15 out of 17 UNDAC members had arrived in Haiti

* All the times are approximate.

“Our first task as we got out of the plane was to make our way to the airport terminal. There we were greeted by the Department of Civil Protection who helped us arranging transportation and pointed out possible locations for OSOCC and BoO.”

Gisli Olafsson
Team Leader, ICE-SAR, Iceland

KEY PRIORITIES

The UNDAC members conducted a rapid assessment of Port-au-Prince to determine the extent of damage, needs and to locate possible sites for a Base of Operations (BoO) for the arriving international USAR teams. The assessment revealed that all tenable areas in the city had been taken for temporary housing. A meeting with DPC in Port-au-Prince proved fruitless, as it was apparent that their ability to cope had been overwhelmed by the disaster. In cooperation with the DPC representative at the airport it was decided to organize the initial USAR response directly from the airport. USAR teams were asked to either establish their BoO at their embassies or at the airport where ICE-SAR had identified ample space to house several teams. In the event, the airport location proved to have enough space for the USAR teams to set up their camps. The airport also provided security since the perimeter was bordered by a wall, military personnel staffed the gates and there was the benefit of easy accessibility for the teams arriving at the airport.

The initial reports from the earthquake indicated severe structural damage in and around the city of Port-au-Prince. A priority list was developed based on reports from the DPC representative at the airport, analysis of images on Google Earth and the media. The list of priorities included buildings, which housed large numbers of people and had the highest potential for trapped survivors, including public buildings, schools, hospitals, apartment blocks, hotels and other large buildings. The first international USAR teams to arrive were assigned locations based on these priorities and they immediately went to work.

At the early stages of the emergency, it became clear that the Dominican Republic would be the main hub for the transportation of all kinds of humanitarian assistance, as most of the responders were flying to Haiti via the Dominican Republic. Therefore, it was decided to deploy an UNDAC team to Santo Domingo to facilitate humanitarian assistance deploying to Haiti, including the international USAR teams. An RDC was established at the international airport of Santo Domingo under the leadership of the UNDAC team and it was staffed by UNDAC support staff from International Humanitarian Partnership (IHP) and members of a USAR team.
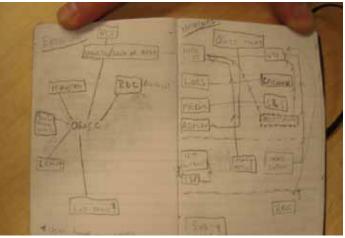

> 66 There was no available place big enough for BoO in the city. The chaos was enormous. After driving around in the darkness for several hours we decided to establish the BoO at the airport. During the next few days a village grew within the fences of the airport, its inhabitants rescuers from all over the world".
>
> *Olafur Loftsson*
> Team Leader, ICE-SAR, Iceland

COORDINATION STRUCTURE

By 14 January 2010, within 48 hours of the earthquake, the majority of the UNDAC team had arrived in Port-au-Prince. The team had also been reinforced with members of the European Union Civil Protection Team (EU CPT). In this mission, there were 17 members of the UNDAC team, seconded liaison staff from international USAR teams, 15 OCHA staff, 5 and later 7 EUCPT team members, a 3 member Americas Support Team (AST), a 5 member IHP team, 7 members from Télécoms sans frontièrs (TSF) and a 9 member Map Action team. (These numbers changed in the later stages of the emergency)

An initial UNDAC Plan of Action (PoA) had already been prepared en route to Haiti and a high priority was to support the Government of Haiti with coordination of the USAR efforts. The PoA also emphasized that tasking of USAR teams should be based solely on humanitarian needs in order to avoid prioritizing expatriate locations and/or governmental locations.

Following initial assessments of the situation upon arrival in Port-au-Prince and discussions with the first UNDAC members to arrive, the PoA was finalized and a coordination structure according to the following configuration was implemented.

Since the overall coordination process under the leadership of the Humanitarian Coordinator was already located at the MINUSTAH base in Port-au-Prince, the On-Site Coordination Operations Centre (OSOCC) also had to be located there. However, as the site for a USAR BoO for practical reasons had been identified at the airport with enough space and ample security, it was the natural choice to locate the USAR operational function of the OSOCC there – approximately 2 km from the main body of the OSOCC – thus establishing a separate Operations Cell (OPC) for USAR coordination. This decision proved to be vital for the USAR phase and the OPC at the BoO functioned later as an extended arm of the OSOCC - an OSOCC that, in fact, became the working place for 40-50 staff working on coordination of the overall humanitarian relief operation taking place in parallel with the USAR operation.

OCHA

Field Coordination Support Section (FCSS)
(INSARAG Secretariat)

INSARAG

The OPC carried out the role of 'operations function' of the OSOCC with focussing only on the USAR operations. All the other responsibilities of the OSOCC were implemented by the OSOCC itself at the MINUSTAH base. The RDCs at the Port-au-Prince airport and the Santo Domingo airport continued to work under the management of the OPC. The OPC became the pivotal point for USAR coordination and was later enhanced with support staff from MapAction, the IHP and TSF as well as additional information management staff seconded from the OSOCC to enhance the OPC's information management capacity.

Staffing of the OPC came from the UNDAC team, the EU CPT team and liaison officers from the USAR teams. The staffing of the RDC in Port-au-Prince came from the UNDAC team (at the beginning), the IHP (UNDAC Support), the EU CPT team and one liaison from a USAR team. The staffing of the RDC in Santo Domingo came from the IHP (UNDAC Support) and members of a USAR team. Tents and facilities for the OPC were provided by ICE-SAR and supplemented by other USAR teams and the OSOCC.

ICE-SAR also took on the challenging task of camp management of the rapidly growing USAR BoO. At its peak, the numbers recorded indicate that the BoO provided living quarters for more than 50 USAR teams from 30 nations, responding with more than 1800 rescuers and 160 search dogs. This task was later handed over to the IHP staff when ICE-SAR ended its mission.

66 It is vitaly important for the UNDAC team and the OSOCC to establish quickly and act efficiently. In order to be efficient there is a need for practical support. The network IHP (International Humanitarian Partnership) realise this fact and acts accordingly. Today establishing UNDAC and/or an OSSOCC in a humanitarian operation is normally done in close reliability with IHP support".

Kjell Larsson

NSARAG Africa/Europe/Middle East Regional Group Chairman

OCHA

Field Coordination Support Section (FCSS)
(INSARAG Secretariat)

INSARAG

USAR OPERATIONS

The number of teams arriving in Haiti continued to increase for several days after impact. To ensure effective utilization of available resources, Port-au-Prince was divided into a number of geographical sectors and teams were assigned to work in these sectors starting from the most affected areas determined based on the information available. After a detailed assessment of Carrefour, this city was also divided into sectors and the teams conducted USAR operations in Carrefour as well.

During the initial hours the highest impacted areas were identified and marked on a map for easy reference. This highly impacted area was subsequently divided into geographical sectors which facilitated th e assignment of tasks and the tracking of the teams assigned to those locations. A total of 42 sectors with a total area of 63 square kilometres were covered by the USAR teams. USAR teams were either tasked to cover entire sectors conducting reconnaissance missions and prioritizing areas, or deployed to a specific site based on reports, which indicated the presence of survivors. In the following days, three flight assessments were conducted and a total of seven outer lying cities (Carrefour, Gressier, Leogâne, Petit Goave, Grand Goave, Miragoane, Jacmel) were assessed to ascertain if USAR teams were needed for potentially trapped victims. These assessments were made by the UNDAC/EUCPT team members and international USAR team experts.

Also, following the January 20 earthquake registering 5.9 in Richter scale with epicentre close to Leogane, an aerial assessment was carried out and three USAR teams were deployed by land to the Leogane urban area. The IEC classified UK ISAR team conducted a USAR assessment of the city centre. This city was thoroughly covered in one day due to the absence of high buildings and the fact that the population had been living in open areas since the first earthquake of 12 January 2010. The medical component of the IEC classified Polish USAR team remained on site for al most 24 hours to treat people injured by the earthquake of 12 January.

The USAR teams were assigned to a sector and INSARAG IEC classified teams were tasked to the areas with the highest concentration of affected buildings. The idea was to saturate the sectors and quickly gain an idea of which buildings should have priority. If medium and light teams worked together independently of a heavy team, they were asked to report back to the OPC and assistance was sent to them if required. The teams were assigned to their working sites at 06:00 every morning and they were requested to be in close contact with the OPC during the day (see reference to communication under Operational Challenges).

In addition to search and rescue activities targeting specific sectors, USAR teams and more specifically their search components were deployed in response to emails, text-messages (SMS), satellite phone calls and visits to the OPC by the general public in Haiti and their relatives and friends all over the world. All reports of trapped people claimed to be sending SMS messages from the rubble were tracked in the OPC. After the source of the request and the reliability of the information were evaluated, those requests were prioritized, the requests were double-checked and in many instances phone calls were made to those reporting the incident to ascertain the exact location and the validity of the claim. Search groups were sent to those sites reported from reliable resources and rescue teams were only committed to those if the search team could verify the validity of the claim. These kinds of reports diminished as time progressed.

The OPC managed to deploy search teams repeatedly to some large locations from which reports of survivors continued to come in during the USAR operation. Following confirmation of victims found and rescued alive, the necessary first aid was given by the USAR teams while transport or ambulances were identified and dispatched through the OPC.

Mapping services were crucial throughout the entire USAR operation as the earthquake damage extended across a large urban area (Port-au-Prince, Carrefour and surroundings). Swift mapping services by MapAction staff working in the OPC were critical for coordination of such a massive USAR deployment in this large and densely populated geographical area. Inefficient urban planning and hilly topography made geographical accuracy even more important to avoid loss of time in the increasingly heavy traffic that dominated Port-au-Prince. Maps contributed to save time and increase USAR efficiency in a very challenging environment. USAR teams were in most cases deployed with an updated map relating to their sector and/or specific to their task. A package including different types of maps, available information of that sector/area was provided to the teams at the 06:00 am meetings.

A USAR coordination meeting was held every evening at 19:00 where a summary of the day's work was presented and USAR teams handed in their results of the day in writing. The teams were briefed on the safety and security situation and a dedicated security officer from the UN Department for Safety and Security (UNDSS) responded to the concerns of the teams. A representative of the DPC (LEMA) was present at most of these meetings. Each day's USAR data were collated and analyzed by information management staff in the OPC and, based on the information received from the daily work of the USAR teams; new assignments were prepared for the next day. Processed information was forwarded to the OSOCC on a daily basis.

> 66 Haiti's unique logistical limitations and security concerns coupled with the large number of USAR teams on the ground dictated the need for more comprehensive coordination than any previous operation. The twice a day coordination meetings assisted with the dissemination and collection of vital information that benefitted the entire world".
>
> *Ramiro Galvez*
> UNDAC Team Member

66It is very important to allocate INSARAG classified Search and Rescue Teams to priority activities and search areas and use them as a pillars of coordination of the rescue operations both on the work sites as well as in the operations planning section in the OSOCC.
It is because rescuers from pool of teams which passed IEC proved that they conduct rescue operations using the highest standards".

Mariusz Feltynowski
Team Leader, USAR Poland

"Joining efforts: Faced with the lack of some resources, the complementarity [between 2 USAR teams] generates good team work to assist the affected community".

Walter Gerardo Fonseca Bonilla
Chief of Humanitarian Mission of Costa Rica to Haiti

OPERATIONAL CHALLENGES

Due to the complexity of the operations, both the USAR teams and the UNDAC team faced many challenges. Furthermore, these challenges were compounded by the large number of international USAR teams and the lack of some critical resources in country to support the life saving operations. Communication, security and transportation/access undoubtedly presented the biggest challenges. In particular, the security situation hampered the operations to a great degree. In addition, many other challenges were faced with regards to the ambulance services, fuel and power. Although a great number of the international USAR teams were already well integrated into the INSARAG, there were also some search and rescue groups with insufficient knowledge of INSARAG methodology. Below is the list of the challenges identified (not in priority order):

> ❝The USAR community faced many challenges during the Haiti earthquake. The logistical limitations and security concerns severely hampered USAR operations, and limited the ability to properly plan for the days to come. In spite of the challenge, we worked together as a group and adjusted to the challenge posed, allowing us to assemble the longest and most successful USAR campaign in history".
>
> *Ramiro Galvez*
> UNDAC Team Member

1. Communication:

The airport in Port au Prince was quickly congested after the first relief flights had managed to land. The already limited capacity for ground handling of planes soon became exhausted and many flights had to land in Santo Domingo in the Dominican Republic. As a result, many USAR teams and other relief teams travelled by road to Port au Prince. As the airport in Santo Domingo also became congested with USAR teams and other relief teams awaiting transport to Port au Prince, an RDC was established. Due to constant communication problems in Haiti, contact between the OPC in Port au Prince and the Santo Domingo RDC became severely hampered, leaving members of the Santo Domingo side of the operation to make many decisions on their own.

> ❝The establishment of the RDC was made in accordance to our INSARAG guidelines, however trying to maintain staff and keep them rested and fed was a challenge. Because the aircraft were not shutting down once parked on the tarmac the noise level were extremely high. Lack of communication and basic need such as fuel for generators with electricity only on sporadically made the RDC go back to doing the "old Fashion way" by hand".
>
> *Sergio Solis*
> UNDAC Team Member

During the first days after the earthquake, no communication technologies provided constant or reliable communication. Haiti was already burdened with a poor telecommunications infrastructure before the emergency. The earthquake rendered all systems in the Port-au-Prince area totally inoperative within an hour of the quake, and mobile telephony did not fully recover until after the formal end of the USAR operation. The initial solution attempted was to use Iridium phones, but since the media and the entire response community were relying on these devices, the satellite became saturated and no phone calls could be made or received. This incapacitated communication with the teams working in the field and frequently times information about their progress or needs could not be obtained until they physically returned to the OPC. Reliable communication with the teams in the field was unpredictable during the entire operation and this caused difficulties in planning. In addition, and more importantly it involved a security risk since many teams could not notify the OPC of their whereabouts or of possible security threats.

Internet connectivity proved problematic throughout the deployment in all locations. The enormous media coverage during the USAR phase and the subsequent massive humanitarian response effectively resulted in almost immediate saturation of the available un-allocated bandwidth of available satellite communication systems in common usage by USAR teams and the OPC/RDC/OSOCC. At the height of the USAR operation, the OPC was reduced to using very old systems such as Mini-M which had fallen out of general usage in the wider community as high capacity systems, such as BGAN became saturated and failed operationally.

> ❝It was challenging to coordinate the USAR operations while teams had completely different opinions and approaches to security measures. It is time for INSARAG to develop its methodology and a common understanding of working under security challenged environments. Only under this condition, the next operation with such security conditions can be less challenging to coordinate".
>
> *Nihan Erdogan*
> UNDAC Team Member

For radio communications, VHF range was dramatically curtailed in the vicinity of the airport. The use of VHF handsets to communicate between the RDC, OPC and OSOCC became almost impossible. This could have been remedied with the use of repeaters, but such equipment was very scarce and not sufficient to solve the problems. Furthermore, as the RDC was based airside, outside the terminal building, which had been rendered unstable by the earthquake, its staff faced the challenge of an extraordinarily noisy operating environment. The noise made the use of normal VHF handsets almost impossible when they did work, as it was impossible to hear over the aircraft noise (aircraft were required to keep one engine running at all times as there was no ground start capability extant immediately after the earthquake). Early on in the deployment, all available radio channels allocated for 802.11b/g/n became saturated in the vicinity of the OPC and OSOCC. This made WiFi very slow and unreliable when it worked and resulted in routers and access points frequently crashing as their various error logs and collision tables filled up, forcing frequent restarts. Coupled with the heat and unstable power, this contributed to unacceptably long downtime periods.
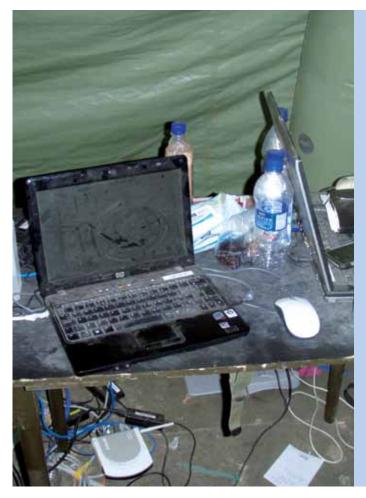
> 66 Working at the RDC with the closest airplanes about 40 meters away was hard. Most of the planes kept engines on while on ground so they could make a quick departure and leave space for the next incoming plane".
>
> *Leif Wall*
> IHP

As a result of all the technological challenges, communications between the OSOCC, OPC, RDC and the USAR teams were frequently only possible through face-to-face contact. This also affected the USAR operational planning. The information from many teams could only be collected when they returned to the BoO at the end of the day, at approximately the same time as the USAR coordination meeting. It was even more difficult to get information from teams not located at the BoO in the airport premises. The OPC was thus only able to obtain an overview of the USAR operations and revise its plan when the teams returned to report in person. Towards the end of the USAR phase, mobile telephony improved slightly but it was still very unreliable. Often staff had to call the same number for many times to get through once.

2. Electrical Energy:

Power also proved to be an ongoing problem during the early phases of the operation. The earthquake destroyed mains power, and consequently the entire operation was forced to rely on whatever generating capacity could be imported, scrounged or later borrowed from whatever host facility was available. Throughout its existence, the RDC suffered intermittent power failures as the airport generators experienced problems. As a result, the RDC was effectively forced to run on batteries, severely limiting communications and information handling capabilities. The massive influx of equipment from around the globe and the borrowed nature of much of the equipment also led to problems with disparate voltages which resulted in some non-auto switching equipment to be destroyed and almost caused a fire at the OPC, when a 110V only charging unit was plugged into a 220V circuit with US type B sockets (usually 110V only). This led to an electrical discharge and smoke, which was rapidly dealt with, but is illustrative of the problems experienced in this regard. Often support teams had to improvise and string together disparate bits of equipment to make them interoperable.

3. Security and Access:

The security of the teams was of paramount importance from the beginning since the situation in Port-au-Prince was very unstable. The country was in UN Security Phase III before the earthquake and the rules and regulations pertaining to this phase were followed. The UN Department of Safety and Security (UNDSS) team in Haiti had been seriously affected by the earthquake with the loss of staff and offices including the operational control centre. In spite of this situation, a senior security advisor was deployed to act as the UNDSS liaison officer at the OPC to support the coordination of USAR operations, provide daily briefing, interact with the security staff of the USAR teams and facilitate the transport and security escorts. In addition, there was also another UNDSS official, a member of the UNDAC team, based in the OSOCC. He also supported this process, participated in daily meetings at the OPC and liaised with the MINUSTAH's section for transport and security. Throughout the process, support was also given by the UNDSS Chief Security Advisor, UN Fire Marshall and the close protection team (QRF).

> 66 Due to the extensive damage of the airport buildings, the RDC had to be very close to the airstrip. The ongoing noise of incoming and departing planes made communication with the operations cell difficult and demanded flexibility and inventiveness".
>
> *Arthur Weber*
> EUCPT Team Member

The security situation remained volatile throughout the USAR operation, but did not deteriorate as feared. Port-au-Prince was divided into zones according to MINUSTAH security procedures. In the main, the harbour area (from Cité Soleil towards the south and Carrefour) was considered as a red area where military escort was necessary. USAR teams could safely work in other areas. No operations were conducted and facilitated by the OPC in red areas without permanent MINUSTAH escort since communications were not reliable. Escorts remained with the search and rescue teams for the duration of the operation in red areas. For other areas, teams were deployed and picked up with MINUSTAH escort.

Sufficient escorts were not available for all teams at all times in all areas. Therefore a prioritization based on daily security assessments was conducted. Teams were also asked to work only during the daytime for security reasons. Exceptions were made for teams who could confirm the presence of live victims after searching the area. In these instances efforts were made to provide security and this was accomplished most of the time. Some USAR teams had their own transportation and others even had their own security resources as some embassies were able to provide security details for their USAR teams. However, all teams were recommended to follow the same security recommendations.

The UNDAC team and UNDSS officials discussed the security situation on a daily basis. The discussions included security reports and information from the USAR teams. Over time and based on the daily security assessments, it was observed that the security situation was improving. This allowed the USAR teams to work in many areas without security concerns. The application of security measures was slightly relaxed for some areas that were considered safe, thus increasing the operational capacity.

Acquiring security forces, transport and fuel for the USAR teams proved to be the biggest challenge throughout the USAR phase. The national authorities did not have sufficient resources to support the operations, although some transport facilities were provided during the two first days. However, the UN Department for Peacekeeping Operations (DPKO) operating in Haiti with the UN integrated mission MINUSTAH force did have resources to cover the needs for logistical and security support, but was unable to support the international humanitarian community with sufficient resources during the initial period of the operation.

MINUSTAH itself was to a large extent crippled by the earthquake. Not only did it suffer from the loss of a high number of staff members mandate to utilize DPKO assets for non-DPKO operations. In addition, national United Nations Police (UN POL) contingents assigned to USAR teams were withdrawn to provide support for relief teams from their own nations. The support provided during the first days was primarily thanks to individuals who stepped up and took responsibility. The visibility of the many UN-marked resources, which were needed for logistics and security of international USAR teams, but were not being utilized, led to massive frustration among international responders.

The OPC facilitated transport and/or security for USAR teams according to their needs and operational area. In the beginning, USAR teams experienced rather unpredictable and ad-hoc transport support provided by the Haitian authorities and MINUSTAH (13 and 14 January).

This arrangement was clearly insufficient as several teams had difficulties to deploy on arrival (14 January). From 15 January, UN POL Canada started coordination of additional transport and security resources. This support improved the situation significantly, albeit the available resources were still limited. An example was that a single truck was deployed up to three times, leading to teams waiting to be deployed until return of the truck, and, similarly, the teams had to end operations in the early afternoon to ensure return to BoO before dark. This shortage of transport and security forces severely reduced working hours for many teams. UN POL coordinated transport and security from 15 to 19 January, the most intense period of the USAR operation. On 19 January 2010, MINUSTAH instructed that all USAR-related transport and security was to be coordinated by MINUSTAH military forces instead of UN POL.

This change was unfortunate as UN POL had improved their efficiency in the coordination of the limited resources by the day and this change implied starting from scratch. The military assets remained insufficient and unpredictable during the final days of the USAR operation. The UNDSS focal point assigned to assist the OPC proved to be of great help to iron out the recurrent shortage of resources. A formal request for transport and security was forwarded every evening once the reports from the teams were received, but transport and security resources were still provided with significant delays.

Some teams expressed verbally at the end of the operations that they had felt threatened by the situation. There was, however, only one reported incident where three USAR teams working in Cité Soleil (red area) were evacuated on 17 January 2010 due to cross fire between looting gangs in the proximity of the operational area. This occurrence was successfully managed by UN POL Canada patrols. The downside to this episode was that the USAR team had located and was currently working on a live victim when they had to disengage from the rescue. It was a very hard decision and even harder for the rescuers, but their safety and security could not be guaranteed. Although rescuers were sent to the same location afterwards, no sign of life could be found.

The logistical situation remained difficult until the end of USAR operation. The situation for the larger humanitarian relief operation improved with the appointment of a new Acting SRSG and, subsequently, the adoption of UN Security Council Resolution, which extended MINUSTAH's mandate, but these new priorities/objectives only slowly trickled down in the organization and did not take full effect until the USAR phase had ended. However it should be kept in mind that such a dramatic extension of MINUSTAH's mandate would take time to be fully implemented.

4. Mobile Medical Services:

There was a great shortage of ambulance services throughout the USAR operation. The USAR teams from Spain and Mexico collaborated to fill the gap. Between the two teams, they provided medical teams and a transport vehicle and served as the only ambulance service available to assist the USAR teams. The ambulance services were also shared with the Hôpital de la Paix. Even if all referrals could be attended to, the previously mentioned communication problems rendered this task challenging. Although if this service was widely used by many USAR teams, it was not enough and many USAR teams were left to improvise transportation of patients. In these cases, the teams ensured medical assistance during transport.

> "A USAR team self-deployed to a restricted area without consulting or informing the Operations Cell and suddenly required security assistance. Security had to be rerouted from another working area, where rescue operations had to be reduced or stopped, in order to help this team. The team had failed to coordinate with the UNDAC team, got themselves into danger and hampered scheduled operations".
>
> Olivier Bruyere
> UNDAC Team Member

> "The Spanish and the Mexican team joined up to keep an ambulance constantly on stand-by. This had a great impact on the operations. It seems crazy to work for hours to save somebody's life and then ruin all the effort because you can't use a proper ambulance to transport critical patients. I would like to think that our effort contributed to the dignity of the victims and to honour the efforts of the teams to save lives".
>
> Pablo Yuste
> Head of Spanish Delegation to Haiti

5. Other Logistical Challenges:

In the absence of the systems that could ensure MINUSTAH support for the ongoing humanitarian actions, separate arrangements were promoted, including securing food rations and water from MINUSTAH. These supplies served to sustain UNDAC members as well as USAR teams and assessment teams. It was observed that some small and inexperienced USAR teams did not have a sufficient amount of food and water and therefore, they came to the OPC asking for it. By the third day of the operations, the logistics function of the OSOCC started working on getting supplies of food and water. The food and water rations arranged by logistics function of the OSOCC through an agreement with the MINUSTAH solved this problem. Daily rations were picked up from MINUSTAH and brought to the OPC in BoO and they were distributed as needed to the USAR teams.

> ❝ USAR logistical Support was also a challenge but the issue here was that many countries sent their team (who were not necessarily part of the INSARAG System) without proper support IE: fuel, food, water. By the third day we had to start working on getting supplies of Water / Fuel / Food for some of the USAR Team that were running out. We were able to get some contracts written out for food, water and fuel from MINUSTAH. Daily rations were picked up and brought to the International camp site for distribution as needed to the USAR teams".
>
> *Sergio Solis*
> UNDAC Team Member

6. Misunderstanding of the Role of the OPC:

The organizational model of taking the Operations function out of the OSOCC and establishing a separate Operations Centre geographically away from the OSOCC worked well for USAR coordination. However, this was a drawback to this arrangement since many actors mistook the OPC for the OSOCC. This lead to some confusion as humanitarian actors forwarded information and requests to the OPC and had to be redirected to the OSOCC at the MINUSTAH base. Also, as the USAR teams were physically separated from the OSOCC and the coordination structure put in place for the larger humanitarian relief operation, they were not able to link up with other humanitarian actors or the clusters in a simple manner.

7. Awareness of INSARAG Methodology:

It was observed by the UNDAC team at the OPC that some search and rescue groups did not have sufficient knowledge of INSARAG methodology. Some groups also lacked self-sufficiency. This situation caused difficulties for the UNDAC team in planning USAR operations. Although some of these search and rescue groups collaborated with the OPC, some of them did not. It was also observed that some of them were not very familiar with the INSARAG marking system. Special attention was given to these teams to ensure that they were a part of the coordination system. The assignments were planned in such a way that these teams were matched with the professional teams aware of INSARAG methodology.

END OF USAR OPERATIONS

In spite of these constraints, the international USAR teams located and rescued more than 130 people who were trapped under collapsed buildings, according to reports and information received from the teams as of 23 January.

The active phase of USAR operations coordinated by the OPC lasted from 14 to 22 January 2010. As it had been 10 days since the earthquake and the number of people rescued by the international USAR teams was decreasing with no live victims rescued in the last 48 hours, it was decided to end the pro-active phase of USAR operations on 22 January 2010. The Prime Minister of Haiti took the decision after a recommendation of the UNDAC Team Leader, based on the unanimous agreement of the Team Leaders of the international USAR teams. The decision was announced at the USAR team leaders coordination meeting at 19:00 on 22 January. The OPC at the BoO was closed by the end of the day and the RDC at the Port-au-Prince airport was closed by early on 23 January.

Although the pro-active phase of the USAR operations ended on the evening of 22 January, the OPC remained operational within the OSOCC and continued its operations on the basis of request made to the OSOCC until the end of the entire UNDAC mission. By this time the majority of the teams were preparing their departure from Haiti and therefore there were no daily assignments given to the remaining USAR teams. The OPC within the OSOCC continued to respond to the requests regarding potential live victims and the teams still in-country were assigned to these working sites if the information was confirmed to be reliable. The OPC also assigned some teams other types of work such as recovery of important equipment from damaged structures.

> ❝ I was out today with the president of Haiti and we discussed the search and rescue phase and how long we want to continue and his words were 'we need to continue as long as the population thinks there is hope".
>
> *Jesper Lund*
> UNDAC Team Leader

Transition to Relief "Beyond the Rubble"

Several USAR teams conducted work outside the normal tasks of a USAR team. Ambulance services, distribution of relief goods, building up temporary shelter and logistical support to orphaned children are examples of services that USAR teams took on, especially towards the end of the USAR phase when search and rescue assignments slowed down. Many teams provided medical assistance to the victims of the earthquake both in Port-au-Prince and Leogane while some supported the field hospitals.

One of the most frequently performed works was the assessment of the structural integrity of hospitals and other vital public buildings. This was an important support to the Government of Haiti to assess the condition of the public buildings and to provide them data for decision making and planning. A number of teams also helped with the recovery of important equipment from the damaged buildings. When the pro-active phase of USAR operations was ended, some teams recovered the deceased. Although this was not the primary role of the USAR teams, some of the teams performed this task and it was observed to be important for the impacted families.

This expanded role of USAR team, referred to as "beyond the rubble", was practiced during the transition phase from the life-saving USAR phase to humanitarian relief. This was regarded as an added value to the overall humanitarian assistance. While some of this work was coordinated by the OPC, most of it was coordinated by the OSOCC.

The Success of the Operations

The outstanding efforts of the international USAR teams were highly appreciated by the Government of Haiti and the UN leadership. This was conveyed by the newly-appointed Acting Special Representative for the Secretary General Edmond Mullet, who personally thanked the USAR teams during a visit to the BoO towards the end of the USAR phase. The UN Secretary-General Ban Ki-Moon also addressed the ongoing USAR operations calling it a "monumental effort" at a press encounter on Haiti in New York on 15 January.

> ❝No doubt exists that the work that INSARAG has done over the years played a significant role in the monumental achievement we saw in Haiti. To my knowledge, USAR teams saved more lives in Haiti than in any other international disaster response and this is because many of them were working under the INSARAG umbrella".
>
> *Tim Callaghan*
> INSARAG Americas Regional Group Chairman

The success of this operation can be evaluated from many different aspects. First of all, a total of 132 people were registered as rescued. This number was based on the reports from the international USAR teams during and after the operations, including post-mission reports and the Virtual OSOCC data. And compared with the registered numbers from previous earthquakes, this is one the highest number of people rescued by international USAR teams. The only international USAR response that has such high numbers was the earthquake in Turkey in August 1999.

> ❝After 12 hours of work, we had a success and it was marvelous – because one life does not have a price."
>
> *Bruno Besson*
> Team Leader, SSF, France

The other important aspect related to the high number of people rescued was the duration of the rescue window. The first international USAR teams entered Haiti in less than 24 hours after the earthquake and started working. And based on the reports from the international USAR teams, the victims were rescued from 13 January to 23 January (while it should be noted that there were no victims rescued between 20 and 22 January).

Another important aspect was the high number of international USAR teams deployed. The total number of teams the OPC staff was able to track either from the Virtual OSOCC or from the USAR team factsheets or from other resources was up to 70. However, it was obvious that not all of these teams had the five components (management, logistics, search, rescue, medical) of a USAR team. And some of them lacked number of staff; therefore it would be wise to consider the overall number of international USAR teams some 60. Out of these international USAR teams, 8 of them were IEC classified teams (UK-ISAR of UK, Fairfax County USAID of USA, Los Angeles County USAID of USA, USAR.NL of the Netherlands, ISAR Germany, USAR Poland, ICE-SAR of Iceland and CISAR of China). There were also 8 USAR teams in the IEC queue by the time of the response. This was the highest number of IEC classified teams responding to an earthquake since the beginning of the IEC system in 2005. The team leaders of these IEC classified teams clearly stated very good joint work of the IEC teams and good level of understanding of each others' work and standards.

The response to Haiti also proved to be a successful example of cooperation between INSARAG, UNDAC and partners. Very timely and efficient examples of international USAR teams supporting the response of INSARAG partners and UNDAC team members were observed. Some teams deployed with UNDAC members or IHP members. Lastly, the expanded work of USAR teams beyond the search and rescue phase to support the larger humanitarian relief operation provided additional value to their work. By this way, the USAR teams were able to support the ongoing humanitarian operations in many different areas and thus proved to bring multi-faceted added value.

CHAPTER 2:
INSARAG HAITI EARTHQUAKE AFTER-ACTION REVIEW MEETING

LEARNING TOGETHER....

On the basis of the data registered by the UNDAC team and the post-mission reports of the USAR teams, the international USAR response to the Haiti earthquake was the largest ever. The only international earthquake response with such large numbers was to the earthquake in Turkey in August 1999, based on the registered numbers of USAR assistance as announced at the Meeting of International Search and Rescue Team Leaders on lessons learned and follow up to the 1999 Turkey and Taipei earthquakes. However, as the concept of a USAR team was different in those days than of today, it would be correct to say that there had never been so many USAR teams, rescue staff and search dogs responding to one earthquake. Also, such a large UNDAC team had never before operated in one location.

With all the challenges faced by the responders, it was only natural that a thorough review of the operations was conducted to capture lessons that could be used to improve the INSARAG methodology. When Ambassador Toni Frisch, the INSARAG Chairman, visited Haiti, this issue was discussed with the UNDAC Team Leader. The organization of a meeting to review the USAR operations was announced to the international USAR teams at the USAR Coordination Meeting.

The INSARAG Haiti Earthquake After-Action Review Meeting was held in Geneva, Switzerland on 2-3 June 2010 with more than 110 participants from 36 countries and 12 organizations . The meeting was hosted by the Government of Switzerland and co-organized by FCSS of OCHA, in its capacity as the INSARAG Secretariat. The meeting was chaired by Ambassador Toni Frisch, Chairman of INSARAG. The Government of Haiti was represented by the Director of Civil Protection, Marie Alta Jean-Baptiste.

The main objectives of the meeting were:

• To share the professional experience of urban search and rescue teams that participated in search and rescue operations during the Haiti earthquake of 12 January 2010;

• To discuss how to further develop the cooperation with different partners and organisations responded to the earthquake;

• To draw lessons learned from the international urban search and rescue efforts in Haiti;

• To initiate greater awareness on the importance of urban search and rescue capacity building in developing countries;

• To identify those areas to be added to the INSARAG methodology with a view to improving the operations in the future.

In the light of these objectives, the first day of the meeting was composed of presentations focusing on different aspects of the USAR operations in Haiti. These were presented in the order of an operations cycle, i.e., "Preparedness", "Mobilization", "Operations", "Demobilization" and "Transition to Relief" (referred to as "Beyond the rubble") as defined in the INSARAG Guidelines. On the second day of the meeting, participants discussed key areas of the USAR operations in Haiti in five working groups. These working groups were determined by the recommendations from the INSARAG USAR Team Leaders Meeting that took place in Abu Dhabi, United Arab Emirates, in March 2010. Many aspects of the USAR operations were discussed at the meeting of INSARAG USAR Team Leaders on one day dedicated to this topic. The major areas of lessons observed were chosen as the themes for the five working groups of the INSARAG Haiti Earthquake After-Action Review Meeting.

Summary of outcomes

The discussions during the meeting resulted in some key recommendations for follow-up activities and further development of the INSARAG methodology. The INSARAG Steering Group will receive an update on the key lessons learned which thereafter will be discussed further at the regional level and subsequently presented at the INSARAG Global Meeting in Japan in September 2010.

The key outcomes are listed in the following 4 main categories:

1. Recognition of the expanding role of USAR teams:

The meeting recognized that in recent years the roles of USAR teams had extended beyond the search and rescue phase to support the larger humanitarian relief operation, hence the expression "beyond the rubble". This role was specifically observed during the transition phase from the life-saving USAR phase to humanitarian relief during the Haiti response operation. USAR teams were deployed with added capacities to strengthen ongoing humanitarian assistance and/or to provide further support to the humanitarian actors once the USAR phase was over.

It was recognized that it is an added value of USAR teams to engage with the other actors in humanitarian relief operations. Therefore, the meeting suggested establishing and strengthening the links with the relevant clusters and adding this to the INSARAG methodology to ensure that this added value of USAR teams will be appropriately practised, "beyond the rubble".

2. USAR capacity building at all levels:

USAR capacity building in disaster-prone countries is one of the key elements for effective preparedness to ensure that adequate capacity exists where it is needed most. Therefore, the meeting recognized the need to focus on this subject. The organizational and operational standards for capacity building of national USAR teams, as well as the incorporation of INSARAG Guidelines and Methodology into national response plans in line with the UN General Assembly Resolution 57/150 of 2002, should be given priority. The UN General Assembly Resolution 57/150 of 2002 refers to this issue as "Encourages the strengthening of cooperation among States at the regional and sub regional levels in the field of disaster preparedness and response, with particular respect to capacity-building at all levels". The meeting suggested various recommendations and follow-up actions regarding USAR capacity building to be implemented through the INSARAG Secretariat.

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1. Argentina, Australia, Austria, Belgium, Bolivia, Brasil, Canada, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Ericsson, Estonia, Finland, France, Germany, Greece, Haiti, Iceland, Japan, Mexico, Netherlands, Peru, Poland, South Africa, Spain, Sweden, Switzerland, Turkey, United Arab Emirates, United Kingdom, United States of America, CEPREDENAC, IRO, Map Action, UN OHCHR, UNITAR/UNOSAT, OCHA, EMS.

3. IEC Teams Making a Difference:

The IEC is a capacity building tool for USAR teams aiming to deploy internationally and a certification that USAR teams are applying internationally agreed minimum standards. The IEC classified teams in Haiti demonstrated professionalism, followed the INSARAG Guidelines throughout their deployment and made a genuine difference during the response to the earthquake.

The meeting suggested actions to be taken to ensure that priority was given to IEC classified teams by the affected countries during an earthquake response. The UNDAC training already has an element of INSARAG training including the IEC concept, so that first-arriving UNDAC members are able to facilitate the teams' effective deployment. The IEC system will continue to be further promoted as the standard to achieve for the international teams.

> 66 Cooperation with other certified teams was almost faultless. This happened because teams worked with the same standards, similar equipment and mainly because they knew each other."
>
> *Mariusz Feltynowski*
> Team Leader, USAR Poland

• It was further suggested that the technical lessons learned should be formulated as "INSARAG Guidance Notes", for subsequent learning for the USAR teams. The aim of these "INSARAG Guidance Notes" would be to provide a resource of globally-accepted best practices. This would also be very relevant for some of the outcomes from INSARAG Working Groups.

> 66 The complexity and magnitude of the medical challenges faced by the medical component of USAR teams in Haiti is unprecedented. The lessons identified provide key strategic direction for the INSARAG Medical Working Group to ensure its outputs best serve the USAR community who will be confronted with similar challenges in future and help achieve our ultimate objective of reducing the loss of life and suffering."
>
> *Trevor Glass*
> INSARAG Medical Working Group Chairman

4. Strengthening the INSARAG Guidelines and Methodology:

The meeting agreed that the INSARAG methodology had worked efficiently during the response to the Haiti earthquake despite the fact that some of the deployed teams were not very familiar with it. However, it was also recognized that with the changing nature of disaster response, there were new areas that required additional attention and strengthening in the field of international USAR response and coordination. These areas were discussed in the working groups during the meeting.

The INSARAG Guidelines and Methodology that needed review are:
• A common methodology for USAR operation planning including the information management needs and search and assessment related issues (proposed for development by an Operations Working Group),
• Security guidance needed to be emphasized to foster greater awareness in USAR teams while working in security-challenged environments.
• A new format was needed for INSARAG Forms and Post-Mission Reporting - to be further discussed in the INSARAG Regional Groups and USAR Team Leaders Meetings and tried out during upcoming INSARAG earthquake response exercises.
• Cross-cutting issues with the clusters.
• National capacity building needs (in line with the proposed organizational and operational standards for capacity building of national USAR teams).

CONCLUSION

The international USAR response to the earthquake in Haiti showed us important lessons. We need to learn from these lessons to further improve our methodology to provide an even better response next time. This has always been the strength of INSARAG and I strongly believe that it will remain as a powerful side of INSARAG.

We now need to focus on these lessons and see how we can draw from them. We certainly learned a lot on the importance of expanded roles of international USAR teams and how this new role can help the broader humanitarian community. The recognition of this role and adaptation of the methodology would bring benefits to both the USAR teams and the other humanitarian actors. INSARAG needs to establish and strengthen the links with the relevant clusters and add this to the INSARAG methodology to ensure that this added value of USAR teams will be appropriately practiced, "beyond the rubble".

As highlighted by the United Nations General Assembly Resolution 57/150 of 2002 on "Strengthening the Effectiveness and Coordination of International Urban Search and Rescue Assistance", the strengthening of cooperation among member states in the field of disaster preparedness and response with particular respect to capacity building at all levels was emphasized at the INSARAG Haiti Earthquake After Action Review Meeting as one of the key elements for effective response preparedness in order to ensure that adequate capacity exists where it is needed most. While INSARAG managed to establish and successfully implement the INSARAG External Classification (IEC) system, the next big challenge will be the recognition and implementation of minimum standards for capacity building of national USAR teams. This would enable the USAR teams at the local and national level to benefit from the best practices to further improve their capacity. This would also enable the affected countries to have better response in the times of emergencies and this is what INSARAG wants to achieve.

What we also observed at the response to Haiti and also during the INSARAG Haiti Earthquake After Action Review, the IEC classified USAR teams make a real difference. Their engagement to the overall coordination mechanism and professional work helps the coordination system to be more effective and rapid. Experiencing the real difference of the IEC system, it is time for INSARAG to encourage all its Member States with urban search and rescue teams that deploy internationally to ensure their teams undergo the IEC process. This is the international capacity building tool to ensure a genuine difference in the life-saving search and rescue phase of a collapsed structure emergency and to learn from each other. All these efforts of IEC classified teams can be more meaningful, should that be supported by the disaster affected countries calling upon the specific assistance of IEC classified teams and offering priority access to such teams. Affected and responding countries should work hand in hand to agree on the necessity and importance of giving priority access to INSARAG IEC classified teams.

I trust in the commitment of all INSARAG members to collectively implement these lessons and I feel confident that this will take INSARAG to the future as a stronger and enhanced network. The enthusiasm and commitment we have experienced at the INSARAG Haiti Earthquake After Action Review Meeting will carry us forward.

Ambassador
Toni Frisch
INSARAG Chairman

The Haiti Earthquake After-Action Review identified a set of new challenges facing the USAR response in Haiti. The careful evaluation of the USAR operations and the recommendations from this meeting suggest areas that need to be further strengthened in the INSARAG methodology to be better prepared for the increasing complexity of the emergencies.

Therefore, in my role as INSARAG Africa/Europe/Middle East Regional Group Vice-Chair, I believe it is important to use this publication to document these lessons, thus supporting our advocacy for the implementation of the recommendations from the Haiti response review. It is also important to disseminate the information on the USAR operations in Haiti to the network of USAR teams worldwide. Understanding the reality of the operations, the timeline of the response, the challenges as well as the recommendations as identified at the INSARAG Haiti Earthquake After-Action Review would help all the USAR teams and the sponsors of these teams to improve response to future emergencies. Many of us played a role as part of the response and this text brings all these pieces together, providing the overview from many perspectives, e. g. from partners to USAR teams; from the coordination on-site to the coordination on-line, from challenges of the operations to the victims rescued, from facts and figures to the opinions of responders.

This publication is also an opportunity for those USAR teams that did not respond to the earthquake in Haiti to learn the lessons of those who responded. Last, but not least, this publication will remain as a reference document for future generations as the response to Haiti has been one of the most significant international USAR operations since the establishment of INSARAG.

While we should all be proud of what INSARAG achieved in Haiti, I believe it is essential we implement the lessons identified to ensure that the INSARAG methodology is adapted to the changing complexity of emergencies. Those challenges experienced during the operations and recommendations from the INSARAG Haiti Earthquake After-Action Review demonstrate that once the capacity of the affected countries can be improved, more lives can be saved.

Hence, as the INSARAG Africa/Europe/Middle East Regional Group Vice-Chair and incoming Chair for 2011, I would like to encourage all the members of INSARAG to give priority to the capacity building of disaster prone countries as highlighted by the United Nations General Assembly Resolution 57/150 of 2002. We should support the capacity building initiatives through a coordinated approach based on lessons learned from Haiti.

Of course this is a major challenge and will take time. We take heart in how far INSARAG has come since its establishment and how it made a genuine difference to saving lives thus inspiring all of us to take this progress even further.

Vice-Chairman
Kjell Larsson
INSARAG Africa/Europe/Middle East Regional Group

Annex 1
Summary of International USAR Operations in Haiti

Date	USAR Operations	Number of Rescues*
12 January	• The earthquake hits Haiti	No data
13 January	• The first INSARAG Team and UNDAC member enter the country • The first contact with the Government of Haiti by the first arriving UNDAC team member • RDC is established at the PAP airport and it gives assignments for potential working areas to the USAR teams	7
14 January	• RDC continues to give assignments for potential working areas to the USAR teams • The OSOCC is established at the MINUSTAH • The OPC is established at the airport at USAR BoO area • The first USAR Coordination Meeting takes place • The request received from the Resident Coordinator in the Dominican Republic for a UNDAC team	22
15 January	• PaP is divided into sectors and teams are assigned to the sectors • The first assignments are given to the USAR teams by the OPC • Announcement of 'no more USAR teams needed unless the teams already left their countries' on the VO and at the USAR Coordination Meeting • MINUSTAH UN POL Canada supports the coordination of additional transport and security resources • The UN Secretary-General addresses the ongoing USAR operations calling it a "monumental effort" • An RDC is established in the Dominican Republic at the airport in Santo Domingo	40
16 January	• Ongoing operations	22
17 January	• Ongoing operations • The security incident involving 3 USAR teams (in Cité Soleil) occurs	19
18 January	• Ongoing operations	9
19 January	• Ongoing operations • MINUSTAH military assets start to support the coordination of additional transport and security resources	12
20 January	• Ongoing operations • Aftershock of 5.9 M with epicentre close to Leogane • Aerial assessment and 3 USAR teams being deployed to Leogane	0
21 January	• Ongoing operations	0
22 January	• Declaration of the end of proactive USAR operations in agreement with the Prime Minister • Closure of the OPC at the BoO and continuation of response to USAR needs on request basis (practical closure on 23 January)	0
23 January	• Continuation of response to the USAR needs on request basis inside the OSOCC • Closure of RDC at the PaP airport	1
24 January	• Continuation of response to USAR needs on request basis	0
25 January	• Continuation of response to USAR needs on request basis	0
26 January	• Continuation of response to USAR needs on request basis	0
27 January	• The management of OSOCC handed over to OCHA	0
Total Numbers	• A total of 42 sectors with an area of 63 square kilometres were covered by the USAR team • A total of 7 outer lying cities (Carrefour, Gressier, Leogâne, Petit Goave, Grand Goave, Miragoane, Jacmel) • More than 60 USAR teams from 36 countries responded with more than 2000 rescuers and 200 search dogs • 8 out of 16 IEC classified teams responded	132

* The numbers are based on the reports from the USAR teams during the operations in Haiti recorded by the UNDAC team, the post-mission reports of the USAR teams and the information on the Virtual OSOCC.

Annex 2
Meeting Agenda of INSARAG Haiti Earthquake After-Action Review Meeting

0900-0940	Opening Remarks
	Ambassador Toni Frisch, INSARAG Chairman
	Marie Alta Jean-Baptiste, Director of Civil Protection, Government of Haiti
	Rudolf Müller, Chief, Emergency Services Branch, OCHA Geneva
	Rene Carrillo, on behalf of the Chairman, INSARAG Americas
	Jesper Lund, OIC, FCSS (INSARAG Secretariat), OCHA Geneva
0940-1000	Participants Introduction and Adoption of the Agenda
1000-1015	Group Photo
1015-1045	Coffee Break
1045-1100	The Approach of the INSARAG Haiti Earthquake After-Action Review Meeting, Ambassador Toni Frisch, INSARAG Chairman
1100-1130	Haiti Earthquake of 12 January 2010, Marie Alta Jean-Baptiste, Director of Civil Protection, Government of Haiti
1130-1230	Session 1 – USAR Preparedness and Mobilisation, Key Note Address from the Chair, Rene Carrillo
	(on behalf of the Chairman, INSARAG Americas)
	Presentations
	Discussions
1230-1400	Lunch
1400-1530	Session 2 – USAR Response and Transition beyond the rubble, Key Note Address from the Chair, Ambassador Toni Frisch
	Presentations
	Discussions
1530-1600	Coffee Break
1600-1700	Session 2 – USAR Response and Transition beyond the rubble (continued)
1700-1730	Briefing on Working Group Sessions
1730	Adjourn
1900	Dinner for Participants hosted by the Government of Switzerland

Thursday 03 June 2010

0900-1030	Working Group Sessions
	Information Management
	Search and Assessment
	Transition from USAR
	USAR in Security-Challenged Environments
	Capacity Building
1030-1100	Coffee Break
1100-1230	Working Group Sessions (continued)
1230-1400	Lunch
1400-1530	Feedback from the Working Group Sessions and Discussions
1530-1600	Coffee Break
1600-1610	The Way Forward
1610-1630	Closing Statements
	Marie Alta Jean-Baptiste, Director of Civil Protection, Government of Haiti
	Ambassador Toni Frisch, INSARAG Chairman
1630	Closure of the Meeting

Annex 3
Recommendations from the INSARAG Haiti Earthquake After-Action Review Meeting

Capacity Building Working Group

The aim of this working group was to discuss the USAR related capacity building issues, their importance and how they might be improved. The working group sessions were attended by representatives of donor countries and assistance-receiving countries. The discussions were focused on the importance of capacity building as a key element for effective preparedness. The need to improve the coordination among the donors through the facilitation of the INSARAG Secretariat was another major discussion issue.

The working group participants agreed on the need for better coordination among the donors, more encouragement of recipient countries to identify INSARAG national focal points and the development of guidelines on national standards, especially to use as the basis for the capacity building initiatives. In this regard, it was further agreed that the Chapter G of the INSARAG Guidelines needed to have some amendments.

> 66 Experience has learnt INSARAG people that international rescue teams cannot save all lives. It is always the local, regional and national resuers that can save most lives as they are earlier at the theatre. But the proffessionalism among those teams can and must be imroved. Therefore capacity building is a key priority in INSARAG business. The USAR teams has outstanding proffessionalism which shall be shared with those who want to learn."
>
> *Kjell Larsson*
> INSARAG Africa/Europe/Middle East Regional Group Chairman

Issue	Suggested Solution	Recommendation
Lack of proper coordination among donors	• To increase awareness of the recipient countries of capacity building projects. • To have better coordination amongst the donors implementing capacity building initiatives in the same recipient country. • To use the model of the coordinated approach of INSARAG for all USAR-related capacity building initiatives (such as in the case of Pakistan after the 2005 earthquake).	INSARAG Secretariat should facilitate the process by communicating with the recipient country of the capacity building project, assessing the situation and sharing the results with interested donors. This process needs to be implemented through OCHA Regional Offices and United Nations Resident Representatives. The INSARAG Secretariat should have the role to coordinating these efforts, but it should not actually do the work of capacity building.
Lack of clarity in recipient country's structure.	• To encourage the bottom-up approach • To increase the government's awareness	The INSARAG Secretariat should facilitate the process of increasing the awareness of recipient countries.
Absence of national standards (such as light, medium and heavy USAR teams)	• To develop guidelines on national standards by INSARAG to use for capacity building.	INSARAG should work on the necessary amendments of the Chapter G of the INSARAG Guidelines to include national capacity building issues. The INSARAG Secretariat through the INSARAG Regional Groups and INSARAG USAR Team Leaders should facilitate this process.
Lack of INSARAG focal points in many countries.	• To encourage the governments to appoint national focal points.	The INSARAG Secretariat should encourage all the Regional Groups to identify the national focal points. In particular, these national focal points should be at two different levels: the decision making/policy level and operational/technical level.

Information Management Working Group

The Information Management Working Group discussed several aspects of the operations. These included the need to improve operational planning, to extend the use of Virtual OSOCC in the field, to develop a better communications strategy, to improve the information management capacity of USAR teams. One of the challenging topics discussed was the new and increasing role of social media and how to manage it and to benefit from it for information management during the USAR operations.

While the group recommended many solutions for the issues faced by the response in Haiti, one of the most important recommendations was the establishment of an INSARAG Operations Working Group with the mandate to define a methodology and process for operational planning of USAR teams. The working group also suggested some recommendations that fall under the responsibility of the GDACS and GDACS Secretariat and some in the area of the INSARAG Training Working Group.

66 *Every year, new disaster information technologies emerge and new tools are developed by a multitude of actors. The main challenge for modern disaster information systems is to synchronise with other relevant systems efficiently to complement their capacity and avoid information overload or duplication".*

Thomas Peter
Manager
Emergency Relief Coordination Centre OCHA Geneva

66 *This is the first emergency where we really have seen how social media can influence the way we work. We set up dedicated sites on Twitter or Facebook, we had a capacity where people send SMS and say that they have had heard of somebody being trapped under rubbles in this location".*

Jesper Lund
UNDAC Team Leader

Information Management Working Group

Issue	Suggested Solution	Recommendation
Operational planning needs to be improved	• To define a more clear methodology for USAR operational planning. • To develop a training programme for USAR operational planning at the international level. • To establish OSOCC Operational Support Staff in each region.	It was suggested that an INSARAG Operations Working Group (OWG) be established with the mandate to define a methodology and process for operational planning of USAR teams. It was also suggested that the INSARAG Training Working Group (TWG) may work on developing a training programme for USAR operational planning at the international level. The donors were encouraged to support the OSOCC Operational Support Staff training and the establishment of such teams in their regions.
The need to improve the information flow	• To better define the information management processes. • To explore the ways of extending the use of Virtual OSOCC in the field as a coordination information system. • To collaborate with GDACS Information Management Working Group.	The proposed INSARAG OWG should work on the definition of information management processes. The INSARAG TWG should identify ways of improving the information management training for USAR teams and OSOCC liaisons. The INSARAG Guidelines and Methodology also needed to be amended to include the proposed updated versions of INSARAG forms. It was also suggested that GDACS may explore ways that the Virtual OSOCC can support field activities.
The roles within the Operations Cell of the OSOCC to be clarified	• To define a scalable organizational structure for the Operations Cell of the OSOCC. • To improve the training of liaison officers. • To improve the training of the OSOCC support team.	It was suggested that the proposed INSARAG OWG may work to create the organisational structure of an Operations Cell and to define the roles within this structure. It was also suggested that the INSARAG TWG may work on the training programme for liaison officers and for OSOCC support.
Communication needs to be improved	• To define a more clear communication strategy between operation cells and USAR teams • To more clearly define communication requirements of USAR teams. • To allocate call signs to IEC teams. • To collaborate with the Emergency Telecommunications Cluster.	It was suggested that the proposed INSARAG OWG may define a communication strategy and work on proposal for communication requirements to be included in the guidelines It was also suggested that work should be done with the Emergency Telecommunications Cluster on call signs and other relevant support.
USAR team information management capacity needs to be improved	• To develop and conduct information management training for USAR teams. • To develop and conduct USAR team leaders training in international humanitarian operations. • To develop Guidelines/standard information packages for arriving USAR teams.	It was suggested that the INSARAG TWG should explore the possibilities for information management training for USAR teams and USAR team leaders training for international humanitarian operations. Another suggestion was that the proposed INSARAG OWG works on an information package for incoming teams.
Information Management capacity in the field is limited	• To encourage and help drive the creation of systems like Project 4636 and USHAHIDI. • To create a process for handling incoming reports via social media. • To explore ways to scale out information management and operational planning efforts via social networks.	It was suggested that the proposed INSARAG OWG work with creators of social-network-based reporting systems to enable information sharing from the general public to Operations Cell. The proposed INSARAG OWG may work to explore ways to include social media reports in the USAR operations planning process. It may also work to explore new ways of scaling out work via the Internet.

Transition from USAR Working Group

Given that it was established as a result of the expanded roles of USAR teams most frequently observed, the working group discussed the definition of this new concept. The participants agreed on the added value of this expanded role and discussed how this role should be structured and added to the INSARAG Guidelines and Methodology.

The group suggested strengthening the integration between the clusters and USAR teams, training for USAR team members towards a better understanding of the broader humanitarian perspective and more interaction between the UNDAC and INSARAG networks and their methodology. The recommendations from this working group together with the discussions and presentations at the plenary sessions of the meeting became one of the major outcomes of the INSARAG Haiti Earthquake After-Action Review Meeting.

> "Rapid Response is a great tool to save lives. However, there is room for improvement at the end of the rescue phase. The Haiti Earthquake showed the importance of having USAR teams vested with specific knowledge on how to hand over the responsibility to other organizations, which then continue to alleviate human suffering with basic services for survival and early recovery. It is therefore a great challenge for the international community to set up minimal standards to achieve better coordination during this transition phase".
>
> *Urs Amiet*
> Switzerland

Transition from USAR Working Group

Issue	Suggested Solution	Recommendation
Coordination	• OSOCC: Taking care of problems (USAR, camp management, fuel). • Intention is not to set up one BoO. • To improve the profile of liaisons for OSOCC	It was suggested that USAR representatives attend the relevant clusters meetings. It was also suggested that the role of the OSOCC be defined during/for preparing the transition from the USAR perspective and how to utilize the USAR teams more effectively at this phase. The skills and experience of liaison officers assigned to the OPC was also discussed and it was recommended that a better way be found to select and deploy them.
Technical capacity of USAR teams to be used	• To define clearly the scope of the new concept for the USAR teams • Experts to stay on.	
USAR personnel are not trained for humanitarian aid activities	• To make better use of USAR knowledge (medical, logistics, communications/CIS, IMC). • To develop relevant skills.	It was suggested that the transition issues related to the USAR concept to be included into agenda of the next Global Cluster Meeting. It was also suggested that the plan for transition should be shared at the daily OSOCC meetings. Discussions before the emergencies (such as USAR teams and other humanitarian aid organisations inviting each other) and joint training were also recommended as useful actions.
Mandate of USAR team	• To use USAR teams during stand-down: assisting. • To have Operations and planning or liaison in the USAR team structure with UNDAC knowledge. • Not to change the mandate	
Perception competition	• Not to extend USAR mission. • To utilise assistance on structural engineering and medical issues	
Coordination mechanism USAR-humanitarian aid	• To recognise the important role of UNDAC • To assign better role of liaisons in the OSOCC • To revise templates for assessments with accurate/needs humanitarian aid related information. • To expand the role of OSOCC.	The training on UNDAC, humanitarian aid and cluster approach is important for USAR teams. It was suggested that UNDAC members be invited to the INSARAG Team Leaders Meeting to build up stronger relations.

Search and Assessment Working Group

The aim of the Search and Assessment Working Group was to discuss different terminology used during search and assessment and suggest solutions for the development of a common understanding. The group also discussed the potential implications of search methods on the INSARAG marking system and further improvement of the search function of the USAR teams. The group suggested the development of a standardized reporting form for search and assessment, the recognition of the value of assigning IEC classified teams to be in charge of USAR operations sectors and the continuation of the INSARAG marking system as it is.

Many recommendations of this working group referred to the establishment of an INSARAG Operations Working Group in line with the recommendations from other working groups of the INSARAG Haiti Earthquake After-Action Review Meeting. It was also suggested that the INSARAG Training Working Group should work on some of the needs determined.

> "When talking about search respectively detection methods, it has to be distinguished between technical and biological (Search and Rescue Dogs) detection. Both methods should not be seen separately but should be used jointly in a USAR-Team. For both detection methods a joint training should be possible inside a USAR-Team".
>
> *Wolfgang Zörner*
> President International Rescue Dog Organisation (IRO)

Search and Assessment Working Group

Issue	Suggested Solution	Recommendation
Defining Sectors/ Assessment	• To reduce the number of USAR operations sectors to a manageable size. • To assign an IEC classified team to be in charge of a sector (including national teams/local authority, if possible). • To encourage the establishment of sub-OSOCCs. • To have a more disciplined approach by the USAR teams while working with the OSOCC. • To use one terminology for three levels of assessment.	It was suggested that an INSARAG Operations Working Group be established to discuss these issues and suggest solutions that could help to further strengthen the INSARAG methodology and that could be added to the INSARAG Guidelines.
Implications of search methods on INSARAG marking system.	• To leave the INSARAG marking system as it is and not to make any changes. • To have information note at the OSOCC rather than integrating search methods to the INSARAG marking system. • To develop a standardized form for the reporting format.	This system and form should be developed and added to the INSARAG Guidelines and Methodology.
The need for further development of partnerships in the search function of the USAR teams and search methods	• To have standards for each module • To have a better quality of dogs • To have joint training • To have pre-defined standards for dogs • To have debriefing at OSOCC • To enhance the transition from USAR to medical care. • To coordinate GPS system.	It is suggested that the INSARAG Training Working Group may work on training-related suggestions. The outcomes of these suggestions could be added to the INSARAG Guidelines and Methodology.
Role of the Flash Environmental Assessment Tool (FEAT) for assessment	• FEAT is more related to the UNDAC team and LEMA than the USAR teams • To have the ability (minimum detection capacities) to identify HAZMAT by all USAR teams. If not, to have a specialist team. • To announce beforehand the existence of a special HAZMAT team. • To work closely with LEMA.	It was suggested that these issues could be discussed by the proposed INSARAG OWG. The relevant outcomes may be added to the INSARAG Guidelines and Methodology.

USAR in Security-Challenged Environments Working Group

Participants of this working group had comprehensive discussions about urban search and rescue operations during the emergencies where there were security challenges. Several opinions representing different ideas were suggested. The key discussion topics were: communication with the population to better explain the work of USAR teams; some teams lacking dedicated security staff; the need to share the security information as two-way street and potential further challenges that could be caused by inexperienced USAR teams. The participants discussed at great length the issue of USAR teams having their own armed security staff and how this may affect the operations and the approach of the population to the USAR team. It was suggested that this topic be further discussed and the necessary amendments to the INSARAG Guidelines and Methodology be made.

> "The increasing involvement of national and international military forces in responding to sudden onset disasters is a reality that the INSARAG community needs to anticipate in future emergencies. USAR Teams should be ready to engage military forces on the ground when the need arises, especially in the critical areas of security, logistics and information sharing".
>
> *Ronaldo Reario*
> UNDAC Team Member

USAR in Security-Challenged Environments Working Group

Issue	Suggested Solution	Recommendation
Security threat is from the affected community – often because they do not know what is happening	• To provide information to the affected community about the situation, what is being done and why, and why it is important for USAR teams to work safely.	It was recognised that only the LEMA can provide the necessary information to the affected community. However the United Nations/UNDAC team can encourage the LEMA to do this and provide the necessary information to them. Additions to the UNDAC handbook and training in this regard could also be considered.
USAR teams not having security expertise	• All USAR teams should have one person responsible for security issues. This person should be security trained and preferably all USAR team members should have a level of awareness of security issues. • USAR teams should create, implement and update their security plans.	This responsibility should be included in the USAR team's structure. It was also suggested that a security-training programme may also be included in the USAR team's training programme. The United Nations online safety and security awareness training should be encouraged for all USAR teams, perhaps within the IEC process.
Sharing of Security Information	• To recognise that the sharing of security information is a two-way process – from the OSOCC to USAR teams and from USAR teams to the OSOCC. • To establish better communications between the USAR teams and OSOCC.	All the international USAR teams should report the security situation to the OSOCC as IEC classified teams do. It was also suggested that all the responders needed better communications equipment.
NGO's and inexperienced teams – a problem from anywhere causes everyone problems	• To control and guide these USAR teams. • To prioritise responsible USAR teams.	It was suggested that it was important to encourage all the USAR teams to be IEC classified. In this regard, it is was also necessary to encourage the affected country to control the entry of USAR teams. Lastly, there should be encouragement for the sector method of coordinating the USAR teams.
Lack of information about security situation at the onset stage	• USAR Teams should know how to access this information.	It was necessary to have proper training in this area. The Virtual OSOCC should have links to relevant websites when the emergency topic was opened at the start of the emergency and the United Nations security level should be announced under this topic.
More security information needed at high-risk events such as Haiti.	• To add a specific daily USAR teams security briefing to cover security issues in more depth.	This consideration can be added the UNDAC Handbook and INSARAG Guidelines and Methodology.
Risk to USAR teams is less than aid distribution	• USAR operations should not be mixed with aid distribution e.g. different trucks • Different security measures needed for different types of humanitarian work.	These issues might be further discussed and added to the INSARAG Guidelines and Methodology.
The issue of USAR teams have their own armed security staff	• There are different opinions among the USAR teams. However the majority say definitely not. • Armed guards can hinder and compromise USAR operations. • This issue should be the responsibility of receiving country.	The USAR teams should follow the INSARAG Guidelines and Methodology. These issues can be further discussed and added to the INSARAG Guidelines and Methodology.

AKNOWLEDGEMENTS

List of Acronyms

AST	Americas Support Team
BoO	Base of Operations
DPC	Département de la Protection Civile (in Haiti)
ESB	Emergency Services Branch
EUCPT	European Union Civil Protection Team
FCSS	Field Coordination Support Section
FEAT	Flash Environmental Assessment Tool
GDACS	Global Disaster Assessment Coordination System
IEC	INSARAG External Classification
IHP	International Humanitarian Partnership
INSARAG	International Search and Rescue Advisory Group
LEMA	Local Emergency Management Agency
MINUSTAH	UN Stabilization Mission in Haiti
OCHA	Office for Coordination of Humanitarian Affairs
OPC	Operations Cell
OSOCC	On-Site Operations Coordination Centre
OWG	INSARAG Operations Working Group
PaP	Port-au-Prince
PoA	Plan of Action
QRF	Close Protection Team
RDC	Reception and Departure Centre
SRSG	Special Representative of the Secretary-General
TSF	Télécoms sans frontières
TWG	INSARAG Training Working Group
UN	United Nations
UNDAC	United Nations Disaster Assessment and Coordination
UN DPKO	UN Department for Peacekeeping Operations
UNDSS	UN Department of Safety and Security
UN POL	UN Police
USAR	Urban Search and Rescue
VO	Virtual OSOCC