



Rapid Study Report on the International Search and Rescue Response to the Izmit Earthquake

Turkey, August 1999

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1. Introduction

At 0301 hrs on Tuesday 17 August 1999 one of the deadliest earthquakes of the century struck Turkey. The earthquake registering 7.4 on the Richter Scale brought death and destruction to an area of 40,000 km² in the north-west of Turkey, equivalent in size to Denmark in Europe and containing the country's industrial belt.

Over 15,000 people died in the earthquake, with injury figures in excess of 50,000 and many tens of thousands unaccounted for.

The international community responded immediately in support of those affected by the disaster, by dispatching Search and Rescue (SAR) Teams from every corner of the globe, on a hitherto unprecedented scale.

This report has been commissioned on behalf of the International Search and Rescue Advisory Group (INSARAG) as a quick and practical analysis, seeking to examine the international SAR response in the immediate aftermath of the disaster. The Terms of Reference for this report are listed in Appendix "A"

The report will also serve as lessons-learned document, to ascertain strength and weaknesses in Coordination, SAR Operations, Deployment and Information Flow in the hope of identifying opportunities for improvement for future International SAR response.

2. Reaction by the Government of Turkey

At the time of the earthquake the National Authorities experienced great difficulties in assessing the damage and immediate needs. During the four hours preceding daylight with the infrastructure in the affected area destroyed or severely damaged and key disaster response personnel dead, injured or committed to the rescue of relatives and neighbours, very little quantifiable information was forthcoming.

The National Authorities in accordance with pre-determined procedures established a Crisis Management Centre reporting directly to the Prime Minister's Office (Prime Minister's Crisis Management centre – PMCMC) and activated Crisis Centres (CC) in each of the Governorates of the affected provinces. The effectiveness of this organization as a disaster management and coordination tool varied from one Governorate to another, depending on the extent to which the infrastructure and personnel had been affected by the disaster.

By 0930 hrs on Tuesday 17 August 1999 (6½ hours after the earthquake), with all signs indicating a disaster of massive proportions but still with an unclear picture of damage and needs, the Government of Turkey (GoT) came under pressure from the international community to accept SAR assistance. The GoT, instructed a number of their Diplomatic Missions abroad to inform respective governments that support with search, rescue and medical assistance would be welcome. However, the Disaster Response

Branch (DRB) at the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) in Geneva was not informed at the same time. By this time many of the international SAR assets had either mobilized, pending the official request, or were already deployed to Turkey, in anticipation of unimpeded entry into the country for SAR operations.

The National Authorities were already putting systems in place at Istanbul's International Airport to receive massive assistance from the international community. Selected areas were earmarked for aircraft parking and dispersal of relief, and airport immigration and customs formalities were unrestrained.

3. Reaction by Governmental and Non-Governmental SAR Organisations

On learning about the disaster most Governments and NGOs put their International SAR Teams on stand-by, pending an official request from the GoT before deploying

The International SAR Community reacted in the main to an official request from the GoT, some were driven to a response by media coverage of the disaster, whilst others responded as part of a bilateral pre-determined response arrangement.

Only a small number of teams reported their deployment or intentions to deploy to DRB, OCHA's Field Coordination Support Unit (FCSU).

Overall the speed of response is commendable, however the same cannot be said of the quality of response. Some teams arrived ill equipped and with a limited self-sufficient component built into their system, leading to a high level of dependency on the already overstretched local resources. These teams in particular, were those who had no previous knowledge of the INSARAG Protocols for Affected and Assisting Countries or any previous experience of response outside their own borders (see List of International SAR Teams in Appendix "B").

On arrival in Turkey, SAR Teams failed to deposit team members in support of the Istanbul based OSOCC established by the UNDAC Team and Airport Reception Centre as previously agreed during the INSARAG meeting in Orlando, USA in June 1999. The OSOCC experienced great difficulty in tracking SAR teams' movements especially those already in country, as once the teams left the airport they did not maintain contact with the OSOCC. They operated to a greater or lesser extent in contact with the Provincial Government Crisis Centres and in liaison with other SAR teams in the area.

There was little evidence of quality information exchange or combined operations amongst the teams, and the INSARAG agreed procedures for the marking of collapsed structures were not apparent.

4. Reaction by DRB, OCHA-Geneva

The Duty Officer was alerted at around 0400 hrs (Geneva Time) two hours after the earthquake, the information was reinforced by an additional call from Swiss Disaster

Relief (SDR) stating that they were planning the despatch of a SAR team, as part of a standing mutual agreement with the GoT.

DRB, OCHA activated its Disaster Response System (DRS) and key personnel were alerted and called-in to their respective posts in anticipation of a major deployment of international assistance. Contact was immediately established with the Ministry of the Interior in Turkey, the UN Development Programme (UNDP) Office in Ankara, OCHA New York and several focal points within the International Search and Rescue Advisory Group (INSARAG) network. This culminated in a UN Disaster Assessment and Coordination (UNDAC) Team Alert Message transmitted at 0900 hrs and preparations for the despatch of the first UNDAC Team, together with the issue of the first Situation Report.

Information was also provided by OCHA-Geneva, incoming SAR Teams and other actors involved on the interactive web page, set-up by OCHA for the INSARAG network as a “Virtual OSOCC”.

A three-member UNDAC Team was despatched at 1400 hrs on Tuesday 17 August 1999, with instructions to act as the On-site Operations Coordination Centre (OSOCC) for the International SAR Teams, although at the time of despatch no specific request had been received from UNDP Ankara or the Turkish Government. This despatched was further reinforced by four additional UNDAC members arriving during the morning and afternoon of Wednesday 18 August 1999, bringing the strength of the UNDAC Team to 7 within 40 hours of the earthquake.

The UNDAC Team was augmented by personnel from UNDP Ankara and other UN Agencies in-country, other UNDAC members were deployed over the next 48 hours bringing the total number to nine at the height of operations. UNDAC members were assisted by locally engaged drivers and interpreters who offered their services gratis, as part of the national effort in support of the international show of solidarity.

This decision by DRB, OCHA Geneva to take the initiative and despatch an UNDAC Team to establish an OSOCC, pending the formal request from the GoT or the UNDP Resident Coordinator, was crucial in ensuring the timely installation of the OSOCC.

5. Arrival of UNDAC Team and Setting up of OSOCC

The first contingent of UNDAC members concentrated on taking stock of SAR Teams and relief goods arriving and being processed through Istanbul’s International Airport. This was a challenging task as some assets had already arrived and deployed before UNDAC members established a presence at the airport.

SAR Teams were received and deployed with the great ease, with transport and interpreter support being provided by the National Authorities.

Tasking of the SAR Teams at Istanbul Airport was initially carried out by the National Authorities, which, in the absence of proper assessment information, sent the teams *ad hoc* to the affected provinces of Bolu, Kocaeli, Sakarya, Yalova and the Istanbul Suburb of Avcilar. Once the Reception Centre was established at 0100 hrs on Wednesday, 18

August 1999, it remained operational for 24 hours a day, deploying teams in a joint effort with the National Authorities.

The OSOCC (see OSOCC Structure – Appendix “C”) was established by the UNDAC Team at Istanbul’s Crisis Management Centre at 0600 hrs on Wednesday 18 August 1999, an assessment mission by helicopter was conducted the same morning, and it remained operational until 1800 hrs on Thursday, 2 September 1999. During this period it maintained close contact with National Authorities, OCHA Geneva, MCDA, UNDP Ankara. In addition, it fielded Assessment Missions and monitored the movements and assisted with the departure of 150 SAR Teams with approximately 2,500 members.

At UNDP Ankara, two UNDAC members acted as liaison officers to the Resident Coordinator, UN Disaster Management Team, UN and other Agencies and National Authorities, providing a vital link between the OSOCC in Istanbul and UNDP Ankara.

6. Field Assessments and Co-ordination Missions

Assessment Missions by road transport and helicopter were fielded by the OSOCC to:

- **Tupras Refinery, Izmit** – to assess firefighting needs and environmental damage.
- **Izmit, Golcuk, Degirmendere and Yalova** – to find out the location of and take contact with the SAR teams operating in the area and advise them on the need to make joint efforts in coordination and information exchange. To check on the functioning of the Sub-OSOCCs in Izmit and Yalova.
- **Sakaraya and Duzce** - to find out the location of and take contact with the SAR teams operating in the area and advise them on the need to make joint efforts in coordination and information exchange.

It was surprising to learn that a large number of SAR Teams knew very little about the INSARAG concept, or indeed the OSOCC or Reception Centre procedures. Those who were familiar with these, explained that they concentrated all efforts on arrival, in securing a solid operational platform for their teams and ensuring that they were committed to the rescue effort without delay. They went on to explain that they had not considered the release of team members to support the OSOCC, and several stressed that the OSOCC/Reception Centre at the airport was not conspicuous upon their arrival.

All the SAR teams contacted welcomed the presence of UNDAC members in the field and were enthusiastic to learn about the mechanisms in place, to facilitate information exchange and coordination. SAR teams from countries not represented in the INSARAG system expressed interest in maintaining professional contact with UNDAC members, with the view of initiating the necessary contacts to subscribe to INSARAG.

7. Sub-OSOCCs

On instructions from the OSOCC at Istanbul, Sub-OSOCCs were established in Yalova and Izmit to provide a platform for coordination and information exchange. The Yalova Sub-OSOCC was managed entirely by SAR Team members and the Izmit centre was supported by a joint SAR Team Members and UNDAC complement.

Despite initial difficulties, the Yalova Sub-OSOCC worked in close cooperation with the National Authorities. However, the same cannot be said of the Izmit Sub-OSOCC, where despite several visits to the Izmit Crisis Centre the necessary information was difficult to obtain.

In affected regions outside Yalova and Izmit, there was no apparent effort on the part of the International SAR Teams to engage in any meaningful coordination. Teams tasked at the Reception Centre to take a lead in coordination once they arrived on-site, failed to carry out this duty. There existed a clear need for sub-OSOCCs in Sakaraya, Golcuk, Duzce and Degirmendere.

8. Lessons Learned

The lessons learned during the mobilisation, deployment, operations and disengagement phases of the international SAR teams which responded to this disaster are numerous and varied. Listed below are those, which are in need of urgent redress, to enhance international SAR Response in future:

- 8.1 A number of SAR Teams (including several of those registered in the International Directory of SAR and actively involved in INSARAG) failed to inform DRB, OCHA-Geneva (FCSU) of their deployment.
- 8.2 DRB, OCHA Geneva (FCSU) had difficulties contacting responsible SAR focal points in the capitals of assisting countries, to ascertain the SAR Team's status or disposition after deployment.
- 8.3 Most SAR Teams deployed in Turkey were not complying or operating within the INSARAG Protocols, especially on issues relating to self-sufficiency.
- 8.4 SAR Teams did not adhere to operational recommendations as per the International SAR Response Guidelines
- 8.5 SAR Teams failed to designate personnel to assist with OSOCC duties.
- 8.6 Few SAR Teams pooled resources to establish Sub-OSOCCs in support of on-site coordination amongst the teams.
- 8.7 It was evident that in a disaster covering such a wide geographical area a series of Sub-OSOCCs reporting to the Main OSOCC would have been of immense operational benefit.
- 8.8 Although the Airport Reception Centre was strategically positioned at Istanbul International Airport, a compromise was reached on the positioning of the OSOCC within the Crisis Centre at Istanbul, against a suitable site near the scene of major SAR activities in Izmit. It was felt at the time that the OSOCC could better serve the coordination function and information flow, by being sited within the Crisis Centre at Istanbul

- 8.9 Those SAR teams who first arrive in country should share responsibility for initiating the coordination systems.
- 8.10 The UNDAC complement, and speed of response to this disasters should serve as a bench mark for future responses, and the benefits of a rapid deployment should not be compromised pending clear and concise instructions from the affected country UNDP Office or National Authorities.
- 8.11 The overwhelming international SAR response to this disaster identified many SAR teams hitherto unknown to the INSARAG family.
- 8.12 During the initial stages (3 days) of SAR Operations following a massive deployment of international SAR teams, the OSOCC(s) had no substantial capacity to coordinate operations other than those directly related to Search, Rescue and Medical issues. The containment of secondary effects (fires, HazMat and other potential hazards) likely to hamper SAR operations also need to be coordinated.
- 8.13 SAR Teams need to have a clear understanding of OCHA's responsibilities as far as the OSOCC and UNDAC Teams are concerned.
- 8.14 Office space permitting, DRB, OCHA-Geneva should reconsider the use of the designated Operations Centre which can be activated and staffed 24 hours a day, acting as the nerve centre for such international operations.

9. Conclusions and Recommendations

Considering the scale of the disaster, its geographical coverage and the massive international SAR response, the SAR teams gave an excellent account of themselves, working in an unselfish, dedicated and tireless manner in their search and rescue operations, in the best tradition of humanitarian response. The International SAR response accounted for 142 live rescues and the recovery of 609 bodies.

The UNDAC team responded rapidly by any previous standard, taking the unprecedented decision to mobilise without a clear acknowledgement from UNDP Ankara or indeed the GoT, once the scale and geographical extend of the disaster was becoming apparent.

Coordination on-site, although not to the standard and precision one might have hoped for, played an important role in taking stock of SAR assets on the ground, ensuring full cohesion with the local SAR effort and overseeing and assisting where necessary with the teams' departure from Turkey.

Many of the lead officers within the international SAR teams knew each other, were familiar with and expected a coordinating platform and had previous contact with UNDAC members, which assisted in no small way in the exchange of information and troublefree operations on-site. This reflects positively on the important role played by INSARAG through meetings, seminars, workshops, training and exercises since its inception in 1991.

The Turkish Earthquake has opened up many windows of opportunity, to take stock of all international SAR assets, improve existing coordination mechanism and encourage a more meaningful and dedicated participation in the INSARAG concept by all interested parties. I feel that there is no need to go back to the drawing board, it is more a case of making adjustments to existing schemes and systems to provide an effective, efficient, safe and properly coordinated international SAR response.

International SAR Teams need to be reminded that they have co-ownership and responsibility for coordination and that operating as independent units, detached from other SAR Teams and the national SAR response, is not within the spirit of INSARAG and is counterproductive to on-site coordination.

With this in mind, I recommend the following:

9.1 DRB, OCHA-Geneva

- 9.1.1 DRB, OCHA-Geneva should make a concentrated effort to promote the INSARAG, UNDAC and the OSOCC concept amongst UNDP Offices and the Governments of disaster-prone countries. Both disaster assisting and affected countries should be familiar with the INSARAG Protocols, to ensure a smooth and rapid interface of International SAR Teams into SAR operations.
- 9.1.2 Countries contributing to the UNDAC concept should ensure that they have sufficient numbers of members available, to meet current and future demands for UNDAC missions.
- 9.1.3 The Operations Centre at DRB, OCHA-Geneva should be re-commissioned and personnel trained to operate the centre to sustain 24-hour operations in support of SAR assets and UNDAC members on mission.
- 9.1.4 DRB, OCHA-Geneva should consider time permitting, deploying European based UNDAC member with the first SAR Teams deploying from Europe.

9.2 Government of Turkey

- 9.2.1 The GoT should be encouraged to become more involved in INSARAG with a view to raising awareness of the recommendations listed in the INSARAG Beuggen Protocols “Recommendations for disaster-affected countries” and strengthening their national SAR capacity.

9.3 INSARAG

- 9.3.1 SAR Teams should keep DRB, OCHA-Geneva informed of their movements once the decision is taken to mobilise them to the disaster area.

- 9.3.2 SAR Teams should be encouraged to make use of the information technology ‘Virtual OSOCC’ facilities, currently offered by DRB, OCHA-Geneva by way of the OCHA Relief Web.
- 9.3.3 SAR Teams should follow the recommendations listed in the INSARAG Beuggen Protocols “Recommendations for countries providing international assistance”
- 9.3.4 SAR Teams should follow the operational guidelines and recommendations on good operational practices as listed in the INSARAG International SAR Response Guidelines
- 9.3.5 SAR Teams should build adequate redundancy into their complement to enable them to detach members (2 to 3 persons) in support of OSOCC operations and appoint a Liaison Officer with technical knowledge of SAR operations, to remain in the assisting country and act as Focal Point between the team and DRB, OCHA-Geneva.
- 9.3.6 The INSARAG should encourage at Regional Group level, greater participation in meetings, conferences, courses, training and exercises with the view to securing wider membership and securing an INSARAG presence in the regions. Also INSARAG should be used as a reference point for SAR Teams wishing to develop or improve their existing SAR capability.
- 9.3.7 The Directory of International SAR Teams should be revised and updated, to include all those teams which responded to this disaster and take stock those now ready to deploy internationally.
- 9.3.8 SAR Teams should be trained on “SAR Response and the International Environment” (Emergency Response Awareness Course –ERA Course) to include the role of the UN and OCHA’s mandate, expectations and realistic deliverables by OCHA-Geneva

9.4 OSOCC

- 9.4.1 The first SAR Teams arriving in country should commence setting up the OSOCC(s) in anticipation of a large influx of international SAR response.
- 9.4.2 Rapid Respond SAR Teams in the Americas, Europe/Africa and Asia Pacific should be identified as ‘Lead OSOCC Teams’ and be pre-tasked, equipped and trained to operate as OSOCC initiators (in addition to their normal SAR duties), pending the arrival of UN personnel and other SAR Team members in support of coordination operations.
- 9.4.3 DRB, OCHA-Geneva should provide a core management staff for OSOCC duties to provide advice, guidance and overall coordination, with the bulk of staffing provided by members from international SAR Teams, National Authorities and agencies responding to the disaster.

- 9.4.4 Operational conditions permitting, the OSOCC should be established close to the scene of greatest SAR activity and likely to attract the largest numbers of SAR Teams.
 - 9.4.5 Where a disaster covers a wide geographical area consideration should be given to the establishment of Sub-OSOCCs to decentralise coordination and relieve operational pressure on the Main OSOCC.
 - 9.4.6 During the initial stages (3 days) of a major international SAR response operation, the OSOCC(s) should remain truly focussed on coordination issues relating to Search, Rescue, Medical and the containment of secondary effects. It does not make good operational sense to expect the OSOCC(s) during this intense period of activity, to facilitate coordination on other humanitarian relief issues.
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**Rapid Study Report on the International Search and Rescue Response
to the Izmit Earthquake**

Terms of Reference:

An immediate, rapid study will be conducted by the Consultant in Turkey to analyse on behalf of the INSARAG Secretariat, the immediate International Search and Rescue response to the earthquake in Turkey on 17 August 1999. The intention of the study is to utilise the ongoing experience of large scale deployment of numerous International Search and Rescue Teams to assess the international SAR response provided to the Government of Turkey in response of the earthquake which took place in West Turkey. The rapid study aims at conducting a quick and practical analysis with a view to learning immediate lessons and ascertaining the strengths and weaknesses of the international search and rescue response to the emergency caused by the earthquake in order to initiate improvements to the system.

The Study will cover the following aspects:

1. Only the immediate international Search and Rescue operations phase in the immediate aftermath of the earthquake emergency in support of the GoT.
2. To analyse and assess the modalities of deployment and information flow regarding International Search and Rescue teams into Turkey with a view to improving and strengthening the functioning of the INSARAG system.
3. To study and analyse the role of the OSOCC and the overall coordination of the international Search and Rescue teams in support of the emergency efforts of the GoT and to make recommendations to improve coordination of international search and rescue response in future.
4. To analyse the factors that influenced decisions making at the capital level in countries providing international Search and Rescue teams, and the United Nations in Geneva, as well as the emergency management authorities in the Government of Turkey and recommend measures to improve and accelerate decision making and information flow for international search and rescue operations in such emergencies in the future.
5. To identify innovative action which was taken for the coordination and utilisation of the International Search and Rescue teams in Turkey with a view of improving the guidelines and standard operating procedures of SAR teams provided for response and coordination of the international Search and Rescue operations in support of local emergency management authorities in future emergencies.

The Consultant in the conduct of the study should interact with all concerned international and national entities involved in this search and rescue phase of the earthquake emergency in Turkey, including Search and Rescue teams who are not members of INSARAG and submit a preliminary report and findings by 5 September 1999. The report should be brief, analytical and include lessons learnt as well as concrete recommendations.

Appendix “B”

List of International SAR Teams Deployed in Turkey

The following countries deployed Search, Rescue and or Medical teams during the emergency phase of the disaster. The teams represented Government Agencies, Non-Governmental and Private Voluntary Organisations:

Algeria	Germany	Norway
Austria	Greece	Pakistan
Azerbaijan	Hungary	Poland
Belgium	Iceland	Portugal
Bosnia	Israel	Rumania
Bulgaria	Italy	Russia
Canada	Jordan	Slovakia
Croatia	Kuwait	Spain
Cyprus	Japan	Sweden
Czech Republic	Macaristan	Switzerland
Denmark	Mexico	Ukraine
Egypt	Moldavia	United Kingdom
Finland	Morocco	United States of
France	The Netherlands	America

OSOCC Structure

