



# Capacity development of Health Experts, Decision Makers, Engineers, Consultants & Individuals

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## Improving the Multi-Hazard Resilience of Health Facilities in Iran (BEHTAB)

Capacity development of Health Experts, Decision Makers, Engineers, Consultants & Individuals	
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**UN-Habitat Tehran Office**  
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## Capacity development of Health Experts, Decision Makers, Engineers, Consultants & Individuals

This stage included capacity development of the health experts, decision-makers, engineers, consultants, and individuals who are involved in the design, construction, operation, maintenance, and management of healthcare facilities. The aim of this stage was to develop a locally driven agenda for maximum adaptation of BEHTAB project outputs to existing national capacities in terms of knowledge, regulations, and attitudes and covered:

- Stakeholders engagement:
- Organizing four Project Oversight Committees, three Technical Working Groups (TWG), and twenty-three technical sub-committees

### Stakeholders Engagement

To ensure adequate engagement of stakeholders at diverse levels, two consultative arrangements have been envisaged in the project: Project Oversight Committee (POC) and a Technical Working Group.

#### *Project Oversight Committee (POC)*

The first POC meeting was held on 24 December 2018 at the Ministry of Health and Medical Education (MoHME). In this meeting, several stakeholders presented their views on BEHTAB Project. Development of a revised work plan, request for time extension from the Donor, consultant selection, and supervision of Road, Housing and Urban Development Research Centre (BHRC) on the guideline preparation and capacity development were topics that were discussed in that meeting.

#### *Technical Working Group (TWG)*

Reviewing the outputs from different angles was an essential task of BEHTAB the Project. A schedule of meetings was developed that encompassed three TWG and twenty-three technical sub-committee meetings. The TWG meetings oversaw the whole project's progress while sub-committees focused on specialized subjects including:

- Hazard Analysis
- Rapid Visual Assessment (RVA) and Preliminary Engineering Analysis (PEA)  
in the majority of meetings, the RVA and PEA methodologies were discussed and requests for modification were received from the committee members. The discussion was mainly on performance levels, performance objectives, and seismic hazard levels of different types of hospitals in the design, construction, and operational phases. Some other meetings were held along with discussions about both guidelines for the assessment of existing and design of new health facilities.
- Non-structural Hazard Mitigation:  
Two sessions were held and after considering the sub-committee recommendations, the methodology was accepted by the members. The finalized methodology was submitted to the consultant to initiate the implementation phase. The results of the consultant's assessment were reviewed by the sub-committee in other meetings. Furthermore, institutional Aspects also were reviewed through separate meetings. In addition, the sub-committee members, participating in two meetings, contributed to developing a new checklist for assessing functional aspects of hospitals in disasters. Furthermore, each factor in the checklist was weighted based on its importance using the AHP method by the sub-committee members.

- Synthesis (Guideline)

The First TWG meeting took place on 10 March 2019 at the office of the Deputy Minister and Rector of BHRC, with the participation of well-known professionals. In this meeting, the structure for TWG and its four sub-committees was adopted.

Meanwhile, some sub-committee meetings were held with a focus on reviewing the Project methodologies, guidelines, and training course contents<sup>1</sup>. Below, some meetings are pictured.



Figure 1. TWG meetings

## Training Events

Training activities of the project include the following events:

### *Initial training*

- The First Workshop on improving Multi-hazard Resilience of Hospitals-Rapid Visual Assessment (RVA) – held on 7-8 July 2018 -32 engineers
- The Second Workshop on Improving Multi-hazard Resilience of Hospitals-Rapid Visual Assessment (RVA) - held on 22 April 2019 -15 employees of the consultancy firms were trained

### *RVA training*

According to the approved schedule for organizing training in “Rapid visual Assessment”, three 2-day training were held which included one day for theoretical sections and another day

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<sup>1</sup> See Annex I for structure of TWG and its subcommittees.

for practical sections and how to work with the BEHTAB application. The figure below depicts information on held training and statistics of participants and features.

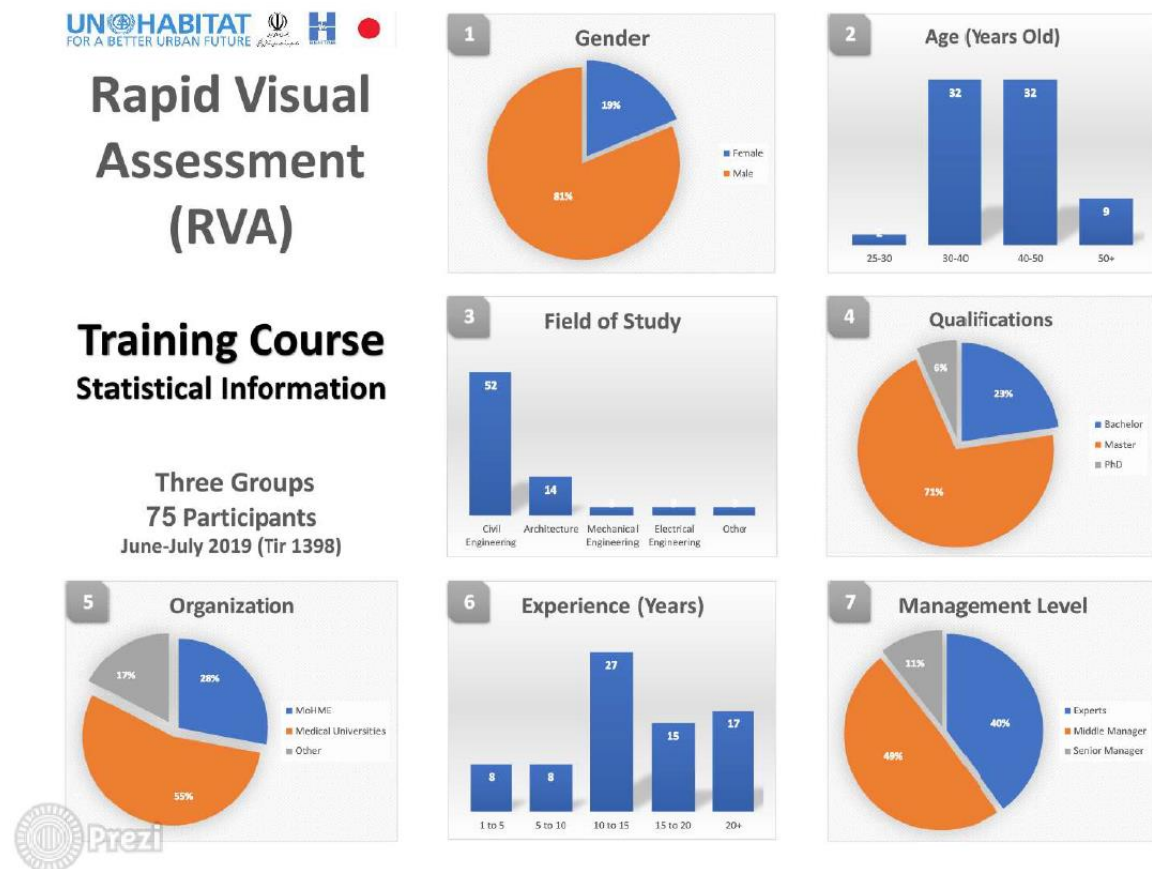


Figure 2 Statistical information of RVA training

The first day started with a short introduction to BEHTAB projects that highlighted the objectives, components, and accomplishments of the project. Kono, Second Secretary, Embassy of Japan, kindly, participated in the third group on 8 July 2019 as a representative from the sponsor side and explained that the Government of Japan is ready to share its past earthquake experiences with Iranian authorities and experts.



Figure 3 Mr. Kono, speaks at the opening session of the third RVA Course.

#### *PEA training*

Three 2-day PEA courses also were held for a number of engineers of MOHME and consultant engineering companies in the field of Hospitals. To increase the effectiveness of the course, participants were divided into three groups of about 20 individuals. This made the delivery of content more efficient as the interaction between participants and lecturers increased. On the first day, the performance-based design approach was introduced, and the steel structure evaluation procedures were described. In the second day, evaluation procedure for concrete and masonry structures were explained and retrofitting strategies, including innovative methods, were expressed. Two case studies for steel and concrete structures were provided that allow participants to apply their knowledge in practice. Below are some statistics of PEA courses:





# Preliminary Engineering Analysis (PEA)

## Training Course Statistical Information

Three Groups  
54 Participants  
July-August 2019 (Mordad 1398)

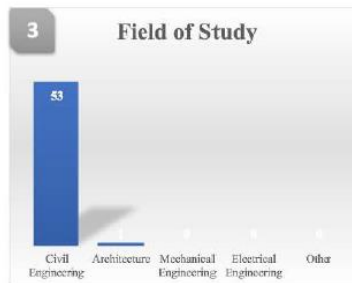
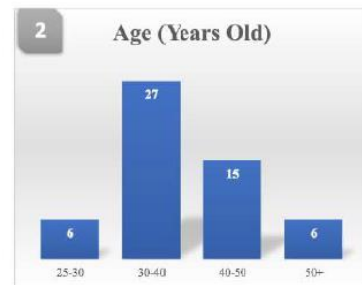
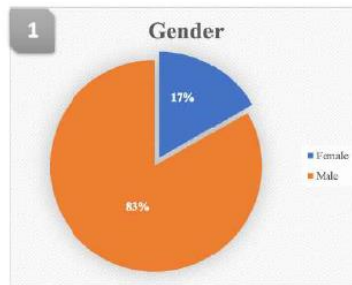


Figure 4 Statistical information of PEA training



Figure 5 some meetings of the PEA Course

### NST training

To improve knowledge about non-structural aspects of health facilities and in line with the goals of BEHTAB project, three training in Non-structural hazard mitigation were held and 72 participants took part in these courses.

**Non-Structural Aspects (NST)**  
**Training Course**  
**Statistical Information**

Three Groups  
 72 Participants  
 September 2019  
 (Shahrivar 1398)



Figure 6 Statistical information of NST training



Figure 7 participants in NST training

## Congress and seminar Events

### *The Fifth and Sixth Congress for Hospital Construction and Facility Management*

As per the request of MoHME, the BEHTAB team contributed to the Congress, (the fifth held on 9-10 December 2018 and the sixth held on 1-2 November 2019), by organizing four specialized panels. The main theme of this event was improving the resilience of healthcare facilities, which corresponds to the main objectives of the BEHTAB project. Four panels covering topics such as Health System Reform, Innovative Strategies for Design and Retrofitting of Safe Hospitals, Improving Multi-hazard Resilience of Hospitals and BEHTAB Project approach to Multi-hazard Resilience of health care facilities.



Figure 8: Fifth and Sixth Congress

### *The Second Symposium on Seismic Rehabilitation of Heritage Structures*

The second symposium on “Seismic Rehabilitation of Heritage Structures” was held on 23-25 February 2019. The focus of the symposium was in line with one of the main objectives of BEHTAB project regarding improving the resilience of hospitals and other critical facilities in any given urban area. Accordingly, the BEHTAB team contributed to this symposium by delivering presentations on:

- Restoration and retrofit strategies applicable to buildings of heritage value including hospitals; and
  - BEHTAB methodology on improving urban resilience with an emphasis on the specific characteristics of historic fabric.
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- *The First National Conference on Crisis Management and Passive Defence in Hospitals and Healthcare Centres*



The First National Conference on Crisis Management and Passive Defence in Hospitals and Health Care Centres was held on 6-7 March 2019 at the University of Tehran. BEHTAB Team contributed to this Conference by making presentations on:

- BEHTAB methodology on improving the resilience of hospitals and health care centers
- Use of innovative technologies in structural hazard mitigation; and
- Non-structural vulnerability of hospitals and health care centers

▪ *The First International Conference on Resilience of Healthcare and Critical Facilities*

An international conference organized by The Building, Roads and Housing Research Centre (BHRC) on 29-30 September 2019 in Tehran and at the campus of BHRC. The conference theme was improving the resilience of healthcare and critical facilities. The Conference's mission was to transform the mindsets, enhance the knowledge and change the attitudes of participants towards the resilience of healthcare and critical facilities in Iran, in particular by achieving the following objectives:

- Enhancing participants' knowledge of resilience subject
- Capturing recent advancements in the field of resilient health and critical facilities design and construction
- Informing participants about the process of assessing, engineering analysis, retrofitting, maintaining, and managing health and critical facilities.

The majority of BEHTAB Project activities and achievements were also presented at this conference.





Figure 9 The First International Conference on Resilience of Healthcare and Critical Facilities