Reduction of Earthquake Losses in the Eastern Mediterranean Region (RELEMR) Program Evaluation

1. Introduction

Program Background

RELEMR is a program jointly run by United Nations Educational, Scientific and Cultural Organization (UNESCO) and US Geological Survey (USGS). It is part of the UNESCO's implementation of Sendai Framework for Disaster Risk Reduction. The RELEMR program was initiated in 1993 in order to "assess, evaluate, and reduce expected earthquake losses in the Middle East, North Africa and the Mediterranean area" (UNESCO). More specifically the goals of RELEMR conferences and workshops are to foster data exchange among countries in the region; to conduct joint activities and experiments that would improve the quality of seismic data; to improve hazard assessments in the Mediterranean region; to improve the dissemination of earthquake engineering data; and, ultimately, to improve the seismic provisions of building codes in the region (UNESCO).

This is achieved through hosting annual conferences for scientists from the region during which they are able to showcase their work, participate in innovative training and workshops and are given an opportunity to network. Since its inception in 1993, RELEMR has hosted 36 conferences and meetings, involving over 500 unique participants from the Middle East and North Africa (MENA) region, European, and Mediterranean countries, and the United States. The participant pool has been comprised the following countries:

Table 1 RELEMR Participating Countries

Region	Country	
Middle East and North Africa (MENA)	Algeria Egypt Iran Iraq Israel Jordan Kuwait Lebanon Libya Morocco	Oman Palestinian Territories Qatar Saudi Arabia Sudan Syria Tunisia United Arab Emirates Yemen
Europe, Mediterranean and USA	France Germany Italy Netherlands Portugal UK Spain	Austria Switzerland Greece Cyprus Turkey Malta USA

On average each year, there are about 55 – 60 scientists and researchers participating in the RELEMR meetings and workshops. While some have only attended one conference, many have been continuous contributors and participants through the past decades. The conferences are usually held over a three-four day period and are structured as follows:

- Day 1:
  - Opening Ceremonies and Registration
  - Keynote
  - Contributed papers presentations / Trainings/ Workshops
- Day 2:
  - Contributed papers presentations/ Trainings/ Workshops
  - Networking/coffee breaks
- Day 3:
  - Contributed papers presentations/ Trainings/ Workshops
  - Potential Field trip
  - Networking/coffee breaks
- Day 4:
  - Contributed papers presentations/ Trainings /Workshops
  - Networking/coffee breaks

Each paper, presentation or training session is typically about 2 to 3 hours with coffee breaks or food breaks at the end of each session. Thus, throughout the conference participants have ample time to network in between the sessions, during food breaks, dinner and during a field trip.

Typically, RELEMR conferences are held in politically neutral countries such as Malta, Italy, Crete, Spain, etc. This allows organizers to ensure that majority of the invitees will have fewer issues with obtaining travel permissions and country clearances. UNESCO's support of the program also helps with often necessary political neutrality. UNESCO has also been a significant supporter of RELEMR through assistance with physical and legal logistics and program organization.

Purpose of Evaluation

The evaluation was performed by eScience and Technology Solutions, Inc. (eSTS) at the request of Department of State (DoS). The objectives of this evaluation included the assessment of the degree of cooperation between Israelis and Arabs; the effectiveness of RELEMR conferences and the participating scientists, and the quality of the science employed for the RELEMR program. In addition, the evaluation attempted to determine any program's diplomatic and economic impacts on the region.

2. Evaluation Methodology

Approach

The evaluation has been conducted through a combination of methods: a survey of program participants, follow-up interviews, and review of program documentation and related artifacts. The evaluation is qualitative in nature with supporting data drawn from surveys and interviews.

Data Description

In the course of this analysis, several sources of data were utilized:

1. Conference Reports
2. Survey Data
3. Follow-up interviews with select participants.

Conference Reports

USGS has provided conference and workshop reports for the years 1993 through 2015. These reports included conference proceedings description, lists of participants and submitted papers.

Survey Data

A crucial part of the evaluation is the survey of RELEMR conference/workshop participants. The survey consisted of 34 questions (Appendix). The survey was available for completion through SurveyMonkey.com, as well as through email (MS Word and PDF forms). The survey link and forms were disseminated to 115 RELEMR participants, of those 61 (53%) responded. Basic demographics of the respondents are provided below:

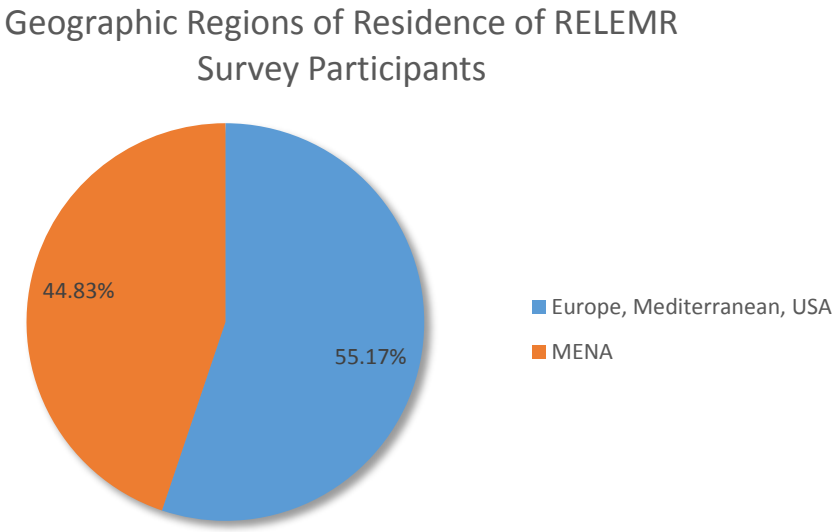
Table 2 Survey Respondent's countries of residence

Country of Residence	Number of Respondents	Percent of the Total Responses to Residence Question
Algeria	2	3.45%
Cyprus	1	1.72%
Egypt	1	1.72%
France	5	8.62%
Greece	2	3.45%
Israel	4	6.90%
Italy	4	6.90%
Jordan	3	5.17%
Lebanon	2	3.45%
Libya	1	1.72%
Malta	2	3.45%
Morocco	2	3.45%
Oman	2	3.45%
Palestine	4	6.90%
Portugal	1	1.72%
Saudi Arabia	1	1.72%
Spain	5	8.62%
Sudan	1	1.72%
Switzerland	1	1.72%
Tunisia	3	5.17%
Turkey	3	5.17%
UK	1	1.72%
USA	7	12.07%

Country of Residence	Number of Respondents	Percent of the Total Responses to Residence Question
Grand Total	**58**[1]	**100.00%**

Of respondents who chose to provide their country of residence, 44.83% are from the MENA region and 55.17% are from Europe/Mediterranean/USA.

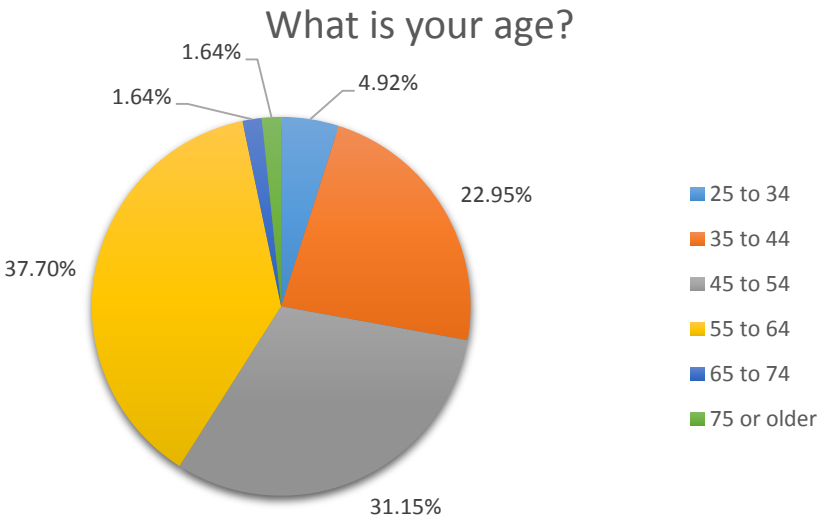
Figure 1 Geographic division of participants' residence



Of the 61 respondents 13 identified as female and 48 as male; a majority of those indicated residing in Europe/USA/Mediterranean region. Additionally, most (91.80%) survey participants are between 35 and 64 years of age, with largest 2 age groups of 45 to 54 and 55 to 64.

[1] While there were 61 responses, only 58 provided their respective countries of residence.

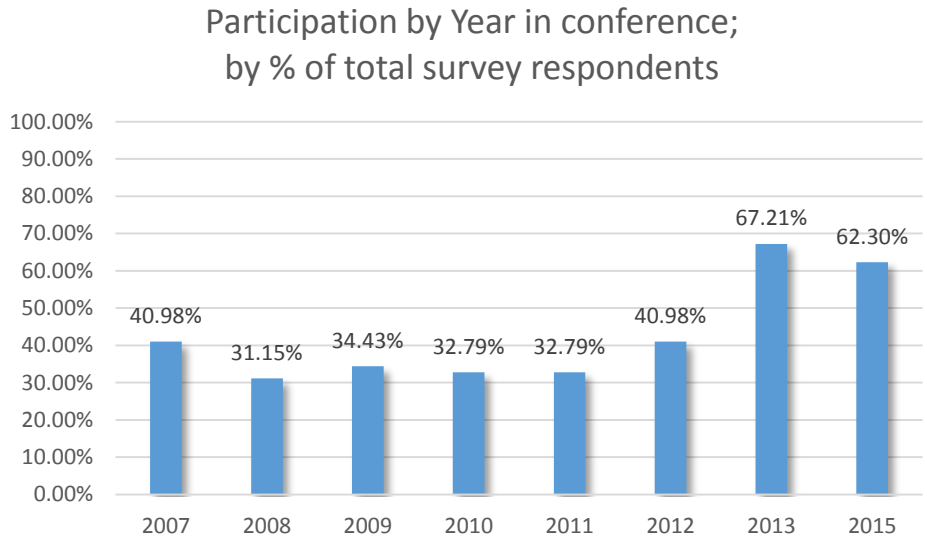
Figure 2 Age Distribution of the Survey Respondents



Of those, 84.62% of the MENA region survey participants were older than 45 years old where 65.63% of survey respondents from Europe/USA/Mediterranean region were older than 45 years old.

Figure 3 below shows the distribution of participation of survey respondents in the RELEMR meetings. This chart only captures participation for the last eight years. The last two meetings were the most popular ones. This is confirmed by the RELEMR participation data collected from the program reports, 2013 and 2015 had at least ten more participants than average (60 participants) across all years.

Figure 3 Conference Participation Distribution



Interviews

Interviews were conducted with RELEMR participants selected by Dr. Michael Foose. eSTS reached out to about 30 survey participants. Interviews were conducted with 14 of those.

The majority of these participants have had a long time involvement with RELEMR. Several of them have been a part of the program from its foundation in 1993 while others have only been involved in the last five years.

3. Results

Cooperation between Israelis and Arabs

To measure cooperation building abilities of the RELEMR program eSTS leveraged the survey, RELEMR conference reports and interviews. We examined networking and communications of the RELEMR participants during and outside of the RELEMR conferences. We also looked at projects that RELEMR participants were involved in.

In estimating communication of RELEMR participants and Israelis and Arabs in particular, we looked to see which countries interacted during and after the conferences and how easy that communication was. Our survey shows that representatives from UNESCO, Egypt, Switzerland, and the USA communicated with participants from all other countries in the MENA and European regions. Multiple country representatives from the survey reported establishing rapport with Israel and Palestinian Territories scientists:

Table 3 Cooperation and Rapport with participants from Israel and Palestinian Territories

	Reported establishing rapport with:
Israel	Cyprus, Egypt, UNESCO, Greece, Italy, Palestinian Territories, Spain, Switzerland, USA, Turkey
Palestinian Territories	Algeria, Cyprus, Egypt, Greece, Israel, Italy, Jordan, Lebanon, Spain, Tunisia, Turkey, UNESCO, Switzerland, USA

Additionally, a majority of survey and interview respondents reports that establishing rapport and sharing ideas with the RELEMR participants, regardless of where they were from, was rather easy as shown in Figure 4. This holds true even when we control for EU/USA/Mediterranean survey respondents.

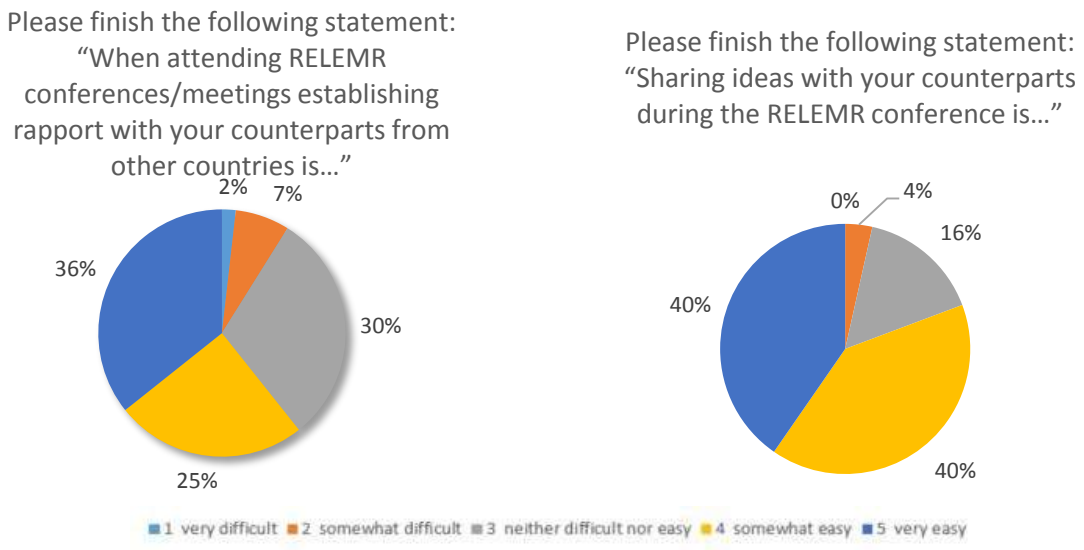


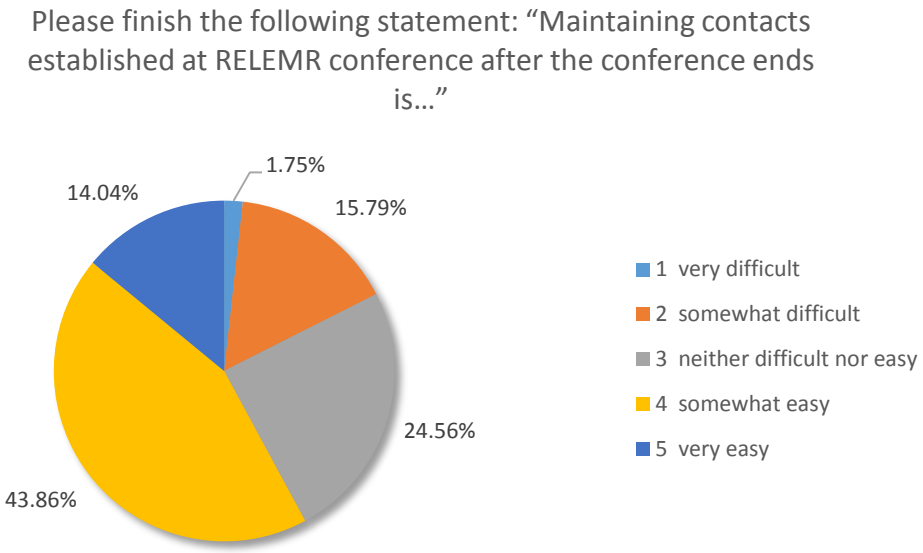
Figure 4 Establishing Communication and Rapport

In interviews, when asked about the ease of establishing communication and networking at RELEMR conferences, almost unilaterally everyone talked about a sense of science-focused community that RELEMR fosters. All interviewees report that RELEMR meetings enable them to communicate with scientists from countries that they would not have been able to reach out to otherwise, that at RELEMR meetings the political differences or circumstances are put aside, and they can freely communicate, network, share their research and plan for future projects.

This is further evidenced by the data from the survey. Here survey respondents from Arab countries report having worked with both Israeli and other Arab participants from the MENA region. In the case of Israel-Arab cooperation, it seems that Israeli scientists have been able to work successfully with their immediate neighbors: Egypt, Palestinian Territories, Jordan. Some participants reported that while unable to establish official connections, they were able to have "off the record" discussions during the meetings.

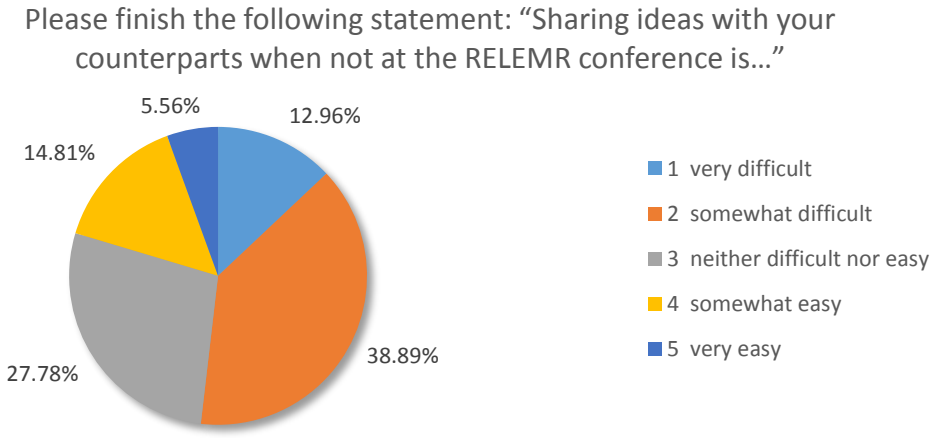
It also seems that RELEMR contacts are not lost in the aftermath of the conference, where 58% report that maintaining contacts established at RELEMR conference in the aftermath is easy. (Figure 5)

Figure 5 Contact maintenance



The reported rate of post-conference contact maintenance and continuation of idea exchange is far less when participants do not attend RELEMR conferences. About 51% of survey participants report that sharing ideas when not at RELEMR conferences is rather difficult (Figure 6).

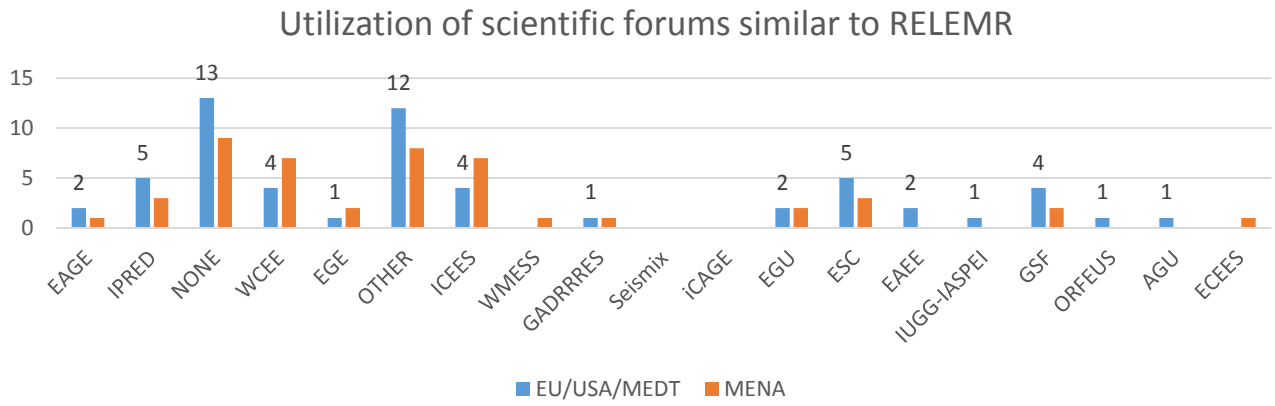
Figure 6 Idea Sharing



This observation holds even when we examine respondents from different regions separately. In fact, about 54% of the respondents from the MENA region stated that it was either "somewhat difficult" or "very difficult" to share ideas with their counterparts when not at RELEMR conference. This leads to the conclusion that RELEMR creates a unique forum for the participants. Further corroborating this, 57% of survey respondents from EU/USA/Mediterranean indicated they would find it difficult to continue interacting with their counterparts from RELEMR if the conferences are no longer held, yet only 35% of the MENA region respondents said the same. This is due to the fact that vast majority (70%) of the MENA

region survey participants attend other scientific forums such as Gulf Seismic Forum, World Conference on Earthquake Engineering (WCEE), International Platform for Reducing Earthquake Disaster (UNESCO-IPRED), International Conference on Earthquake Engineering and Seismology (ICEES), European Seismological Commission (ESC). Alternatively, this could be due to the interpretation of the question. Since the question does not specify counterparts from which regions, it is possible for survey participants to interpret it as counterparts from the same region as opposed to counterparts from other regions. Figure 7 below showcases utilization of other forums by the survey's participants.

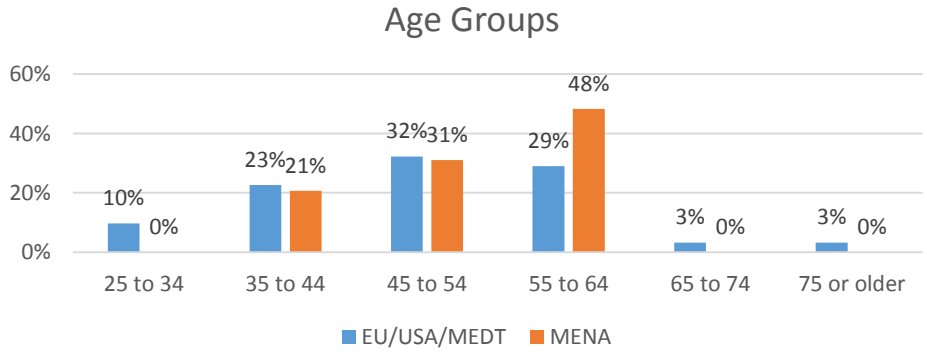
Figure 7 Other seismic forums utilization



Inclusion of Younger Scientists

Survey data shows that the majority of participants fall into three age groups 35 to 44, 45 to 54 and 55 to 64; with more than half of those being older than 45. However, that does not mean that younger scientists are excluded from RELEMR: about 27.95% of all surveyed reported to be under 44 years of age, 24% of those are from Arab countries. RELEMR organizers and longtime participants recognize the involvement of younger scientists and students as an important goal for RELEMR. In interviews, several people acknowledged that the participation of younger scientists and students should become a higher level priority.

Figure 8 Participants' Age Distribution



It is worthwhile to note that a majority of RELEMR past and current participants are well-established scientists, especially those from the MENA region. It also takes a while to obtain higher level degrees: in the USA if there are no gaps in enrollment it takes about 7 - 8 years to complete all the classwork required for a PhD (BS/BA and PhD) plus several years of research for the dissertation. Additionally, in US enrollment in tertiary education (Bachelors and up) is about 88% while in the Arab world it is about 27% [2], thus, it might not be surprising to see a low number of young scientists participating in RELEMR meetings.

Our survey data shows that scientists participated in multi-country projects because of attending RELEMR conferences/workshops. About 39% have confirmed participating in multi-country projects that were a direct result of RELEMR conferences, of those only 19% reported to be in the 35 to 44 age group. Of those participating scientists in the 35 to 44 age group, several multi-country projects involved participants from Israeli and Arab partners.

Across all age groups surveyed, a majority of respondents who said they have participated in either multi-country projects or research projects that were direct result of RELEMR reported having worked on those with scientists from MENA region (Arabs and Non-Arabs)

Data collected from the interviews and conference reports suggest that there have been some notable multilateral projects fostered through RELEMR in the past. These include seismic calibration experiment at the Dead Sea in 1999; seismic hazard mapping of the Mediterranean, EU, and some Gulf states; seismic hazard mapping of the Middle East for the Global Seismic Hazard Assessment Program; multilateral seismic network development (Israel/Palestinian Territories/Jordan). The calibration experiment and Middle Eastern seismic network involved a significant degree of cooperation between Israelis and the rest of the MENA region. The data was shared across all RELEMR participants and jointly analyzed. It wouldn't be hard to imagine that in the course of these projects younger scientists were involved who did not attend RELEMR conferences and as a result would not be captured by our survey.

Quality of Science

An analysis of the interviews, survey data, and conference reports suggests that RELEMR conferences contribute to the advancement of the science in the MENA region in a variety of ways. These include training, exchange of ideas and data, networking, and assistance with multi-lateral collaborations.

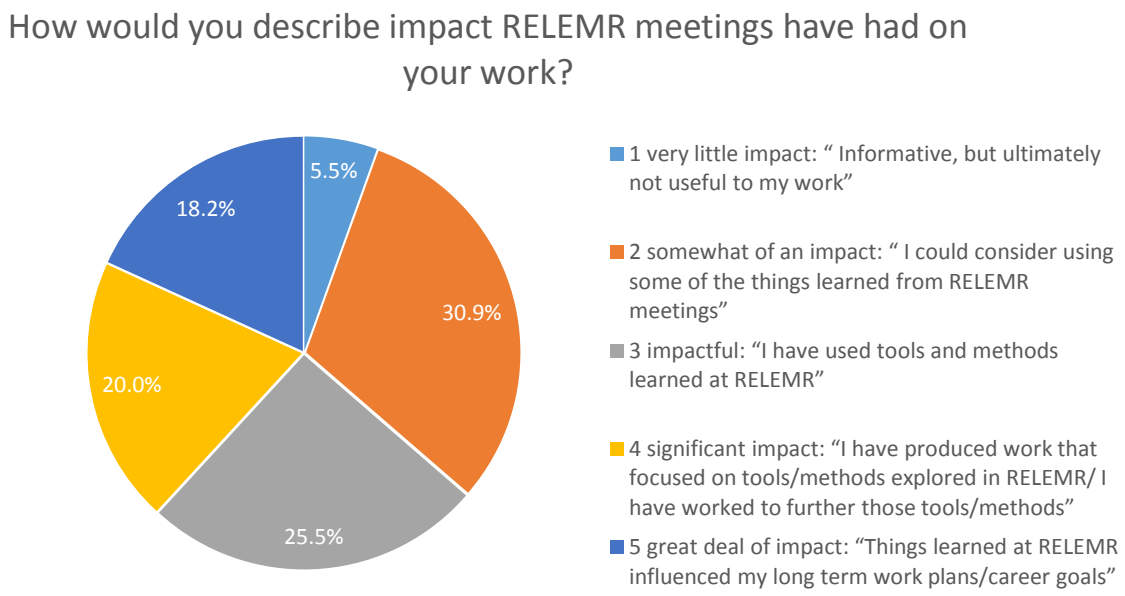
RELEMR conferences offer its participants not only ability to present their work and findings, but also an opportunity to learn. Over the course of the past decade, there have been a number of training sessions and presentations provided through RELEMR. Most notable and most remembered by participants is the Hazus-MH software training. Hazus-MH is a nationally applicable standardized methodology that estimates potential losses from earthquakes, hurricane winds, and floods. The Federal Emergency Management Agency (FEMA) developed Hazus-MH under contract with the National Institute of Building Sciences (NIBS). Hazus-MH uses state-of-the-art Geographic Information Systems (GIS) software to map and display hazard data and the

[2] Based on World Bank development indicators data for 2013.

results of damage and economic loss estimates for buildings and infrastructure. It also allows users to estimate the impacts of earthquakes, hurricane winds, and floods on populations.

The training was offered by FEMA staff and the software was then provided to RELEMR participants at no cost. In interviews, some have cited this as having a significant impact on the advancement of hazard mitigation in the MENA region. The impact of such training was further substantiated by the survey results: 61% of participants ranked HAZUS and other training sessions and tools from "important" to "very important". Additionally, almost all survey respondents reported that RELEMR meetings and training have had a positive impact on their work (Figure 9).

Figure 9 RELEMR Impact



The majority (64%) of Arab survey respondents ranked work impact as a 3 (impactful) and a 4 (significant impact). It is important to point out that 18% of those surveyed ranked work impact of RELEMR as a 5 (great deal of impact), suggesting that conferences have been able to produce a long lasting effect on the scientific community that participates in them.

Most respondents find data and knowledge exchange fostered by RELEMR conferences significant to their work: over 70% ranked it a 3 or higher on the scale from 1 to 5. Many have found sharing of information about country operational activities helpful in various ways. Examples include:

- Understanding available data
- Understanding a level of expertise available
- Getting insight into local capabilities
- Understanding of current national networks thus aiding in development of domestic networks

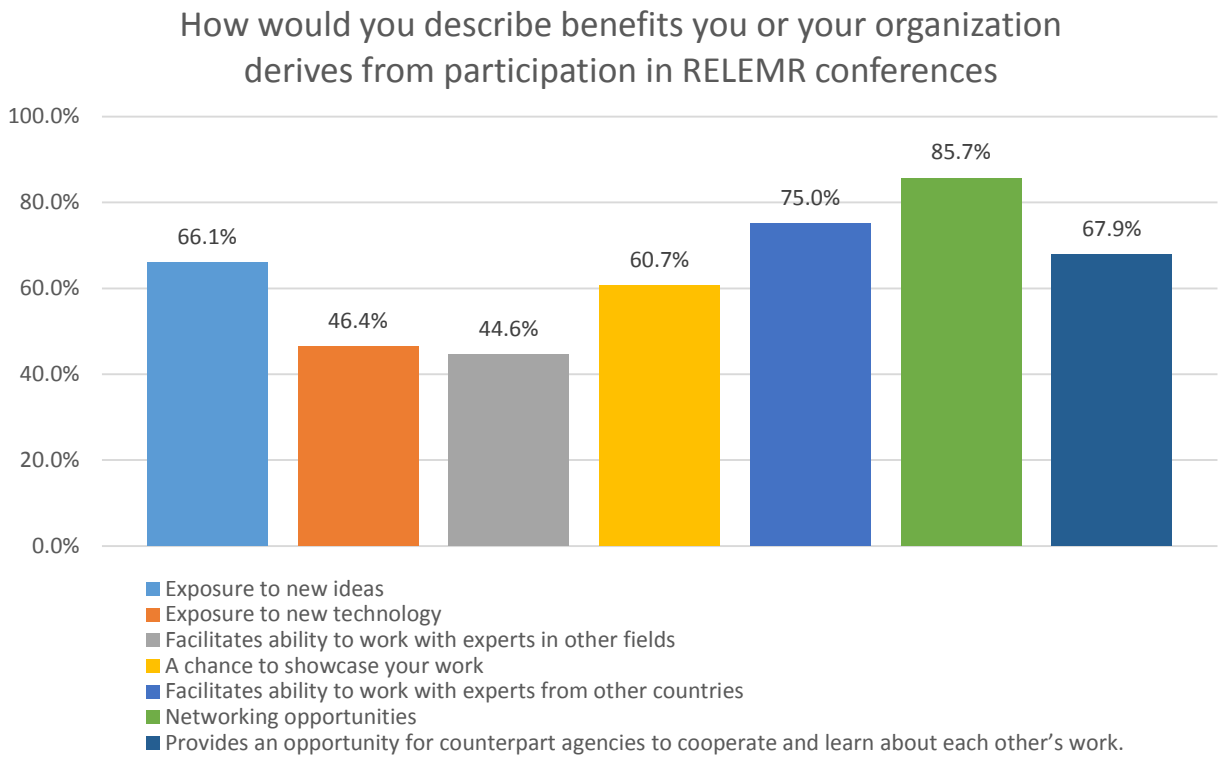
- Helped in developing domestic seismic hazard assessment strategies and studies
- Showcase of best practices to be adopted

Also, over 60% of the survey participants reported deriving the following benefits from attendance of RELEMR conferences:

- Exposure to new ideas
- A chance to showcase their work
- Facilitation of ability to work with experts from other countries
- Networking opportunities
- An opportunity for counterpart agencies to cooperate and learn about each other's work

While overall "Networking opportunities" seems to be the most important benefit derived, respondents from the MENA region indicated "exposure to new technology" as a key advantage.

Figure 10 RELEMR Benefits



Positive impact is further supported by analysis of interviews: most stated that RELEMR enabled them to expand their network, which in turn led to fruitful collaborations.

When asked about how the program is helping advance science in the region, most responded that the program is helping with scientific advancements. Some stated that while the papers and science presented at RELEMR conferences is not at the same level as some of the well-known European or US conferences, it is advanced and helps RELEMR participants. The survey and interviews indicate the papers presented vary widely in their level of innovativeness and strength.

This is not that surprising considering that examination of participant citation counts shows wide variations as well, with some having citation counts as high as 4892 and some as low as 2.

Such variation in work presented at the conference does not mean that RELEMR participants are not contributing to advancing science in the region. Many RELEMR participants are well known in their respective fields and are widely published authors with over half of participants having (co-)authored a paper between 2009 and 2015. Program reports from 2009 to 2015 show that on average there were over 30 papers presented at every conference; with Turkey, Israel, Algeria, Spain, Jordan and Italy leading the way in the number of papers presented.

Interviews provide the best evidence on participants' contribution to advancing science in the region:

- Exchange of sensitive data resulting in common catalogs of seismic data
- Opportunities for scientists to cooperate and develop spin-off projects:
    - Early warning systems developed through multilateral collaborations (Spain/Morocco/Algeria and Israel/Palestinian Territories/Lebanon/Jordan)
    - Multi-country (Syria/Saudi Arabia/Spain/Israel) and single country (Jordan, Oman, Morocco) hazard maps
- Opportunities for spin-off meetings such as Gulf Seismic Forum
- Facilitating bilateral and multilateral exchanges
    - Seismic codes exchange
    - Research exchange
- Inspiration for new work and research

RELEMR format has also been replicated across multiple regions: there is now a similar style of meeting happening for South Asia (RELSAR) and Central Asia (RELCAR). UNESCO participants have mentioned that there are plans to create a conference like RELEMR for Latin America to develop a global network.

Despite quite successful past notable multilateral projects, it seems that in the most recent years RELEMR has experienced a bit of stagnation. This view has also been expressed by several participants.

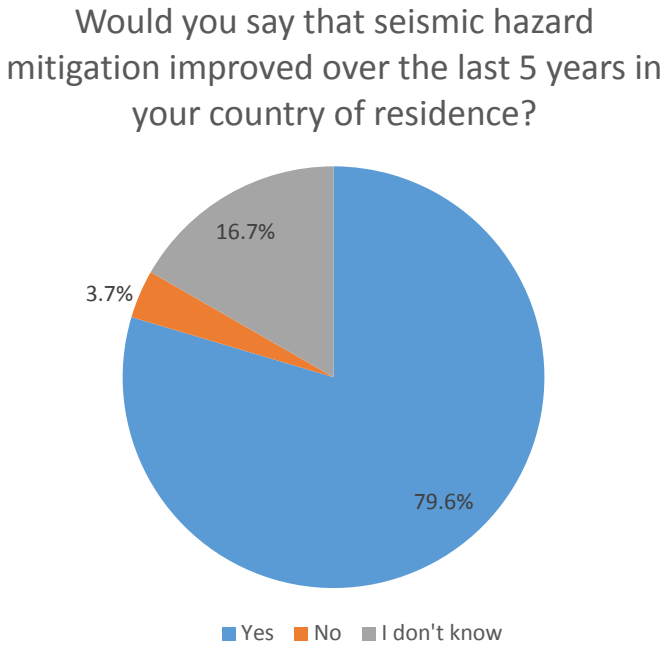
Economic Development

The program's economic impacts on the region are often elusive and difficult to measure. One way to estimate effects would be to assess the impact of any of the RELEMR projects on the participating countries' earthquake preparedness and hazard mitigation; an example of this would be the passage of new laws. One could also look to see if there have been any decreases in the damage estimates for earthquakes that have occurred since 1993. Both of these methods would provide a relative estimate of the potential economic impact of the RELEMR. However, there is not enough data currently available publicly to leverage quantitative analyses techniques. The survey did ask several questions to try to gather a rough understanding of any economic impacts on the region:

1. *What impact do tools provided by RELEMR have on your ability to work with seismic data?*
2. *What effect has working with RELEMR community had on your country's seismic catalog?*
3. *Would you say that seismic hazard mitigation improved over the last 5 years in your country of residence?*
4. *In the past 5 years what impact have seismic hazard mitigation parts of RELEMR had in your country of residence?*
5. *Would you say seismic data and maps you create impact building decisions in your country?*
6. *What kind of impact has RELEMR had on your ability to provide better data and maps to decision makers?*

While mostly opinion questions, these aim to show how the program has impacted the work of its participants, and what perceived impact their work has had on the policies and hazard mitigation in each participants' country of residence. In general, a vast majority of the survey respondents from all participating regions noted that seismic hazard mitigation has improved in their home country over the last five years (Figure 11).

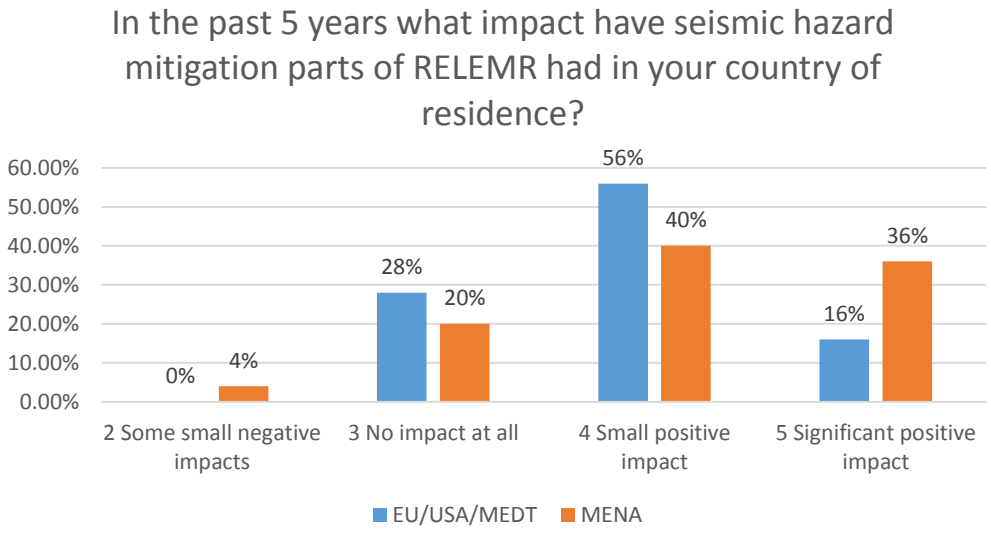
Figure 11 Hazard Mitigation Improved?



The improvements noted by the participants could likely be attributed to a variety of factors: advancements in the field of seismic hazard mitigation, development of new technology, the passing of better building codes, increased awareness of the seismic hazards, etc. However, when asked a more specific question regarding knowledge obtained from RELEMR and its impact on

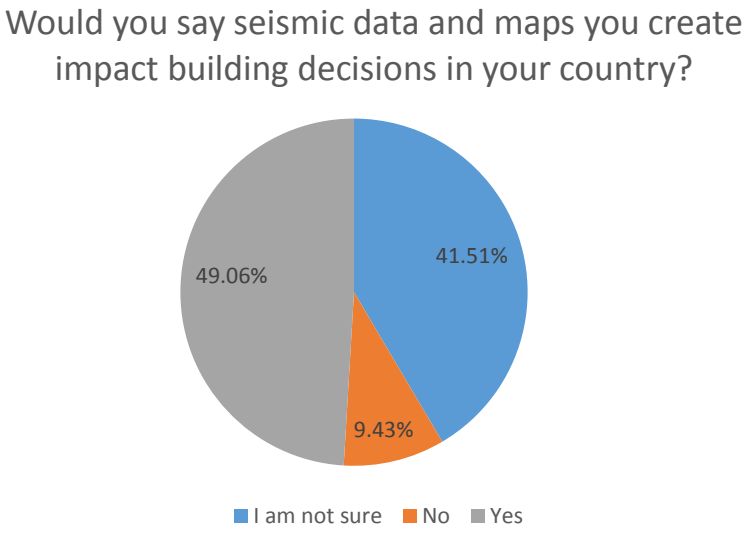
the seismic hazard mitigation, most respondents ranked RELEMR as a 4 or a 5 (small to significant positive impact).

Figure 12 RELEMR impact on Seismic Hazard Mitigation



Additionally, about 79% of EU/USA/Mediterranean region respondents and over 85% of the MENA region respondents have stated that RELEMR has had a positive impact on their ability to provide better data and maps to decision makers. Although when asked if respondents believed that seismic data and maps they develop impact building decisions in the country, answers were divided between "yes" and "I am not sure" (Figure 13).

Figure 13 Improving building decisions



Most respondents reported positive effects from interactions with the RELEMR community. Most cite the exchange of seismic data, which allowed many countries to improve their seismic

catalog, and some, such as Morocco, have been able to complete their seismic catalog. A comprehensive seismic catalog is a critical component in seismic hazard analysis: maintaining a completed historical record of earthquake activity allows for better characterization of area's seismic hazard, resulting in better hazard mitigation decisions.

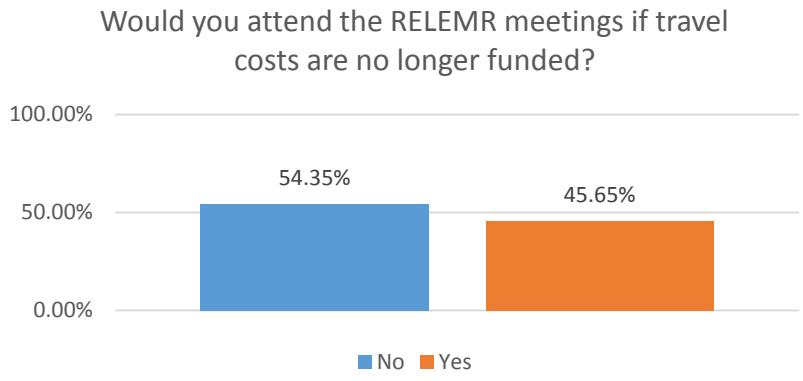
RELEMR's positive impact on seismic hazard mitigation is also seen in the interviews. Through networking and connections built at RELEMR conference and workshops, scientists in Jordan, Oman and Israel have been able to improve their seismic hazard maps. In addition, Dr. Maria Jose Jimenez cited RELEMR as enabling her to complete seismic hazard mapping for the MENA region as part of the Global Seismic Hazard Assessment Program.

Survey and interview data suggests that RELEMR conferences do have a favorable impact. While it is impossible to estimate the exact extent of economic impact of RELEMR conferences on the participating countries, it is clear that there are wide-spread positive contributions to the science and cooperation in the MENA region. This, in turn, provides capacity for improvements in seismic hazard mitigation through such means as improvements of building codes and engineering standards. Such advancements indirectly provide positive contributions to the economic development of the region through lowering of damage costs. Participants of this survey overwhelmingly support this hypothesis as a majority believes that building codes have improved in the last 5 years and that their work could have contributed to these improvements.

Funding of participants

One of the benefits the program provides to its participants is funding for attendance at the conferences. Initially, funding was provided to encourage attendance from across the MENA region. This is not a norm in other scientific gatherings where the usual practice reflects the expectation that conference attendees pay their own way, with sponsorships for students available occasionally. The questionnaire (survey) attempted to determine whether such an incentive is still necessary to encourage attendance at the conferences. The data obtained from the questionnaire suggests that funding for travel is still necessary. The survey respondents overall said they would not attend RELEMR meetings if the travel costs were no longer funded. (Figure 14)

Figure 14 Attendance likelihood when travel not funded (all participants)



In the "no" category, the majority of the Gulf countries would not attend if the travel is not funded; a similar sentiment is seen from other MENA region countries. European and USA participants' responses were an even split.

Table 4 Attendance likelihood when travel not funded by region

Would you attend the RELEMR meetings if travel costs are no longer funded?		
	No	**Yes**
Gulf Countries	66.67%	33.33%
Non Gulf Countries (Other MENA countries)	55.56%	44.44%
European countries (including Greece, Cyprus and Malta)	50.00%	50.00%
USA	50.00%	50.00%
Percent of the Total Responses	54.35%	45.65%

Program Awareness

One of the issues that UNESCO program supporters, as well as other participants, have highlighted in the interviews is a lack of awareness of RELEMR accomplishments and achievements. Some of this is intentional due to the need to protect RELEMR participants from potential persecution. However, it could be beneficial to RELEMR if more than just the participants were aware of program progress. Additionally, as one UNESCO interviewee remarked, there are no metrics established to quantitatively measure program successes.

From the interviews, it is unclear if participants ever really interact with US embassies in the MENA region. It seems that UNESCO assists in obtaining country clearances for the participants and provides some assistance with obtaining visas. This process, however, does not involve US embassies. Interviews and analysis of the conference reports show that ambassadors or economic officers from the hosting countries have frequently attended opening ceremonies for RELEMR. However, very few have stayed throughout the conference, thus, it is unclear if there is any benefit beyond awareness of the program is generated.

4. Conclusion

RELEMR is a unique program that works to further international collaboration and dialogue among MENA, Mediterranean, and European countries in a scientific forum. This long-standing program over the course many years has enabled cooperation between Europe, Israel, and its neighbors, as well as among Gulf countries. Such collaboration has allowed all participating countries to be engaged with new technologies and allowed for scientific advancements across all. While it is impossible to measure the exact amount of economic impact of the program, it is clear that the program has made a positive contribution to the participating regions, especially in the case of MENA countries.

Appendix - RELEMR Survey

Q#	Survey Question	Answers
1	Please provide your age:	☐18 to 24 ☐ 25 to 34 ☐35 to 44 ☐45 to 54 ☐55 to 64 ☐ 65 to74 ☐ 75 or older
2	What is your gender?	☐ Male ☐ Female
3	What is your current country of residence?	
4	Please check all years that you have participated in RELEMR meetings/conferences? (Check all applicable years.)	☐2007 ☐2008 ☐2009 ☐2010 ☐2011 ☐2012 ☐2013 ☐2015 ☐Other (please provide a year):
5	Please finish the following statement: "When attending RELEMR conferences/meetings establishing rapport with your counterparts from other countries is…"	☐1 very hard ☐2 somewhat hard ☐3 neither hard nor easy ☐4 somewhat easy ☐5 very easy
6	During RELEMR conferences, which country representatives/organizations have you been able to establish rapport with?	
7	Communications with your counterparts from which countries have you been able to establish as a result of attending a RELEMR conference?	
8	Please finish the following statement: "Maintaining contacts established at RELEMR conference after the conference ends is…"	☐1 very difficult ☐2 somewhat difficult ☐3 neither difficult nor easy ☐4 somewhat easy ☐5 very easy
9	Please finish the following statement: "Sharing ideas with your counterparts when not at the RELEMR conference is…"	☐1 very difficult ☐2 somewhat difficult ☐3 neither difficult nor easy ☐4 somewhat easy ☐5 very easy

Q#	Survey Question	Answers
10	Please finish the following statement: "Sharing ideas with your counterparts during the RELEMR conference is…"	☐1 very difficult ☐2 somewhat difficult ☐3 neither difficult nor easy ☐4 somewhat easy ☐5 very easy
11	Which country representatives have you been able to cooperate with in the past?	
12	Which country representatives would you like to cooperate with; but haven't had a chance to do so?	
13	Would you be able to continue interaction with your counterparts from the RELEMR regions if the RELEMR meetings are no longer held?	☐ Yes ☐ No
14	What forums, other than RELEMR, do you participate in that provide similar to RELEMR content/ benefits?	☐ EAGE (European Association of Geoscientists & Engineers) International Conferences & Exhibitions ☐ GADRRRES events ☐ Seismix – Seismix International Symposium ☐ iCAGE – International Conference on Applied Geology & Environment ☐ EGE – Conference of the Geological Society of Greece ☐ WMESS – The World Multidisciplinary Earth Sciences Symposium ☐ ICEES – International Conference on Earthquake Engineering and Seismology ☐ WCEE – World Conference on Earthquake Engineering ☐ UNESCO-IPRED –International Platform for Reducing Earthquake Disaster ☐ None ☐ Other (please write in)

Q#	Survey Question	Answers
15	Please rank the following statements: • In the last 5 years there was an increase in participants younger than 40.	☐1 I disagree ☐2 I somewhat disagree ☐3 Neither agree nor disagree ☐4 I somewhat agree ☐5 I agree very strongly
	• In the last 5 years, there was an increase in new participants.	☐1 I disagree ☐2 I somewhat disagree ☐3 Neither agree nor disagree ☐4 I somewhat agree ☐5 I agree very strongly
	• In the last 5 years, there was an increase in participants.	☐1 I disagree ☐2 I somewhat disagree ☐3 Neither agree nor disagree ☐4 I somewhat agree ☐5 I agree very strongly
16	In your estimation, what is the average age of participants in RELEMR conferences?	☐18 to 24 ☐ 25 to 34 ☐35 to 44 ☐45 to 54 ☐55 to 64 ☐ 65 to74 ☐ 75 or older
17	Have you seen or heard of any projects/research that were direct result of RELEMR conferences/meetings?	☐ Yes ☐ No
18	Have you participated in any projects/research that have been a direct result of a RELEMR conference?	☐ Yes ☐ No
19	How would you describe benefits you or your organization derive from participation in RELEMR conferences (check all that apply):	☐ Exposure to new ideas ☐ Exposure to new technology ☐ Facilitates ability to work with experts in other fields ☐ A chance to showcase your work ☐ Facilitates ability to work with experts from other countries ☐ Networking opportunities ☐ Provides an opportunity for counterpart agencies to cooperate and learn about each other's work. ☐ Other (please provide a brief description)

Q#	Survey Question	Answers
20	How would you describe impact RELEMR meetings have had on your work? Please select from 1 to 5.	☐1 very little impact: " Informative, but ultimately not useful to my work" ☐2 somewhat of an impact: " I could consider using some of the things learned from RELEMR meetings" ☐3 impactful: "I have used tools and methods learned at RELEMR" ☐4 significant impact: "I have produced work that focused on tools/methods explored in RELEMR/ I have worked to further those tools/methods" ☐5 great deal of impact: "Things learned at RELEMR influenced my long term work plans/career goals"
21	RELEMR conferences have provided training sessions over the years. How have such training sessions affected your ability to meet your responsibilities?	☐1 very little impact: " Informative, but ultimately not useful to my work" ☐2 somewhat of an impact: "I could potentially use some of the things I learned in training sessions in my work" ☐3 impactful: "I have used tools and methods learned at the training sessions in my everyday work " ☐4 significant impact: "I have produced work that focused on tools/methods explored in RELEMR training / I have worked to further those tools/methods" ☐5 great deal of impact: "Training offered at RELEMR had a profound effect on my work plans/career goals"
22	RELEMR has provided a variety of trainings including HAZUS Software Training (2009 & 2010), Earthquake locations training, Modeling ground response training, Probabilistic seismic hazard assessment. How would you rank the importance of such training to you?	☐1 Not important at all ☐2 ☐3 ☐4 ☐5 Very Important ☐ Not Applicable
23	What kind of training sessions would you like to see in the future?	
24	What level of impact has exchange of data/knowledge that occurs at RELEMR had on your work?	☐1 very little impact ☐2 somewhat of an impact ☐3 impactful ☐4 significant impact ☐5 great deal of impact

Q#	Survey Question	Answers
25	How does having other RELEMR countries describe their operational activities affect you/ your work?	
26	What impact do tools provided by RELEMR have on your ability to work with seismic data?	☐1 very little impact ☐2 somewhat of an impact ☐3 impactful ☐4 significant impact ☐5 great deal of impact
27	What effect has working with RELEMR community had on your country's seismic catalog?	
28	Have you participated in any multi-country projects as a result of attending the RELEMR conference?	☐ Yes ☐ No
29	Which countries were represented in the projects?	
30	Would you say that seismic hazard mitigation improved over the last 5 years in your country of residence?	☐ Yes ☐ No
31	In the past 5 years what impact have seismic hazard mitigation parts of RELEMR had in your country of residence?	☐1 Significant negative impact ☐2 Some small negative impacts ☐3 No impact at all ☐4 Small positive impact ☐5 Significant positive impact
32	Would you say seismic data and maps you create impact building decisions in your country?	☐ Yes ☐ No ☐ I am not sure ☐ Not Applicable
33	What kind of impact has RELEMR had on your ability to provide better data and maps to decision makers?	☐1 Significant negative impact ☐2 Some small negative impacts ☐3 No impact at all ☐4 Small positive impact ☐5 Significant positive impact
34	Would you attend the RELEMR meetings if travel	☐ Yes ☐ No

Q#	Survey Question	Answers
	costs are no longer funded?	