SECOND REGIONAL STANDARD OPERATING PROCEDURE WORKSHOP FOR BROADCASTING MEDIA IN THE TSUNAMI WARNING CHAIN

UNESCAP Project on Strengthening Tsunami Warning in the North West Indian Ocean through Regional Cooperation

26-28 OCTOBER 2021

Country Report: Iran

Dr. Ali Khoshkholgh(INIOAS)
Mrs Sadeghzadeh (IRIMO)

Activities after 1st Media SOP workshop :

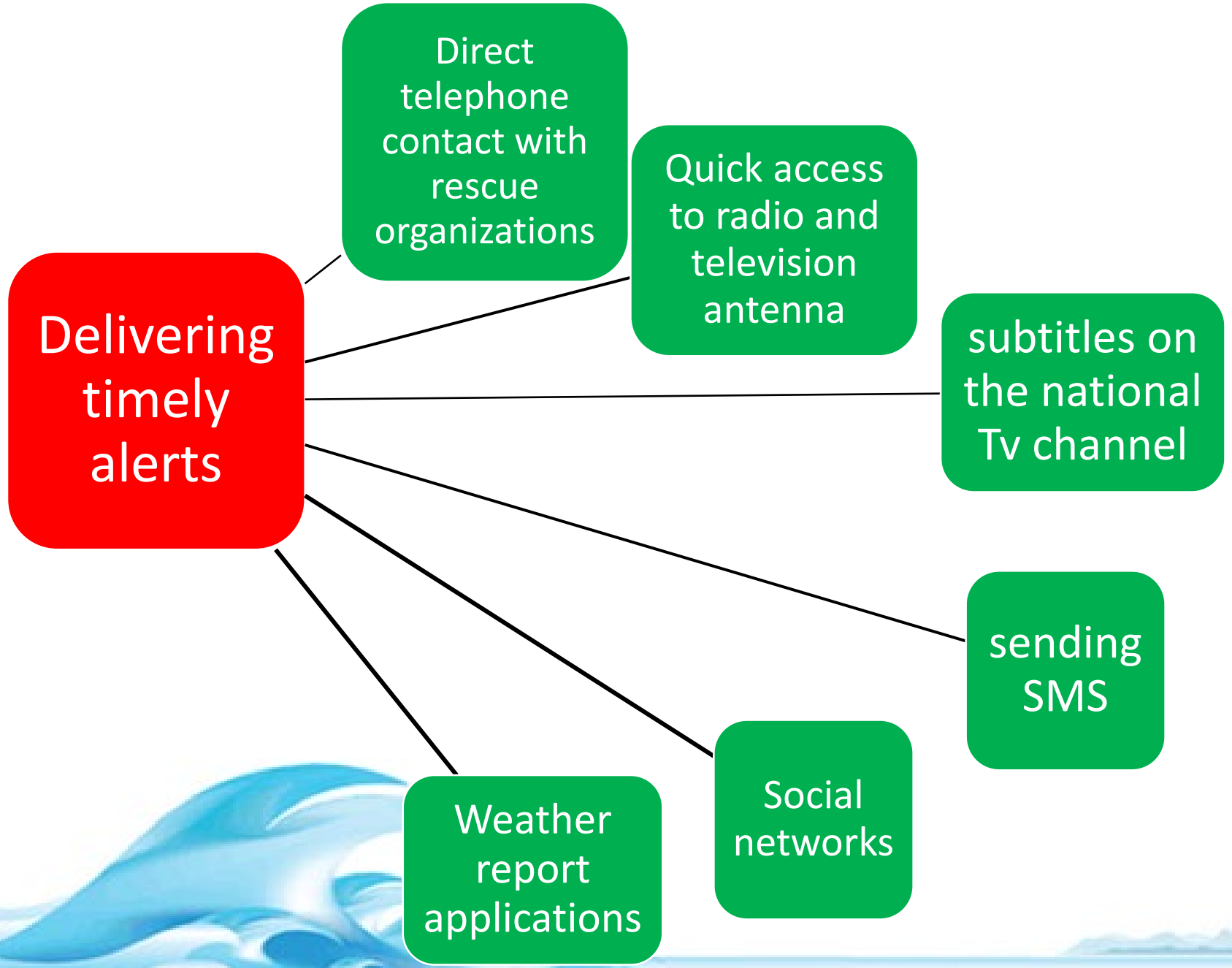
- Sending Invitation letter to Directors of some national and local broadcasting channels to nominate their official representatives to participate at national/International meeting

- During the following up of answering the invitation letters, we tried to introduce a brief description of
  - IOTWMS
  - the task of NTWC and its activities
  - the subject of the UNESCAP projects
  - the subject of this workshop

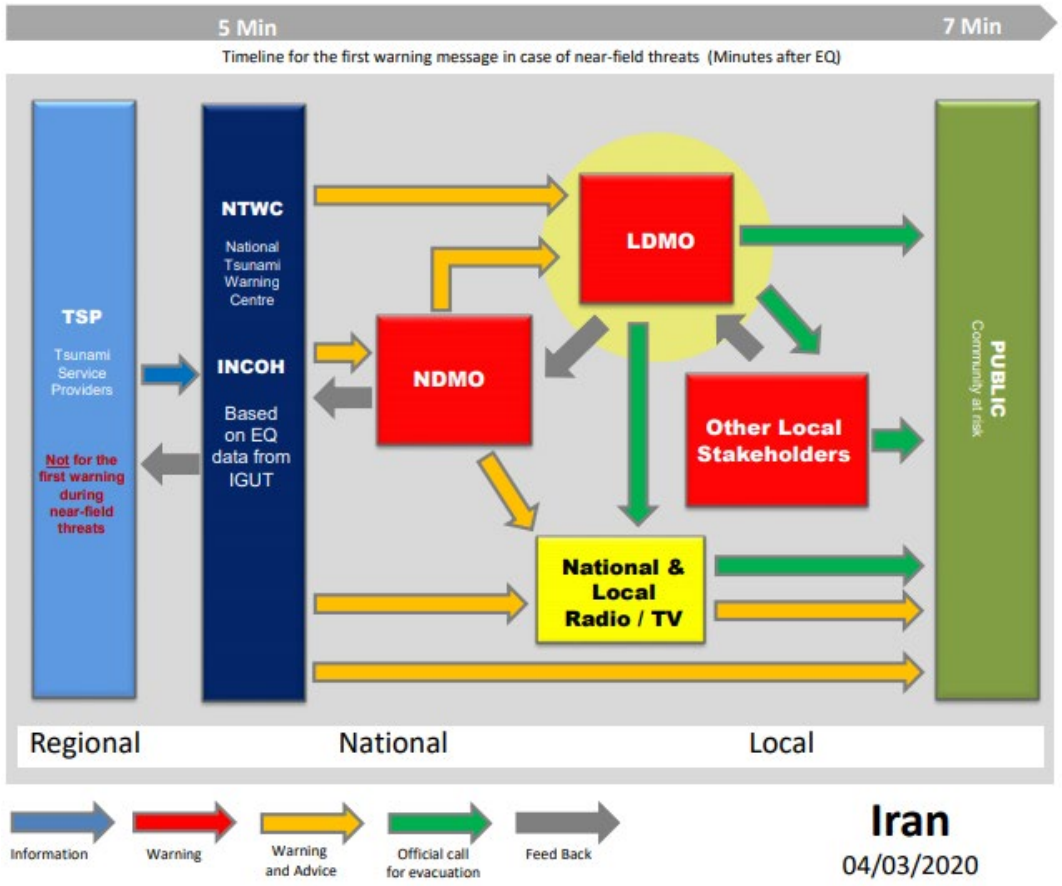
- Iran Meteorological Organization as the legal responsible center for issuing warning for meteorological hazards has very good relation with national and local broadcasting channels

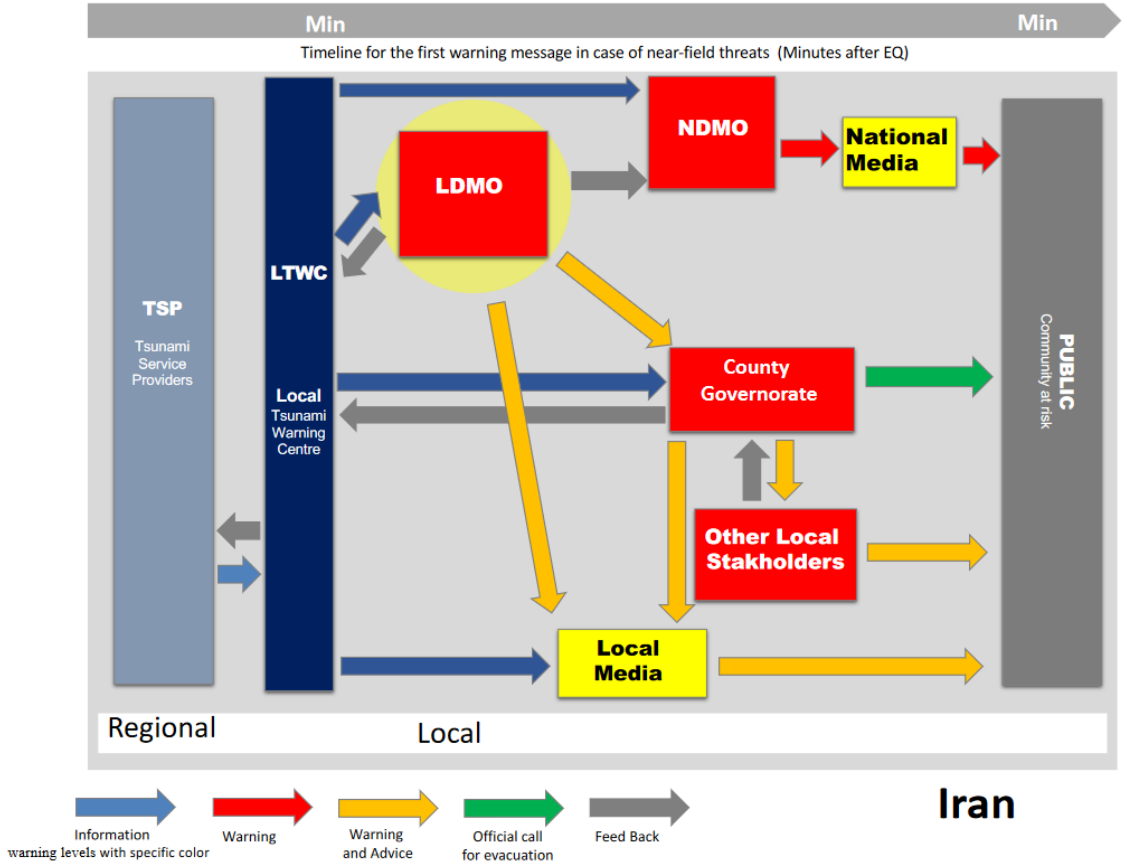
Challenges with delivery of timely forecasts of IRIMO

Timely prognosis	Reciept of relevant data with more frequency
Proper understanding of the severity of the risk	Warnings are divided into three different colors: yellow, orange and red
Delivering timely alerts	


Delivering timely alerts
Direct telephone contact with rescue organizations
Quick access to radio and television antenna
subtitles on the national Tv channel
sending SMS
Social networks
Weather report applications

Tsunami warning chain of Iran should be finalized





NTWC SOP of IRAN

00:00(mm:ss)-Seismic sensors start recording /EQ felt at coastal area.

05:00(mm:ss)-NTWC receive EQ information from IGUT through SMS/FAX/E-mail/Social media and also Phone if the magnitude is larger than 7.0 at MSZ

07:00(mm:ss)-The proper **B.1**(EQ information and potential of Tsunami generation and Warning Level) will automatically be prepared by NTWC software and disseminate to LDMO/NDMO/Media/Public based on the following criteria through SMS/Fax/E-mail/Social media and also Phone if the magnitude is larger than 7.0 at MSZ based on the following criteria:

Earthquake Magnitude at Makran Area	Warning level	Advice
8.0≤Mwp	Warning	Evacuate to high Ground
7.5≤Mwp<8	Alert	Stay away from beaches
7≤Mwp<7.5	Watch	Be prepared to act
Mwp<7	No threat/threat passed	

10:00(mm:ss)-NTWC receives updated information of EQ from IGUT .

10:00(mm:ss)-NTWC receives feedback from NDMO.

12:00(mm:ss)-Updated EQ information and the details of tsunami information including warning level, Maximum wave height and tsunami estimated time arrival by NTWC software will be issued to LDMO/NDMO/Media/Public through SMS/Fax/E-mail Social media at **B.2.** The warning level at this bulletin is based on estimated wave height as follow:

Threshold of Estimated Wave Height	Warning level	Advice
>2m	Warning	Evacuate to high Ground
0.5-2m	Alert	Stay away from beaches
0.2-0.5m	Watch	Be prepared to act
<0.2m	No threat/threat passed	

15:00 Based on sea level monitoring and other witnesses, the information of **B.2** will be confirmed and updated at **B.3** and will be issued to LDMO/NDMO/Media/Public through SMS/Fax/E-mail Social media. It could to be updated every **5 minutes**.

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00:00+Max T4+2hr- NTWC will issue **Final Bulletin** as cancellation of warning to LDMO/NDMO/Media/Public through SMS/Fax/E-mail Social media.

Bulletins Issued by NTWC

Bulletine 1

Warning ■

Issued by Iranian National Center for Ocean Hazard

Date:

Earthquake Information:

Magnitude: Depth:
Date: Origin Time:
Latitude: Longitude:
Location:

Evaluation:

Due to the characteristics of the earthquake, there is a grea
Makran region, and the danger of tsunami waves threatens
the Oman Sea. Potential tsunami waves will reach the country
about 20 minutes after the earthquake).

Advice:

In addition to creating high-risk waves and currents, tsunam
even low-lying areas and create flooding. Therefore, in additi
lying coastal areas need to be evacuated and local residents
away as possible. Due to the higher altitude and danger c
recommended to change the position of ships to deep w
available until the tsunami waves reach the shores, it is not p
to the deep waters and only the ships in the sea should be pr

Updates:

Upon receipt of new information about the specifications of t
forecasts, subsequent tsunami announcements will be mad
time available for the arrival of tsunami waves, it is necessary
the necessary measures based on this announcement and as

Bulletine 2

Warning ■
Alert □

Issued by Iranian National Center for Ocean Haza

Date:

Earthquake Information:

Magnitude: Depth:
Date: Origin Time:
Latitude: Longitude:
Location:

Evaluation:

Given the seismic characteristics of the earthquake an
great potential for a massive tsunami in the Makra
threatens all the southern coasts of the Oman Sea. Po
shores in a very short time (on average about 20 minut
in the next section are at risk of tsunamis.

Tsunami threat at coastal area:

The list below shows the estimated height and arrival ti
the country in the Oman Sea. The areas where the ma
than 0.5 m are not listed below.

Name	Max H(m)
Chabahar	12m
Jask	10m

.

Advice:

In addition to creating high-risk waves and currents
penetrate even low-lying areas and create flooding. Th
across the country's coast in the Oman Sea, low-lying
residents flee to high-altitude areas (especially high-ris
altitude and danger of tsunami waves in shallow areas
ships to deep waters. However, due to the short time
shores, it is not possible to transfer the ships of the por
sea should be prevented from moving towards the port

Updates:

Upon receipt of new information about the specificatio
forecasts, subsequent tsunami announcements will be
time available for the arrival of tsunami waves, it is nec
the necessary measures based on this announcement a

Bulletine 3 (Confirmation of Tsunami Threat)

Warning ■

Issued by Iranian National Center for Ocean Hazard

Date:

Earthquake Information:

Magnitude: Depth:
Date: Origin Time:
Latitude: Longitude:
Location:

Evaluation:

Sea level observation have confirmed that a tsunami was generated. Maximum wa
observed so far:

Name	Max Observed Wave Height(m)
Chabahar	...
Jask	...

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Tsunami threat at coastal area:

The list below shows the estimated height and arrival time of tsunami waves on th
the country in the Oman Sea. The areas where the maximum tsunami height is e
than 0.5 m are not listed below.

Name	Max H(m)	ETA(min)
Chabahar	12m	25min
Jask	10m	25min

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Advice:

In addition to creating high-risk waves and currents, tsunamis appear to hav
penetrate even low-lying areas and create flooding. Therefore, in addition to closi
across the country's coast in the Oman Sea, low-lying coastal areas need to be e
residents flee to high-altitude areas (especially high-risk areas) as soon as possible
altitude and danger of tsunami waves in shallow areas, it is recommended to cha
ships to deep waters. However, due to the short time available until the tsunam
shores, it is not possible to transfer the ships of the ports to the deep waters and c
sea should be prevented from moving towards the ports.

Updates:

Upon receipt of new information about the specifications of the earthquake, as we
forecasts, subsequent tsunami announcements will be made and issued. Howeve
time available for the arrival of tsunami waves, it is necessary to announce tsunam
the necessary measures based on this announcement and as quickly as possible.

Bulletine 4 (All Clear Message)

Issued by Iranian National Center for Ocean Hazard

Date:

Earthquake Information:

Magnitude: Depth:
Date: Origin Time:
Latitude: Longitude:
Location:

Evaluation:

Sea level observation have confirmed that a tsunami was generated. Maximum wave amplitudes which was observed are as follws:

Name	Max Observed Wave Height(m)
Chabahar	...
Jask	...

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Tsunami threat at coastal area:

The list below shows the estimated height and arrival time of tsunami waves on the southern coast of the country in the Oman Sea. The areas where the maximum tsunami height is expected to be less than 0.5 m are not listed below.

Name	Max H(m)	ETA(min)
Chabahar	12m	25min
Jask	10m	25min

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Advice:

In addition to creating high-risk waves and currents, tsunamis appear to have the potential to penetrate even low-lying areas and create flooding. Therefore, in addition to closing ports and docks across the country's coast in the Oman Sea, low-lying coastal areas need to be evacuated and local residents flee to high-altitude areas (especially high-risk areas) as soon as possible. Due to the higher altitude and danger of tsunami waves in shallow areas, it is recommended to change the position of ships to deep waters. However, due to the short time available until the tsunami waves reach the shores, it is not possible to transfer the ships of the ports to the deep waters and only the ships in the sea should be prevented from moving towards the ports.

Updates:

Upon receipt of new information about the specifications of the earthquake, as well as more accurate forecasts, subsequent tsunami announcements will be made and issued. However, due to the short time available for the arrival of tsunami waves, it is necessary to announce tsunami warnings and take the necessary measures based on this announcement and as quickly as possible.

Bulletins Issued by NTWC

مرتبه هشدار (تهدید زیاد)
مرتبه هشدار (تهدید متوسط)
مرتبه مشاهده (تهدید کم)

اطلاعیه شماره ۱ سونامی

صادره توسط مرکز ملی پیش‌بینی و هشدار مخاطرات دریایی ایران

مورخ: ۱۳ ام شهریور ماه، سال ۱۳۹۷ (۴ ام سپتامبر سال ۲۰۱۸) - ساعت: ۱۰:۳۷

الف- اطلاعات زمین‌لرزه:

بزرگی: Mwp ۸/۵

زمان مبدأ: ۱۰:۳۰ (به‌وقت ایران) - ۶:۰۰ (UTC)

مختصات مرکز زمین‌لرزه: ۵۸،۲ طول جغرافیایی - ۲۴،۸ عرض جغرافیایی

موقعیت (منطقه جغرافیایی): گسل مکران

عمق زلزله: ۱۰ کیلومتر

مختصات زلزله رخداده، پتانسیل زیادی برای وقوع سونامی عظیم در ناحیه مکران وجود داشته و خطر امواج سونامی سواحل جنوب کشور در دریای عمان را تهدید می‌کند. امواج سونامی احتمالی در زمان بسیار کمی به سواحل کشور

سونامی احتمالی علاوه بر ایجاد امواج و جریان‌های نیرومند مخاطره‌آمیز، حتی قدرت نفوذ به نواحی خشکی کم ارتفاع فتگی را نیز دارا باشد. بنابر این علاوه بر تعطیلی بنادر و اسکله‌ها، نیاز است تا مناطق ساحلی کم ارتفاع تخلیه شده و هر چه سریعتر به سمت نواحی مرتفع دور از ساحل بگریزند.

ی:

ات جدید از مشخصات زلزله رخداده و همینطور با توجه به پیش‌بینی‌های دقیقتر، اطلاعیه‌های بعدی سونامی خواهد شد. هر چند با توجه به زمان اندک موجود برای رسیدن امواج سونامی، نیاز است هشدارهای سونامی اعلام و بر اساس همین اطلاعیه و با سرعت هر چه بیشتر صورت گیرد.

مرتبه هشدار (تهدید زیاد)
مرتبه هشدار (تهدید متوسط)
مرتبه مشاهده (تهدید کم)

اطلاعیه شماره ۲ سونامی

صادره توسط مرکز ملی پیش‌بینی و هشدار مخاطرات دریایی ایران

مورخ: ۱۳ ام شهریور ماه، سال ۱۳۹۷ (۴ ام سپتامبر سال ۲۰۱۸) - ساعت: ۱۰:۴۰

الف- اطلاعات زمین‌لرزه:

بزرگی: Mwp ۹/۰

زمان مبدأ: ۱۰:۳۰ (به‌وقت ایران) - ۶:۰۰ (UTC)

مختصات مرکز زمین‌لرزه: ۵۸،۲ طول جغرافیایی - ۲۴،۸ عرض جغرافیایی

موقعیت (منطقه جغرافیایی): گسل مکران

عمق زلزله: ۱۰ کیلومتر

ب- ارزیابی:

با توجه به مشخصات زلزله رخداده و همین‌طور نتایج شبیه‌سازی سناریوهای سونامی، پتانسیل زیادی برای وقوع سونامی عظیم در ناحیه مکران وجود داشته و خطر امواج سونامی شدیداً تمامی سواحل جنوب کشور در دریای عمان را تهدید می‌کند. امواج سونامی بر اساس محاسبات در زمان اندکی به سواحل کشور خواهند رسید.

ج- خطر سونامی در سواحل کشور در دریای عمان:

در لیست زیر حداکثر ارتفاع تخمینی امواج سونامی، زمان رسیدن اولین موج (بلندتر از ۰/۵ متر)، به همراه احتمال آب‌گرفتگی در سواحل جنوبی کشور در دریای عمان ارائه شده است.

نام منطقه	ارتفاع سونامی (متر)	زمان رسیدن موج به ساحل	احتمال آب‌گرفتگی (زیاد، کم)
چابهار	۱۶	۱۰:۵۰	زیاد
جاسک	۱۴	۱۰:۵۶	زیاد

د: توصیه‌ها:

این سونامی علاوه بر ایجاد امواج و جریان‌های نیرومند مخاطره‌آمیز، قدرت نفوذ به نواحی خشکی کم ارتفاع و ایجاد آب‌گرفتگی را نیز داراست. بنابر این علاوه بر تعطیلی بنادر و اسکله‌ها در سراسر سواحل کشور در دریای عمان، نیاز است تا نواحی ساحلی کم ارتفاع تخلیه شده و ساکنان محلی هر چه سریعتر به سمت نواحی مرتفع دور از ساحل بگریزند (به ویژه مناطق با احتمال آب‌گرفتگی زیاد).

ه: به روز رسانی:

از طریق بررسی داده های میدانی و مشاهدات عینی وقوع سونامی تایید گشته است و با توجه به زمان اندک موجود برای رسیدن امواج سونامی، نیاز است هشدارهای سونامی اعلام و اقدامات لازم بر اساس این اطلاعیه و با سرعت ادامه یابد.

موقعیت: گسل مکران، سواحل ایران

مانور سونامی 2018 اقیانوس هند
(IOWave18)
اطلاعیه شماره ۱ سونامی توسط
مرکز ملی پیش‌بینی و هشدار
مخاطرات دریایی ایران صادر شد.
زمان وقوع زلزله: ۱۰:۳۰ ۱۳ شهریور
۱۳۹۷
بزرگی زلزله: ۸/۵
مختصات کانون زلزله: ۵۸/۲ طول
جغرافیایی - ۲۴/۸ عرض جغرافیایی
موقعیت: گسل مکران، سواحل ایران
برای اطلاع از جزئیات
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