Exercise Indian Ocean Wave 2023 (IOWave23) Post-Exercise Evaluation

General Instructions

The IOWave23 Post-Exercise evaluation links will be distributed to the **National Contact for Exercise IOWave23** following each scenario. In total four (4) links will be distributed over the course of the exercise, 4-25 October 2023. Each scenario will have a unique evaluation link. If your country did not complete a scenario, please indicate this in the Participation section and then submit the survey.

The evaluation will take approximately 2 hours to complete for each scenario exercised (e.g., Andaman trench, Makran trench, Heard Island volcano, Sunda trench) once all required inputs have been received from your national stakeholders (NTWCs, DMOs, communities) who were involved in the exercise.

It is possible to exit a partially completed survey for completion later. Simply exit the survey and use the link provided to you by email to access it again when you are ready to answer more questions. In this way you can complete the survey at your own pace and go back to amend responses if necessary.

Each section of the survey can be shared with a colleague, so that they can provide input. It is possible to share different sections with different people. However, please only share each section with one person.

Please complete and submit the online survey by **30 November 2023**.

Any questions can be directed to the ICG/IOTWMS Secretariat (email: iotwms@unesco.org).

Exercise Objectives

There are eight (8) core objectives of Exercise IOWave23. Each objective is designed to validate a part of the end-to-end tsunami warning and mitigation system.

Objectives 1 and 2 survey questions relate to the at-risk coastal communities.

- Objective 1: Validate procedures are in place to ensure tsunami warnings get to all in the community, including those with disabilities, all genders, elderly, and youth.
- Objective 2: Validate the level of community awareness, preparedness, and response.

Objective 3 and 4 survey questions relate to standard operating procedures at all levels in the national tsunami warning chain.

- Objective 3: Validate the Standard Operating Procedures within countries for generating and disseminating tsunami warnings to their relevant emergency response agencies, other authorities, media, and the public.
- Objective 4: Validate the Standard Operating Procedures within countries for the issuing of public safety messages, ordering evacuations and where possible issuing all-clear messages.

Objectives 5 to 8 survey questions relate to the National Tsunami Warning Center.

- Objective 5: Validate dissemination by TSPs of Tsunami Bulletin Notification Messages to NTWCs via Tsunami Warning Focal Points (TWFPs) of Indian Ocean countries and the reception by NTWCs of the TSP messages.
- Objective 6: Validate access by NTWCs to the tsunami bulletins and other products on the TSP websites, and the use of that information to produce national warnings.
- Objective 7: Validate the reporting by NTWCs to the TSPs of their National Tsunami Warning Status.
- Objective 8: Validate receipt and understanding by NTWCs of new TSP service for tsunamis generated by non-seismic and complex sources.

Section Navigator

Section	Status	Actions	Invite Colleague to Complete	
Member State Details *	Not Started	Answer	Email Address	Send
Participation *	Not Started	Answer	Email Address	Send
Objectives 1-2: Communities	Not Started	Answer	Email Address	Send
Objectives 3-4: Standard Operating Procedures	Not Started	Answer	Email Address	Send
Objectives 5-8: National Tsunami Warning Centre	Not Started	Answer	Email Address	Send
General Questions	Not Started	Answer	Email Address	Send
Submit Survey (National Exercise Contact) *	Not Started	Answer	Email Address	Send

*Indicates required sections.

Member State Details

Country:

Details of National IOWave Exercise Contact

       Name:
       Position:
       Agency:
       Email:
       Phone:

Is there a second National IOWave Exercise Contact?

If yes, please provide the details of the second National IOWave Exercise Contact

Name:
Position:
Agency:
Email:
Phone:

Participation

Did your country participate in the scenario of this evaluation (i.e. Andaman trench, Makran trench, Heard Island volcano, OR Java trench)? Yes/No
- If No, please submit your survey.
- If Yes, please continue.

Please indicate if the following statements reflect your level of in-country participation.

	Yes	No
National Disaster Management Organisation was involved.	O	O
Provincial Disaster Management Organisation(s) participated.	O	O
Local Disaster Management Organisation(s) participated.	O	O
Media representatives participated.	O	O
The community was involved (not necessarily evacuation).	O	O
Public evacuation drills were conducted.	O	O

Comments

Please indicate the type of exercise(s) conducted.

(More than 1 option can be selected.)

- ☐ Orientation Exercise
- ☐ Drill
- ☐ Tabletop Exercise
- ☐ Functional Exercise
- ☐ Full Scale Exercise

Comments

[   ]

TYPES OF EXERCISES

1. An **Orientation Exercise** lays the groundwork for a comprehensive exercise programme. It is a planned event, developed to bring together individuals and officials with a role or interest in multi-hazard response planning, problem solving, development of standard operational procedures (SOPs), and resource integration and coordination. An Orientation Exercise will have a specific goal and written objectives and result in an agreed upon Plan of Action.

2. A **Drill** is a planned activity that tests, develops, and/or maintains skills in a single or limited emergency response procedure. Drills generally involve operational response of single departments or agencies, organizations, or facilities, but may be a subset of full-scale exercises. Drills can involve internal notifications and/or field activities. Limited evacuation may or may not be conducted, such as within a school, pilot hotel, or village.

3. A **Tabletop Exercise** is a planned activity in which local officials, key staff, and organizations with disaster management responsibilities are presented with simulated emergency situations. It is usually informal, in a conference room environment, and is designed to elicit constructive discussion from the participants to assess plans, policies, and procedures. Individuals are encouraged to discuss decisions based on their organization's Standard Operating Procedures (SOPs) with emphasis on slow-paced problem solving, rather than rapid, real-time decision-making. A Tabletop Exercise should have specific goals, objectives, and a scenario narrative.

4. A **Functional Exercise** is a planned activity designed to test and evaluate individual functions, multiple activities within a function, or interdependent groups of functions among various agencies. It is based on a simulation of a realistic emergency situation. The Functional Exercise gives the decision-makers a fully simulated experience of being in a major disaster event. It should take place at the appropriate

coordination locations (e.g. warning centres and emergency operations centres) and activate all the appropriate members designated by the plan. Organisations should test their SOPs using real-time simulation tsunami bulletins. Public evacuations may or may not be included. A Functional Exercise should have specific goals, objectives, and a scenario narrative.

5. A **Full-scale Exercise** is the culmination of a progressive exercise programme that has grown with the capacity of the community to conduct exercises. A Full-Scale exercise is a planned activity in a "challenging" environment that encompasses a majority of the tsunami warning and emergency management functions, and involves multiple layers of government (national, provincial, local). This type of exercise involves the actual mobilization and deployment of the appropriate personnel and resources needed to demonstrate operational capabilities. DMOs (Disaster Management Office) and other local command centres are required to be activated. It tests all aspects of emergency response, and should demonstrate inter-agency cooperation. A Full-scale exercise is the largest, costliest, and most complex exercise type. It may or may not include public evacuations.

Objective 1: Validate procedures in place to ensure tsunami warnings get to all in the community, including those with disabilities, all genders, elderly, and youth.

To be completed with input from Disaster Management Organisations (DMOs) and/or National Tsunami Warning Centre (NTWC) as appropriate.

1(a) Were tsunami warning messages that were issued to the public formatted able to be accessed and understood by those with disabilities, all genders, elderly, and youth?

If yes,

- Please describe measures implemented:

If no,

- Please describe measures to be implemented:

Objective 2: Validate the level of community awareness, preparedness, and response.

To be completed with input from Disaster Management Organisations (DMOs).

2(a) Have there been any pre-exercise community tsunami awareness activities?

If yes,

- Please specify the awareness activities undertaken (for example, public displays, community briefings, educational materials):
- Did these activities cater for people with disabilities, all genders, elderly, and youth? Yes/No

2(b) Have there been any pre-exercise community preparedness activities?

If yes,

What were the community preparedness activities between the last exercise and the current exercise?
(Select all that apply.)

- ☐ Tsunami exercise
- ☐ Tsunami education in schools
- ☐ Participatory evacuation planning
- ☐ Community education seminars
- ☐ Evacuation maps
- ☐ Evacuation signage
- ☐ Shelter facilities
- ☐ Other - Write In [   ]
- ☐ Other - Write In [   ]

2(c) Has there been any support for the following activities prior to the exercise and from whom?

	Supported activity		If supported, from whom:
	Yes	No	
Tsunami signage	○	○	
Vertical evacuation shelters	○	○	
Hazard mapping	○	○	
Tsunami inundation mapping	○	○	
Evacuation route mapping	○	○	

2(d) If evacuation maps exist, do they consider evacuation of disabled persons, all genders, elderly, and youth?

○ Evacuation maps exist and do account for evacuation of disabled persons, all genders, eldery, and youth.

○ Evacuation maps exist, but do not account for evacuation of disabled persons, all genders, eldery, and youth.

○ Evacuation maps do not exist.

Comments

2(e) Was Exercise IOWave23 used as an opportunity to evaluate the UNESCO-IOC Tsunami Ready Recognition Programme (TRRP) indicators in communities? Yes/No

2(f) If yes,

What is the name of the **1st community** that evaluated the Tsunami Ready Indicators?

Please rank the Tsunami Ready indictors from 4 (extremely good), 3 (very good), 2 (good), 1 (poor) to 0 (very poor) for the community:

	4 (extremely good), 3 (very good), 2 (good), 1 (poor), 0 (very poor)				
	4	3	2	1	0
Tsunami hazard zones are mapped and designated.	○	○	○	○	○
The number of people at risk in the tsunami hazard zone is estimated.	○	○	○	○	○
Economic, infrastructural, political, and social resources are identified.	○	○	○	○	○
Easily understood tsunami evacuation maps are approved.	○	○	○	○	○
Tsunami information including signage is publicly displayed.	○	○	○	○	○
Outreach and public awareness and education resources are available and distributed.	○	○	○	○	○
Outreach or educational activities are held at least three times a year.	○	○	○	○	○
A community tsunami exercise is conducted at least every two years.	○	○	○	○	○
A community tsunami emergency response plan is approved.	○	○	○	○	○
The capacity to manage emergency response operations during a tsunami is in place.	○	○	○	○	○
Redundant and reliable means to timely receive 24-hour official tsunami alerts are in place.	○	○	○	○	○
Redundant and reliable means to timely disseminate 24-hour official tsunami alerts to the public are in place.	○	○	○	○	○

Did another community evaluate the UNESCO-IOC Tsunami Ready indicators? Yes/No

The questions can currently be repeated up to 20 times. If you would like to provide input on more than 20 communities, please contact the IOTWMS Secretariat at iotwms@unesco.org.

2(g) Were community evacuations conducted in any areas?

If yes, please answer the following questions for each community that evacuated. Select a community that you would like to provide input on and answer Questions 2(h)-2(x) below. At the end of the page, you will be given the opportunity to answer the questions again for another community that evacuated. The questions can be repeated up to 20 times. If you would like to provide input on more than 20 communities, please contact the IOTWMS Secretariat at iotwms@unesco.org.

2(h) Location of evacuation (name of community):

2(i) Please rank the following from 4 (extremely good), 3 (very good), 2 (good), 1 (poor) to 0 (very poor) for the community that evacuated.

	4	3	2	1	0
Availability of tsunami evacuation protocols such as inundation/evacuation maps	O	O	O	O	O
The level of community awareness of the tsunami risk	O	O	O	O	O

2(j) Have community members received prior evacuation training?

2(k) Are Standard Operating Procedures for community evacuation in place?

   If yes, please provide the details.

2(l) How were community members notified that an evacuation order was issued? (Select all that apply.)

☐ Siren

☐ Door-to-door

☐ Public announcement

☐ Radio / TV

☐ Mobile Phone / Social Media

☐ Evacuation time set prior to the exercise

☐ Other - Write In [   ]

☐ Other - Write In [   ]

2(m) What time was the evacuation order issued? (Specify UTC or local time.)

2(n) What time did the community receive the evacuation notification? (Specify UTC or local time.)

2(o) At what time was the evacuation? (Specify UTC or local time.)

2(p) What is the estimated number of people that evacuated?

   How many were women?

2(q) Who evacuated? (Select all that apply.)

☐ Beachgoers

☐ Boat Users

☐ Home Residents

☐ Businesses

☐ Schools

☐ Hospitals

☐ Hotels

☐ People with disabilities

☐ Elderly

☐ Elderly (in supported care)

☐ Youth

☐ Other - Write In

☐ Other - Write In

2(r) Where did the evacuees go to?

2(s) Did the community receive an all-clear message?

   If yes, at what time did the community receive the all-clear message? (Specify UTC or local time.)

2(t) How was the all-clear message issued to the public? (Specify the mode of communication.)

2(u) Did the community have a shelter management plan?

2(v) At what time did the people return to their residences? (Specify UTC or local time.)

2(w) Did the evacuation process happen smoothly?

If no, please provide the details of the problems encountered during evacuation.

2(x) How could future evacuation exercises be improved?

Objective 3: Validate the Standard Operating Procedures within countries for generating and disseminating tsunami warnings to their relevant disaster response agencies, other authorities, media, and the public.

To be completed with input from Disaster Management Organisations (DMOs) and/or National Tsunami Warning Centre (NTWC) as appropriate.

The following section is designed to assess who is responsible for generating and disseminating tsunami warnings and information to five types of recipients:

1. National Disaster Management Organisation (NDMO)
2. Provincial Disaster Management Organisation (PDMO)
3. Local Disaster Management Organisation (LDMO)
4. Other authorities, e.g., port and airport authorities, marine rescue, beach life-saving organisations
5. Media
6. Public

3(a) In the following table, please indicate who is responsible for the generation and dissemination of tsunami warnings and information to each recipient listed in the left-hand column, and if exercised, the details of the warning delivery.

	Who sends tsunami messages to the recipient? (e.g. NTWC, NDMO, LDMO-P, LDMO-C and/or media)	Number of messages sent	Time 1st message sent (UTC)	Time last message sent (UTC)	Methods of delivery (e.g. email, webpage, sms, fax, phone, tv, radio, social media)	Were the messages received in a timely manner?
NDMO						-- Please Select -- ⌄
PDMO						-- Please Select -- ⌄
LDMO						-- Please Select -- ⌄
Media						-- Please Select -- ⌄
Public						-- Please Select -- ⌄

Comments

3(b) Do the following authorities and organisations have Standard Operating Procedures in place to ensure tsunami warnings are efficiently transmitted along the national tsunami warning chain in a timely manner?

	Standard Operating Procedures		
	Yes	No	Partially
NTWC	O	O	O
NDMO	O	O	O
PDMO	O	O	O
LDMO	O	O	O
Other Authorities	O	O	O
Media	O	O	O
Public	O	O	O

3(c) How well did your Standard Operating Procedures perform for generating and disseminating tsunami warnings within your country?

O Extremely Well   O Very Well   O Well   O Poor   O Very Poor

3(d) What Media participated in the Exercise?

(Select all that apply.)

- [ ] Press (newspapers, magazines, journals)
- [ ] Radio
- [ ] Television
- [ ] Social - Facebook
- [ ] Social - WhatsApp
- [ ] Social - Twitter
- [ ] Other - Write In [   ]
- [ ] Other - Write In [   ]

3(e) What information did the Media broadcast?

- [ ] Pre-exercise tsunami awareness
- [ ] Information on the upcoming scheduled exerc
- [ ] Tsunami threat information
- [ ] Tsunami evacuation information
- [ ] All-clear information
- [ ] Mock interviews
- [ ] Coverage of the event
- [ ] Other - Write In [   ]
- [ ] Other - Write In [   ]

3(f) Was the information broadcast by the Media useful?

○ Yes

○ No

○ Partially useful

3(g) How could Media involvement be improved in future exercises and real events?

Objective 4: Validate the Standard Operating Procedures within countries for the issuing of public safety messages, ordering evacuations and where possible issuing all-clear messages.

To be completed with input from Disaster Management Organisations (DMOs) and/or National Tsunami Warning Centre (NTWC) as appropriate.

Agency abbreviations used are:

1. National Tsunami Warning Centre (NTWC)
2. National Disaster Management Organisation (NDMO)
3. Provincial Disaster Management Organisation (PDMO)
4. Local Disaster Management Organisation (LDMO)

4(a) Were **public safety messages** issued during the exercise? Public safety messages provide information about the tsunami threat and appropriate actions to take for each level of threat, but do not include evacuation orders or all-clear messages.

If yes, please complete the following table for **public safety messages** issued during the exercise.
(Complete one row for each agency/authority that issued public safety messages as required.)

Name of agency/authority that issues public safety messages	Agency type	Time message issued (UTC)	Communication method (e.g. email, webpage, sms, fax, phone, tv, radio, social media)	Were there any communication problems?	Content of message	Reason message issued	Comments
1.	-- Please Select -- ∨			-- Please Select -- ∨			
2.	-- Please Select -- ∨			-- Please Select -- ∨			
3.	-- Please Select -- ∨			-- Please Select -- ∨			
4.	-- Please Select -- ∨			-- Please Select -- ∨			
5.	-- Please Select -- ∨			-- Please Select -- ∨			

Agency types include NTWC, NDMO, PDMO, LDMO, and other.

4(b) Were **evacuation orders** issued during the exercise?

If yes, please complete to following table for **evacuation orders** issued during the exercise.
(Complete one row for each agency/authority that issued public safety messages as required.)

	Name of agency/authority that issues public safety messages	Agency type	Time message issued (UTC)	Communication method (e.g. email, webpage, sms, fax, phone, tv, radio, social media)	Were there any communication problems?	Content of message	Reason message issued	Comments
1.		-- Please Select -- ∨			-- Please Select -- ∨			
2.		-- Please Select -- ∨			-- Please Select -- ∨			
3.		-- Please Select -- ∨			-- Please Select -- ∨			
4.		-- Please Select -- ∨			-- Please Select -- ∨			
5.		-- Please Select -- ∨			-- Please Select -- ∨			

Agency types include NTWC, NDMO, PDMO, LDMO, and other.

4(c) Were **all-clear messages** issued during the exercise?

If yes, please complete to following table for **all-clear messages** issued during the exercise.
(Complete one row for each agency/authority that issued public safety messages as required.)

	Name of agency/authority that issues public safety messages	Agency type	Time message issued (UTC)	Communication method (e.g. email, webpage, sms, fax, phone, tv, radio, social media)	Were there any communication problems?	Content of message	Reason message issued	Comments
1.		-- Please Select -- ⌄			-- Please Select -- ⌄			
2.		-- Please Select -- ⌄			-- Please Select -- ⌄			
3.		-- Please Select -- ⌄			-- Please Select -- ⌄			
4.		-- Please Select -- ⌄			-- Please Select -- ⌄			
5.		-- Please Select -- ⌄			-- Please Select -- ⌄			

Agency types include NTWC, NDMO, PDMO, LDMO, and other.

Objective 5: Validate the dissemination by TSPs of Tsunami Bulletin Notification Messages to NTWCs via TWFPs of Indian Ocean countries and the reception by NTWCs of the TSP Messages.

To be completed with input from the National Tsunami Warning Centre (NTWC).

5(a) Name of NTWC (organizational name):

5(b) For each of the four notification message delivery mediums was the information received in a timely manner for you to carry out your warning response SOPs?

	GTS	Fax	Email	SMS
TSP Australia	-- Please Select -- ⌄	-- Please Select -- ⌄	-- Please Select -- ⌄	-- Please Select -- ⌄
TSP India	-- Please Select -- ⌄	-- Please Select -- ⌄	-- Please Select -- ⌄	-- Please Select -- ⌄
TSP Indonesia	-- Please Select -- ⌄	-- Please Select -- ⌄	-- Please Select -- ⌄	-- Please Select -- ⌄

-- Please Select --
Received in time
Received late
Not received

Comments

5(c) Please provide the TSP Australia notification message receipt times in UTC.

5(d) Please provide the TSP India notification message receipt times in UTC.

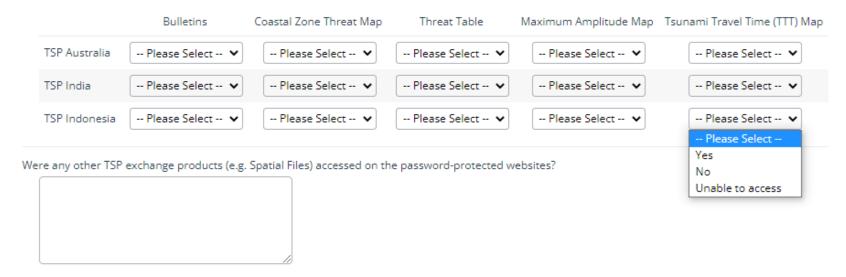**5(e)** Please provide the TSP Indonesia notification message receipt times in UTC.

For example, noting that the timings are subject to change:

	GTS Time Received (UTC)	Fax Time Received (UTC)	Email Time Received (UTC)	SMS Time Received (UTC)
06:00 Announcement Message				
06:12 Notification Message 1				
06:13 Notification Message 2				
06:22 Notification Message 3				
06:32 Notification Message 4				
07:32 Notification Message 4				
08:32 Notification Message 5				
09:32 Notification Message 6				
10:32 Notification Message 7				

Objective 6: Validate the access by NTWCs to the tsunami bulletins and other products on the TSP websites, and the use of that information to produce national warnings.

To be completed with input from the National Tsunami Warning Centre (NTWC).

6(a) Please indicate which TSP exchange products you accessed on the password-protected websites.

	Bulletins	Coastal Zone Threat Map	Threat Table	Maximum Amplitude Map	Tsunami Travel Time (TTT) Map
TSP Australia	-- Please Select -- ▾	-- Please Select -- ▾	-- Please Select -- ▾	-- Please Select -- ▾	-- Please Select -- ▾
TSP India	-- Please Select -- ▾	-- Please Select -- ▾	-- Please Select -- ▾	-- Please Select -- ▾	-- Please Select -- ▾
TSP Indonesia	-- Please Select -- ▾	-- Please Select -- ▾	-- Please Select -- ▾	-- Please Select -- ▾	-- Please Select -- ▾

-- Please Select --
Yes
No
Unable to access

Were any other TSP exchange products (e.g. Spatial Files) accessed on the password-protected websites?

6(b) Was tsunami threat information from TSP websites (bulletins and other products) used in the production of your national warnings?

If yes, please indicate which information was used:

	Tsunami Wave Observations	Predicted Wave Arrival Times				Predicted Maximum Wave Amplitudes	Coastal Forecast Zone Threat Levels	Other
		T1	T2	T3	T4			
TSP Australia	☐	☐	☐	☐	☐	☐	☐	☐
TSP India	☐	☐	☐	☐	☐	☐	☐	☐
TSP Indonesia	☐	☐	☐	☐	☐	☐	☐	☐

If no, please comment on why the tsunami threat information from the TSP websites was not used:

Objective 7: Validate the reporting by NTWCs to the TSPs of their National Tsunami Warning status.

To be completed with input from the National Tsunami Warning Centre (NTWC).

7(a) Did your NTWC send reports of its warning status to the TSPs?

If yes,

> **7(b)** At what time (UTC) did the NTWC first report its status?

> **7(c)** How many status reports did the NTWC send to the TSPs?

If no, why did your NTWC not report its warning status on a TSP website?

Objective 8: Validate receipt and understanding by NTWCs of new TSP service for tsunamis generated by non-seismic and complex sources.

To be completed with input from National Tsunami Warning Centre (NTWC).

8(a) Did the NTWC access the new TSP products from TSP Australia for tsunamis generated by non-seismic and complex sources? Yes/No

If yes,

8(b) Were the TSP Australia new products easily accessible and understood by the NTWC? Yes/No

8(c) Were TSP Australia new products used by the NTWC to generate national tsunami warnings? Yes/No

8(d) Were the national tsunami warnings disseminated to the DMOs and useful? Yes/No

8(e) Please provide any further and more detailed feedback on the new TSP products for tsunamis generated by non-seismic and complex sources:

General Questions

9(a) Please rank the following from 4 (extremely good), 3 (very good), 2 (good), 1 (poor) to 0 (very poor).

	4	3	2	1	0
Exercise planning and communication with Member States: Timeliness and usefulness of information provided by the ICG/IOTWMS Secretariat.	○	○	○	○	○
Exercise documentation: Manual, websites, bulletins	○	○	○	○	○
Exercise format and style: Real-time operation, exercise messages similar to real event	○	○	○	○	○
Post-exercise evaluation: Web-based survey	○	○	○	○	○

Comments

9(b) Our country benefited from the exercise by:

1)

2)

3)

9(c) Future exercises could be improved by:

1)

2)

3)

9(d) Our country used exercise observers?

If yes, please rank the following from 4 (extremely good), 3 (very good), 2 (good), 1 (poor) to 0 (very poor).

	4	3	2	1	0
Feedback provided by the exercise observers	○	○	○	○	○
Information for the post-exercise evaluation provided by the exercise observers	○	○	○	○	○

Comments

*<<< End of survey >>>When the survey is completed and no further information needs to be entered or amended, the **National Contact for Exercise IOWave23** should submit the completed survey.*