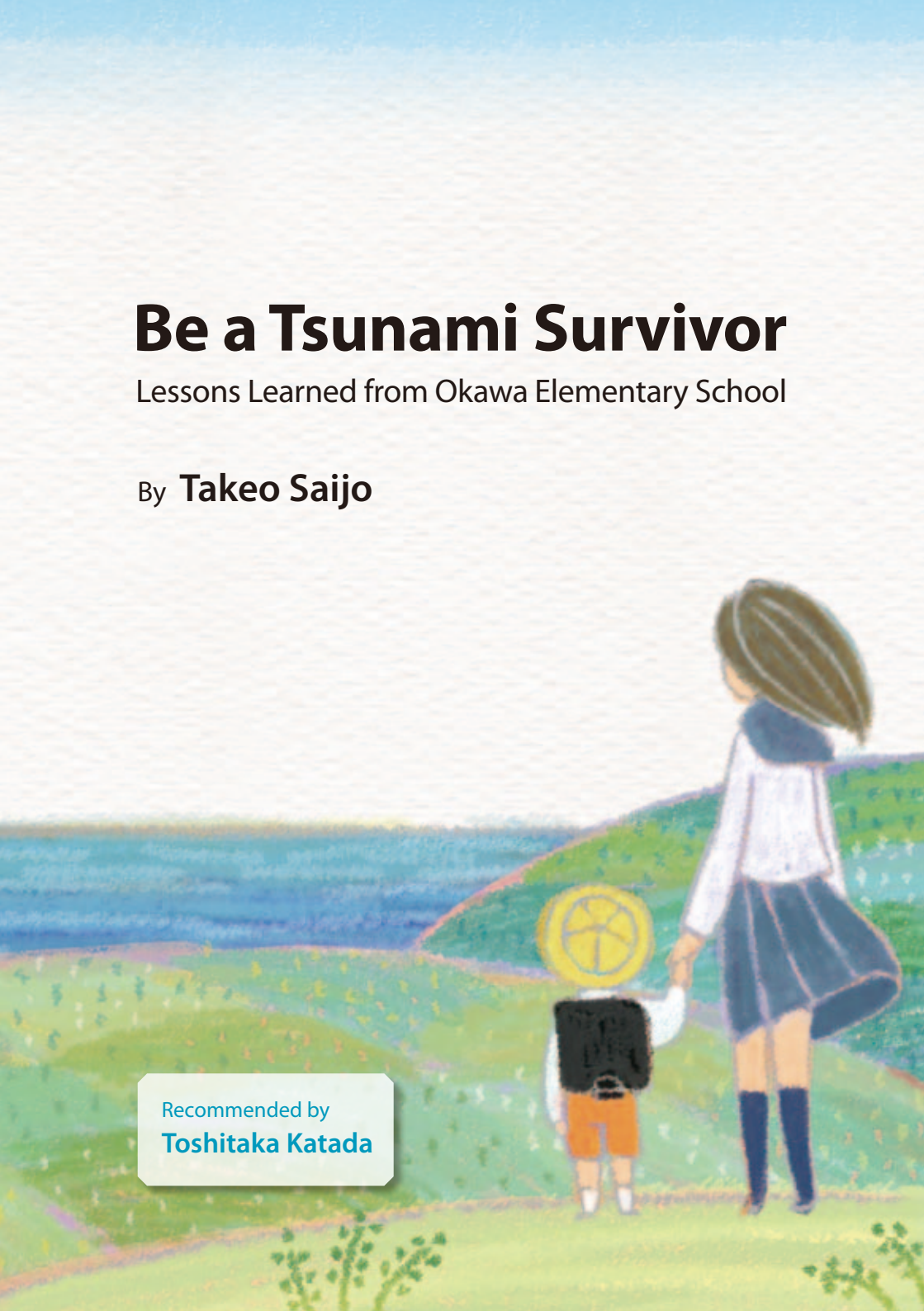


Be a Tsunami Survivor

Lessons Learned from Okawa Elementary School

By **Takeo Saijo**

An illustration of a young girl with long dark hair, wearing a white shirt and a dark skirt, holding the hand of a smaller boy. The boy is wearing a white shirt, orange shorts, and a yellow hat with a peace symbol. They are standing on a grassy hill, looking out at a blue ocean under a light blue sky. The style is soft and painterly.

Recommended by
Toshitaka Katada

Be a Tsunami Survivor

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Preface

Two years have passed since that hell on earth, the date of the Great East Japan Earthquake.

The massive wall of water swallowed everything—irreplaceable family members and homes—and left many tragedies. In particular the tragedy that happened to my alma mater, the Okawa Elementary School, cannot be described in words.

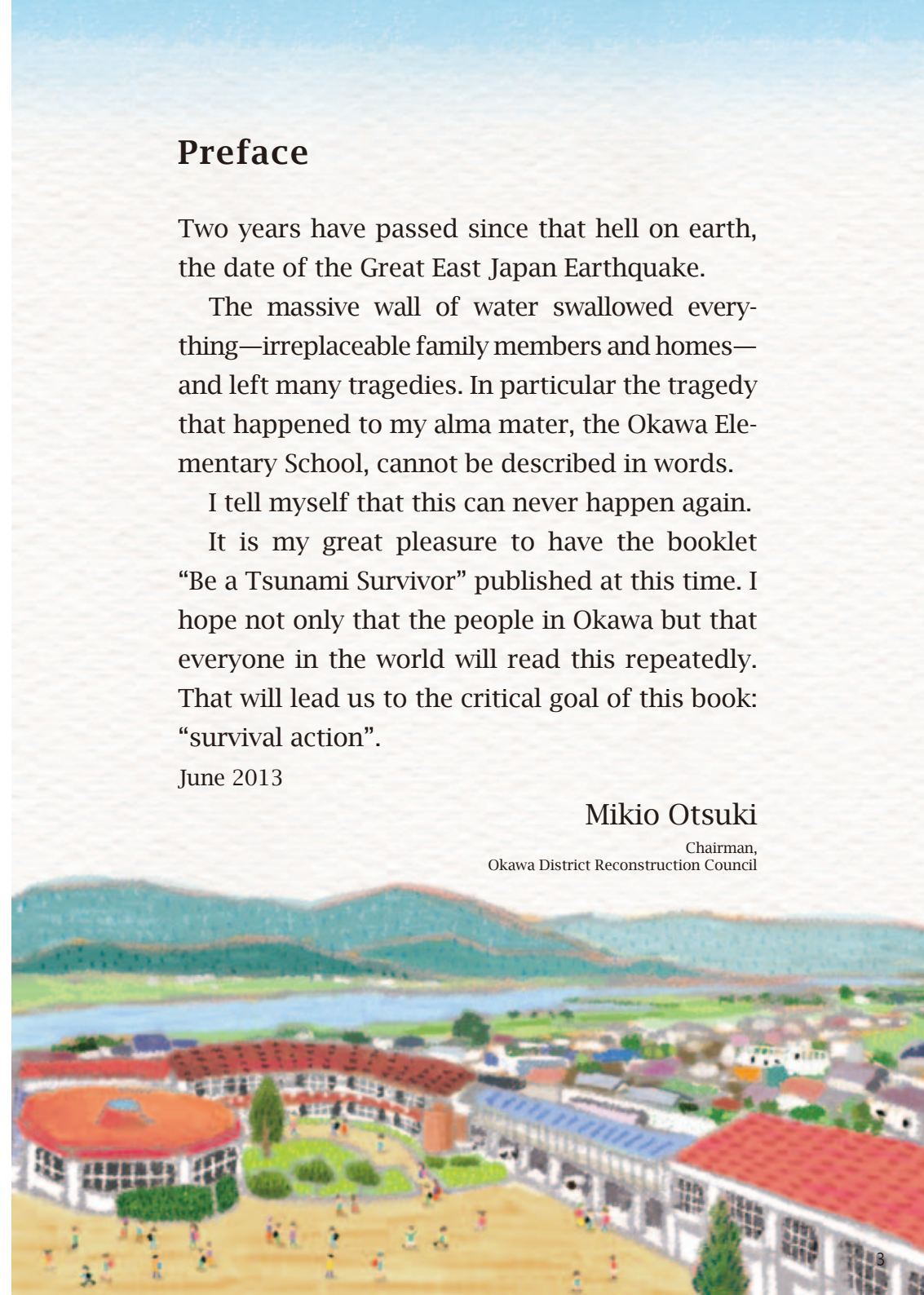
I tell myself that this can never happen again.

It is my great pleasure to have the booklet “Be a Tsunami Survivor” published at this time. I hope not only that the people in Okawa but that everyone in the world will read this repeatedly. That will lead us to the critical goal of this book: “survival action”.

June 2013

Mikio Otsuki

Chairman,
Okawa District Reconstruction Council



Dear Children —On Publishing This Book—

Children with big dreams about their future. Children living happy lives with their families and friends. The tsunami took the lives of those children. Many of the students at Okawa Elementary School died, as did 5 elementary and middle school students in Kamaishi City. When we think of those children, when we think of the families and friends of those children... all we can feel is deep sadness unlike we've ever felt before.

This book is a collection of lessons we learned from tsunamis—about how we can survive tsunamis and disasters.

You need to know about tsunamis if you want to survive them. But that is not enough. The most important thing for you is to run for your life. When tsunamis hit, no matter when, no matter where, think about yourself first. Please think about survival. Run for yourself. Run for your life. That is what is important.

This book is for you... a strong child who can save your own life.

June 2013

Toshitaka Katada

Director, Research Center for Disaster Prevention
in the Extended Tokyo Metropolitan Area, Gunma University
Professor, Gunma University, National University Corporation



Toshitaka Katada

PhD in Engineering. Worked as the disaster prevention and risk management advisor in areas such as Kamaishi City, Iwate and was the central figure in “Miracle in Kamaishi” where many elementary and middle school children survived tsunamis at the Great East Japan Earthquake.

What happened at Okawa Elementary School?

Okawa Elementary School in Ishinomaki City, Miyagi was located at about 4km away from the shoreline along with Kitakami River. It had 108 students and 13 teachers and other staff members. At 2:46 p.m. on March 11, 2011, there was an earthquake as classes were about to end. Around 2:50 p.m. after the powerful shaking had stopped, everyone ran to the schoolyard to evacuate.

Parents who came to pick their kids up already knew about the tsunami and its size—maybe 6m, maybe 10—since they heard that on the radio. There was a hill right behind the school, and it would have been a good place to evacuate. So the assistant principal, other teachers, some parents and students and local residents all asked to go to the hill. School buses were on standby as well. Then, right after 3:25 p.m., several cars from the city drove by, with someone shouting, “Go to high ground! The tsunami has passed the pine trees at the beach!”

Around 3:35 p.m., the teachers and students tried to head to the spot that was slightly higher than the surrounding areas. However, after moving only about 170m, a huge tsunami swallowed them.

Meanwhile, Okawa Elementary School lost 70 of the 78 students who were present at the time and 10 of the 11 teachers and staff members. As of June 2013, four students were still missing. The survival rate was only 5.6%, the worst tragedy in the school education system since World War II.



▶ Okawa Elementary School before the disaster



▲ Vicinity of Okawa Elementary School right after the tsunami



▲ Okawa Elementary School seen from the hill behind the schoolyard. The hill was a candidate for an evacuation site. The blue rope in front of the tree on the right is where the tsunami reached.



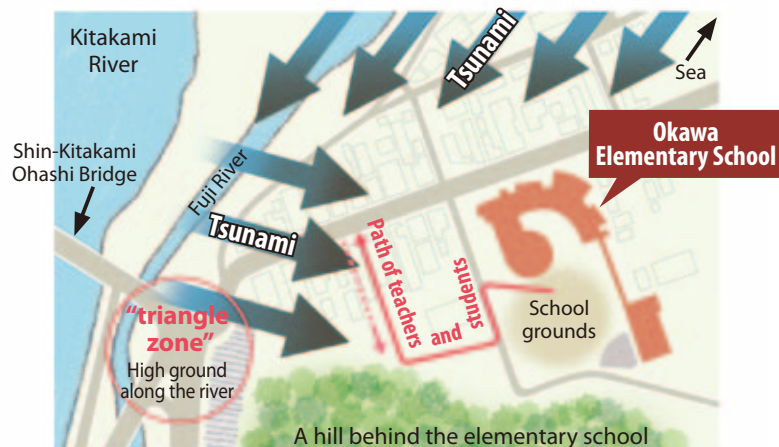
◀ The high ground called “Triangle Zone”, several meters above the ground level along the river. People were trying to head to the spot to evacuate, but the tsunami eventually consumed the area.

Q1

Why did the tragedy at Okawa Elementary School happen?

A Many suggestions and information caused a dilemma and delayed decision to evacuate.

Many reasons are overlapping for the tragedy at Okawa Elementary School. Unexpected size of tsunami hit the area which had never experienced tsunami damage. The school was designated as an shelter in their hazard map. A lack of software: no evacuation manual, no evacuation drills neither for children nor parents. Having a series of big aftershocks, the tsunami had already been informed. Adults were arguing with dilemma which was safe; mountain, roads or some other. They finally headed to the triangle zone, when the tsunami was visible. It was too late, so many people were washed away instantly.



Q2

What should we learn from this tragedy?

A Get correct information about tsunamis, understand that this can happen to you, and prepare for future massive earthquakes.

So many factors caused the tragedy at Okawa Elementary School. One thing is certain. If there had been an evacuation manual and if evacuation drills assuming the worst-case scenario had occurred, this tragedy would never have happened and many students and teachers would still be alive.

Except for those living along the coast, most people think "I don't care about tsunamis", "Our area is safe". The truth is, people who lived in inland areas of the Okawa district and who thought, "This area is safe" were slow to evacuation and were killed by the tsunami. Furthermore, you may encounter massive earthquakes when you visit the coast area. When you consider this, no one should say, "I don't care about tsunamis".

There will be massive tsunamis in the future. Are we really ready even if a tsunami that exceeds our expectation comes? Can we survive if we encounter a tsunami during a visit to the coast? Reading this booklet thoroughly and getting a good understanding of tsunamis will be one step in learning from the tragedy of Okawa Elementary School.

Q3

Can the evacuation manual be enough to protect our lives?

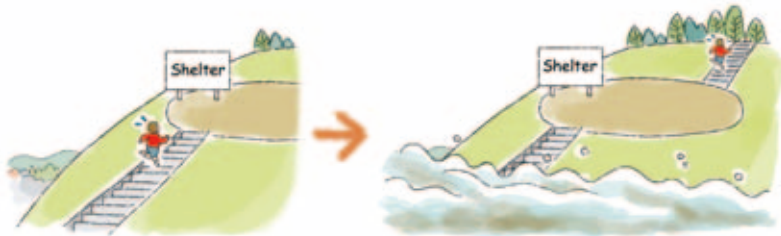
A The manual gives you the basic information. It is your assessment of the situation that will save your life.

The manual is something like a traffic signal. The rule is—stop at the red light and go when the signal turns green. You should still check the traffic and assess your own safety because you would be in danger if another driver ignored the traffic signal.

So run to the top of a hill when you hear the tsunami warning and wait until the warning is cleared. This is the first step to safeguard your life.

Just as you check the safety of traffic even when the signal is green, you should assess your safety yourself when you arrive on the hill.

Move to a higher place if you think the tsunami may be bigger even if you are in the designated shelter.



Look around and move further!

Q4

How can we prepare to cope with the unexpected situation?

A Think “What is the best way to protect my life right now” and MOVE!

You may lose your cool and the ability to make good decisions during a disaster. So try to anticipate every possible situation and be ready to evacuate.

When you find yourself in an unexpected situation,

1: Assess the situation and

2: Think how best to protect your life.

In the case of Okawa Elementary School, people there hesitated to climb a nearby hill due to a series of nine large scale aftershocks. If they had agreed to evacuate to a higher place in case of a tsunami, the students would’ve had plenty of opportunities to survive by climbing the hill, taking a bus to a higher area and so on.

We all know saving lives is most important. Nonetheless, after the earthquake many people returned to their homes to fetch their wallets, checkbook and other “valuables” and were killed. One person ran out of his home to evacuate but then stayed when he saw many people hang around. Trust your instincts and save yourself even if someone says it’s not that serious. Because your life is really, really important.

Q5

I understand the need to assess the situation, but based on what and how?

A Keep in mind, “The bigger the earthquake, the worse the damage.”

In order to make the right decisions to survive, it is crucial to know that there is a trend—“the bigger the earthquake, the worse the damage”.

This knowledge can help you take appropriate survival action by anticipating serious situations such as fires, building destruction, tsunamis, landslides and ground crack. Evacuate after you feel a strong or long earthquake in anticipation of possible tsunamis.

In Okawa area, the tsunami reached the coast just 50 minutes after the earthquake, but it came next day, as was the case of the 1960 Chilean tsunami. Tsunamis can hit the coastal area repeatedly, increasing in size each time. Never return once you evacuate.



Big shake ➡ Ready for big damage.

Q6

Is it safe to think that there will be no big tsunami after a small earthquake?

A Never underestimate the possibility; a small “tsunami earthquake” can trigger a big tsunami.

A “tsunami earthquake” is an earthquake that causes a big tsunami even though the earthquake felt in a given location is small. As discussed in Q5, there is a trend that “the bigger the earthquake, the worse the damage”. This is a general “trend” but you may have severe damage due to the factors like ground instability, topography and other conditions of the area. During the 1896 Meiji Sanriku earthquake, tsunamis hit the coastal area and killed 22,000 people after only a mere tremor was felt on site.

When a tsunami warning is issued on the radio, you must evacuate from any area near a coast or river even though the earthquake you felt was small.



Q7

If tsunami didn't come despite of warning, isn't it a waste of time to evacuate for every alert?

A Seeking refuge is not a one-time act. It is one of your daily habits to stay alive.

If nothing happened after a tsunami alert was issued, you may think seeking refuge was in vain. After a false alarm is repeated, you may become insensitive to the warnings.

You must change your outlook that seeking refuge is a one-time act, instead of a part of your routine to survive a huge disaster that could someday occur.

For example, a car may not hit you the first time you jaywalk. But if you always jaywalk, it's likely you'll be hit by car and lose your life.

Tsunamis may not always occur. But if you don't always evacuate, you increase the odds you will be killed by a one-time tsunami. So you must evacuate every time a tsunami alert is issued. That is smart survival action.



Q8

How do we make tsunami evacuation a habit?

A The important thing is design a disaster drill that makes people think it is worth practicing.

We tend to stop any actions that we think are pointless.

So to encourage people to participate in a disaster drill and seek refuge during a tsunami alert, it is important for those actions to be meaningful.

For example, one junior high school made a rule that during their tsunami drills after their actual escape to high ground, they eat emergency food stock and discuss disaster and their own drills.

Please think out how you could put meaning in your evacuation drills which would build the foundation of the "survival action".



Q9

I'd like to teach children how to protect themselves from a tsunami. What should I do?

A It is crucial that they learn the “three principles” of tsunami evacuation.

In Kamaishi City, Iwate Prefecture, 99.8% of elementary and junior high school students survived because they knew the “three principles of tsunami evacuation”, developed by Professor Katada. This high rate of survival is called the “Miracle of Kamaishi”.

The principles are: “Do not over-trust hypotheses or hazard maps”, “Do whatever you can in the situation to save your own life”, and “Run first even if no one else is evacuating”. Students did not go back home to look for their families and lose their lives in the tsunami because they trusted that the others too would take the necessary “actions to survive” and “they have already evacuated like me”.



Since That Day

—As a School Teacher in Charge of Disaster Prevention

I watched from a hill with my students as our town was swallowed by the tsunami. I have been wondering as a school teacher, and a parent, how serious was I when I used to say “value your life”? Now I see a life when I look at a student. I understand that the school is entrusted with irreplaceable lives that are the future of our town.

I have been put in charge of educating students about disaster prevention at the school where I work. Did the existing disaster prevention manuals and drills really protect students’ lives and raise awareness? Before the Great East Japan Earthquake, many schools were not prepared for a situation where school broadcast systems would be unusable due to a power outage and parents and municipal offices could not be reached. They were not equipped with blankets and food even though they were designated as emergency shelters.

I sincerely hope this booklet will be used by families, municipalities, and experts together to protect our children’s lives and their bright futures.

My daughter was in sixth grade. When I go home, I can still hear her say: “I can’t wait to go to Junior High”.

Toshiro Sato

Senior teacher, in charge of disaster prevention
at Yamoto Daiini Junior High School, Higashimatsushima

Toshiro Sato

He worked at Onagawa Daiichi Junior High School at the time of the Great East Japan Earthquake. As a member of bereaved family of Okawa Elementary School, he directs “Chiisana inochi no imi wo kangaeru kai” (The Group that Thinks About the Meaning of Small Lives) and gives lectures at disaster prevention events nationwide. He has been in his present position since 2014.

Q10

Can we trust the “tsunami watch” and “tsunami warning” on TV or radio and take action based on them?

A Yes and no. You can trust “warnings”. But the tsunami can be worse.

The “watches” and “warnings” are based on the government’s scientific predictions. But the tsunami that is coming YOUR way may be different. You should prepare for your location to be struck by a bigger tsunami than the official agency is predicting. This is the rule of the thumb to survive.

In the case of Okawa, many people lost their lives by staying or returning to their neighborhoods when they heard the magnitude of the tsunami from radio warnings and thought that their homes would be safe.

When you see the ocean retreat, the river water draw back, or feel a strong, lengthy earthquake, prepare for a tsunami and run immediately to the highest place nearby. Also, when you hear someone saying “Evacuate,” do as they say. This is another rule to follow in order to survive.

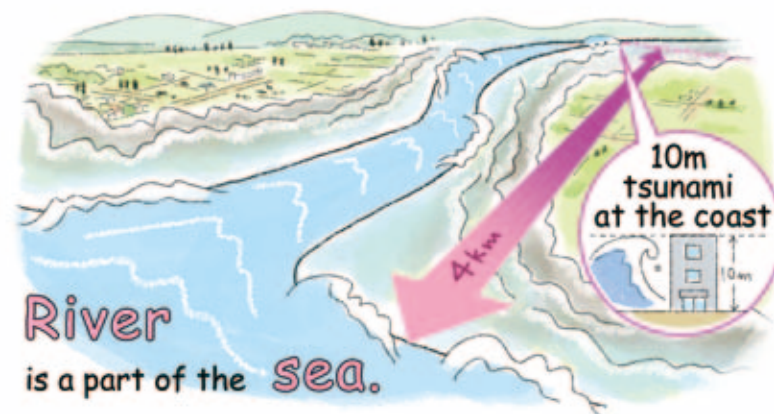
**Q11**

If I am away from the sea, should I still worry about a tsunami?

A Yes. Tsunamis can surge all the way up a river channel and reach areas inland far away from the coast.

A tsunami can travel inland to you. The Okawa Elementary School was 4km away from the coast but the tsunami was higher than 10m. Records show a tsunami with a 3.8m wave has caused damage 49km inland. Even if you are away from the coast, remember the river is always a part of the sea and you should evacuate to a higher place. In Rikuzentakata city, the tsunami reached 6km inland. If this happened to Tokyo, most of metropolitan area would’ve been hit.

Based on these facts, you should always review the safety of your home, school and even the evacuation shelter based on a tsunami tens of meters high.



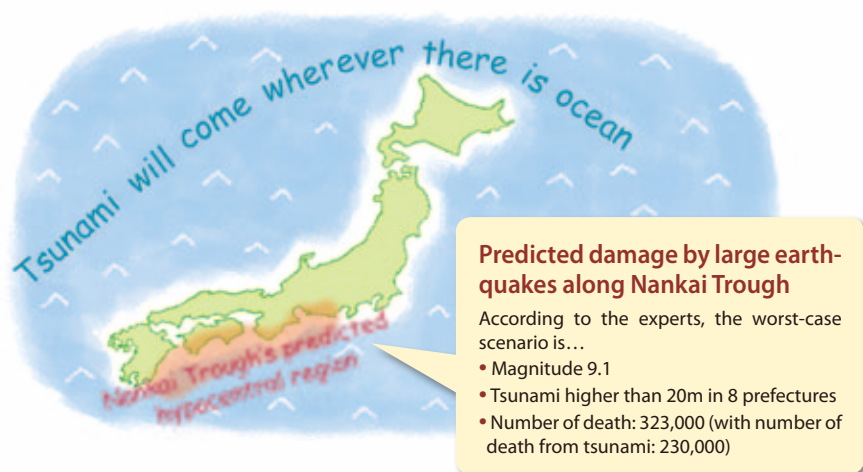
Q12

The damage prediction of big earthquake along Nankai Trough has been published. How should I prepare?

A Many lives can be saved by being cautious and practicing drills whether or not the area is included in the prediction.

They say the possibility of a Nankai Trough earthquake happening in the near future is high. The predicted death toll could reach as high as 230,000. But if the evacuation is done promptly, the number could be lowered to one-fifth—46,000. We must expect a massive earthquake or tsunami and train ourselves how to react. This way, we will be able to safeguard our lives.

Also, even if predictions are that your area won't be affected, it does not mean it is safe. Areas without previous tsunami experience are damaged tremendously.



Q13

I live on the coast, but we have never had a tsunami. Could it really happen?

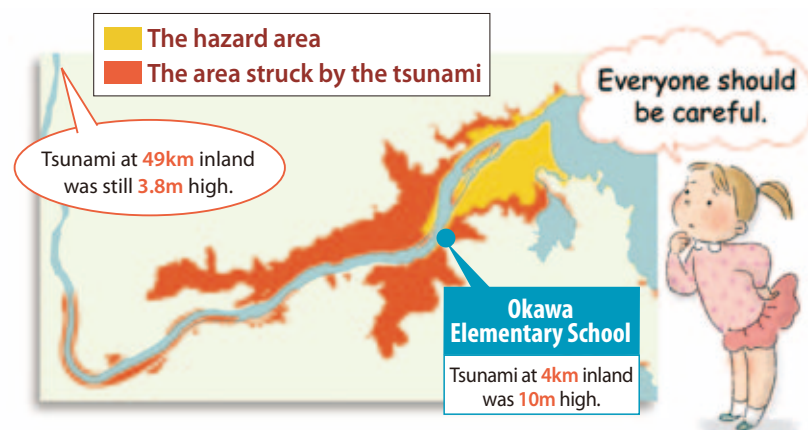
A Many people didn't evacuate because they were careless about tsunamis after several cases of earthquakes without tsunamis.

Kamaya village, where Okawa Elementary School is, had never been hit by a tsunami before. Now 40% of the residents are dead or missing due to the 2011 tsunami.

"It has never happened," doesn't mean, "It will never happen."

Hazard maps are made with data from the past. So they are just for reference and offer no guarantee that those outside of the hazard areas are safe.

You should be prepared for the worst. You should evacuate at once to survive when you get a warning or information that a tsunami is coming.

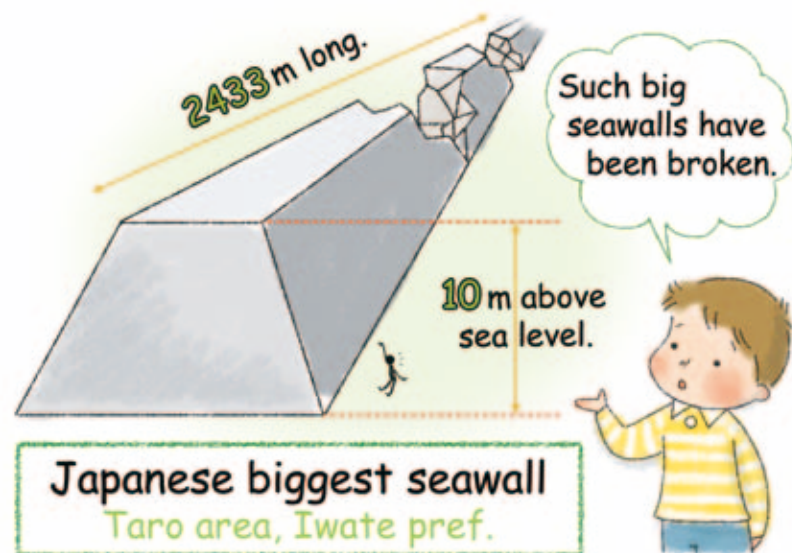


Q14

There are big seawalls in my town.
Should I still evacuate?

A The tsunami of the Great East Japan Earthquake went over many big seawalls and crushed them.

You should evacuate. The tsunami of the Great East Japan Earthquake broke through many massive seawalls. The seawall in the Taro area of Miyako City, Iwate Prefecture was the biggest in Japan, but it was crushed by the tsunami. Many people died there after putting too much faith in the seawall that saved the area from the Valdivia Earthquake's tsunami in 1960. The high water of big tsunamis can go over seawalls without breaking them, and then the water will rush into the town.



Q15

Can I survive if I swim
after being washed away by a tsunami?
Is wearing a life jacket helpful?

A It isn't easy to survive after being swept away by a tsunami, even if you are a good swimmer.

A tsunami isn't just a wave of water. It is muddy water with wood, cars, and debris. You might have a better chance of surviving if you can swim, but you will be helpless with big boards and cars coming towards you at 70km/h. Many people died from a drop in body temperature after being in the cold water for a long time. The best way to survive a tsunami is to run to a hill.

But you have to realize that a tsunami can be bigger and faster than you imagine. The children who survived at Okawa Elementary School were found floating wearing their helmets. It is better to wear a helmet and life jacket and prepare for the worst.



Afterword: To Keep Hope Shining Bright

The first time I visited Okawa Elementary School was April 2, 2011. As I paid tribute to those who lost their lives, all I could do was listen to the stories told by the victims' tearful families. All I felt was sadness.

Later, at the request of the families of victims, we formed a research group at Waseda University. We investigated over 550 publications such as newspapers, books and papers including the reports by the Education Council at Ishinomaki and other related articles. We interviewed families, local residents, city workers and experts on the site. We studied the results of our research from different points of view and wrote our own report.

At the same time, I approached an expert in clinical psychology who I deeply trust. I asked him to help the families of victims I knew. Also, we started projects for Okawa such as workshops and festivals.

Then, I got to know the father of T, one of the few survivors of the Okawa incident. T and his father were kind enough to volunteer at a festival and let me stay at their house overnight.

These are T's words.

"I lost many friends on March 11. I was swallowed by the black tsunami too. Really cold. Really heavy. Really painful. I can't find any words to explain my fear at that time. I didn't think I could make it. But, it's a miracle that I survived. Not only did I lose my friends and hometown, I also lost some of my family members. My sister, who was only in the 3rd grade, my mother and my grandmother died. Recently, I finally started feeling sad about having lost my family. I don't want anyone else to feel the same way I do."

We made this book so people will survive tsunamis. We made this book so people will not feel the same sadness again. This book is based on our lengthy extensive research, and we believe it can be used for other disasters and situations, not only limited to tsunamis. If you would like to use it for the activities of any nonprofit groups or an educational use, please feel free to copy it.

Takeo Saijo

Director, Project Fumbaro Eastern Japan
Okawa Elementary School Research Project Team, Waseda University

Takeo Saijo

Director, Project Fumbaro Eastern Japan (PFEJ). Visiting associate professor at the graduate school of commerce (MBA), Waseda University. Saijo specializes in philosophy and psychology (Ph.D Human Science). He is from Sendai, Miyagi Prefecture where he lost a relative to the tsunami. In addition Saijo used his original qualitative method called "Structural Construction Qualitative Research Method" to investigate why 74 students lost their lives at Okawa Elementary School. He has published 20 books including as "What is structural constructivism?" and "What is qualitative method"(Books in Japanese only). He will continue study a organizational behavior based on structural constructivism. If you are interested in such studies, please contact following address.
Email: info@akademeia.jp.net

Project Fumbaro Eastern Japan

<http://fumbaro.org>

"Project Fumbaro Eastern Japan" (PFEJ) is a new support model that was constructed by Takeo Saijo to cope with the unprecedented disaster following the March 11, 2011 massive earthquake that hit Japan. The system made it possible to make 35,000 deliveries to more than 3,000 temporary shelters. PFEJ consists of over fifty groups of different sizes and purposes such as study aids for kids, teaching traditional Nuno-Zouri, hand-made goods, entertainment, PC + internet use, horticulture, etc. About 3,000 SNS members in the Facebook group maintain and assist our activities voluntarily. In 2014, PFEJ won the Golden Nica in the Prix Ars Electronica which is the world's oldest and most prestigious competition in media art. This means PFEJ is following in the footsteps of famous social systems like the WWW (World Wide Web), Wikipedia and WikiLeaks. Takeo Saijo, PFEJ volunteers and the Smart Survivor Project (SSPJ) made this brochure as a disaster prevention education project concentrating on tsunamis. The project is explained in full on our website.

We encourage you to translate this brochure into your native language to help save lives in the future.

If you want to produce this booklet in your native language, please visit the following website. We can provide the original illustrations free of charge.
<http://wallpaper.fumbaro.org/survivor/english>

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Peter Addyman
Translators: Hitoshi Akiyama
Hiroko Daidoji
Erika Ikeda
Kaori Misono
Kumiko Kubo
Yumiko Pelletier

Project Fumbaro Eastern Japan will be renamed and restarted
as Fumbaro Fund in September 2014.



Project Fumbaro
Eastern Japan