

## Otsuchi Town's Commitment

Otsuchi Town in Iwate Prefecture suffered extensive damage in the tsunami that followed the Great East Japan Earthquake in March 2011. Nearly all of the buildings built on the town's flatland area along the coast were washed away in the tsunami, leaving behind an utter wasteland where once stood a townscape lined with homes and businesses. The number of missing and dead totaled more than 1,200, or about 10% of the town's pre-quake population. The town also lost its government and industrial infrastructure, leading to the question of how it can rebuild itself literally from the ground up. One of the commitments established by Otsuchi Town Mayor Yutaka Ikarigawa after he was voted in following the quake was to preserve the memory of this disaster for future generations. He states, "Otsuchi Town has been struck by a number of major tsunamis, including one from the Chilean earthquake of 1960. Unfortunately, however, we failed to utilize what we learned from these previous incidents, which caused a significant loss of life and damages to our town this time. To avoid a repeat, I believe our responsibility is to preserve the memory of these disasters and convey them to future generations. To that end, I would like to build the Chinkon no Mori, a forest to honor those lost during these disasters, and to educate future generations about the frightening nature of disasters."

Meanwhile, Iwate Prefecture announced plans to build a 14.5-meter tall coastal levee along the coast of Otsuchi Town to prevent the next tsunami from striking the area. Although aware of the need for a coastal levee, the Mayor had very strong concerns about this project because it would completely change the townscape and "local residents would end up living surrounded by a concrete wall much like one found in a prison."

"This is the time when we learned about the 'Green Coastal Levee that Protects Lives' project involving the construction of a green coastal levee. The rubble and debris from this tragedy represent relics that preserve the memories of those that lost their lives. Under this plan, we will plant trees atop a pile of rubble mounded on the inner side of the levee to completely enshroud the concrete structure. One day these trees will become a forest that will enshrine the souls of the lives lost. This forest will also protect town residents from future tsunami. I feel keenly aware of the meaning this project has for the future of Otsuchi Town. In this regard, I very much look forward to working with Dr. Miyawaki and everyone at Yokohama Rubber to make this vision a reality."

This message from the Mayor of Otsuchi Town marked the full-fledged start of the project.



Dr. Miyawaki, the Mayor of Otsuchi Town, Otsuchi Town officials and Yokohama Rubber officials

# Considering the Reconstruction Effort from the Perspective of the Disaster-affected Areas

## Green Coastal Levee that Protects Lives Created based on a Shared Vision

Otsuchi Town, which is located along the coast of in the Kamihei District of Central Iwate Prefecture, suffered extensive damage during the Great East Japan Earthquake and is now moving forward with the development of a forest, called the "Chinkon no Mori", to honor those lost during the disaster and to protect future generations. Yokohama Rubber has been supporting Otsuchi Town's efforts through a tree planting project that will serve as a model for future activities. On April 30, 2012, a 50-meter long mound was formed using pile of earthquake rubble and debris along the Kozuchi River that flows through the town, and the first phase of the tree planting project was held. In 2013, this mound will eventually be extended to a length of some 300 meters. The second phase of the tree planting project was also held on another 50-meter mound directly adjacent to the first phase. This tree planting project will be held every year until 2017, when a 300-meter long mound of forest and green coastal levee called "Heisei no Mori" will be completed.

This project was first advocated by botanist Dr. Akira Miyawaki. Trees extend their roots deep into the ground. The strength of these root systems means that trees will not collapse even in a strong tsunami. Conversely, trees can absorb the force of a tsunami and largely mitigate damages. In contrast to concrete levees that age with each passing year, a green coastal levee made from forest continues to grow stronger each year thanks to the maturing trees and the power of nature. Moreover, unlike concrete which is devoid of color or character, the vibrant green of a forest offers a comforting and rejuvenating natural scene.

The mound atop which the forest will be planted is made of incombustible material, including concrete, sorted from the debris field left by the Great East Japan Earthquake and natural trees that have not been chemically treated. This leaves voids within the mound that serve as a source of oxygen and as a source of nourishment essential to the new forest's root system. This also means that roots will extend deep underground in search of these voids, forming even stronger trees as the forest matures. At the same time, this debris filled with the memories of those that lost their lives in the earthquake and tsunami will be put to good use instead of just being disposed of.

Of course, the path to achieving this vision has not been the smoothest. The town by itself could not finalize the disposal method for this debris, as the approval of both the prefectural and national governments was needed. As a result, Yokohama Rubber officials met with the Ministry of the Environment and Iwate Prefectural Government on countless occasions, eventually receiving official approval.

"I was opposed to a concrete levee, but when I heard about this plan I imagined the sight of a beautiful green hill, which I found quite appealing." "After the tree planting project, I was really excited to see a hill covered in green seedlings take shape along a river that before did not have much around it."

These comments were provided to Yokohama Rubber and Otsuchi Town by people that lost their homes in the tsunami and are living in temporary housing. Similar to the Forever Forest Project where we plant trees together with the local community, tree planting projects have been held in Otsuchi Town on two occasions to date, each of which have attracted large numbers of local residents who helped out immensely. Local residents are also helping to grow seedlings for future tree planting projects, while those living in temporary housing

# Reconstruction Effort from Disaster-affected

## Yokohama Rubber's Commitment

Yokohama Rubber's production sites in Japan and overseas have been involved in the Forever Forest Project since 2007. Under this initiative, we are aspiring to plant a total of 500,000 seedlings both in Japan and overseas by the year 2017 when we will celebrate our 100th anniversary. Our goal through this is to maintain biodiversity, curb global warming, and build forests that protect the local environment.

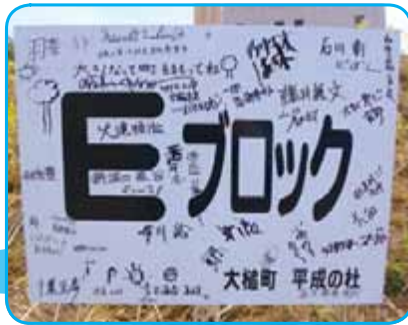
One of the unique features of this project is the use of a mixed and dense planting technique where a variety of native tree seedlings are planted to create a forest that is as close to a local forest as possible. Such a forest will be able to mitigate and prevent disasters because its roots are deeply embedded making it difficult to fall even during typhoon, torrential rainfall or other natural disasters. In addition, we are looking to do more than just plant trees. We are growing seedlings from acorns, cultivating good soil, and nurturing the forest after planting. Employees from each of our sites are closely involved in all of these processes. Furthermore, we jointly plant trees and maintain the new forest together with local residents, which helps us to foster a stronger relationship and sense of unity with the community.

All of our domestic sites have already completed their first plantings, while our sites in China, Thailand, the Philippines as well as the United States have started tree planting projects locally. By the end of fiscal 2012, we had finished planting some 280,000 trees, or about 57% of our final goal.

The Green Coastal Levee that Protects Lives project in Otsuchi Town is taking full advantage of our know-how in forest development that we have built up through the Forever Forest Project. We constantly ask ourselves how can we leverage our technologies and experiences for the betterment of the disaster-affected areas and what can we do together with these communities. Yokohama Rubber has been involved in a wide range of support activities following the Great East Japan Earthquake, but we continue to ask ourselves these very same questions. The Green Coastal Levee that Protects Lives project represents one answer that we have come across in our activities.



Warm messages were written on each block's signboard



The second phase tree planting project held on May 2, 2013 saw 553 people take part



Everyone from the Otsuchi No. 12 Temporary Housing Complex pictured together with their carefully nurtured seedlings

are collecting acorns from the local mountains to grow these seedlings. Even if these seedlings do not make it in time for the Heisei no Mori green coastal levee, they will undoubtedly be used for the Chinkon no Mori, similar forests to honor those that lost their lives in the disaster.

It is Yokohama Rubber's hope that about the time when these seedlings grow into large, mature trees, the know-how accumulated from this project will be passed down to the new forest covering Otsuchi Town and that it will serve as a green coastal levee that protects the town from future disasters.

Otsuchi Town Mayor Yutaka Ikarigawa says, "There are still many unknowns because this initiative just got underway, but I look forward to working closely with and receiving guidance from Yokohama Rubber for many years to come." A local resident living in temporary housing that is helping to grow seedlings adds, "Before, I was conscious of Yokohama Rubber's TV commercials whenever they were aired, but recently I'm keenly aware that this particular company is helping to make a difference in our lives. It's the acorn company, after all (laughs)."

This tree planting project, which will serve as a model for future activities, represents a combination of Otsuchi Town's commitment to the recovery effort and Yokohama Rubber's commitment to help out using its own unique experiences. This project will preserve the memories of the earthquake and tsunami for future generations, while also creating a forest of hope for the future of Otsuchi Town. Yokohama Rubber stands firmly committed to providing ongoing assistance to Otsuchi Town that is closely in tune with the needs of local residents.



Photos from tree planting events held around the world