How will society change in the future? How can we achieve a recycling-oriented society amidst constant change? In April 2013, we invited Ms. Mariko Kawaguchi, a Senior Researcher with the Daiwa Institute of Research Ltd. and specialist in environmental management, CSR and sustainable investing to attend a dialogue session at Yokohama Rubber.

Expert Profile

Chief Researcher
Research Division
Daiwa Institute of Research Ltd.
Ms. Mariko Kawaguchi

Yokohama Rubber Attendee Profiles

Director and Managing Corporate Officer
Head of Corporate Social Responsibility Division
Kinya Kawakami

Corporate Officer
Head of Tire Technical Development Division
Yasushi Kikuchi

General Manager
Multiple Business Materials Development Department.
Multiple Business Production and Technical Planning Division
Hideyuki Oishi

Helping Build a Recycling-oriented Society

Kawaguchi: How to build a recycling-oriented society is one of the most important questions when it comes to addressing environmental issues. Yet, unlike energy conservation it's difficult for consumers to see any benefit from a recycling-oriented society, so in some ways it has been difficult to receive support for this. For example, even if we say that using recycled paper will save forests consumers can't quite feel the benefits unless they use their imagination. However, future resource depletion is an issue all of us will ultimately face in the future and companies have a major responsibility when it comes to finding a solution to this issue, I believe. How is Yokohama Rubber working to address this issue?

Kawakami: First, we launched the DNA eco-tire series back in 1998 with a focus on environmental performance. At the time, there was little in the way of demand for fuel efficiency and so I was pleased that Yokohama Rubber was one of the first to demonstrate such a commitment to the world.
Since then, we have also moved forward with research into resource recycling, with the ultimate goal being switching from oil-based raw materials used to make synthetic rubber to all natural raw materials, in preparation for future oil resource depletion.

Kawaguchi: In terms of all natural raw materials, is it technologically possible to manufacture synthetic rubber from biomass?

Kawakami: This remains difficult today, but our ultimate goal is to be able to make rubber in a flask. We are hoping to manufacture biomass rubber for the first time by FY2020 and commercialize the technology by FY2050.

Making Long-lasting Tires from Less Materials

Kawakami: We are also manufacturing tires made partly with powdered rubber sourced from vulcanized rubber. Although powdered rubber only accounts for 2% of these tires, this percentage is much higher than our competitors at around two times their volume.

Kikuchi: Of course, we're also working hard to increase this percentage. Currently, waste tires are incinerated and used to generate energy, but the fundamental approach should also be to recycle old tires so that they can be collected and reused in new tires.
However, some of our customers are concerned about safety when they hear the word recycled tire. These tires have the same level of quality assurance as our new ones, so I think we need to get the word out more.

Kawaguchi: Going forward, tire demand is forecast to rise, while the amount of rubber used per tire will likely be reduced. How is Yokohama Rubber addressing these future trends?

Kawakami: If we can reduce the amount of rubber used and make tires lighter weight, we can make cars more fuel efficient and reduce their sticker price. With that in mind, we are working to develop durable, high quality rubber materials.

Kikuchi: Making durable tires that are less prone to damage is one of the most important ways to use resources more effectively. If a tire had a blowout and could no longer be used, then that represents a waste of resources, so we are also working to raise awareness among consumers on how to ensure their tires last as long as possible. The most ideal situation would be to make durable, long-lasting tires using fewer materials and then be able to recycle these tires at the end of their service life.

Kawaguchi: What other efforts are you making outside of your tire products?

Oishi: We are taking the same approach as with our tires. This includes increasing products that use recycled rubber and reducing the amount of materials used in products to every extent possible. We are developing and manufacturing conveyor belts that contain up to 10% recycled rubber.
Two of our most important causes going forward will be how to recycle used products and how to approach the development of non-oil-based products. We are working with the Tire Group and other manufacturers to come up with a long-term strategy regarding these.

Kawaguchi: In recent years, the environment has become an important element even for the investment world. Yet, investors are interested not in whether a company is doing something good for the environment, but rather how environmental actions bring value to the company from a business standpoint. In this regard, I hope that Yokohama Rubber shares more information about its environmental activities going forward.

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The Importance of Foreseeing Future Change and Continually Developing Good Manufacturing Practices

Kawaguchi: The big question is whether automobiles, a mode of transportation that emits large amounts of CO_2, will keep its current shape and configuration over the medium to long term. Perhaps automobile designs will change so much that tires are no longer used like they are today. If that were the case, Yokohama Rubber will need to come up with new ideas for providing value to society through a completely different domain that utilizes the unique features of rubber. Being soft and elastic, rubber should work well with the human body, so have you thought about using rubber in healthcare applications?

Kawakami: We have launched Medi-Air, an adjustable air cushion for wheelchairs. This product was developed jointly with outside researchers for wheelchair users that were susceptible to bedsores. In this regard, this particular product can also be used to develop a bed that helps prevent bedsores. Today, we are moving forward with the development of a new material that combines plastic and rubber. If all goes well, we will be able to more easily make and process sheets from this material, which will open up many new interesting avenues technologically speaking.

Oishi: There is also elastic paving, which uses crushed rubber to reduce road noise from vehicles. However, there is still room for improvement in terms of durability.

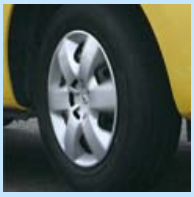
Kawakami: There is also great potential for rubber used in industrial applications. Although, we still need to identify needs and continually develop materials tailored to these needs.

Kikuchi: Even if tires continue to be used as they are today, the shape and configuration of the automobile will likely change a great deal, as evidenced by the popularization of the electric vehicle. We need to be mindful of this in our ongoing development efforts.

Kawaguchi: In either case, Yokohama Rubber will need to envision changes taking place in society. The end result will vary quite a bit depending on whether you are or are not doing this.

Kawakami: I have come away with this dialog with a renewed sense of importance toward pursuing manufacturing while also making efforts aimed at a recycling-oriented society and considering tires and rubber products of the future that can accommodate rapid changes taking place in society. I hope to incorporate this philosophy in our future manufacturing.

Introducing Yokohama Rubber Products / Products made from recycled materials now offer same level of quality and durability as conventional products



Passenger vehicle tires made with recycled powdered rubber

Powdered recycled rubber is made by pulverizing vulcanized rubber for use in recycling and resource conservation, the large nature of the shards made it an extremely difficult to combine with raw material rubber. Yokohama Rubber established a compounding technique that can be used for various rubber compounds, making the use of recycled powdered rubber possible. The Yokohama Rubber Group received the FY2012 3R Promotion Council Chairman's Award for its proactive use of recycled powdered rubber both in Japan and abroad.

Conveyor belt made from recycled rubber

The Duotex belt raises the bar for conveyor belt because its features improved abrasion-resistance performance, improved durability at the joints, and reduced installation work load thanks to the development of a new rubber material and improvements in structure. This environmentally friendly product balances the features of reduced weight and longer service life with resource recycling by using a higher concentration of recycled rubber.

Marine hoses and Reel hoses made from recycled rubber

Our marine hoses and reel hoses partially made from recycled rubber offer the same level of performance and functionality as conventional products that do not use recycled rubber thanks to our various proprietary compounding techniques.

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Electric vehicles, or EV, are expected to be one of the popular modes of transportation as a means for society to guard against global warming. With this in mind, Yokohama Rubber launched a cross-functional project internally to take a closer look at how the company can assist. Recently Project Leader Kunihiko Ito sat down with racing car designer Takuya Yura to discuss the matter. Below is a summary of their dialogue.

Ito: In 1998, we became the first tire company in the industry to launch a tire line, the Eco Tire DNA series, with fuel efficiency the number one priority. Since then we have researched, developed and sold fuel efficient tires for some 15 years now. Five years ago, however, in January 2008 we set up the EV Prototype Project at the request of then President Tadanobu Nagumo (currently Chairman and CEO), who wanted us to examine the key company-wide technologies and personnel, instead of just tire products and technologies, we could use to contribute to the EV revolution when it arrived. We called for volunteers and selected the leading minds from our Tire, MB and Research groups to take part in the project as team members. Initially, we used a trial and error approach where everyone proposed their ideas, which were then discussed. Even though some of these ideas never took shape in the actual prototype, I do believe we gained new-found knowledge and technologies from the general process. Once we reached the final stage of creating an actual car, we decided to ask Mr. Yura to be our designer.

Yura: The first thing I thought about when asked to be the designer for the project was to come up with a design truly unique to EV. I wanted something that was more than just cool to look at. I wanted something that would draw people's attention and articulate the newness of the car. Of course, the design also had to pass Japan's vehicle inspection regime so it could actually be driven on public roads. The challenge for me was to create a design that satisfied all of these unique conditions. My first design proposal was a more elegant version of an eco-friendly car. But Mr. Ito told me he wanted to focus more on strength and power.

Ito: I felt since it was an eco-friendly EV the design should be more than just rounded and compact. After it was completed and we were showing it off at the Tokyo Auto Salon a lot of the general consumers were attracted to the prototype, thinking it was quite cool. This made me really happy.

Yura: The one thing that stood out to me from the creative process was that a new genre of tire had been born, one that balances efficiency with sportiness to fit the concept of the AERO-Y, which was to create a sports car that was actually eco friendly. This is just what you'd expect from Yokohama Rubber.

Ito: In that sense, I feel the AERO-Y represents the perfect compilation of our many proprietary technologies and businesses in a single vehicle. The team was comprised of members from various departments and I sometimes found myself surprised at the level of their commitment and attention to detail. I remember when I went to a scrap yard as a point of creative reference, people involved in adhesives development (Adhesives,Sealants and Electronic Materials Technical Department) were carefully and diligently investigating every part that was connected with an adhesive. Often they were just staring straight at it, making me wonder if they really needed that much time (he laughs). They had an insatiable appetite for technology. Generally, we don't have many opportunities to work in a team with people from other departments, so the fact we were able to share a passion for manufacturing and a variety of cutting edge technologies in this project will likely serve me well going forward.

Yura: Generally, people think Yokohama Rubber is purely a tire company, but from this experience I learned that you can do much more. I ask that Yokohama Rubber continue to take on a steady stream of new challenges going forward.

Ito: The project had its share of difficulties, but all of our project members and I found that creating a car from scratch was a purely enjoyable experience. I guess we enjoyed the hard work and difficulties (he laughs).

Yura: This is because the best products are always created when you're having fun with manufacturing. When the next of these projects gets launched I'm sure we won't be designing a second EV, but rather a completely new car powered by hydrogen or some other form of energy. This will undoubtedly lead to a host of new and interesting ideas for the future.

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AERO -Y Project Members

Introducing Yokohama Rubber's gleaming technologies at work on the AERO-Y

R&D Center **Masataka Koishi**

I took part in the project as the first step to commercializing an inside fin tire featuring the technology for reducing vehicle air resistance that we had been researching. Basically, we found that using a fin-shaped protrusion on the inner wall of a tire reduced air resistance even further. I'm really happy we were able to use the prototype on the AERO-Y and showcase the two together.

POINT

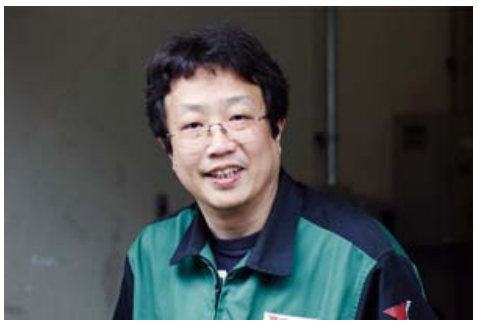
The innovative new inside fin technology not only reduces roll resistance, but also reduces the air resistance of the entire vehicle, providing new added value for fuel efficient tires.

Aerospace Engineering Department **Mitsuhiro Iwata**

The Aerospace Division manufactures a wide range of lightweight composite materials for airplanes, ships and rolling stock made from rubber, metal and composites adapted for use in aerospace applications. For this project, we used materials normally used on airplanes for the AERO-Y. I'm happy to know that we were able to showcase the Aerospace Division's technologies on the AERO-Y and I was really stimulated by the highly positive experience of exchanging technologies with other departments.

POINT

The Aerospace Division's proprietary light weight carbon fiber plastic technology was adapted for automobile use and employed on the AERO-Y.



Adhesives,Sealants and, Electronic Materials Technical Department Hideyuki Matsuda

I took part in this project as part of a study on whether the heat resistance performance of parts differed between an electric vehicle and conventional vehicle. We faced a great difficulty in finding the right adhesive performance for various materials, but I expect that building the automobile of tomorrow will see an even greater evolution in lightweight materials and more instances where two different materials need to be joined together. Through my involvement in the AERO-Y I was able to broaden my understanding about the design philosophy for the automobiles of the future.

POINT

We investigated and analyzed variety of parts, including around the windows as well as interior and exterior components, and leveraged our primer processing technologies* and optimal adhesives to ensure a high degree of durability and reliability.

* A technology that uses a chemical compound to processes the surfaces two parts to be joined for stronger adhesion.

Tire Research and Experiment Department Yuji Minami (left) and Masatoshi Kuwajima (right)

We were originally involved in developing elemental tire technologies for EV and decided to participate in the project because we felt that we could achieve and showcase results in technological development. Through this project, we developed a new tread pattern best suited for the AERO-Y as well as a new aerodynamic technology in the inside fin tire. It truly represents a balance of environmental consciousness with the pleasure of driving.

POINT

The AERO-Y employs tires featuring the latest in Yokohama Rubber's technologies, including a new tread pattern for balancing driving performance with fuel efficiency, the inside fin design, and nano-blend rubber with orange oil.

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Addressing CSR Together through Workshops

On April 25, 2013, 62 individuals representing 58 of the companies we procure materials for took part in a workshop held at Yokohama Rubber's Hiratsuka Factory. This workshop included a presentation on the expectations of our procurement managers and concise, easy-to-understand examples using the seven pillars of critical CSR issues. The ultimate goal of the workshop was to deepen everyone's understanding of CSR, improve practices through actual activities, and achieve co-existence and co-prosperity.
This initiative got its start in fiscal 2010 when it served as a briefing on Yokohama Rubber's approach to CSR. In fiscal 2012, though, we moved to a workshop format that we continued with in 2013 as well. This workshop is actually held at each of our business locations across Japan because we want more of our business partners to be able to participate, which would be more difficult if it was only held at a single location. After each workshop ends, we hand out a questionnaire and inform our business partners of how to reach us, to ensure that the workshop is modified to reflect user feedback. So far a total of 7 workshops have been held, with 192 people from 177 companies taking part. Hirofumi Imamura, General Manager of the Indirect Materials Procurement Department, defines the purpose of the workshop as helping to make contributions to the local community by educating participants on how to prevent compliance, human rights and information leakage issues that may arise at their companies, as well as on activities for the environment and biodiversity. Imamura states, “We often hear on the questionnaire from participants about how easy to understand and practical the workshop was, but we also receive candid advice about our purchasing activities. I believe that we are able to build stronger relationships with our business partners precisely because we are able to accept and listen to this honest feedback.”

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Why did we begin this initiative? What's in it for our business partners?

The reason why we decided to hold workshops is because there is growing demand from society for companies to address CSR together with their suppliers and business partners, while the cooperation of our suppliers is also one key to enhancing our competitiveness internationally. It is also essential to produce a sense of speed and breadth in environmental and community contribution activities by working together with partners that share the same philosophy.

Mr. Yoshikatsu Abe

For our business partners, using case studies as reference to implement measures internally, based on a clearer understanding Yokohama Rubber's approach to CSR and our fundamental philosophy, will help them to enhance corporate value. In this regard, Mr. Yoshikatsu Abe of Abe Tekkou Co., Ltd., one of our suppliers that develops rubber products in-house and also has strengths in precision machining and metal fabrication technologies, notes, “We've always wondered what exactly CSR meant, but now we recognize that this concept permeates not only in our business activities but also throughout our daily lives. This is a concept that I would like to share not only at our company, but also with our business partners as well. We've been working with Yokohama Rubber for 54 years now and based on this relationship I hope to continually offer up new solutions as well as work together toward making society a better place going forward.”

What we hope to achieve through these workshops

When asked about his goal for the workshops, Imamura states, “Going forward, we hope to expand these workshops to our overseas business locations in order to foster greater capabilities through friendly competition and to build win-win relationships. Carefully building on this simple communication, we hope to expand these value-added activities for Yokohama Rubber, its business partners and society.

Hirofumi Imamura

General Manager
Indirect Materials Procurement Department

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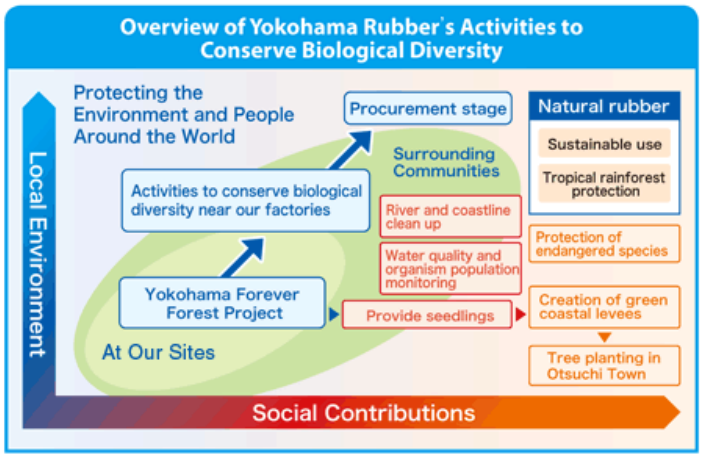
Yokohama Rubber began full-scale efforts to conserve biological diversity in the areas near its factories starting in 2010. In this section, we take a closer look at some of the unique activities and initiatives being undertaken by each factories based on the question of why conserve biodiversity.

Why is Yokohama Rubber conserving biological diversity?

Yokohama Rubber manufactures a truly wide range of products that span from tires and conveyor belts to golf clubs and aerospace components. Tracing the roots of these products you will find they are made from all natural rubber grown responsibly in Southeast Asia and from mineral resources extracted at mines around the world.
Furthermore, to produce these products huge amounts of water are required in the manufacturing process. Moreover, these represent only but a few examples, as the benefits we have received from nature since our founding are too countless to list here.
In 2017, Yokohama Rubber will celebrate its 100th anniversary and during this time we have constantly been aware of these benefits and have considered ways we can help protect nature. Based on this, we launched initiatives to give back to nature, which largely began with a trial-and-error approach. These activities represent our efforts to conserve biological diversity.



Our efforts to conserve biological diversity, which begin with the Yokohama Forever Forest Project, are being spread from our business sites to local communities and from Japan to sites around the world.

2013 marks the third year since we began our trial-and-error approach. Today, in many ways activities being implemented at each of our factories have taken on unique approaches of their own.
One example is raising awareness about the benefits we receive from the large amount of water used in our production activities. This is followed by fostering a site wide discussion with employees on how we can give back to nature, based on an understanding of our impacts and contributions to the water environment near our site. The site then implements activities on its own, but also comes up with conservation activities that can be implemented together with the local community because we would like to foster the same kind of thinking there as well.
These unique approaches found in our biodiversity conservation activities are set to increase going forward as long as we are working closely with the local community and with our employees.

Guidelines on Biodiversity

Basic Guidelines

We are running our business by heavily relying on the grace given by nature. We should pass on this rich nature to our future generations by addressing the preservation of biodiversity and utilization of sustainable biological resources through our business activities, while recognizing the fact that the "linking diversified lives equals to biodiversity", which is the basis of this grace, has been dwindling rapidly on a global scale lately.

Action Guidelines

1. Recognition as a Management Issue
2. Participation by All Employees
3. Determine the Effect on Biodiversity and its Reduction
4. Preservation of Biodiversity through the Supply Chain
5. Sustainable Usage of Biological Resources
6. Information Sharing and Communication

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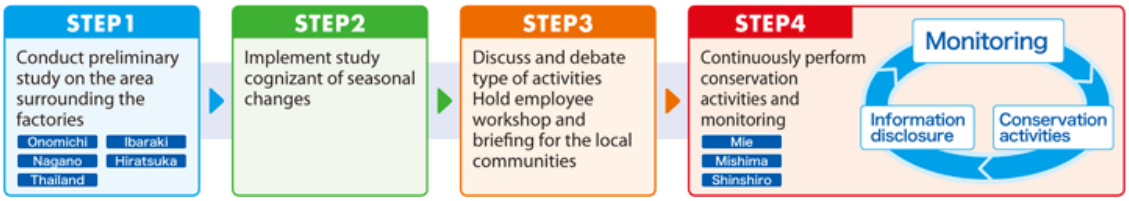
Our Approach to Biodiversity Conservation Activities

Yokohama Rubber's unique approach

Preliminary studies conducted on the areas surrounding factories tell us where nature preserves, greenery and water areas are located, which enables us to take the right action in the right area.

Processes involved in Yokohama Rubber's biodiversity conservation activities



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Reports of Biodiversity Conservation Activities from each Factory

STEP4 Mie Plant | Mishima Plant | Shinshiro Plant and Shinshiro-Minami Plant

STEP1 Onomichi Plant | Ibaraki Plant | Nagano Plant | Hiratsuka Factory | Thailand Plant

Mie Plant STEP4 [Year 2]

Located in Ise City, Mie Prefecture, the Mie Plant manufactures truck and bus tires. The plant began year to of is activities and monitoring work as a model plant for our biodiversity conservation activities. Currently, activities are being held at four locations with the help of both employees and members of the local community.

① Water discharge location（Hinokijiri River)

Assistant Manager
Quality Assurance Section Takehiko Fujita

The plant's coolant water is discharged into the Hinokijiri River after use. Over the years we have carefully monitored the water quality of the plant's effluent and recently we began to perform water quality surveys to ascertain the clarity, turbidity and extent of pollution found in this water as well as population surveys on aquatic life such as killifish and dragonflies, among others. As a result, we found that the Mie Plant is helping to maintain the water quality of the Hinokijiri River. Going forward, we will discuss how to improve the current situation. Our goal is to make these activities foster greater awareness of our contributions in the local community and to ensure that all of our employees feel they are making a difference.

② Water intake location downstream（Downstream of Miya River)

Assistant Manager for Rolling/Cutting
Manufacturing Section No. 1 Masanobu Kikukawa

We have been conducting a bird monitoring program for about one year in order to research the ecosystem of the Higashitoyohama area in the downstream reaches of the Miya River watershed. Every month we hold a bird workshop to catalog the birds we observed and to improve members' knowledge. We also began clean-up activities in January 2013 to mitigate impacts on the ecosystem. Our employees and members of the local community work together to pick up trash and to check for objects that may have floated downriver to the coast. Going forward, we hope to put even greater efforts so that our bird monitoring program can identity even more species.

Yokohama Rubber's unique approach

Our efforts do not end with our activities, as we constantly measure their effectiveness. We believe that conservation and monitoring should be performed in unison to ensure effective activities can be sustained.

③ Water intake location（Miya River Watershed)

Environmental Master, Mie Plant Environmental Management Secretariat
CSR & Environmental Affairs Department
Hisataka Okada

The Mie Plant, which uses 340 tons of coolant water every hour, plants seedlings that it grows in the mountains near the headwaters of the Miya River watershed to increase the water retention capacity of the forest, which will ensure vibrant water resources last 100 years and even 1000 years into the future. As an advocate of Mie Prefecture's company forest building initiative, we decided to cultivate a Yokohama Forever Forest. Seeing firsthand as a barren land with no tree on it was gradually restored to its natural forest habitat made me really happy to be a part of this important effort.

④ Terminus of water intake and discharge locations（Ominato Coast)

Assistant Manager and Manager's Aid
Manufacturing Section No. 1
Yukihisa Kubo

Homemade tool for measuring the depth and thickness of sand

The Ominato Coast is situated at the bottom of the Miya River watershed. Activities that are closely in tune with the ecosystem are essential for conserving the biological diversity of seashores. We are helping to remove foreign plant species to protect native species like the beach vitex and beach silvertop. To safeguard breeding grounds of the loggerhead sea turtle, we are also measuring the length of the sandy beach as well as the thickness and depth of sand using our own homemade tools. Going forward, we will continue to protect the Ominato Coast to safeguard habitats for the loggerhead sea turtle and native plant species. Our goal is to complete the Ominato Coast Field Guide we are currently working on and host workshops for children in the local community.

Yokohama Rubber's unique approach

Employees originally from the local area lead our conservation activity teams. Their love and devotion to their community is what ensures the long-term viability of our activities.

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Mishima Plant STEP4 [Year 1]

The Kano River water system supports the production of some 40,000 passenger tires each day. The coolant water used in the Mishima Plant's equipment is sourced from subterranean water from the Kano River watershed and effluent is discharged into the Goten River, which flows behind the plant. A study performed in fiscal 2012 on the ecosystem of the Goten River found many aquatic organisms, including freshwater minnow, pseudogobio esocinus, and macromia amphigena (dragonfly larva), as well as native aquatic flora such as curly-leaf pondweed and potamogeton oxyphyllus. A further study discovered beautiful kingfisher birds, which are a symbol of Misima City. Once the Goten River becomes even cleaner, the number of aquatic organisms will increase and more kingfishers will come. With this in mind, we set themes for our activities. All of our employees are currently working toward making the Goten River cleaner with the hopes of attracting more kingfishers to live there. To that end, we began clean-up activities and biodiversity monitoring work on the Goten River in May 2013.

Aquatic organism study in progress

Employees working as part of the study

Egeria densa

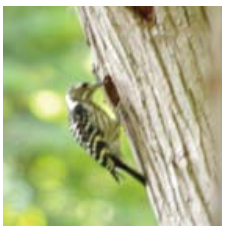
Pseudogobio esocinus (kamatsuka)

Kingfisher

Shinshiro Plant and Shinshiro-Minami Plant STEP4 [Year 1]

The Toyo River water system supports the production of a total of 48,500 tires each day at these two plants. The two plant's equipment sources coolant water from the Toyo River and discharges effluent into the Noda and Kuroda rivers, tributaries of the Toyo River. To survey the plants' impacts on these rivers, studies on aquatic organisms, wildfowl and plant life were conducted in fiscal 2012. These studies have reaffirmed the vibrant natural environment surrounding these plants, while also fostering active dialogue among employees on how we can help make the Noda and Kuroda rivers cleaner, on their commitment to monitoring aquatic life, such as carassius auratus langsdorfii and Japanese pond turtle, and on other things we can do to make a difference. The survey also found native Japanese dandelion quietly blooming along the river banks, the sight of which along the Noda and Kuroda rivers was quite memorable. Beginning in 2013, we have decided to focus on weeding along the river banks and removing highly invasive foreign species to take back the traditional spring scenery of the Shinshiro area, which used to be known for its extensive yellow carpet of dandelion blooms.
Every year new hires take part in weeding activities held jointly with the Mt. Kurakake Senmaida Preservation Society at the terraced rice paddies of Yotsuya Senmaida near the headwater of the Toyo River watershed as a hands-on learning experience. Going forward, our biodiversity conservation activities will focus on communications with the local community and environmental education as well as monitoring of aquatic organisms, amphibians, and lefua echigonia, an endangered fish species.

Flora survey being conducted on the Kuroda River



Japanese pygmy woodpecker on the Noda River

New hires learning firsthand at the terraced rice paddies of Yotsuya Senmaida

Onomichi Plant STEP1

The Onomichi Plant faces the Seto Inland Sea. The Forever Forest located onsite supports the habits of many insect species and serves as a resting place for migratory birds and waterfowl. Wildlife studies conducted onsite are used to ensure the plant is properly managing the surrounding environment, which ensures that more life will be able to call this habit home in the future.


Ibaraki Plant STEP1

The Ibaraki Plant is located in tranquil countryside. Coolant water used in the plant's equipment makes it way to the Sonobe River and onward to Lake Kasumigaura after being discharged as effluent. This water is also used to irrigate agricultural land that supports the local economy and local residents. Therefore, we closely manage the water quality of effluent in consideration for the organisms that live in the Sonobe River watershed and the impacts it has on local crops. The aquatic organism studies we perform here also ensure that we protect the community's natural environment.


Nagano Plant STEP1

The Nagano Plant is situated in a fruit-growing town with views of the Central Alps. Because of its location amidst such vibrant nature, we recognized our responsibility to ascertain the impacts our production activities have on the surrounding environment. As a result, the Nagano Plant decided to study the local natural environment as it is today. This environment includes the mighty Tenryu River. Therefore, our biodiversity conservation activities began from studies on the rich ecosystem of this river.


Hiratsuka Factory STEP1

The Hiratsuka Factory serves not only as a production site, but also as an important research and development base. The water resources of this area make it possible for the plant's some 2,000 employees to work each and every day. The water resources of this area, which are known as the Kaname River water system, support local agriculture and ecosystems. The Hiratsuka area has seen steady urbanization, but there are still many organisms that live there. The Hiratsuka Factory will conduct organism studies to discover the natural charms of this area and to convey it to the community.


Thailand STEP1

Yokohama Rubber operates a natural rubber processing plant in the Mueang Surat Thani District of Southern Thailand. This natural rubber represents the company's most important raw material and can only be produced in tropical rainforests. However, using natural rubbers means that we will have an impact on tropical rainforests. Yokohama Rubber was made even more keenly aware of this fact from interviews with rubber plantation officials and local university professors. As a result, we have established a commitment to reduce our impacts on the area's tropical rainforests using environmental impact studies on the areas surrounding the plant and organism studies.


Yokohama Rubber believes it can contribute to its customers and to the environment by offering longer use, more durable tires for consumers. To that end, we have developed a team of service engineers that can provide services in tune with the many consumer needs found around the world.

Our mission is to develop a team of tire professionals that can provide optimized services for our customers around the globe.

Hideki Asabane

General Manager, Tire Overseas Technical Service Department

The Yokohama Rubber Group maintains a business presence in every corner of the globe. Consumer needs toward our products and our company vary across each region. To satisfy these needs, we established the Tire Service Training Center in Thailand in October 2011 to develop staff that are capable of explaining our products and how to use them to customers around the world, that can earn the trust of our customers and satisfy their needs, and that can collect highly accurate information on product usage information as well as product requests in each country and region. Here, we offer practical training programs that foster a more customer-centric viewpoint among our service engineers around the world, from the manufacturing process to local services. These programs include hands-on learning sessions for broadening understanding of tires and vehicles used on our test course. In fiscal 2012, a total of 62 service engineers from 28 countries completed this training program.

Service engineers that completed this training program and returned to their places of work are providing services tailored to the unique situation of their customers. In particular, they are helping customers to improve fuel economy by reducing roll resistance through better awareness of the need for proper maintenance and daily inspections, such as air pressure management. This also ensures that customers can use their tires safely and comfortably for a longer period of time. These services not only benefit our customers, but also society and the environment because of energy savings and reduced greenhouse gas emissions.

Service engineers want nothing more than Yokohama Rubber to provide customers with services that make driving safer and more enjoyable. This is achieved by gathering highly accurate information on differing product usage information and customer needs in countries and regions around the world. Service engineers also plan and host workshops for sales staff on how to properly introduce our tire line as well as on basic tire knowledge, basic maintenance practices, and daily inspections.

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Messages from service engineers that have taken part in the training program

YOKOHAMA SCANDINAVIA AB
SWEDEN
Göran Bengtsson

I hope to use the advanced technical knowledge I gained through this training program to provide satisfactory explanations and proper recommendations to my customers about our tire lineup. I believe this will enable me to provide better quality products and services and fulfill the company's responsibilities to society.

N.V. YOKOHAMA BELGIUM S.A.
BELGIUM
Olivier Hermans

Through this training program I was able to deepen my knowledge of our products and customer service standards. The practical lectures on customer service and plant visits really broadened my technical knowledge, which I'm using to benefit our customers.

YOKOHAMA H.P.T LTD.
UNITED KINGDOM
Simon Clarke

Through the training program I was able to enhance my skills and knowledge, which has made it possible for me to provide even better explanations and services to my customers. I hope to help the company fulfill its responsibilities to society by delivering high quality products and services.

ITR Co., Ltd, CEE Branch
POLAND
Artur Posluszny

During the training program I took part in test drives, tire inspections and producion line visits, which helped me acquire a range of technical knowledge. I firmly believe that I have gained new potential in providing my customers with better services.

Seccional Comércio International Ltda.
BRASIL
Gustavo Loeffer

The Advanced Training Course technical lectures were highly theoretical in nature, but also provided test drives using actual vehicles and the opportunity to visit the factory production line. For a service engineer, this was truly an attractive and stimulating opportunity that heightened my self-confidence.

Yousuf Abdul Rahman Engineer S.P.C.
BAHRAIN
Khalid Ali Yousuf Engineer

Learning about analyzing tire problems through this training program has enabled me to continually provide superior quality services to my customers. I believe the Advanced Training Course is one of Yokohama Rubber's greatest strengths.

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

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

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 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.

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Otsuchi Town's Commitment

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

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 Otuchi 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.

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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 Otuchi 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.

Photos from tree planting events held around the world

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The Yokohama Rubber Group has identified "7 Pillars of Critical Issues for Yokohama Rubber to Address" based on the central theme of ISO26000, and has been carrying out the PDCA cycle accordingly. In this section, we will clarify which issues must be further emphasized, evaluate the current status of our activities, and provide respective executives' descriptions of current conditions and prospects of their activities, in order to realize our goals by FY2017.

[Self-assessment criteria] ○ = Target achievement △= Improved but targets not achieved ×=No significant achievement (each KPI is displayed from the year the target was set)

* 9 months, from April to December, FY2011

1. Safe and Healthy Workplace Environment

Our Goals (by FY 2017)	● We will establish a "zero risk" safety culture.	
KPI	**Average accident frequency rate of all global sites** FY2010…1.07 FY2011…1.29 FY2012…1.01	**Regularly scheduled "open work observation"** FY2012…9/10 factories
Self-assessment of achievements	△	△
Issues to be addressed	● Establishment of a standard work manual through "open work observation" ● Training "Safety Man (Safety Monitor)"	

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2. Advancement of Environmentally Friendly Management

Our Goals (by FY 2017)	● We will turn all of our products into environmentally friendly ones. ● We will try to achieve a 25% reduction of greenhouse gases. ● We will achieve and maintain total zero emissions in both in our domestic and overseas factories and intend to keep this up. ● We will enhance the environmental preservation activities in the surrounding areas of both of our domestic and overseas factories.			
	Percentage of environmentally-friendly products among our	**Reduction in the rate of greenhouse gas emissions**	**Number of domestic and overseas factories that**	**Total water intake at domestic and overseas factories**

KPI	**complete product line** FY2010…84% FY2011…89% FY2012…91%	**compared to the base year (domestic group)** FY2010…14.4% FY2011…13.2% FY2012…15.9%	**achieved total zero-emissions** FY2010…21 FY2011…21 FY2012…23	FY2010… 9.18million m^3 FY2011… 8.97million m^3 FY2012… 8.25million m^3
Self-assessment of achievements	○	○	△	○
Issues to be addressed	● Improvement of systems at domestic and overseas business locations towards the achievement of our new mid- to long-term environmental goals ● Biodiversity study at overseas business locations			

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3. Safety and Quality of our Products and Services

Our Goals (by FY2017)	● We will improve our support systems for various global services. ● We will establish global training facilities (for tire sectors). ● We will improve our customer credibility by continuing to provide quality products all the time (for MB sectors).		
KPI (Tire Business)	**Number of employees who newly-completed quality training at factories** FY2011…73 FY2012…98	**Number of newly-qualified service engineers** FY2011…111 FY2012…105	**Total number of ISO/TS16949 qualified internal quality auditors** FY2012…714
Self-assessment of achievements	○	△	○
Issues to be addressed	● Expansion of quality training at overseas factories ● Global enhancement of training for service engineers		

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4. Human Rights and Labor Practices

Our Goals (by FY2017)	● Our workplace is structured so that all of our diversified personnel can perform to the fullest regardless of age, gender, nationality, etc.		
KPI	**Employment rate of people with disabilities** FY2010…1.75% FY2011…1.77% FY2012…2.05%	**Re-employment rate** FY2010…77.5% FY2011…80.4% FY2012…80.4%	**Number of participants in overseas training among new employees** FY2010…48 FY2011…51 FY2012…49
Self-assessment of achievements	○	○	○
Issues to be addressed	● Promotion of the use of women workers ● Development of global individuals ● Establishment of human rights policy		

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5. Credibility with our Business Partners

Our Goals (by FY2017)	● Our company is able to enhance various CSR activities on the global stage by working hand-in-hand with our partners.		
KPI	**Rate of local procurement of raw material at overseas factories** FY2010…63% FY2011…70% FY2012…73%	**Number of global meetings held; number of participating groups** FY2012…Once a year; 8 (locations)	**Number of CSR partners that participated in study meetings** FY2012…177 companies
Self-assessment of achievements	○	○	○
Issues to be addressed	● Partners' human rights and labor practices ● Establishment conflict mineral policy ● Sustainable material procurement		

6. Stakeholder Communication

Our Goals (by FY2017)	● A system is in place to apply what stakeholders have to say. ● Five hundred thousand trees have already been planted at both domestic and overseas business locations.	
KPI	**Yokohama Forever Forest project, number of seedlings planted during the year** FY2010…48,502 FY2011…48,980 FY2012…53,323 (Total 285,000 trees, achievement rate 57%)	**Number of social gatherings held with local citizens at factories (per year)** FY2011…2 times FY2012…2 times
Self-assessment of achievements	○	○
Issues to be addressed	● Cooperation with NGOs in our business areas ● Development of a system to support employees' volunteer activities ● Support for reconstruction of disaster-stricken areas	

7. Corporate Governance and Compliance

Our Goals (by FY2017)	● Good ethics values based on ISO26000 compliance are well-known throughout our company. ● The entire company can visualize the applicable legislations. ● BCP support system is being developed as a group unit.			
KPI	**Cases of infringement of legal compliance** FY2011…0 FY2012…1	**Number of Global compliance meetings held** FY2011…1 per year FY2012…2 per year	**Number of participants in compliance-training meetings** FY2010…638 FY2011…558 FY2012…1,633	**Number of reports issued via whistle-blowing system** FY2010…13 FY2011…14 FY2012…39
Self-assessment of achievements	△	○	○	○
Issues to be addressed	● Evaluation of risk levels of respective domestic and overseas companies in the group ● Penetration of CSR among domestic and overseas companies in the group			

7 Pillars of Critical Issues for Yokohama Rubber to Address

Safe and Healthy Workplace Environment

1/7

Message from General Manager, Safety & Health Management Dept.

Based on the recognition that “safety and health are the foundation for everything else,” we aim to prevent workplace injuries, promote a comfortable workplace, and encourage healthy lifestyles, under the strong leadership of managers and supervisors and the cooperation of all group employees. As a step towards reaching our goal to “establish a zero-risk safety culture” by FY 2017, each office has already acquired OSHMS certifications and implements the PDCA cycle of safety activities. However, there is still room for improvement in the areas of systems, human resources, and facilities. Our challenges going forward are to enhance people’s awareness and improve the safety of our facilities. To tackle these challenges, we are targeting an average accident frequency rate below 0.8 across all global sites , and have been continuing to focus our efforts on systems, human resources and facilities since FY 2012.

In the area of systems, we are working to establish appropriate and feasible rules. Specifically, we are developing a standard work manual through open work observation. A good standard work manual will ensure safety at work as well as product quality, and will also improve productivity. In the area of human resource development, we are focusing on the training employees to avoid injuries and comply with rules. We are aiming to train each employee as “Safety Man” (Safety Monitor), based on our safety standards. As for safety, we will also focus on daily KYT (kiken yochi training, or hazard prediction activities) to improve risk awareness. In the area of facilities, it is essential to ensure the best possible safety. We promote the improvement of our facilities through risk assessment.

General Manager, Safety & Health Management Dept. Corporate Social Responsibility Div.
Riichiro Mama

Yokohama Rubber Group Safety Policy

1. All employees across the entire group make safety a primary concern, and improve safety activities through their participation, actions, and cooperation with others from all office organizations and job positions.
   (1) Each member of a workplace conforms to workplace rules and works with safety in mind.
   (2) All managers and supervisors take responsibility to ensure the safety of their employees, without overlooking any unsafe conditions or actions.
   Managers and supervisors clearly express their attitudes towards safety and devote themselves to the “3 Realities Principle” (personally observe the 3 realities: the real place, the real thing, the real situation) and to grasping a complete picture of their respective workplaces.
2. We proactively adapt to laws and government guidelines related to safety and health.
3. We familiarize all group employees with the importance of safety and health, and provide the necessary education and training.
4. We utilize the PDCA cycle and make continuous effort to reduce risks for the elimination of potential hazards related to work and facilities through the Occupational Safety and Health Management System (OSHMS).
5. We strengthen 2S activities (seiri and seiton, or sorting and straightening) based on the idea that “2S is the basis of health and safety.”
6. We promote a comfortable working environment where employees can work free from anxiety, and provide active support to promote employees’ health.

7. As a company that plays a role in the automobile industry, we contribute to efforts to prevent traffic accidents.

KPI and Results of FY2012 Activities ▶▶▶

Average accident frequency rate of all global sites

* The internal index rate which represents the number of accidents that occurred within a certain time frame, and the number of workers affected, with the severity of the disaster as a coefficient.

Goal	Result
Below 1.00	1.01

We regret to say that our target was not reached this year, still there was a trend towards improvement. A reduction in the number of disabling injuries in both domestic and overseas sites contributed to the drop in the rate.

Regular implementation of Open Work Observation

* All work at a plant is observed by all employees involved with the concerned plant to identify areas for improvement, which will lead to the improvement of the standard work manual.

Goal (number of factories where Open Work Observation will be implemented)	Result
10/10	9/10

*** We have a total of 7 domestic factories but the Hiratsuka Factories consist of 4 individual factories.**

We decided to undertake research on how to best conduct the observation, since each factory in Hiratsuka differs in mode of operation and the “changeover” process from others. The observations at Hiratsuka have not been implemented regularly yet.

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7 Pillars of Critical Issues for Yokohama Rubber to Address 2/7

Advancement of Environmentally Friendly Management

Message from the General Manager, CSR & Environmental Affairs Dept.

The Environment GD100 (Grand Design 100) of the Yokohama Rubber Group set as a goal that we assert world-class strengths in technologies for protecting the environment with the principle of "dealing fairly with society and valuing harmony with the environment." We will continue to work towards the mitigation of the environmental impacts of our business process while creating and promoting environmentally sound products as a manufacturing company.
We assess our environmentally sound products in terms of 4 factors: "prevention of global warming," "resource recycling and circulation," "resource conservation," and "safety and comfort." We aim to ensure that all of our products are environmentally friendly products by FY2017. Working towards the mitigation of the environmental impacts of our business process, we implement various activities in keeping with the principle of globally-consistent environmentally-friendly management, including aiming for zero-emissions at both domestic and overseas factories, focusing on global warming countermeasures, and reducing our water intake and amount of waste. It should not be forgotten that we also implement measures for the conservation of biodiversity around our factories as a part of our group's activities for environmentally-friendly management. We assess the range and the level of environmental impacts of our factories and we execute measures and monitoring in sequence, beginning with our domestic factories.
With the promotion of these activities, we set the assertion of world-class strengths in technologies for protecting the environment as a target by FY 2017.

General Manager, CSR & Environmental Affairs Dept. Corporate Social Responsibility Div. Mitsuo Sakurai

TOPIC: Set up new mid- and long-term goals for the reduction of greenhouse gases (base year 2005)

CO_2 emissions from the entire value chain of the Yokohama Rubber group:
FY 2030: More than 40% reduction at sales output level
FY 2050: More than 50% reduction of sum total

Yokohama Rubber Environmental Policy

Following the principle of dealing fairly with society and valuing harmony with the environment, we shall assert our world-class strengths in technologies for protecting the environment.

1. Yokohama Rubber will initiate measures considerate of the environment in all of its activities as well as make all of its manufactured goods environmentally-friendly products. Additionally, we will deepen communication with stakeholders as well as strive to make contributions to local communities and society as a whole.

2. Yokohama Rubber will strengthen its environmental management system to become a company trusted by its stakeholders and will continually strive to help improve the environment through the mitigation of its impacts on the environment as well as through the prevention of environmental pollution and sensory nuisances using preemptive approaches.
3. Yokohama Rubber will comply with all related laws, regulations, and agreements as well as endeavor to continually implement activities that help improve the environment.
4. Yokohama Rubber will strive to prevent global warming, conserve energy and resources as well as promote resource recycling aimed at the fulfillment of a recycling-oriented and low-carbon society.
5. Yokohama Rubber will strive to conserve biological diversity and use organic resources sustainably in its business activities.
6. Yokohama Rubber will promote harmony with local communities as part of its commitment to work with and become a company that is trusted by local communities.
7. Yokohama Rubber shall publish this policy and make it known to all.

KPI and Results of FY2012 Activities ▶▶▶

Percentage of environmentally-friendly products among our complete product line

By FY 2017, we aim to ensure that all of our tire and MB products are environmentally-friendly products.

Reduction in the rate of greenhouse gas emissions compared to the base year (domestic group)

At our domestic group companies, we are working towards reducing greenhouse gas emissions by 25% by FY 2020 (compared to the base year).

* Although in principle the base year is 1990, the base year for PFC, HFC, and SF6 is 1995 in accordance with the Kyoto Protocol.

Number of domestic and overseas factories that achieved total zero-emissions

We work towards the achievement of zero-emissions at all domestic and overseas factories.

* Number of zero-emissions factories / all factories

Total water intake at domestic and overseas factories

Our goal for FY 2013 is to achieve a per-unit reduction of 1%. We have been working toward a per-unit reduction of 1% each year (until FY 2012), but mid- and long-term goals for the reduction of water intake will be considered in FY 2013.

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7 Pillars of Critical Issues for Yokohama Rubber to Address

3/7

Safety and Quality of our Products and Services

Message from the Head of the Tire Quality Assurance Div.

As a contributing member of the global community, quality control is an essential element of our pledge to give first priority to customer satisfaction and to building a trusted reputation in society. According to our corporate philosophy, it is our responsibility to establish a stronger, more functional, and higher-level quality control system. I believe that to promote quality control together with all employees is a part of our quality operation management.

We realize the necessity of ensuring the promotion of quality education at our ever-expanding overseas factories in response to globalization. In FY 2013, we began to implement specific improved measures for quality education at our overseas factories.

We have identified some key performance indicators (KPI) to measure our progress, and among them are “number of employees who newly-completed quality training at factories,” “number of newly-qualified service engineers,” and “total number of ISO/TS16949 qualified internal quality auditors.” Regarding quality education at factories, we will focus on the promotion of quality education at our ever-expanding overseas factories in response to globalization in FY 2013. Although we have been continuously improving our education program to develop service engineers who can always provide service with the customers’ standpoint in mind, the number of service engineers at overseas offices is not always sufficient. Now, more than ever before, we need to focus on increasing the number of service engineers at overseas factories if we are to achieve our goals for FY 2017. As for the number of newly qualified service engineers, we are striving to achieve a 40% increase over FY 2012, with a focus on the overseas areas where reinforcement is most needed.

We promote internal quality control with a great awareness and understanding of the importance of quality within each department, while seeking the cooperation of an increasing number of auditors.

Head of the Tire Quality Assurance Div.
Atsunori Agari

Quality Policy

We contribute to society by planning, designing, producing, and selling attractive products for the satisfaction of our customers while maintaining a quality assurance system in all of our processes, including service. To this end, we will conduct systematic activities to ensure that all the basic steps in our quality assurance activities function properly.

KPI and Results of FY2012 Activities (Tire Business)

Number of employees who newly-completed quality training at factories

Goal	Result
75	98

We successfully achieved the target for supervisor quality education at each level as an activity to empower job sites under a robust action plan.

Number of newly-qualified service engineers

Goal	Result
110	105

We came close but did not fully achieve the target due to delays in the progress of training and development at some overseas locations.

Total number of ISO/TS16949 qualified internal quality auditors

Goal	Result
700	714

Based on a great awareness of quality control within each department and a deep understanding of its importance, we successfully achieved the target though increasing the number of auditors.

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7 Pillars of Critical Issues for Yokohama Rubber to Address

Human Rights and Labor Practices

4/7

Message from the General Manager, Global HR Dept.

The environment around us has been continuously evolving, based on various factors such as the globalization of the business domain and a decrease in the domestic labor force due to the falling birth rate and Japan's aging population. In the area of "human rights and labor practices," the development and utilization of human resources in order to respond to this new environment is essential. At the same time, we recognize that the range of human rights that must be considered expands just as business domains expand, and that it is necessary to establish environments where diverse people, such as women, elderly people, and people with disabilities, can have active careers.

One of our current approaches is a 2-month overseas training period for new employees, in order to develop individuals with a global perspective. This program has been implemented since 2009, and the number of employees to have completed the training reached 208 this year. We promote the employment of people with disabilities through regular recruiting as well as with the establishment of a special subsidiary company (Yokohama Peer Support). In April 2013, we also launched a new company (Yokohama Business Association) that leverages the skills and experiences of retired employees in its focus on handing down skills to current employees and supporting the business operations of the current generation of.

As a goal for FY 2017, Yokohama Rubber Group pledges that "our workplace is structured so that all of our diversified personnel can perform to the fullest regardless of age, gender, nationality, etc." When comparing our current progress with the goal, we have made achievements in the employment of people with disabilities but we must make more progress in the utilization of global human resources and women.

To address these challenges, we are implementing measures such as "reviewing and establishing an improved personnel system globally and regionally," "developing the successors' education system," and "discovering, recruiting, and educating outstanding human resources in each region." In the area of human rights, we do not tolerate discrimination of any kind, on the basis of race, religion, or any other factors whatsoever.

General Manager, Global HR Dept.
Koichi Tsuruno

"Policies for Human Resource Management"

We will create an environment in accordance with our management policy of creating a workplace to value, improve, and energize people, where each of our ever-diversifying personnel can equip themselves with the necessary skills and perform by utilizing their capabilities to the fullest. Also, we aim to create a workplace where our employees can realize a work-life balance.

We will continue to raise the awareness of our personnel so that they can perform on the global stage and are capable to deliver the business strategy of GD100 and various technical strategies.

KPI and Results of FY2012 Activities

Employment rate of people with disabilities

Goal	Result
1.80%	2.05%

We have exceeded the target thanks to the recruitment activities of each office and the special subsidiary company “Yokohama Peer Support.”

Re-employment rate of the retired workers

Goal	Result
80%	80.4%

We have been creating different ways to make productive use of our retired human resources, and our reemployment rate in FY 2012 also reached the target.

Number of participants in overseas training among new employees

Goal	Result
49	49

Since 2009, we have conducted 2-month training sessions for all newly-employed comprehensive staff of our overseas group companies. We also conducted the training session as planned in 2012, and all participants had valuable experiences.

TOPIC 1 Human resource development through open work observation / Thailand

Yokohama Tire Manufacturing (Thailand) Co., Ltd. (TYMT) has implemented “open work observation” as one of our human resource development initiatives, in order to revise and improve the standard work manual and to provide thorough work training. With the “open work observation” process, not only supervisors but all staff members observe the real-time work of operators at the site, identify any operational problems and discuss how to improve/solve them, and then decide the chain of command and deadlines for implementing the improvements on site. We also assess operators’ safety, the quality of the products, and overall production, the aim of which includes cultivating possible operational managers from those who demonstrate leadership among the top operators. We began to implement this initiative, suggested by the General Manager of the Plant at the time, in 2009. At first, “open work observation” was led by the General Manager of the Plant, and in 2010 local managerial staff and assistant managers were also included. In 2011 the scope of the initiative was broadened to include management-level staff, and our “open work observation” system has now grown to become a company-wide activity in which the operators play key roles. The enhanced process, including monthly follow-ups as well as the annual recognition of superlative operators, has led to increased motivation among our operators. Together with all plant employees, we will continue to strive to improve the quality of our products, develop an awareness of workplace safety, and pursue a safer, more rational, and more effective, and changeover process.

* This initiative, which we first implemented at TYMT, is now carried out in all of our domestic plants. (Please see “Safe and Healthy Workplace Environment” for more detail).

Asst. Mgr Demonstration / Head Office
Wicha Khunphiluek

The aim of “open work observation” is to realize more effective and safer operations by observing the entirety of all work processes at the plant in order to identify problems. In addition, the participation of all employees, from operators to the President, helps to develop teamwork. The most important aspect of the system is the participation of operators, who are able to create their own standard work manuals, work accordingly, and suggest their own ideas for improvement. We believe that the system will lead to the improvement of safety, quality, the work environment, and productivity. We will further develop this beneficial program in the future.

TOPIC 2 Supporting Social Independence for Persons with Disabilities

Yokohama Peer Support Co., Ltd., established in 2011, employs persons with mental disabilities in order to support their social independence. Peer Support employees are engaged primarily in cleaning, caring for flowers and plants, and delivering mail within the factory. As these employee testimonies show, Yokohama Peer Support provides a place for handicapped people to work pro-actively and independently.

Work scean

Environment Improvement Section
Yokohama Peer Support
Hirofumi Arai

When I joined Yokohama Peer Support, the first assignment I worked on was scrubbing the floors in the lounges and meeting rooms at the Aerospace Products Plant. Before, basic sweeping and mopping of the floors was outsourced, but we scrub the floors by hand with scrub brushes. Yokohama Rubber uses an organic solvent with rubber in it, which adheres to employees work shoes, which results in stains on the floors. They used to think that having stained floors was inevitable, but our hand-scrubbed floors changed their longstanding perceptions. The staff often ask us “May we use the room now?” or say “Thank you for always cleaning the floors” while we are cleaning the floor, so I feel that the cleaning work by Peer Support has been acknowledged by the employees at the Plant.
We’ll have 2 new employees join us at Peer Support in April, and I look forward to sharing with them the fantastic feelings from seeing the clean-scrubbed floors!

General Manager, Hiratsuka Plant
Yokohama Peer Support
Keizaburo Abe

My biggest concern is that our employees might suffer from injuries or accidents while moving about in the plant, as the nature of each individual’s disability, and capacity for work, vary. The scope of service we offer has been expanded by using Yokohama Peer Support employees for previously outsourced cleaning duties. We are still learning about different approaches, including having employees be accompanied by instructors and working in teams.

Instructor
Yokohama Peer Support
Shizuo Nakamura

Some of our daily routines include meetings at the beginning and end of the workday, and writing daily reports. The report notebooks are checked by instructors, taken home to show their parents, and then we check it once again. We recognize the importance of communication between ourselves, the workplaces where they clean, and their guardians.

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7 Pillars of Critical Issues for Yokohama Rubber to Address

Credibility with our Business Partners

5/7

Message from the General Manager, Raw Materials Procurement Dept.

Our Procurement Policy is based on “co-development under fair and equal trading, by establishing a sense of trust, to realize co-existence and co-prosperity.” When we apply this policy to the procurement of raw materials, the viewpoints of risk management and LCA,* such as a focus on choosing “suppliers who can ensure stable procurement requiring less transportation while also meeting the quality, cost, and delivery time we require,” become more pronounced. We think that our partners should be raw materials suppliers who can cater to the requirements of each locality where production sites are located. True CSR is to realize co-prosperity not only with partner companies but also with each locality impacted by our business (with each partner). However, the reality is that there are places where certain materials are not locally available, or the industry for said materials itself doesn’t exist. In such cases, we work together with ASEAN for CSR through procurement of most materials (with some exceptions) within ASEAN. Our current achievement is 73% of the target goal of 100% local procurement.

Local production for local consumption won’t be realized by simply employing local materials. Certain work can be conducted only on-site, such as technical assessment, price negotiation, and decisions regarding delivery and packaging, etc. The sustainable procurement of local materials can be realized only when we employ capable human resources for each of those tasks. For this purpose, we rotate mid-level and young employees both globally and domestically to develop human resources, and hold global meetings among procurement staff to comply with rules and regulations and implement fair and equal trading. We will promote the education of local staff as well as local production for local consumption.

General Manager, Raw Materials Procurement Dept.
Global Procurement Division
Noboru Takita

* LCA (Lifecycle assessment): A technique to assess environmental impacts in numerical data, associated with all the stages of a product's life from manufacture to disposal.

Basic Guidelines of Yokohama Rubber's Procurement

• Procure optimum raw materials, equipment, and construction.
In order to provide better products, we will continue to procure optimum raw materials, materials, and construction.

• Trading with fairness and impartiality
We will conduct fair and equal trading based on the notion of free competition. Also, we source all our business partners from all over the world through global perspective.

• Reasonable selection of our partners
As for the selection of our partners, we will determine them based on economical reasonability under consideration of comprehensive perspectives; their quality, price, stable supply, ability for technology development, and environmental friendliness.

• Partnership
We will establish an equal and fair cooperative relationship through healthy trading with our business partners; we will enhance mutual understandings and credibility to achieve growth with one another.

• Compliance
During our procurement activities, we will abide by all the related regulations and social standards in addition to not disclosing any confidential information we came to know during trading. Also, we will try not to conduct any misleading behavior by reflecting onto our socially accepted ideas.

• Harmony with the environment
We will try to purchase raw materials with a lesser burden to the earth environment.

KPI and Results of FY2012 Activities

Use of local raw materials at overseas factories

Goal	Result
76%	73%

Due to delays in implementing the local procurement plan at plants in Russia, we fell 3% short of the target rate of 76%. We will increase the target rate to 77% by promoting local procurement at the plants where we are falling behind in localization.

Number of global meetings held and number of groups participating

Goal	Result
Once a year, at 8 locations	Once a year, at 8 locations

We held the meetings as planned, attended by staff involved with raw materials procurement, to educate them on our CSR activities and purchasing code of conduct. We will hold the meeting for a wider range of participants, including those involved with indirect materials, from FY 2013.

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7 Pillars of Critical Issues for Yokohama Rubber to Address

Stakeholder Communication

6/7

Message from the General Manager, CSR and Environmental Affairs Dept.

In order to build a trusted identity as a contributing member of the global community, proper communication with both internal and external stakeholders is essential, as is the consideration of their views in our corporate activities.
We communicate with various stakeholders in various ways. For example, one of our characteristic initiatives is the YOKOHAMA Forever Forest project, which has grown from a forestation project within the company to a project that includes the provision of seeds and know-how outside of the company. As part of our effort to provide reconstruction assistance for areas devastated by the Great Eastern Japan Earthquake, we are working to prepare seedlings for the Tohoku Committee for Promoting Green Coastal Levee that Protects Lives . In this project, the Committee has provided us with seedlings from Tohoku, and we will act as a foster parent for two to three years and then return seedlings to Committee-supervised forests free of charge. We continuously support the vision of the Chinkon no Mori in Otsuchi town, Iwate.
In addition, at business locations overseas and in Japan, we conduct activities aimed at resolving local issues, including biodiversity surveys near business locations and working together with NGOs and NPOs, as well as relief activities in response to disasters. What do our stakeholders expect of us? Are we satisfying their expectations? By maintaining constant communication with all of our stakeholders, the Yokohama Rubber Group is striving to live up to the expectations of our society. Through these initiatives, we hope to increase the vitality of local communities, our employees, and our company.

**General Manager, CSR & Environmental Affairs Dept.
Corporate Social Responsibility Div.
Mitsuo Sakurai**

Stakeholder policy

Following the establishment of our CSR Division in 2008, we have organized the social responsibility issues we need to address in our day-to-day and future activities, and also we have appointed our stakeholders as listed below. During our selection process, we consulted the GRI Guidelines, ISO26000, and Nippon Keidanren's Charter of Corporate Behavior, and other descriptions thereto.

• Customers

We will enrich people's lives and contribute to their greater happiness and well-being by devoting our wholehearted energies and advanced technologies; this basic philosophy is our declaration to put our customers first. We seek to develop a corporate culture where the customer's interests are the top priority.

• Employees

We believe that being considerate to the rights and safety of the workers and providing an environment to maximize their potential are the greatest driving forces for a corporation with sustainable growth. This is clearly stated in our management policies that reads, "create a workplace that values, improves, and energizes people".

• Business Partners

We are expanding our businesses by working together with a variety of suppliers and partners who provide us raw materials, parts, equipment, etc. By practicing fair and free trade with business partners, we will continue to build relationships of mutual sustainment and being bene¬ficial to each other.

• Shareholders and Investors

By taking on any challenges to develop innovative technologies to generate new value, we will realize our sustainable growth and return of reasonable pro¬ts. Also, we will be happy to provide any information in an appropriate manner to meet the expectations of all of our stakeholders and investors.

• Local Society

As a globally active business, we relate to local communities in a number of domains – the natural environment, law, culture, customs and the economy. We will strive to build a healthy relationship for various local communities together with our both domestic and overseas business locations.

KPI and Results of FY2012 Activities

Yokohama Forever Forest project, number of seedlings planted

Goal	Result
52,600	53,323

We aim to plant 500,000 seedlings at our domestic and overseas production sites by FY 2017, when we will celebrate our 100th anniversary.

Number of social gatherings held with local citizens at factories (per year)

Goal	Result
2 at three factories	2 at three factories

We will continue to hold semi-annual “social gatherings” with local citizens at factories in order to maintain regular communication, and will also increase the number of factories that hold such “social gatherings.”

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TOPIC 1 SAS Rubber Company / Ohio, U.S.A.

SAS Rubber Company manufactures and sells automotive hoses, rubber gaskets for window frames, and molded industrial rubber parts. As a member of the local community, they engage in various initiatives, including:

Donation of trees to the Chestnut Elementary School (2010)

As part of the YOKOHAMA Forever Forest

Donated seedlings to Painesville City and the

project, employees and their families planted about 650 trees on the company grounds, together with people from the local community. (2011)

Japanese Association of Northeast Ohio (JANO) (2012)

YOKOHAMA EUROPE GmbH / Germany

YOKOHAMA EUROPE GmbH has been continuously engaged in community-based social contribution activities such riverbank cleanup activities on the Rhine River and cleanup and improvement activities at the Dusseldorf University Botanical Garden.

Yusaku Hanada (second from left)
Nurhan Türüdü (fourth from left)

Yusaku Hanada, participant in the Rhine riverbank cleanup activity

The riverbank cleanup activities were organized by Dusseldorf City in March 2012. Participating in the riverbank cleanup activities was a new experience for me, and I enjoyed a feeling of accomplishment that I could contribute to the local community by helping to clean the banks of the locally beloved Rhine River together with 30 members of the internal environment team. It was a positive and rewarding experience.

Nurhan Türüdü, participant in the cleanup and improvement activities at the Botanical Garden

The environmental conservation activities at the Dusseldorf City Botanical Garden were held in September 2012. We cleared away deadwood and weeds and replanted seedlings. I thought it was very wonderful and meaningful, not only in terms of our contribution to the internal environment team but also in terms of our contribution to the local community. I am looking forward to the next opportunity to become involved!

7 Pillars of Critical Issues for Yokohama Rubber to Address

Corporate Governance and Compliance

Message from the General Manager, Corporate Affairs and Compliance Dept.

The Yokohama Rubber Group regards fostering a customer-oriented corporate culture as our first priority, by respecting high standards of corporate ethics and understanding the importance of corporate governance and compliance.
In accordance with the principles of internal control, we make use of necessary committee structures to conduct inspections and follow-ups to ensure fair business practices. We also discuss and prepare countermeasures against potential crises, while always remaining careful to efficiently deal with all possible risks.
It is essential that we further improve governance and compliance not only at our domestic business locations but also at our overseas business locations, in order to operate our business under our goal for FY 2017 that "we will evoke a distinctive global identity in building corporate value and in building a strong market presence. To achieve the goal, we strive to ensure continuous global compliance meetings and to expand participation in the meetings, toward raising awareness of corporate governance and compliance while promoting information-sharing with overseas business locations in FY 2013.
We will continuously engage in enforcement and transparency in fighting against corruption such as bribery and complying with competition laws.

General Manager, Corporate Affairs Dept. and Corporate Compliance Dept.
Corporate Social Responsibility Div.
Kiyomi Ishikawa

Yokohama Rubber Group Initiative Policy

Yokohama Rubber Group is making every effort to fortify and improve the support system for corporate governance to be established in order to realize management with transparency and fairness under our Corporate Philosophy. Thereby, this is becoming the management body to maintain our ever evolving corporate value in order for our management to continue to win un-shakeable credibility.

KPI and Results of FY2012 Activities

Cases of infringement of legal compliance

Goal	Result
0	1

There was one incident involving an unregistered sale of toluene and MEK. We immediately reported it to the relevant regulatory agency, and took action to reestablish the internal system and publicize internal rules in order to prevent a recurrence of such an incident.

Number of Global compliance meetings held

Global Compliance Meetings enable us to communicate with local employees overseas in a timely manner, which have led to the equalization of compliance awareness levels between domestic and overseas group companies.

Number of participants in compliance-training meetings

The more our overseas business operation has expanded, the more employees have been assigned overseas. We provide training before transfer to reduce risks during overseas assignments.

Number of reports issued via whistle-blowing system

We try to listen and respond sincerely and adequately to reports in order avoid damaging the trust of those group employees with whom we consult.

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