

## Environmental Conservation



We have defined environmental issues as one of our important management tasks and organizationally promoted our efforts early on. In 1991, we built our environmental management framework by creating the Earth Environment Committee chaired by the president (currently the director responsible for supervision of environment). In the following year, we established the Komatsu Earth Environment Charter and embarked on our efforts to reduce the environmental impact in our business operations, centering on the construction and mining equipment business, as the matters that Komatsu can and must do. More recently in July 2003, we revised the Charter to include the activities that the Komatsu Group as a whole is currently engaging in with awareness of corporate social responsibility from a global perspective in order to realize a sustainable society.

### Global, Group-wide Safety and Environmental Affairs Meeting Held

We held the third Global Safety and Environmental Affairs Meeting in Japan from March 28 through 31, 2006. The meeting was participated in by representatives from 12 overseas subsidiaries in 10 countries and six subsidiaries in Japan for discussions and tours of Awazu, Komatsu and Osaka plants.

For this meeting, we included occupational safety and health activities on the agenda in addition to environmental conservation. Partly because the regulations concerning occupational safety and health activities differ depending on the country, their management has largely been left up to each subsidiary. In view of the fact that corporate social responsibility is growing in importance, however, we believe it has become necessary to enhance employees' awareness of occupational safety and health around the world and to share good management methods within the Komatsu Group. From the starting point of implementing on a global scale, the participants made presentations concerning occupational safety and health activities in place at their companies and exchanged opinions.

In the area of environmental conservation, the participants

discussed the measures for environmental risks: prevention and countermeasures in case of an accident, e.g., if the accidental spill of chemical substances should occur. In addition, they focused on activities for the improvement of performance (improvement of quantitative targets, such as CO<sub>2</sub> reduction and energy savings) which have been discussed in previous meetings. It is equally important for Komatsu to develop and introduce eco-friendly products. In terms of the scale of environmental impact, the development of such products may be more important. In his speech at the meeting, Masahiro Sakane, President and CEO, also stressed the importance of environmental concerns in product development, including compliance with emission standards and fuel consumption.

In the last half of the meeting, the participants observed occupational safety and health as well as environmental conservation activities taking place mainly in the Production departments of the Awazu, Komatsu and Osaka plants. They exchanged opinions concerning specific approaches to daily management and measures to prevent the recurrence after accidents, and confirmed further improvements at their companies.



### Prestigious Recognition on Eco-Friendly Products



Komatsu Hanomag GmbH (KOHAG) has achieved a lowering of the noise level inside the plant to 68 to 69dB on average, creating a worker-friendly environment. Furthermore, KOHAG's mainstay small wheel loaders received the prestigious "Blue Angel" certification for low noise and other qualities in 2005. The "Blue Angel" is the German eco-mark, an important indicator for

consumers to learn about eco-friendly products and corporate attitudes toward the environment, which is recognized throughout Europe.

**Update: 15 Years of Reforestation Research Efforts in Indonesia**

Komatsu equipment is deployed at many jobsites of the forestry industry. Komatsu has been engaged in the reforestation and rehabilitation of tropical forests with the dipterocarps in Indonesia since 1991. Locally called "lauan" or "meranti," the dipterocarps have supported the Indonesian forestry industry as a wood commodity. In addition to illegal slash and burn agriculture, converting forests to other land uses and forest fires have caused the destruction of many of the dipterocarp forests. It is an urgent and paramount task for most Southeast Asian countries to rehabilitate their degraded dipterocarp forests.

One of the technical problems facing the reforestation of the dipterocarps is a stable supply of planting stocks. Coupled with irregular fruiting, the viability of their seeds is short and there is a lack of adequate seed storage techniques. In this light, vegetative propagation is a vital solution for a constant supply of dipterocarp planting stocks.

Jointly with the Forest Research and Development Agency (FORDA) of the Ministry of Forestry, Indonesia, we successfully developed a cutting propagation technique for the planting of dipterocarps and led the world in mass-propagation of the dipterocarps species. We have worked to transfer this technique to the forestry sector institutions for their reforestation activities.

In 2004, the Japan International Cooperation Agency (JICA) became interested in our technique and joined our efforts to transfer the technique to local companies and organizations. In 2006, we began transferring the technique to more than 20 private-sector and state companies as well as

research institutions in Indonesia. We are supporting not only national projects but also an international project of the International Tropical Timber Organization in Indonesia.



**Basic Research: 1991-1995**

1992	Conducted research in vegetative propagation techniques, including tissue culture and cutting propagation.
1995	Succeeded in small-scale propagation (2,000 saplings), using the cutting propagation.

**Applied Sapling Cultivation Technique: 1996-2003**

1996	Conducted research and development of mass-propagation system for the saplings.
1997	Developed the Komatsu-FORDA fog cooling (KOFFCO) system, an original mass-propagation system, jointly with FORDA.
1999	Succeeded in test production of 100,000 saplings in one year.
2000	Conducted test plantation in West Java (120,000 saplings) and Sumatra (50,000).

**Technology Transfer (Jointly with JICA): 2004-2006**

2004	Established four model nursery centers in West Java, East and South Kalimantan and Sumatra.
2006	Began transferring the mass-propagation technique to the forestry-sector institutions. Supporting the national and international projects in Indonesia, including the International Tropical Timber Organization's project.



**Chikaya Sakai, Ph. D.**  
 Chief Researcher  
 Planning & Administration Department  
 Research Division  
 Komatsu Ltd.  
 Manager in charge of the Plantation Project  
 PT. Komatsu Marketing & Support Indonesia

"We are convinced that our mass-propagation techniques, such as the KOFFCO system, accumulated over the last 15 years are a valuable intellectual asset that will make vital contributions to the reforestation of

the tropical forests in Southeast Asia. To make our efforts valuable, we must put them in place in Indonesia and neighboring countries to help the environmental conservation efforts of people in this region. In February 2007, the current joint project with JICA will be completed.

We would like to thank the Government of Indonesia for their support and cooperation. We are encouraged to learn about a growing number of requests for technical assistance concerning our mass propagation techniques from the forestry sector. Forestry should be a sustainable industry. It is our wish that our expertise built over the years will help the forestry sector to prosper for many years to come."