

Environmental management

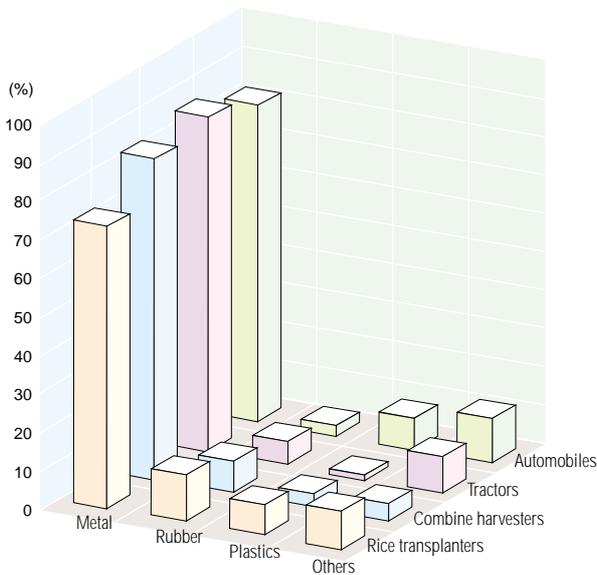
Activities of the Global Environmental Committee

At Kubota, we organized the company-wide Global Environmental Committee in April 1992.

During the 1st period (April 1992 to March 1995), the committee presented 20 issues, including ozone layer protection and global warming prevention. Other efforts were directed to the total elimination of chlorofluorocarbon and trichloroethylene at the earliest possible date, and clearing the U.S. CARB regulations regarding diesel engines. During the 2nd period (April 1995 to March 1998), a total of 12 issues were presented by the committee, which includes the activities to acquire ISO14001 certificate, and measures to recycle the wastes. As a result of these activities, two plants acquired the certificates.

The committee began the 3rd period in April 1998, presenting 30 issues, including global warming prevention and zero emission.

We explain an example, namely "Sub-committee for recycle and re-use of waste products (farm machinery)" which is now active.



Composition ratio in farm machinery by material

The domestic sales volume of main farm machinery (tractor, power-tiller, combine harvester and rice transplanter) is about 400 thousands per year. And the waste volume of the machinery is 40 to 50 thousands per year (estimated). The domestic sales volume and the waste volume of the machinery are smaller than those of automobile, namely 6.5 million and 5 million respectively. The ratio of waste volume to sales volume is also smaller than that of automobile. However it is estimated that the waste volume increases rapidly, which become the issue of social concern. The rubber content of a farm machinery is bigger than that of an automobile, because the machinery installs large tires or rubber crawlers. We are now investigating the treatment method to increase the recycling rate.

The disassembly and separation of the machinery become easy by the reduction of the number of parts variety. And the reduction of the variety of materials used is also expected. In order to reduce the number of parts variety, the activities we tried are as follows:

- use of the parts which are currently used, utilizing the information retrieval system of similar parts
- cooperation with the parts makers, setting up parts design standards for easy assembly, parts standardization and similar parts unification by the design arranging several parts

As a result of those activities, the number of parts variety decreased largely in 1992. The number increases a little now.

In the development of new product, it is one of the most important items to reduce the weight of the product compared with current product, from the viewpoint of saving energy and resources as well as reduction of wastes. The table below shows the examples of weight reduction. The weight reduction is also useful for the reduction of fuel consumption. So environmental load is low when that product is in operation.

The example of weight reduction of the riding rice transplanter

The number of row;	Conventional product (the date of on sale)	The product sold in 2000	Comparison
5 rows	525kg (1996)	420kg	-20%
6 rows	545kg (1996)	450kg	-17%
8 rows	894kg (1995)	595kg	-33%

Organization chart for 3rd period Global Environmental Committee



Status of ISO14001 certificate acquisition

At Kubota, we set up “the improved environmental management ability” as one of directions we progress. So “ISO14001 certificate acquisition” is one of the most important items of environmental conservation activities.

As of September 2000, 16 of our 20 plants in Japan, including Tsukuba Plant, have acquired the certificates. The other four plants will acquire the certificates by the end of fiscal 2000.



Status of ISO14001 certificate acquisition (as of September 2000) Domestic plants

Plant	Main line of business	Certifying organization/Registration number	Date of Certification
Tsukuba plant	Manufacturing of farm machinery	Lloyd's Register Quality Assurance Limited (LRQA), 771757	Nov. 1997
Shinyodogawa environmental plant center	Design and development of environmental facilities	JIC Quality Assurance (JICQA), E018	Dec. 1997
Funabashi plant	Manufacturing of ductile cast iron pipes	Lloyd's Register Quality Assurance Limited (LRQA), 771890	Jul. 1998
Ryugasaki plant	Manufacturing of vending machines	Det Norske Veritas AS (DNV), EMSC-1273	Nov. 1998
Mukogawa plant	Manufacturing of ductile cast iron pipes	Lloyd's Register Quality Assurance Limited (LRQA), 772498	Mar. 1999
Kyuhoji plant	Manufacturing of precision machinery products	Det Norske Veritas AS (DNV), EMSC-1379	Mar. 1999
Sakai PVC pipe plant	Manufacturing of plastic pipes and fittings	Union of Japanese Scientists and Engineers ISO (JUSE), JUSE-EG-019	Jul. 1999
Hirakata plant	Manufacturing of cast steel products, pumps, valves, construction machinery, new material products	Lloyd's Register Quality Assurance Limited (LRQA), 772527	Sep. 1999
Ichikawa plant	Manufacturing of spiral steel pipes, heat transfer pipes	JIC Quality Assurance (JICQA), E097	Nov. 1999
Okajima plant	Manufacturing of industrial cast iron products, ductile segment, cast iron products for jointed water drainage system and other related products	JIC Quality Assurance (JICQA), E105	Dec. 1999
Shinyodogawa factory in Mukogawa plant	Manufacturing of FW pipes	Japan Chemical Quality Assurance Ltd. (JCQA)	Jan. 2000
Odawara plant	Manufacturing of plastic pipes and fittings, and roofing material	Union of Japanese Scientists and Engineers ISO (JUSE), JUSE-EG-028	Jan. 2000
Sakai plant (including Sakai coastal factory and Naniwa factory)	Manufacturing of engines, farm machinery	Lloyd's Register Quality Assurance Limited (LRQA), 772673	Mar. 2000
Shiga plant	Manufacturing of roofing material, FRP products	Union of Japanese Scientists and Engineers ISO (JUSE), JUSE-EG-031	May 2000
Environmental control plant consolidated division	Sales, development, design, procurement, manufacturing, construction, service of environmental control plant	Lloyd's Register Quality Assurance Limited (LRQA), 772707	Jul. 2000

Overseas plant

Plant	Main line of business	Certifying organization/Registration number	Date of Certification
The Siam Kubota Industry Co., Ltd.	Manufacturing of engines and farm machinery	Management System Certification Institute (Thailand), EMS99001/001	Aug. 1999

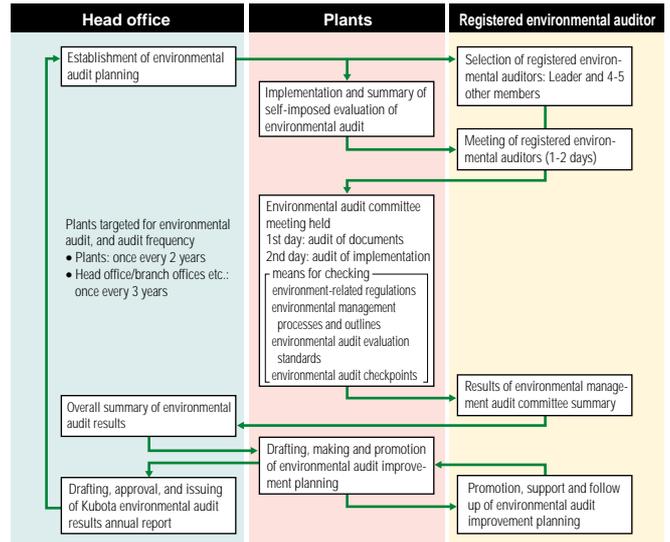
No. of personnel completing internal environmental audit instruction (as of August 2000) : 1,236

Environmental audit

Environmental audit is one of the indispensable functions in order to self-imposed check the environmental impact by corporate activities, and in order to improve the environmental management activities. At Kubota, we started environmental audit in 1973, namely a Central Pollution Patrol. We changed our system into the system based on ISO14001 standard, and enhanced the audit in 1994.

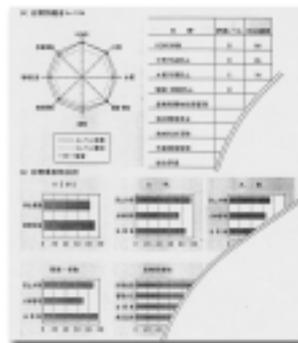
We have been suspending the audit by head office in order to promote ISO14001 activities at each plant. It is expected that all of our plants will acquire ISO14001 certificates by the end of fiscal 2000. So we aim at improved audit to find environmental risk, and to solve the problems by the site-oriented activities, spreading it on all the Kubota group.

In-house environmental audit system



Formation of environmental audit evaluation standards

Environmental audit area	No. of items checked
Kubota Environmental Management System (KEMS)	42
Air pollution prevention	33
Water pollution prevention	48
Noise and vibration prevention	25
Industrial wastes treatment and control	39
Global environmental conservation	13
Local society activities	7
Working environment control	56
Total	263



Audit results sheet



Environment-related education

It is important that each and every employee recognize the environmental awareness for environment-friendly corporate activities. In 1981, we started an environmental management technology program at Kubota, and we now conduct detailed environmental education programs on an annual basis, targeting the employees who is in charge of actual work, and management-level staff, based on in-house textbooks. We also encourage our employees to acquire certification in environment-related area such as the environment judges including pollution control managers. The table at the right shows the numbers of employees with qualifications in various environment-related areas.



Environment-related education for fiscal 1999 (as of end of March 2000)

- Education by rank
 - New employee education 50
 - Education for technology staff at the second year from the enrollment 91
 - Education for middle-level monitors 26
- General education of environmental management
 - Education of environmental management technology 33
- Education for qualification acquisition
 - Education for pollution control manager examination 36
 - Education for class1 working environment measurement engineer examination 4
 - Education for class2 working environment measurement engineer examination 30
- ISO14001-related education
 - Education for internal environmental auditors 583
- Education for affiliated companies
 - Kubota Distribution Service Co., Ltd. education of ISO14001 13

No. of employees acquiring environment-related qualifications (as of end of March 2000)

- Pollution control managers
 - Air 89
 - Water 114
 - Noise 101
 - Vibration 79
- Environment measurement engineer
 - Environment monitor 5
 - Assistant environment monitor 6
- Energy management engineer
 - Heat 44
 - Electricity 38
- Working environment measurement engineer
 - Class1 114
 - Class2 98
- Environment counselor 2

Environment-related costs

At Kubota, we set up our own standards regarding environment-related accounting in 1973, and we keep aggregate totals of expenses for environmental management, investment for environment-related facilities, and direct results. This data is then put to use in our environmental management activities. We have not accounted the cost of the development nor the plant investment for environment-friendly products. In addition, we have not accounted the supposed effect nor indirect effect because the definition is not clear.

In fiscal 1999, environmental management expenses of Kubota amounted to 3.4 billion yen, while plant investments totaled 1.86 billion yen. And direct environmental conservation effects from those expenses and investments totaled 1.84 billion yen.

- Regarding the costs

The breakdown of the environmental management expenses is as follows:

Direct personnel expenses for the ISO14001 certificate acquisition activities in all the plants by fiscal 2000: 1.6 billion yen

Commission costs for industrial wastes treatment for recycling: 1.23 billion yen

- Regarding the investment

The breakdown of the plant investment is as follows:

Environment improvement investment: 670 million yen

Improvement of noisy workshop: 540 million yen

Global environmental conservation: 350 million yen

- Regarding the effects

The breakdown of the effects is as follows:

Saving energy effect: 370 million yen

Reduction of waste treatment costs by zero emission: 270 million yen

Sales amount of valuable substances regarding recycling: 290 million yen

Supporting effect for ISO14001 certificate acquisition: 40 million yen

Effect of distribution improvement measures: 870 million yen

Activities from now on

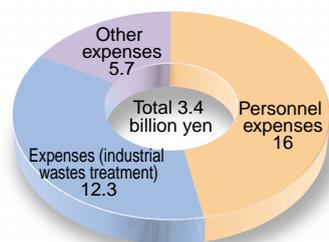
The Environment Agency announced “the guidelines for introduction of environmental accounting system (an edition of 2000)” this year. We construct our new system referred to the guidelines, reconsidering standards and counting method, increasing counting items, raising accuracy, and counting cost-performance.

We consider the environmental accounting as the indispensable tool for environmental corporate management, in order to sustain our business and development, grasping the investment effect and cost-performance.

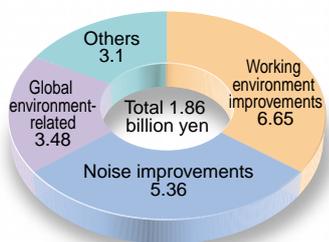
We improve our environmental conservation activities, and environmental information disclosure.

Breakdown of environmental management expenses and plant investment for fiscal 1999

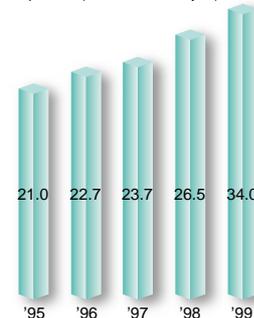
Environmental management expenses



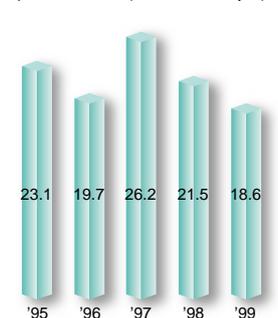
Environment-related plant investments



Transition in environmental management expenses (unit: 100 million yen)



Transition in environment-related plant investment (unit: 100 million yen)



Direct effects for fiscal 1999

Category	Items	Annual effects (unit: 10 thousand yen)
Saving energy measures	Waste heat reuse in cupola, reduction of electric power, etc.	373,00
Zero emission	Reduction and recycling of industrial wastes	270,00
	Sales amount of valuable substances regarding recycling	294,00
Support for ISO14001 certificate acquisition	In-house environmental auditor education (583 employees)	36,00
Distribution improvement	Modal shift, etc.	867,00
Total		1,840,00