



Voices of Concern Raised over Global Environmental Problems
Results of the Ninth Annual
“Questionnaire on Environmental Problems and the Survival of Humankind”
Asahi Glass Foundation

The Asahi Glass Foundation, chaired by Hiromichi Seya, has conducted a questionnaire survey since 1992 of experts involved with environmental problems from both governmental and non-governmental organizations worldwide to highlight the perceptions of various environmental undertakings. The questionnaire this year focused on various current issues, such as expectations for the COP6 global warming countermeasures conference, environmental taxes, nuclear power generation and new energy sources, as well as environmental education and genetically modified products. It also dealt with topics from previous years, such as the Environmental Doomsday Clock, Agenda 21 and changes in lifestyles. We would like to express our appreciation once again to Professor Akio Morishima, Chairman, Institute for Global Environmental Strategies, for continuing to provide invaluable assistance with the questionnaire.

Summary of the Questionnaire Results

Perception of the Crisis Facing Human Survival — Environmental Doomsday Clock

- The average time for all respondents was 8:56, a 12-minute retreat from the prior year. This is the first instance that the average registered in the “fairly concerned” quadrant after four consecutive years in the “extremely concerned” quadrant, showing a general easing of the sense of crisis.

I Main Focus of the Current Year's Questionnaire

1. Global Warming Countermeasures

- Expectations for COP6, which will be held this year, were grouped for the developed regions in the “resolution of the rules of the Kyoto Mechanism...” and for the developing regions in “...support for developing countries through technical transfers and skill development...”
- To ratify the Kyoto Protocol, both overseas and Japanese respondents thought “progress in domestic measures aimed at achieving reduction targets, including legal frameworks” was the most important condition.

2. Environmental Taxes

- Respondents from all regions gave their overwhelming approval of the introduction of environmental taxes. Approval reached 88% overseas and 85% in Japan.
- “Fossil fuels...” was the most commonly selected target of additive taxes for overseas and Japanese respondents, followed by “industrial and noxious waste.” “Natural energy sources, such as solar power...” was most commonly selected as the target of a rebate tax.
- Overseas, 54% of respondents, and in Japan, 51% chose “...environmental taxes are clearly designated for specific uses...” as the most important condition for the introduction of environmental taxes.

3. Nuclear Power and New Energy Sources

- “We should promote the development of new energy sources” instead of relying on nuclear energy, garnered the most responses at 60% overseas and 49% in Japan.

4. Environmental Education

- Among the overseas respondents, 72% indicated that environmental education was included in the school curriculum. In Japan, 46% responded similarly.
- The “4-6” and “7-9” age ranges were each selected by approximately one-third of overseas respondents as the ranges in which environmental education starts. In Japan, a start from the “7-9” range was selected by 89% of respondents, which indicates a later start than in many overseas countries.

- Overseas respondents cited “coordination of environmental and educational policies” as the condition most often missing despite its importance to the promotion of environmental education in schools. In Japan, it was the “development of curricula and teaching materials.”
- “Schools” was the response selected by the most overseas respondents, followed by “national and local governments,” as the institutions most important to the promotion of environmental education and instructional activities.

5. Genetically Modified Products

- More than 40% of overseas and Japanese respondents selected “the effects of genetically modified substances are extremely inconclusive so we should treat them with extra caution,” marking this option as the most commonly selected one.

II. Repeat Topics

1. Causes of Environmental Destruction

- “Economic development that disregards the environment” was selected by the most respondents as the cause of environmental destruction about which they are most worried.

2. Progress toward Agenda 21

- The order was different, but the items most overseas and Japanese respondents thought had progressed the most included the “promotion of environmental education,” “activities by local governments and citizens’ groups” and “environmental measures by industry.”

3. Changes in Lifestyle

- The lifestyle change that respondents thought to be the most difficult was “reducing automobile usage...” overseas and “switching to food that does not impose a heavy environmental burden...” in Japan.

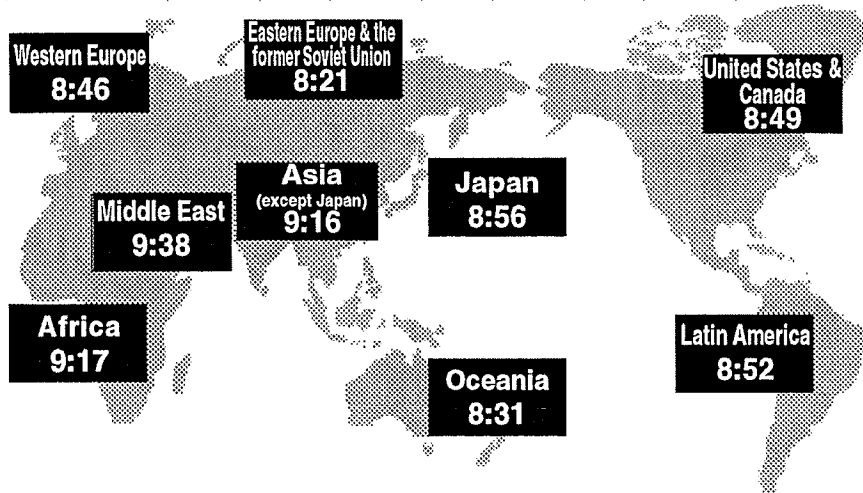
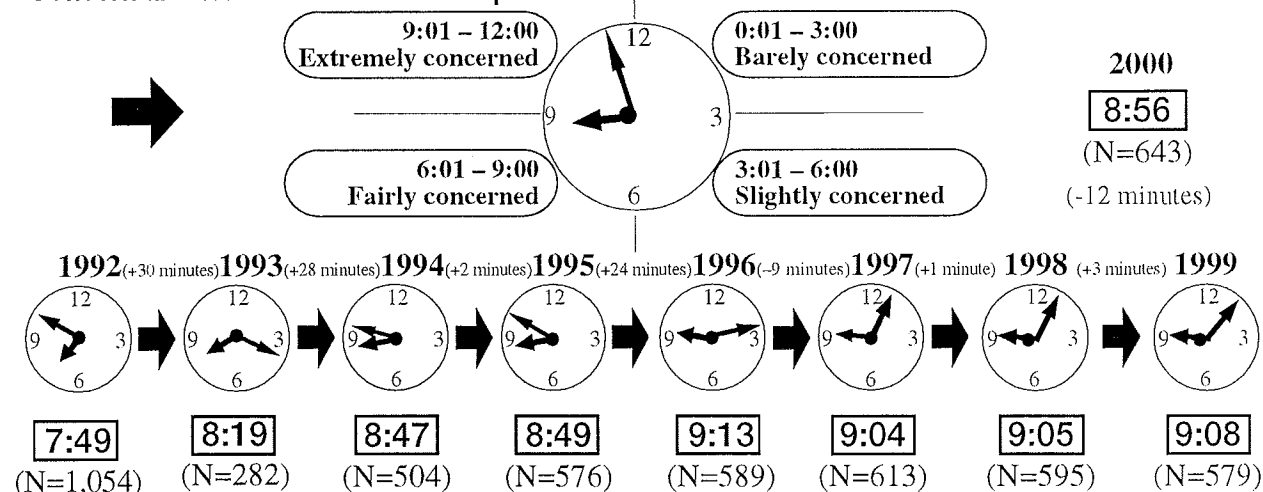
Perception of the Crisis Facing Human Survival

(1) Environmental Doomsday Clock

The average Environmental Doomsday Clock time for all respondents was 8:56, 12 minutes earlier than the previous year. This was the first year the average registered in the “fairly concerned” quadrant after four consecutive years in the “extremely concerned” quadrant, showing a general easing of the sense of crisis.

The average time for Japanese respondents was identical to the average for overseas respondents: 8:56. Reviewing changes in average times since 1995, it is apparent that the hands on the clock in Japan have advanced significantly from 8:08 while they have fallen back from 9:22 overseas. In recent years the Japanese response had been converging with its overseas counterparts, and finally indicated the same 8:56 time this year. The sense of crisis among developing regions was stronger than among their developing region counterparts. Similarly, females were more likely than males to have a strong perception of crisis, a result repeated from last year.

Concern about Human Survival Prospects



	Number of respondents	Changes in time from year to year			Changes in average time by region			
		1995	→	1999	→	2000	1995 → 2000	1999 → 2000
Total	643	8:49	→	9:08	→	8:56	+7	-12
Japan	309	8:08	→	9:07	→	8:56	+48	-11
Overseas Total	334	9:22	→	9:10	→	8:56	-26	-14
Male	512	8:46	→	9:01	→	8:52	+6	-9
Female	114	8:57	→	9:35	→	9:10	+13	-25
Industrialized Regions	474	8:23	→	8:59	→	8:53	+30	-6
Developing Regions	125	9:33	→	9:25	→	9:11	-22	-14

(Please see page 5 of the Questionnaire Report for more information.)

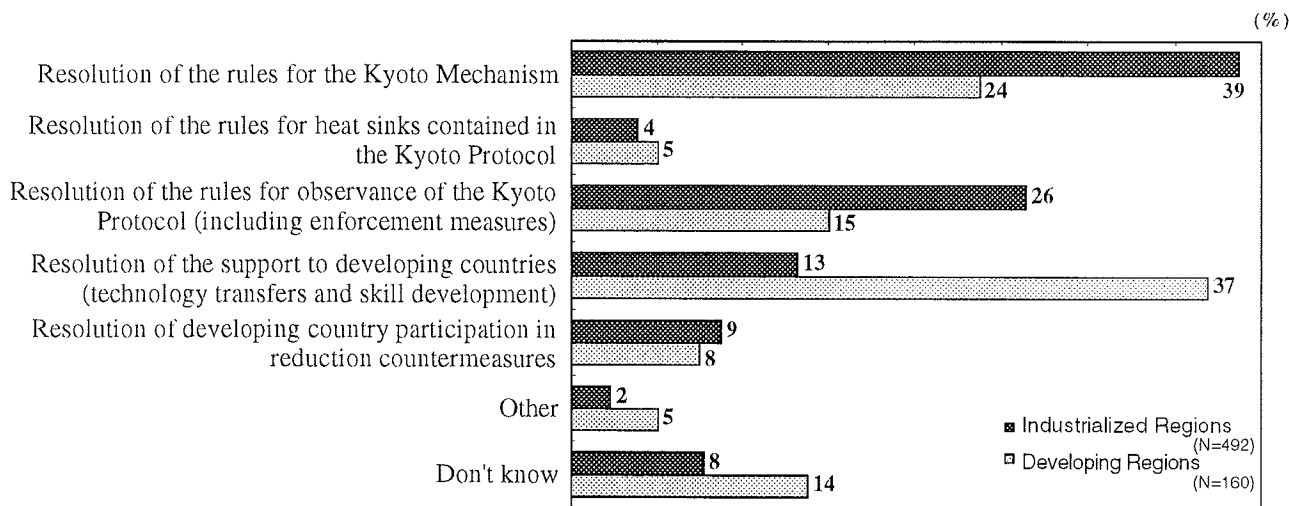
I. Main Focus of the Current Year's Questionnaire

1. Global Warming Countermeasures

(1) Expectations for COP6

Expectations for COP6, which will be held this year, were grouped for the developed regions in the “resolution of the rules of the Kyoto Mechanism...” and for the developing regions in “...support for developing countries through technical transfers and skill development...”

Respondents from both developed and developing regions alike did not have very high expectations for “resolution of developing country participation in the reduction countermeasures” at COP6.

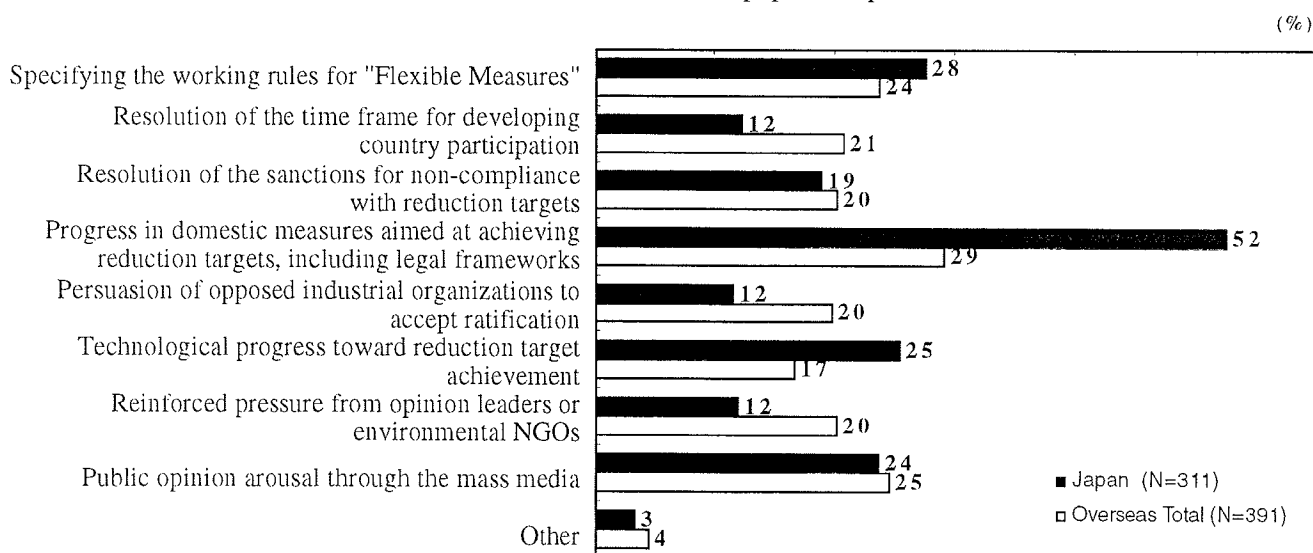


(Please see page 6 of the Questionnaire Report for more information.)

(2) Conditions for Promoting Ratification

To ratify the Kyoto Protocol, both overseas and Japanese respondents thought “progress in domestic measures aimed at achieving reduction targets, including legal frameworks” was the most important condition.

The next most important conditions for ratifying the Kyoto Protocol for overseas respondents were “public opinion arousal through the mass media” and “specifying the working rules for ‘Flexible Measures,’” but Japanese respondents selected “specifying the working rules for ‘Flexible Measures,’” and “technological progress toward reduction target achievement” as their second and third most popular responses.



Note: Please note that the totals for the various regions should add up to 200% since respondents were asked to select two items. However, some respondents marked no items or only one item, causing the aggregate total to be less than 200%.

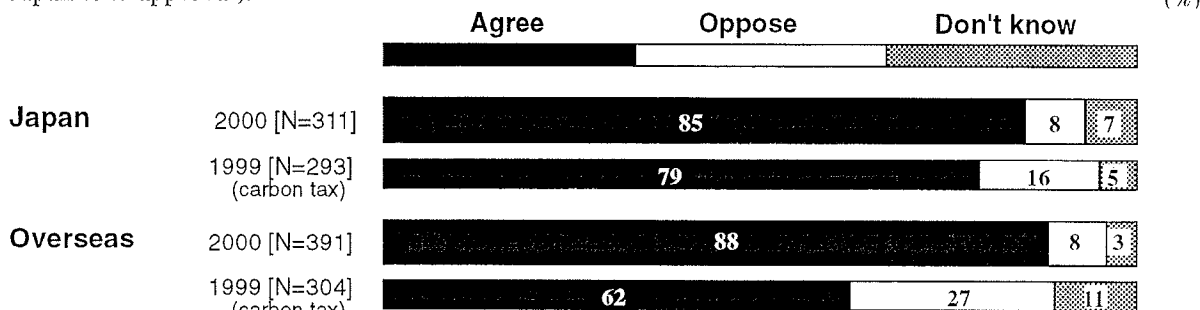
(Please see page 7 of the Questionnaire Report for more information.)

2. Environmental Taxes

(1) Opinions on Environmental Taxes

Respondents from all regions gave their overwhelming approval of the introduction of environmental taxes. Approval reached 88% overseas and 85% in Japan.

An overwhelming number of respondents from all regions indicated approval of the introduction of environmental taxes. This response is higher than for the carbon tax question on last year's report (overseas 62% approval; Japan 79% approval).

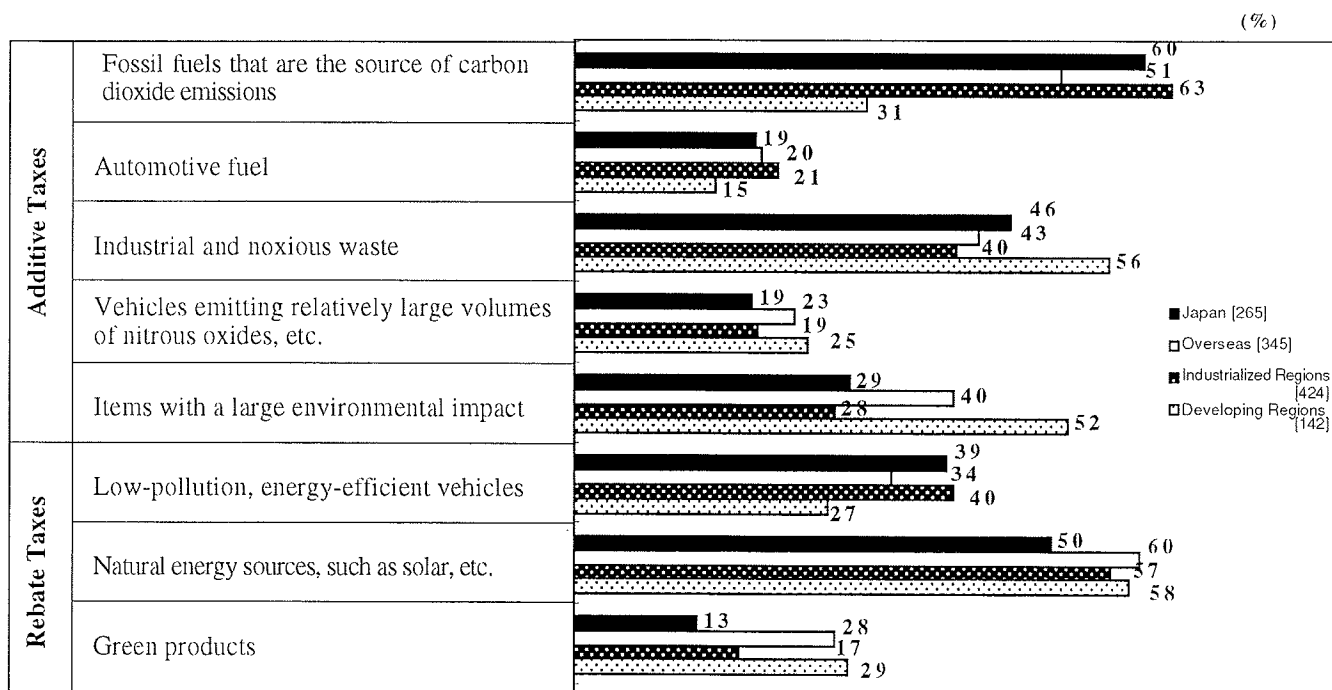


(Please see page 8 of the Questionnaire Report for more information.)

(2) Targets of Environmental Taxes

“Fossil fuels...” was the most commonly selected target of additive taxes for overseas and Japanese respondents, followed by “industrial and noxious waste.” “Natural energy sources, such as solar power...” was most commonly selected as the target of a rebate tax.

Although respondents in developed regions selected “Fossil fuels...” their developing region counterparts selected “industrial and noxious waste” as their first choice.



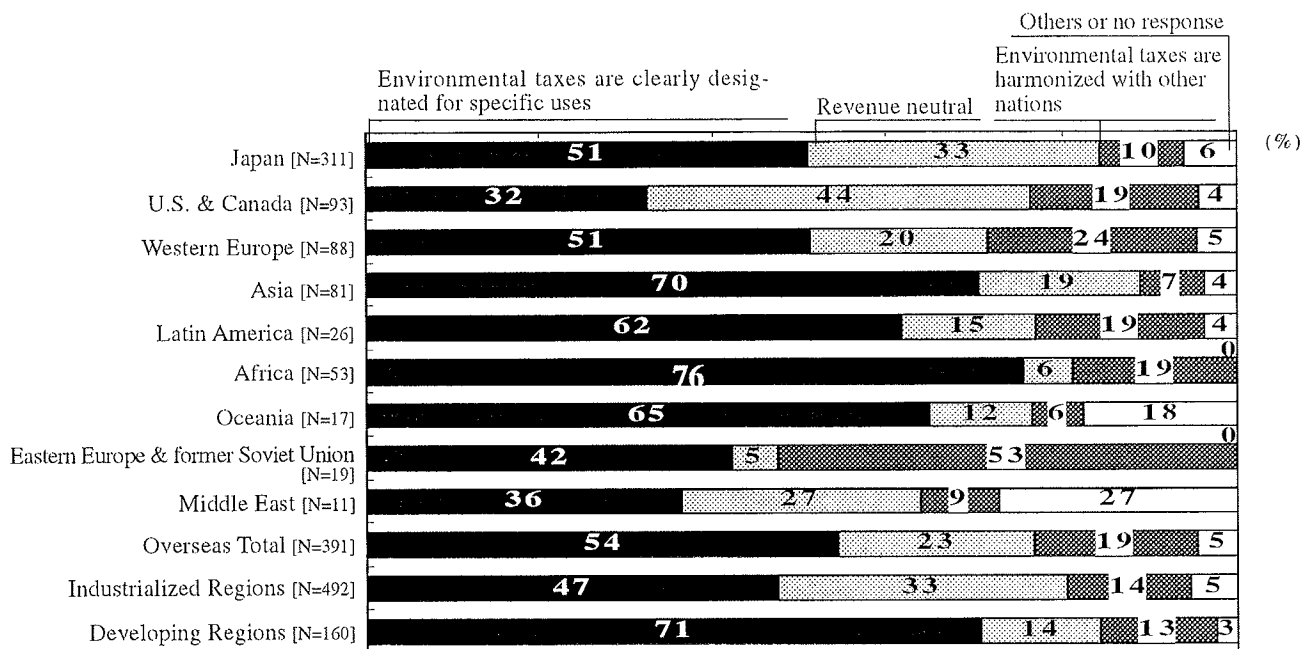
Notes: Please note that the totals for the various regions should add up to 300% since respondents were asked to select three items. However, some respondents marked no items or only one item, causing the aggregate total to be less than 300%.

(Please see pages 8 and 9 of the Questionnaire Report for more information.)

(3) Conditions for Introducing Environmental Taxes

Overseas, 54% of respondents, and in Japan, 51% chose “...environmental taxes are clearly designated for specific uses...” as the most important condition for the introduction of environmental taxes.

Compared with developed regions, the weighting toward the "...environmental taxes are clearly designated for specific uses..." response was markedly higher in the developing regions. Many North American respondents thought that "...revenue neutral..." taxes were the most important condition, while many Eastern European and former Soviet Union countries selected the "environmental taxes are harmonized with other nations..." response.

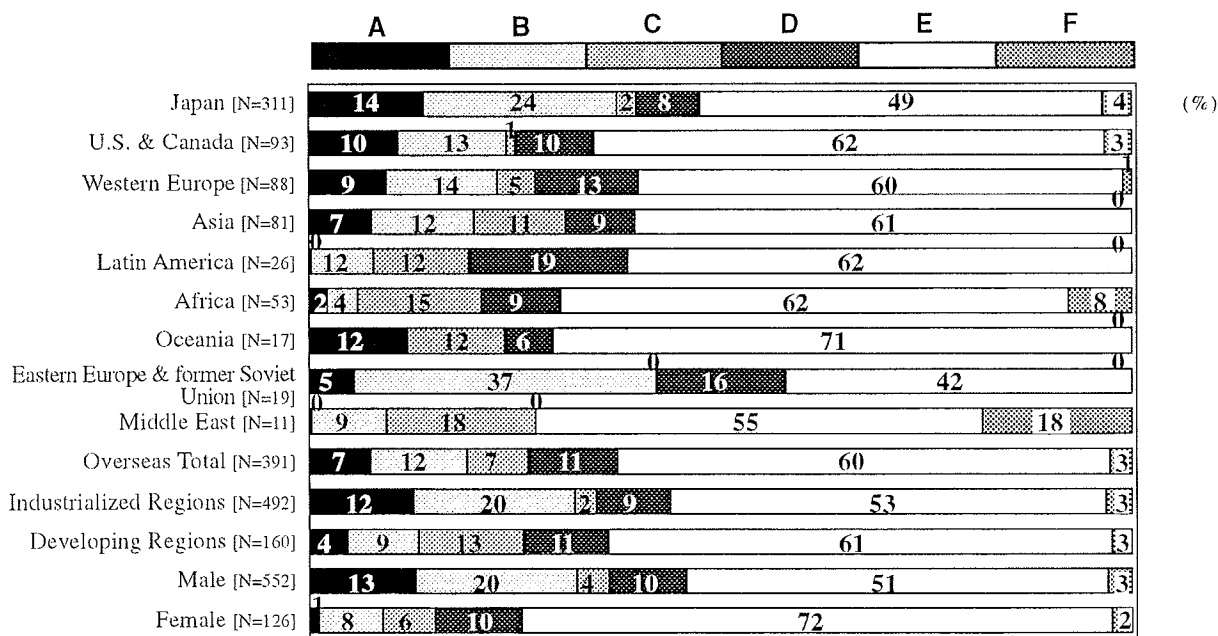


(Please see page 10 of the Questionnaire Report for more information.)

3. Nuclear Power and New Energy Sources

"We should promote the development of new energy sources" instead of relying on nuclear energy, garnered the most responses at 60% overseas and 49% in Japan.

The response to the 1998 questionnaire question on nuclear power indicated that 34% of overseas respondents were opposed and 30% of Japanese respondents shared this view. On this year's questionnaire, however, 78% of overseas respondents and 59% of Japanese respondents indicated that we should not rely on nuclear power (the total of the "...should promote... hydroelectric power generation," "...should improve the energy efficiency of thermal power generation..." and "...should promote the development of new energy sources" options). This indicates that negative opinions about nuclear power have increased over the two years.



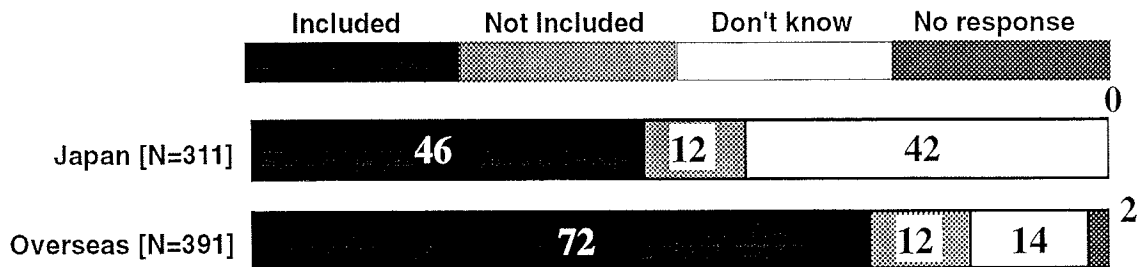
A=current technology is reliable
 B=okay if current technology is fundamentally revised
 C=hydroelectric power generation
 D=should improve the energy efficiency of thermal power generation
 E=should promote the development of new energy sources
 F=don't know

(Please see page 11 of the Questionnaire Report for more information.)

4. Environmental Education

(1) Environmental Education Practices

Among the overseas respondents, 72% indicated that environmental education was included in the school curriculum. In Japan, 46% responded similarly.

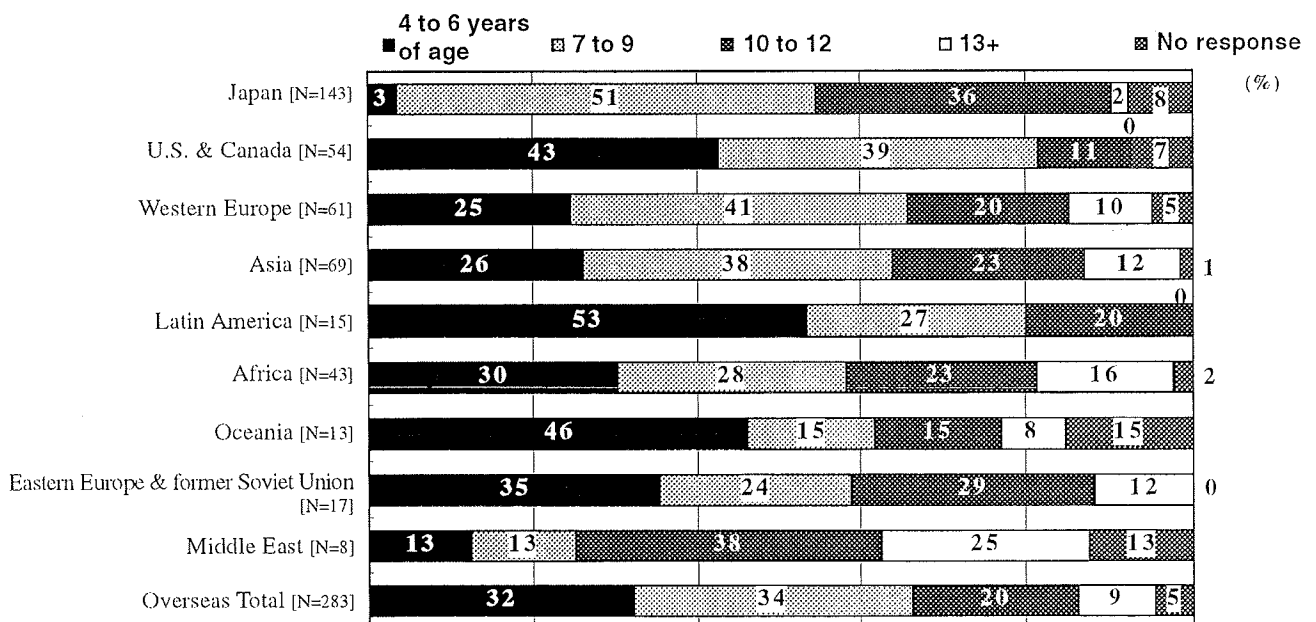


(Please see page 12 of the Questionnaire Report for more information.)

(2). Age at which Environmental Education Starts

The “4-6” and “7-9” age ranges were each selected by approximately one-third of overseas respondents as the ranges in which environmental education starts. In Japan, a start from the “7-9” range was selected by 89% of respondents, which indicates a later start than in many overseas countries.

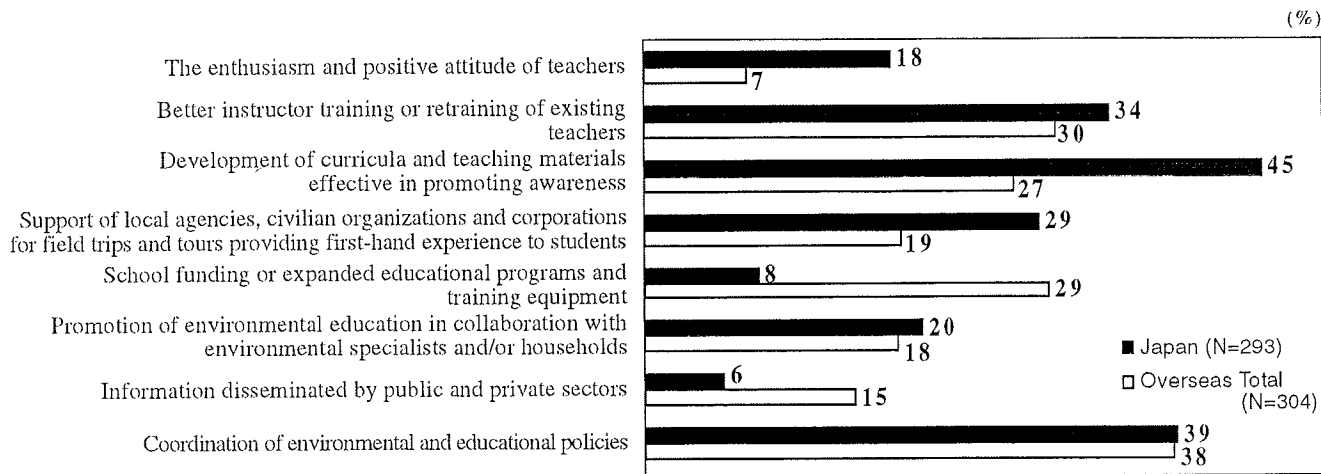
Starting Age Range for Environmental Education



(Please see page 12 of the Questionnaire Report for more information.)

(3) Conditions Lacking for the Promotion of Environmental Education

Overseas respondents cited “coordination of environmental and educational policies” as the condition most often missing despite its importance to the promotion of environmental education in schools. In Japan, it was the “development of curricula and teaching materials.”



Note: Please note that the totals for the various regions should add up to 200% since respondents were asked to select two items. However, some respondents marked no items or only one item, causing the aggregate total to be less than 200%.

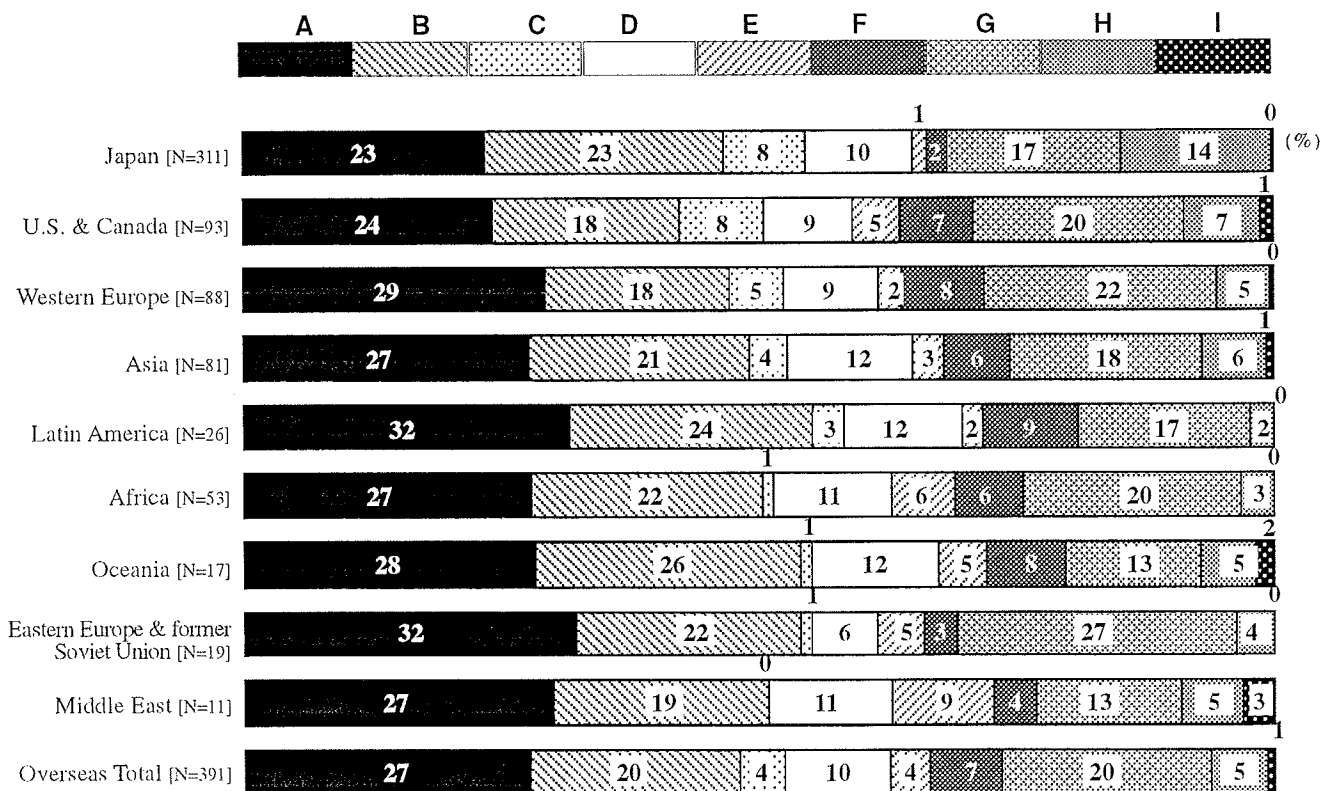
(Please see page 13 of the Questionnaire Report for more information.)

(4) Institutions for Promoting Environmental Education

“Schools” was the response selected by the most overseas respondents, followed by “national and local governments,” as the institutions most important to the promotion of environmental education and instructional activities.

Weighted Regional Results

*Weighting = ((% of #1 x 4)+(% of #2 x 3)+(% of #3 x 2)+(% of #4 x 1)) ÷ 10



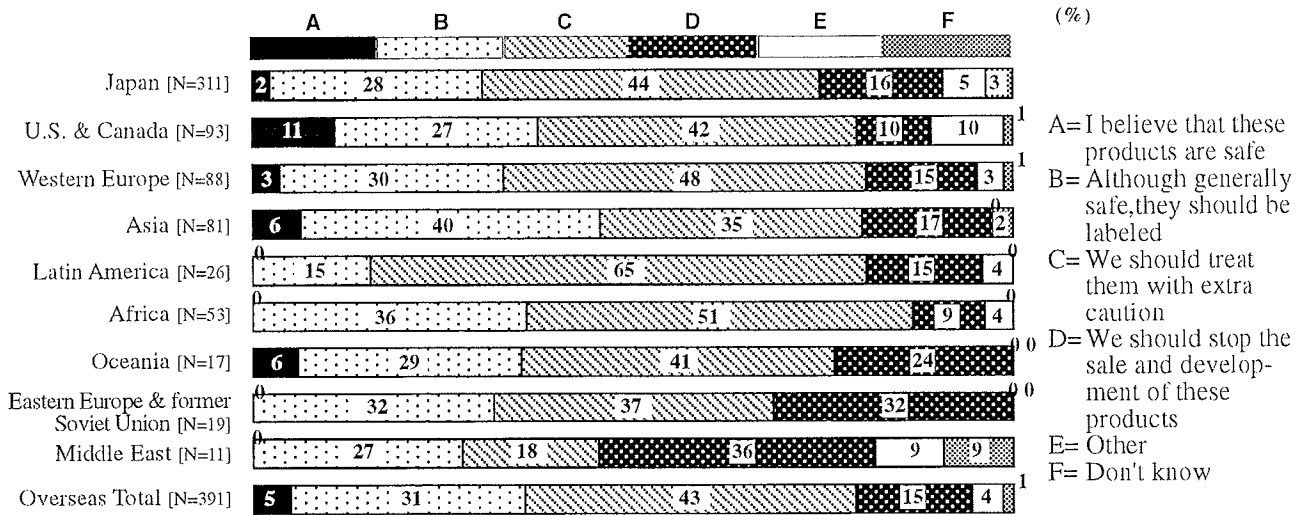
A=Schools B=National and local governments C=Corporations
 D=Citizens' groups or environmental NGOs E=International environmental NGOs
 F=Environment-related research institutions G=Mass media H=Individual households I=Other

(Please see page 14 of the Questionnaire Report for more information.)

5. Genetically Modified Products

More than 40% of overseas and Japanese respondents selected “the effects of genetically modified substances are extremely inconclusive so we should treat them with extra caution,” marking this option as the most commonly selected one.

The second most commonly selected response for both overseas and Japanese respondents was “although these products are generally safe...they should be labeled.”



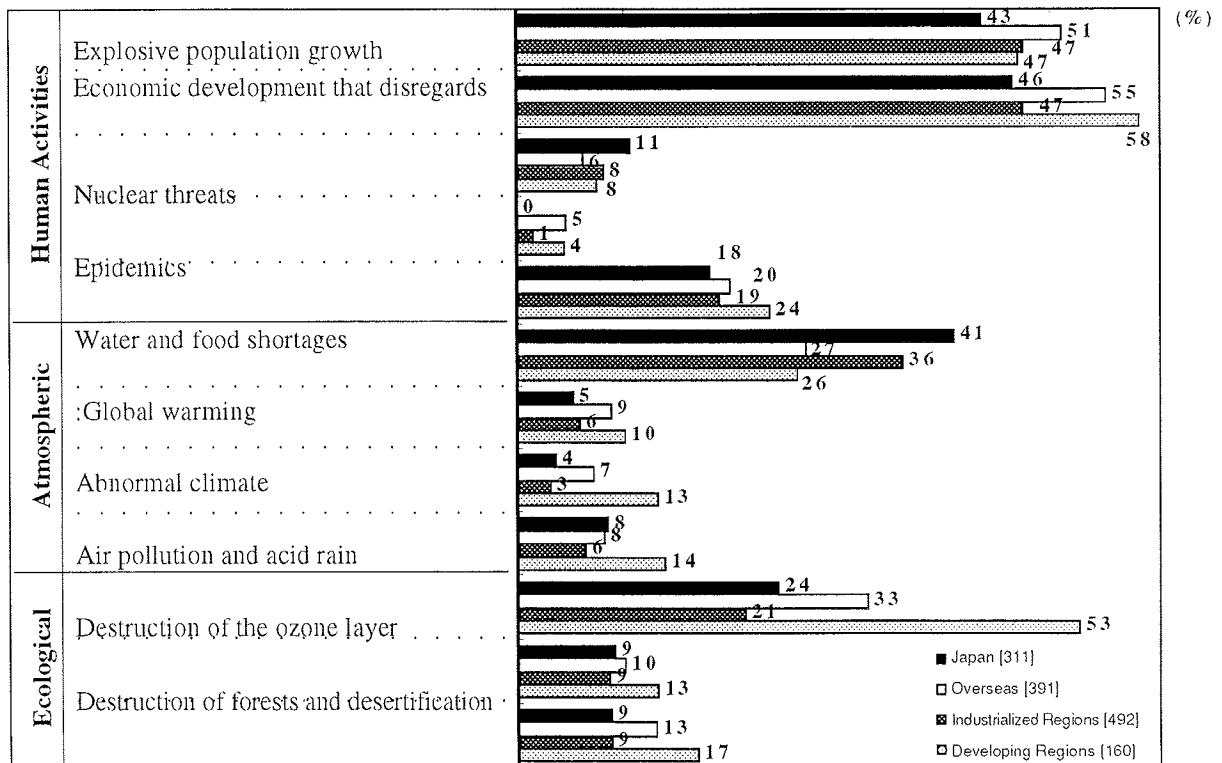
(Please see page 15 of the Questionnaire Report for more information.)

II. Repeat Topics

1. Causes of Environmental Destruction

“Economic development that disregards the environment” was selected by the most respondents as the cause of environmental destruction about which they are most worried.

The second most commonly selected response for respondents from developed regions was “explosive population growth,” while respondents from developing regions selected “destruction of forests and desertification” as the item of strong concern.



Notes: Please note that the totals for the various regions should add up to 200% since respondents were asked to select two items. However, some respondents marked three items, causing the aggregate total to be more than 200%.

(Please see pages 16 and 17 of the Questionnaire Report for more information.)

2. Progress toward Agenda 21

The order was different, but the items most overseas and Japanese respondents thought had progressed the most included the “promotion of environmental education,” “activities by local governments and citizens’ groups” and “environmental measures by industry.” In contrast, the items attracting the least selection were “lifestyle alternation” and “population and poverty problems.”

Perceived Progress*

	Japan (N=311)	United States & Canada (N=93)	Western Europe (N=88)	Asia (N=81)	Latin America (N=26)	Africa (N=53)	Oceania (N=17)	Eastern Europe & former Soviet Union (N=19)	Middle East (N=11)	Overseas Total (N=391)
Promotion of environmental education	61	76	76	90	73	81	94	100	73	82
Activities by local governments and citizens' groups	66	81	80	74	77	70	82	84	82	78
Environmental measures by industry	71	76	83	46	42	38	76	68	45	62
Scientific and technological contributions	54	76	78	51	27	28	76	53	45	60
Formation of recycling systems	51	77	70	46	46	28	71	37	27	57
Greenhouse gas prevention measures	22	25	49	32	27	26	59	47	18	35
Conservation of forest resources	10	38	38	47	31	60	65	47	45	44
Conservation of biodiversity	11	29	26	49	38	58	65	58	64	41
Population and poverty problems	8	18	24	36	19	36	35	16	18	26
Lifestyle alteration	7	17	14	26	12	15	29	26	18	18

Note: Circles indicate the three highest ratings and triangles indicate the three lowest.

*Progress is calculated as the combined total of the 'Significant Progress' and 'Some Progress' categories.

As with last year’s questionnaire, we included 10 items from the Agenda 21 Action Plan and surveyed the responses, comparing the results with those from the 1995 questionnaire five years ago. There was a trend for items that received favorable ratings 5 years ago to have been judged to have made even more progress, while those that received low evaluations five years ago were judged even more harshly this year.

Comparison of Differences between 1995 and 2000

	Japan	United States & Canada	Western Europe	Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total
Promotion of environmental education	+12	+4	+20	0	-12	+4	+17	+43	-9	+7
Activities by local governments and citizens' groups	+12	+13	+12	+5	+10	+5	+1	+27	+1	+9
Environmental measures by industry	+16	+16	+32	-1	+11	+7	+40	+4	-36	+17
Scientific and technological contributions	-3	+12	+20	+1	-15	-9	+26	-4	-5	+10
Formation of recycling systems	+6	+9	0	+5	+15	+7	+11	+8	-23	+11
Greenhouse gas prevention measures	+4	-35	+16	+3	+2	-1	+22	+19	-1	+4
Conservation of forest resources	-9	-14	+5	-11	-17	-3	+10	-3	-11	-6
Conservation of biodiversity	0	-11	-12	+3	-18	+5	-3	+8	+20	-7
Population and poverty problems	-7	-2	+7	-16	-10	-9	-6	-6	-1	-6
Lifestyle alteration	-12	-31	-22	0	+1	+1	-7	+19	-1	-7

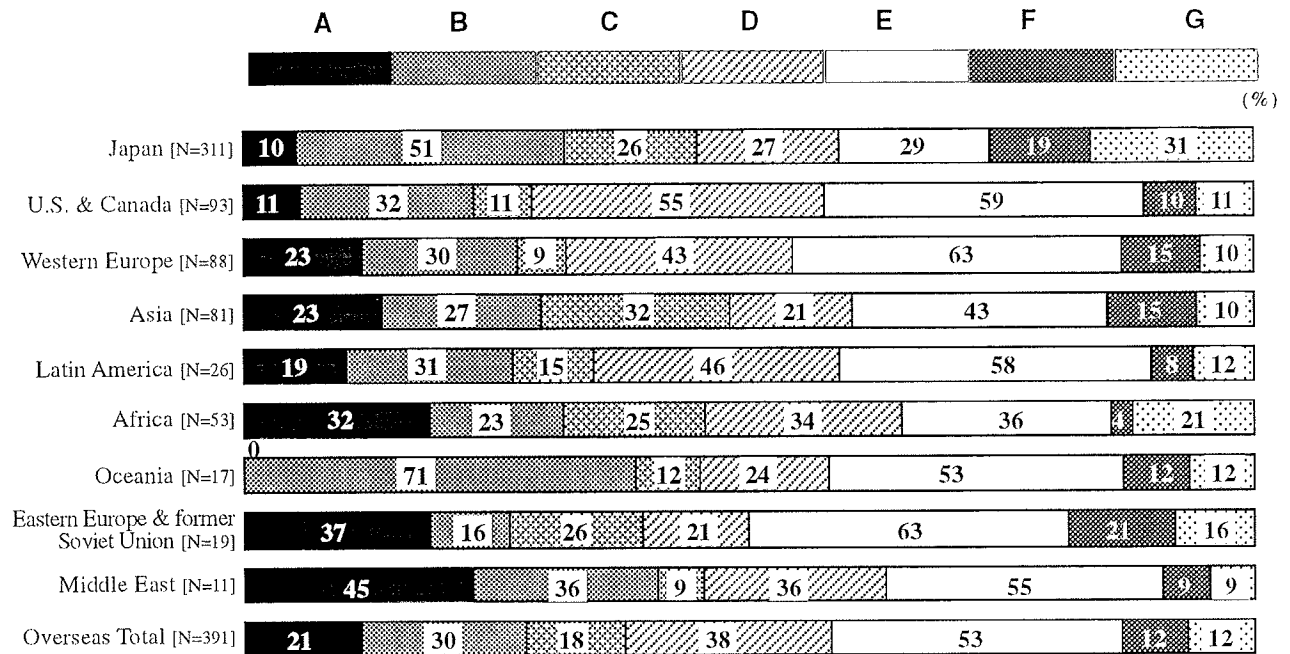
Note: Circles indicate the three highest ratings and triangles indicate the three lowest.

(Please see pages 18 and 19 of the Questionnaire Report for more information.)

3. Changes in Lifestyle

The lifestyle item thought by the most overseas respondents to be difficult to change was “reducing automobile usage...,” while Japanese respondents thought it to be “switching to food that does not impose a heavy environmental burden...”

Overseas, “reducing energy consumption...” and “switching to food that does not impose a heavy environmental burden...” came in second and third respectively, while in Japan it was “participation in...environmental conservation activities...” and “reducing automobile usage...”



- A=Eliminating food waste and leftovers, and reducing drinking water and other water usage
- B=Switching to food that does not impose a heavy environmental burden
- C=Reducing garbage output and recycling
- D=Reducing energy consumption and electricity use, including the use of air conditioners
- E=Reducing automobile usage to the greatest possible extent, using public transport and riding a bicycle or walking
- F=Treating possessions well and rethinking the "throwaway" lifestyle
- G=Direct participation in regional environmental conservation activities or support of environmental conservation organizations

Notes: Please note that the totals for the various regions should add up to 200% since respondents were asked to select two items. However, some respondents marked no items or only one item, causing the aggregate total to be less than 200%.

(Please see page 20 of the Questionnaire Report for more information.)