

**Results of the Tenth Annual
“Questionnaire on Environmental Problems and the Survival of Humankind”**

REPORT

THE ASAHI GLASS FOUNDATION

September 2001

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Foreword

This report contains the results of this year's "Questionnaire on Environmental Problems and the Survival of Humankind," a survey conducted annually by the Asahi Glass Foundation since 1992.

Nine years have passed since the United Nations Conference on Environment and Development, or Earth Summit, was held in Rio de Janeiro and with each year the severity of global environmental problems and the importance of finding solutions grow ever greater. It was under very strained circumstances, following the announcement of the U.S. withdrawal from the Kyoto Protocol in March, that the Sixth Conference of Parties to the United Nations Framework Convention on Climate Change (COP6) reconvened in Bonn, Germany, in July to discuss the problem of global warming. Since each country made compromises transcending fierce opposition at the conference, and the parties came to a basic agreement regarding the operational rules of the Protocol, a path has been opened to its implementation in 2002. Progress is being achieved in such areas as the development of new energy sources with less impact on the environment, recycling and debate about the pros and cons of environmental taxes. Although environmental problems remain severe, we believe that awareness about them is rising worldwide.

In this year's survey, the tenth, the questionnaire was designed to gauge the perceptions of respondents, mainly environmental experts from both governmental and private-sector organizations, regarding the progress of environmental conservation efforts and to highlight regional differences in opinion. In addition to the issues addressed in previous surveys—including queries about the Environmental Doomsday Clock, Agenda 21 and lifestyle changes—the main questions on this year's questionnaire asked about the conditions required to implement the Kyoto Protocol with respect to global warming countermeasures, as well as water problems, endocrine disruptors, and predictions for the global environment in 30 years time expressed from our perspective at the dawn of the 21st century.

Once again, the Foundation would like to thank the many environmentally conscious experts around the world that took the time to respond so carefully to the survey. In addition, we would like to express our profound appreciation to Professor Akio Morishima, chair of the Institute for Global Environmental Strategies, for continuing to provide invaluable assistance at all stages of the project from the initial survey design to the final analysis.

In closing, we appeal to anyone reading this report for advice on how to enhance the survey so that it can be made more comprehensive and relevant in future.

Hikomichi Seya
Chairman
Asahi Glass Foundation
September 2001

I. Facts about the Tenth Annual “Questionnaire on Environmental Problems and the Survival of Humankind”

Response period: Questionnaires were sent out in April 2001 with a return deadline of June 2001.

Questionnaire respondent pool: Selected from members of GOs, NGOs, academic and industrial organizations in the databases of the United Nations Environment Program, the United Nations Commission on Sustainable Development and the Asahi Glass Foundation.

Questionnaires mailed: 3,938

Questionnaires returned: 684

Response rate: 17.3%

Breakdown of respondents by region, sex and occupational affiliation:

Region	Number of responses	Percent of total
Japan	292	42.7
United States & Canada	58	8.5
Western Europe	84	12.3
Asia (outside Japan)	83	12.1
Latin America	35	5.1
Africa	55	8.1
Oceania	30	4.4
Eastern Europe & former Soviet Union	22	3.2
Middle East	22	3.2
No response	3	0.4
(Overseas Total)	(392)	(57.3)
Total	684	100.0

Sex	Number of responses	Percent of total
Male	540	78.9
Female	119	17.4
No response	25	3.7
Total	684	100.0

Occupational affiliation	Number of responses	Percent of total
Central government	129	18.9
Local government	100	14.6
University or research institution	139	20.3
Nongovernmental organization	151	22.1
Corporation	87	12.7
Other	68	9.9
No response	10	1.5
Total	684	100.0

- Notes: 1. This report used the 684 responses as the basis for calculating percentages, which were rounded up from the first or second decimal place.
2. Since the responses that were not attributable to a particular region were written on the overseas version (English) of the questionnaire, they were included in the “overseas total.”
3. Please note that where it is marked “Percentages are based on the total number of responses,” the total number of responses refers to the total number of responses to that question, not to the total number of respondents to the survey.

II. Summary of Questionnaire Results

•Awareness of the Crisis Facing Human Survival

Environmental Doomsday Clock

- The average time expressed by all respondents for the Environmental Doomsday Clock was 9:08 in the “Extremely Concerned” quadrant. This is the same average as the year before last, signifying that the sense of crisis has intensified again after easing the previous year.
- The average response in Japan was 9:04, showing a sense of crisis that was slightly below the overseas average of 9:11.

I. Main Focus of the Current Year’s Questionnaire

1. Global Warming Countermeasures

1) Conditions Required for Implementation of the Kyoto Protocol

- In Japan, North America and Western Europe among the developed regions, the first choice for the most important points that must be cleared for implementation of the Kyoto Protocol was “Introduction of domestic systems...among developed nations.” Second was “Developing countries’ promises to participate in the Kyoto Protocol...” and third was “Additional financial support given by developed countries to developing countries.” In contrast, Asia, Central and South America and Africa among the developing regions selected “Additional financial support given by developed countries to developing countries,” most often, followed by “Introduction of domestic systems...among developed nations” and “Setting upper limits to the Kyoto Mechanism...” in second and third place.

2) Each Country’s Greenhouse Gas Reduction Countermeasures

- Among overseas respondents, “Promotion of education and awareness training for the general public” was cited most often as the countermeasure used for greenhouse gas reduction. Next was “Promotion of natural energy sources...” and “Promotion of energy saving...” In Japan, the top three were “Greening of industry...,” “Development of energy-saving technologies or green products” and “Promotion of energy saving...”

2. Water Problems

1) Quality of Water Used in Daily Life

- Respondents from Africa, Asia, the Middle East and North America were most likely to report having “Acute problems” with the quality of water used in daily life. Respondents from Western Europe and Japan as well as Eastern Europe and the former Soviet Union were least likely to report “Acute problems.”

2) Causes of Deteriorating Water Quality

- Among overseas respondents, the first and second choice cited as the source of water quality problems were “Pollution from agricultural wastes” and “Pollution from industrial wastes,” which contrasted the first and second choices of Japanese respondents, who cited “Pollution from wastewater from the general public” and “Devastation of water reserve lands.”

3) Method of Resolving Water Quality Problems

- The most commonly selected response for the resolution of water problems in Japan, the developing regions and Oceania was “Conservation of water reserve lands.” In contrast, among North American and Western European respondents, the most commonly selected response was “Developing technologies to cheaply reduce...harmful substances in agricultural waste...”

4) Combined Supply of Water for Daily Life, Agriculture and Industry

- In Asia, Africa and the Middle East, 70% of respondents or more reported water shortages (combined acute and mild water shortage responses) in total usage. In contrast, only 16% of Western European respondents reported a water shortage. At 20%, this number was also low for Japan.

5) Cause of Water Shortages

- “Increased water demand due to increased population” was the top-ranked response overall among overseas respondents as the cause of water shortages, followed in second and third place by “Inappropriate management of lake/river/ground waters” and “Desiccation of river/lake/ground waters due to excessive use...” respectively. In Japan, the number one response was “Devastation of water reserve lands (forests),” followed by “Desiccation of river/lake/ground waters...” and “Inappropriate management...”

6) Measures to Solve Water Shortages

- Both “Developing technologies that improve the efficiency of water usage” and “Promoting more efficient water use...and recycling” were top ranked as the solutions to water shortages by overseas respondents as a whole. In Japan, it was “Conserving water reserve lands,” followed by “Promoting more efficient water use...and recycling” in second place. It was notable that contrary to Japanese respondents, those from Western Europe and North America did not think it important to be “Conserving water reserve lands.”

3. Endocrine disruptors

- With regard to endocrine disruptors, only 4% of overseas respondents overall and 2% of Japanese respondents selected “...I don’t sense any urgent hazard,” indicating a fairly high awareness of the problem.

4. 30-Year Prediction for the Global Environment

- Of the overseas respondents, 34% predicted a “Moderately worse” future while 30% thought it would be “Much worse” and 4% expected it to be “So bad as to imperil human survival.” These three responses accounted for 68% of the total. Only 2% thought it would be “Much better” and the “Moderately better” camp was only 17%, showing that a majority of respondents were pessimistic. The responses for Japan were similar to the overseas totals.

II. Repeat Topics

1. Progress toward Agenda 21

- Overseas, the items selected by more than 60% of respondents as having progressed were “Promotion of environmental education” and “Activities by local governments and citizen’s groups.” The items selected the least were “Lifestyle alteration,” “Population/poverty problems,” and “Greenhouse gas prevention measures,” which all were selected by 32% or less of respondents.
- In Japan, more than 60% of respondents reported progress in the five categories of “Activities by local governments and citizen’s groups,” “Environmental measures by industry,” “Scientific/technological contributions,” “Promotion of environmental education,” and “Formation of recycling systems.” In contrast, 11% or fewer respondents reported progress in “Lifestyle alteration,” “Conservation of biodiversity,” and “Conservation of forest resources.”

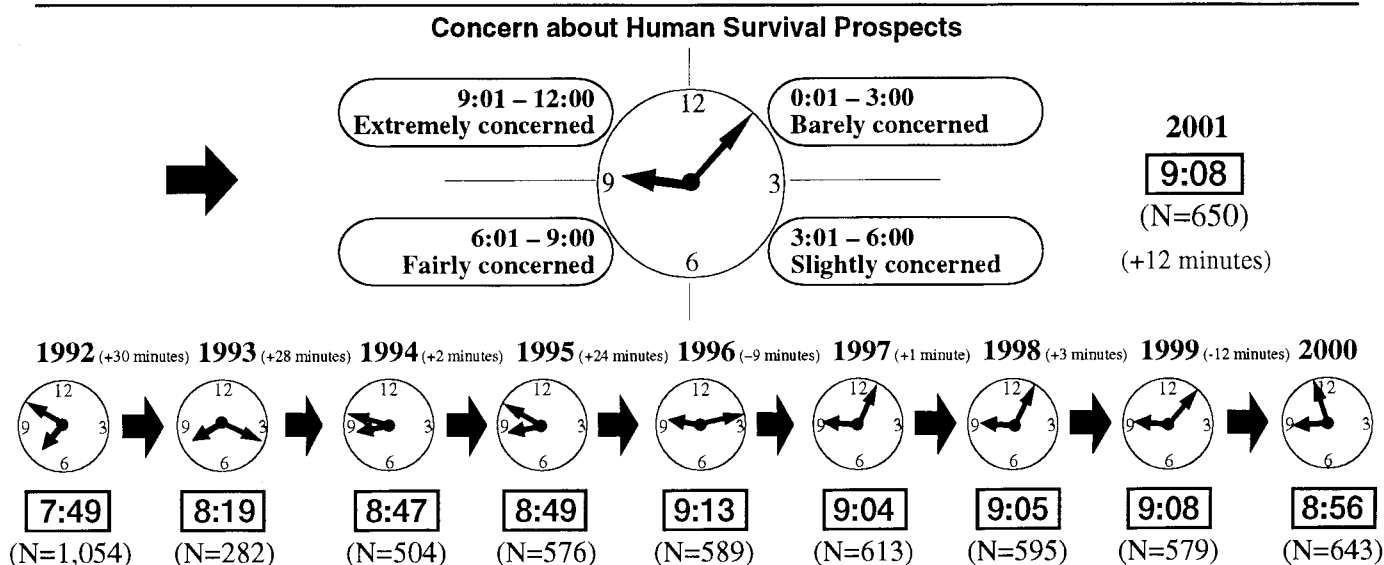
2. Changes in Lifestyle

- Among the developed regions, the answer receiving the most responses as a social system for altering peoples’ lifestyles was “To introduce environmental taxes...” This was followed by “To make it easy for consumers to purchase green products...” Among the other regions, “To make it easy for consumers to purchase green products...” was the first choice by an overwhelming extent and the second choice was “To promote recycling....”

III. Questionnaire Results

• **AWARENESS OF THE CRISIS FACING HUMAN SURVIVAL**
— ENVIRONMENTAL DOOMSDAY CLOCK

Question: To what extent do you feel that the current deterioration of the global environment has created a crisis that will affect the continuance of the human race? Mark a time corresponding to the extent of your concern in the boxes below.



	Number of respondents	Changes in time from year to year			Changes in average time by region			
		1995 → 2000	→ 2001	2001	1995 → 2001	2000 → 2001		
Total	650	8:49	→	8:56	→	9:08	+19	+12
Japan	285	8:08	→	8:56	→	9:04	+56	+8
United States & Canada	52	8:52	→	8:49	→	9:54	+62	+65
Western Europe	81	9:02	→	8:46	→	8:58	-4	+12
Asia	78	9:41	→	9:16	→	9:04	-37	-12
Latin America	30	9:23	→	8:52	→	9:00	-23	+8
Africa	52	9:33	→	9:17	→	9:37	+4	+20
Oceania	27	9:44	→	8:31	→	8:58	-46	+27
Eastern Europe & former Soviet Union	22	9:29	→	8:21	→	8:17	-72	-4
Middle East	21	9:09	→	9:38	→	9:01	-8	-37
Overseas Total	365	9:22	→	8:56	→	9:11	-11	+15
Male	516	8:46	→	8:52	→	9:05	+19	+13
Female	113	8:57	→	9:10	→	9:21	+24	+11
Industrialized Regions	418	8:23	→	8:53	→	9:09	+46	+16
Developing Regions	160	9:33	→	9:11	→	9:14	-19	+3

- The average time expressed by all respondents for the Environmental Doomsday Clock was 9:08, which placed it in the “Extremely Concerned” quadrant and constituted an advance of 12 minutes over the prior year’s results. This is the same average as the year before last, signifying that the sense of crisis has intensified again after easing the previous year.
- The average response in Japan was 9:04, showing a sense of crisis that was slightly below the overseas average of 9:11.
- The sense of crisis increased significantly over the prior year in North America, and was the highest worldwide. Africa was next. Eastern Europe and the Former Soviet Union reported the lowest level of concern.
- Although the developing regions reported a higher sense of crisis than the developed ones, the difference was only five minutes, much smaller than the 18-minute gap recorded last year.
- As in past years, females tended to have a significantly higher sense of crisis than males.

I. MAIN FOCUS OF THE CURRENT YEAR'S QUESTIONNAIRE
1. GLOBAL WARMING COUNTERMEASURES

Question (1): Although the primary purpose of COP6, held at the Hague in November 2000, was to formulate the international rules for implementing the Kyoto Protocol, the participating countries could not come to agreement and the conference ended without yielding a substantive resolution. In your opinion, what are the most important point(s) that must be cleared for implementation of the Kyoto Protocol, which was created by agreement among the approximately 160 developed and developing countries that participated in the climate change framework convention? Please check up to 2 items.

	Japan (292)	United States & Canada (58)	Western Europe (84)	Asia (83)	Latin America (35)	Africa (55)	Oceania (30)	Eastern Europe & former Soviet Union (22)	Middle East (22)	Overseas Total (392)	Industrialized Regions (434)	Developing Regions (173)
Additional financial support from developed to developing countries	26	22	27	54	43	55	47	23	46	40	26	52
Developing countries' promises to participate in the Kyoto Protocol in the near future	38	38	32	25	9	16	37	36	18	27	37	19
Setting upper limits to the Kyoto Mechanism	19	16	24	31	23	35	20	36	23	26	19	31
Specification of activities targeted by the CDM (clean development mechanism)	6	12	14	13	23	26	10	23	5	16	8	19
Vetoes over sink projects included as part of the CDM	1	5	8	7	0	11	3	5	9	7	3	7
Methods to quantify a forest's absorption volume	21	14	12	11	23	7	13	18	5	12	18	12
Compensation to countries affected by global warming, such as island nations and oil countries	2	7	5	15	14	16	20	5	27	12	3	15
Introduction of domestic systems assuring the achievement of reduction targets among developed nations	61	41	46	30	37	40	30	55	27	39	56	35
Other	14	28	20	13	11	13	7	9	14	16	17	13
Don't know	3	3	2	5	6	0	3	0	9	3	3	4

Notes: Figures enclosed by a double circle represent answers with the highest number of points. A single circle is used when more than one answer is closely tied for the highest number of points. 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%.

- A difference was noted between the opinions of respondents from the developed and developing regions over the most important points that must be cleared for implementation of the Kyoto Protocol.
- Among respondents from the developed regions, the first choice was "Introduction of domestic systems...among developed nations." The second choice was "Developing countries' promises to participate in the Kyoto Protocol..." and the third was "Additional financial support given by developed countries to developing countries." The responses from Japan, North America and Western Europe all displayed the same trend.
- Among respondents from the developing regions, the first choice was "Additional financial support given by developed countries to developing countries," while the second and third were "Introduction of domestic systems...among developed nations" and "Setting upper limits to the Kyoto Mechanism..." respectively.

Question (2): Global warming countermeasures have become important topics for humankind. Please check all of the items below corresponding to domestic efforts in your country since COP3 (Kyoto Conference) to reduce emissions of greenhouse gases.

	Japan (292)	United States & Canada (58)	Western Europe (84)	Asia (83)	Latin America (35)	Africa (55)	Oceania (30)	Eastern Europe & former Soviet Union (22)	Middle East (22)	Overseas Total (392)
Development of energy-saving technologies or green products	44	57	60	53	23	44	47	46	46	49
Promotion of natural energy sources (wind power, solar power, etc.)	36	47	77	58	26	58	60	55	32	56
Promulgation of laws and regulations or strengthening of penalties aimed at reducing global warming gases	19	10	25	36	20	26	13	18	27	24
Greening of the tax system, including the introduction of environmental taxes	9	5	51	13	11	7	7	27	5	19
Promotion of energy saving	43	47	63	47	34	51	67	50	50	52
Greening of industry (self-initiatives, environmental accounting, information disclosure, employee awareness training, etc.)	49	50	50	40	20	31	37	18	23	38
Self-initiatives by local authorities	36	29	51	31	29	18	50	50	23	35
Promotion of education and awareness training for the general public	25	59	52	74	40	73	63	64	77	62
Other	5	10	5	10	6	9	10	9	9	8
Don't know	3	2	4	0	0	0	10	9	5	3
Average number of items selected by respondents	2.7	3.2	4.4	3.6	2.1	3.2	3.6	3.5	3.0	3.5

Notes: Figures enclosed by a double circle represent answers with the highest number of points. A single circle is used when more than one answer is closely tied for the highest number of points. The figures indicate the number of responses to each item and the percentage of the total respondents. The total percentage is higher in regions in which there were many respondents that could assess multiple items.

- Among overseas respondents, “Promotion of education and awareness training for the general public” was cited most often as the countermeasure used for greenhouse gas reduction. Next, was “Promotion of natural energy sources...” and “Promotion of energy saving...” In Japan, the top three were “Greening of industry...,” “Development of energy-saving technologies or green products” and “Promotion of energy saving...”
- Among Japanese respondents, it was noteworthy that the “Promotion of education and awareness training for the general public” and “Promotion of natural energy sources...” responses were low relative to the overseas responses.
- Many Western Europe respondents selected “Promotion of natural energy sources...”

Of those who selected “Promotion of energy saving...” the selection of suboptions breaks down as follows.

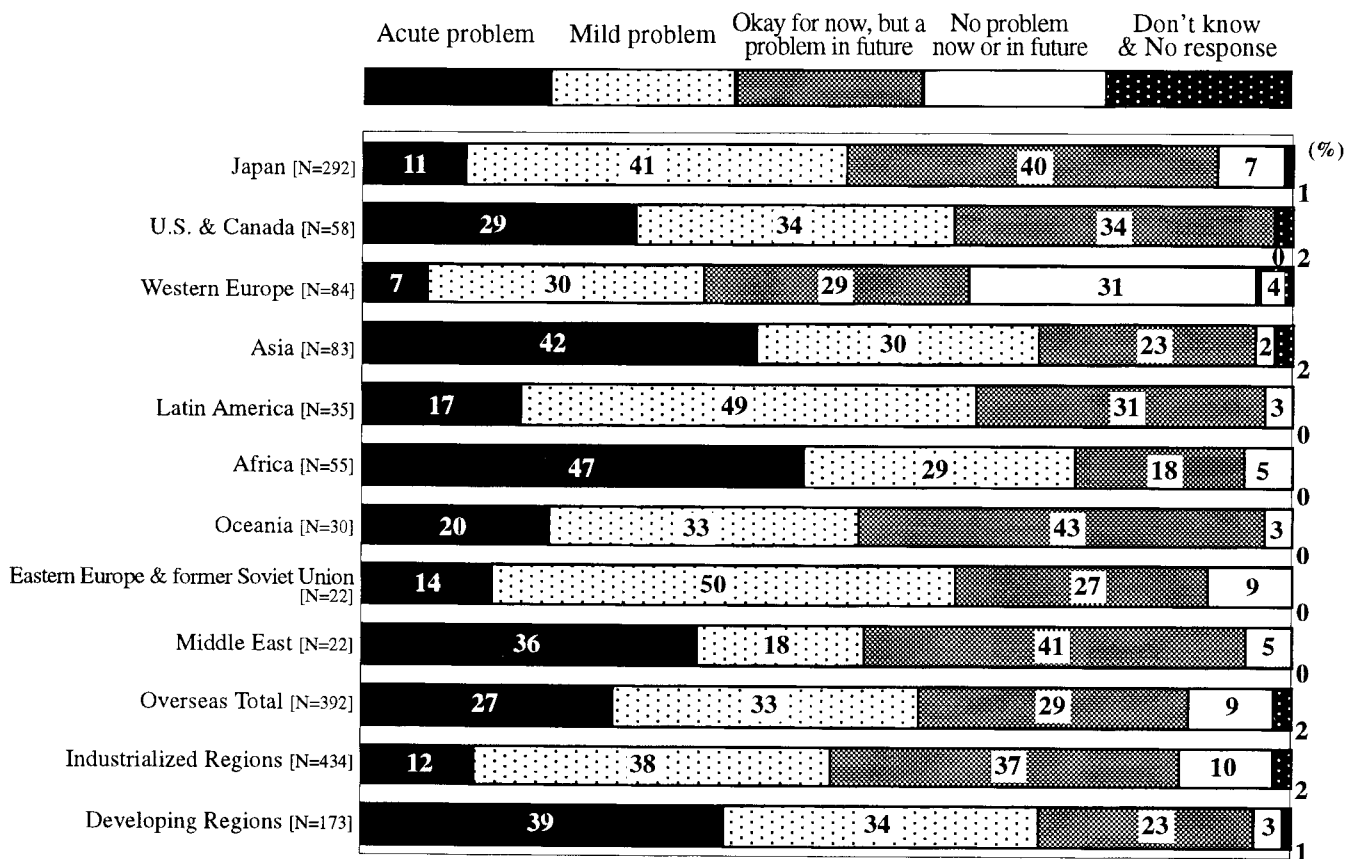
	Japan (126)	United States & Canada (27)	Western Europe (53)	Asia (39)	Latin America (12)	Africa (28)	Oceania (20)	Eastern Europe & former Soviet Union (11)	Middle East (11)	Overseas Total (203)	Industrialized Regions (80)	Developing Regions (79)
Industry	61	63	66	51	50	46	45	55	18	53	65	49
Lifestyles of the general public	21	56	42	44	33	54	45	46	18	44	46	46
Transportation related	18	56	45	49	17	36	25	27	36	41	49	39
Unspecified	36	26	21	33	33	25	45	36	46	30	23	30

Notes: Figures enclosed by a single circle represent answers with the highest number of points. The Industrialized Regions figures in the chart above do not include Japan, just North America and Western Europe. The figures indicate the number of responses to each item and the percentage of the total respondents. The total percentage is higher in regions in which there were many respondents that could assess multiple items.

- Among Japanese respondents, the responses for “Lifestyles of the general public” and “Transportation related” are roughly one-third or less that for “Industry.” In contrast, North American and Western European respondents and overseas respondents as a whole were just as likely to select “Lifestyles of the general public” or “Transportation related” alongside “Industry.”

2. WATER PROBLEMS

Question (1-1): Water problems are presently increasing in severity around the world with the pollution or desiccation of rivers and ground water due to population increases, agricultural land use, industrialization and urbanization. Please inform us about the water situation *in your country*. To what extent is the quality of water used in daily life, including drinking water, deteriorating *in your country*?



- There were large differences by region in the reported level of water quality for daily use.
- Respondents from Africa, Asia, the Middle East and North America were most likely to report having “Acute problems.” Respondents from Western Europe and Japan as well as Eastern Europe and the former Soviet Union were least likely to report “Acute problems.”
- At 31%, Western European respondents were the most likely to report “No problem” with water quality, but the level was below 10% for all the other regions, indicating that most respondents considered water quality to be problematic.

Question (1-2): If you selected answers 1-3 above, check 2 of the underlying causes below.

	Japan (269)	United States & Canada (57)	Western Europe (55)	Asia (79)	Latin America (34)	Africa (52)	Oceania (29)	Eastern Europe & former Soviet Union (20)	Middle East (21)	Overseas Total (350)	Industrialized Regions (112)	Developing Regions (165)
Pollution from agricultural wastes, including harmful substances	24	68	80	18	50	39	59	60	43	49	74	31
Pollution from industrial wastes, including harmful substances	30	44	46	60	44	54	17	55	43	47	45	55
Pollution from wastewater from the general public	57	14	16	52	56	39	17	50	43	35	15	49
Devastation of water reserve lands	51	18	18	33	12	29	24	5	19	22	18	27
Harmful effluents, including adverse soil effects	13	18	11	14	9	12	17	10	10	13	14	12
Salinization	1	9	6	10	18	10	69	5	19	15	7	12
Deterioration of water quality due to reductions in river or lake levels	13	19	11	24	15	35	24	15	38	22	15	26
Other	7	19	9	6	12	14	10	0	10	11	14	10
Don't know	1	0	2	0	0	0	0	0	0	0	1	0

Notes: Figures enclosed by a double circle represent answers with the highest number of points.

A single circle is used when more than one answer is closely tied for the highest number of points.

The Industrialized Regions figures in the chart above do not include Japan, just North America and Western Europe.

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%.

- Among overseas respondents, the first and second choice cited as the source of water quality problems were “Pollution from agricultural wastes” and “Pollution from industrial wastes,” which contrasted the first and second choices of Japanese respondents, who cited “Pollution from wastewater from the general public” and “Devastation of water reserve lands.”
- Among the developed regions, the “Pollution from agricultural wastes” response was particularly common from Western European and North American respondents, who chose “Pollution from industrial wastes” to a lesser extent, in marked contrast to Japanese respondents.
- Among developing region respondents, the “Pollution from agricultural wastes,” “Pollution from industrial wastes” and “Pollution from wastewater from the general public” responses were selected most often. Within that group, Asia stands out for citing “Pollution from agricultural wastes” least as the cause of poor water quality.
- It was also noteworthy that Oceanic respondents were the most likely to select “Salinization” as the source of water quality problems.

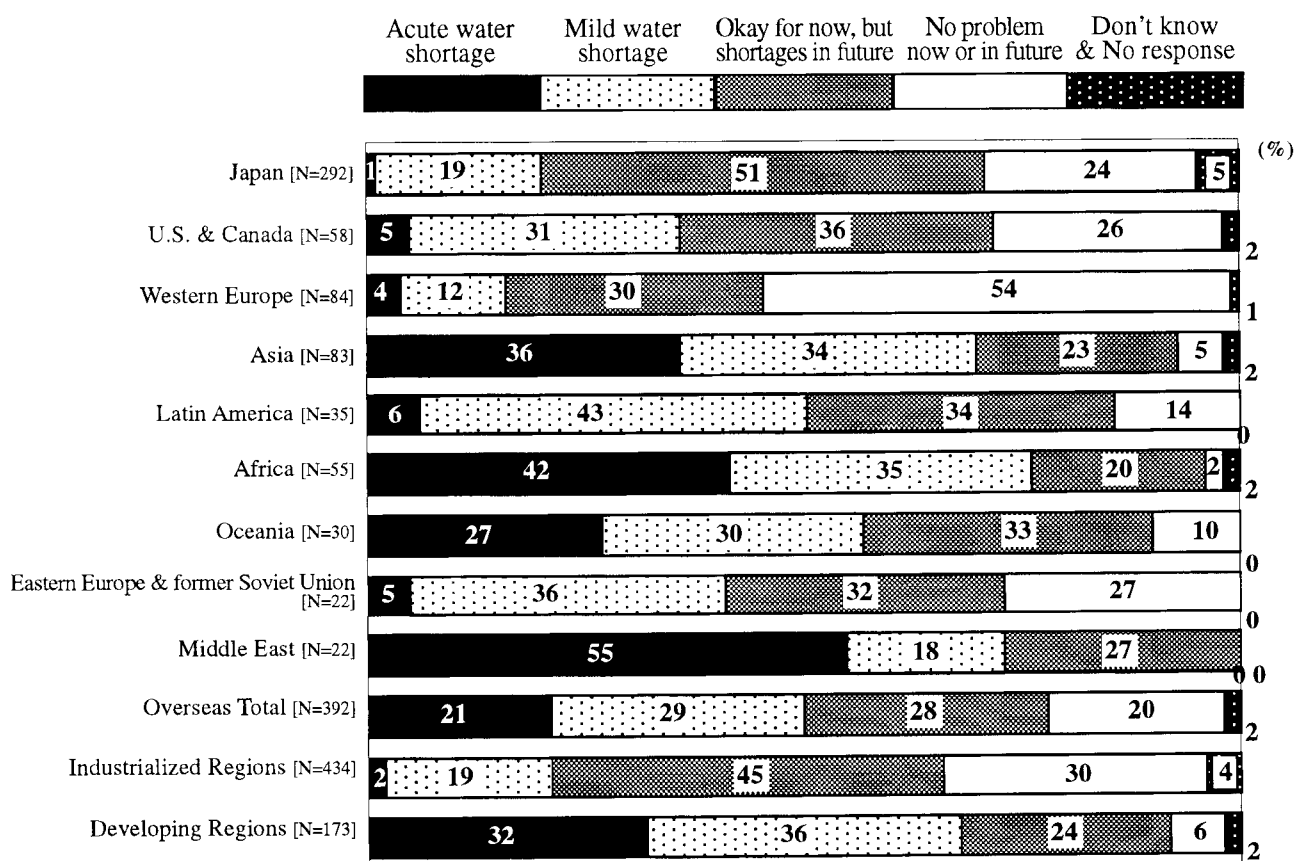
Question (1-3): Please check the 2 items below that you think are the most important for resolving problems with the quality of water used in daily life.

	Japan (292)	United States & Canada (58)	Western Europe (84)	Asia (83)	Latin America (35)	Africa (55)	Oceania (30)	Eastern Europe & former Soviet Union (22)	Middle East (22)	Overseas Total (392)	Industrialized Regions (142)	Developing Regions (173)
Enacting laws and regulations to maintain water quality	33	36	36	41	40	31	33	27	23	35	36	38
Building treatment facilities for drinking water and sewage	36	12	21	37	29	44	27	68	50	32	18	38
Conservation of water reserve lands	60	35	27	58	54	47	50	23	18	41	30	54
Developing technologies to cheaply reduce pesticides and other harmful substances in agricultural waste	18	40	42	12	23	18	23	27	18	26	41	16
Developing wastewater treatment technologies to cheaply reduce harmful substances in industrial waste	16	22	23	29	31	35	27	46	27	28	23	31
Restraining abuses of water use to secure water volume	22	31	32	28	20	31	43	14	50	30	32	27
Other	8	19	6	7	11	15	3	5	9	10	11	10
Don't know	1	0	1	0	0	0	3	0	0	1	1	0

Notes: Figures enclosed by a double circle represent answers with the highest number of points. A single circle is used when more than one answer is closely tied for the highest number of points. The Industrialized Regions figures in the chart above do not include Japan, just North America and Western Europe. 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%.

- The most commonly selected response for the resolution of water problems in Japan, the developing regions and Oceania, was “Conservation of water reserve lands.”
- Among North American and Western European respondents, the most commonly selected response was “Developing technologies to cheaply reduce ...harmful substances in agricultural waste...” in step with the selection of agricultural wastes in the previous question as the main source of contamination.
- “Enacting laws and regulations...” drew a large response in each region, ranking second in the aggregate overseas tally and third in Japan.
- Although “Building treatment facilities for drinking water and sewage” was not selected by many North American or Western European respondents, it was selected by many respondents in other regions and Japan, ranking third in the aggregate overseas tally and second in Japan.

Question (2-1): To what extent is water quantity a problem *in your country*, considering the combined supply of water used in daily life, agriculture and industry?



- The responses about water volume also differed markedly between regions.
- In Asia, Africa and the Middle East, 70% of respondents or more reported “a water shortage” (combined acute and mild water shortage responses). In contrast, only 16% of Western European respondents reported a water shortage. At 20%, this number was also low for Japan.
- In the developing regions, 68% of respondents reported water shortages, which was further topped by Middle East respondents at 73%. In contrast, the figure for the developed regions was only 21%.
- The combined total of “a water shortage” and “Okay for now, but shortages in future” exceeded 70% for all regions but Western Europe, and was particularly high for developing regions at 92%. When the “future” response is added in, the survey indicates an extremely strong sense of crisis regarding future water shortages.

Question (2-2): If you selected answers 1-3 above, check 2 of the underlying causes below.

	Japan (206)	United States & Canada (42)	Western Europe (38)	Asia (77)	Latin America (29)	Africa (53)	Oceania (27)	Eastern Europe & former Soviet Union (16)	Middle East (22)	Overseas Total (306)	Industrialized Regions (80)	Developing Regions (159)
Increased water demand due to increased population	17	57	42	70	72	68	37	31	59	59	50	70
Desiccation of river/lake/ground waters due to the excessive use of water for agriculture/industry/daily life	52	45	63	30	21	17	48	31	32	35	54	24
Reduced precipitation due to abnormal weather	29	14	18	16	24	32	26	31	50	24	16	23
Inappropriate management of lake/river/ground waters	35	57	45	52	55	43	37	63	32	48	51	50
Devastation of water reserve lands (forests)	61	21	5	35	31	26	37	13	0	24	14	31
Lack of water extraction adjustment mechanisms for rivers shared with another country	0	0	5	4	3	6	0	13	0	4	3	4
Other	3	7	13	0	3	8	7	0	5	6	10	3
Don't know	1	0	0	1	0	0	0	0	0	0	0	1

Notes: Figures enclosed by a double circle represent answers with the highest number of points.

A single circle is used when more than one answer is closely tied for the highest number of points.

The Industrialized Regions figures in the chart above do not include Japan, just North America and Western Europe.

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%.

- “Increased water demand due to increased population” was the top-ranked response overall among overseas respondents as the cause of water shortages, followed in second and third place by “Inappropriate management of lake/river/ground waters” and “Desiccation of river/lake/ground waters due to excessive use...” respectively.
- In Japan, the number one response was “Devastation of water reserve lands (forests),” followed by “Desiccation of river/lake/ground waters...” and “Inappropriate management...” The second- and third-ranked responses were the same as for the aggregate overseas response, but the first choice is plainly different.

Question (2-3): Select the 2 measures below that you think are the most important to solving the water shortage for all uses, including agriculture, industry and daily life.

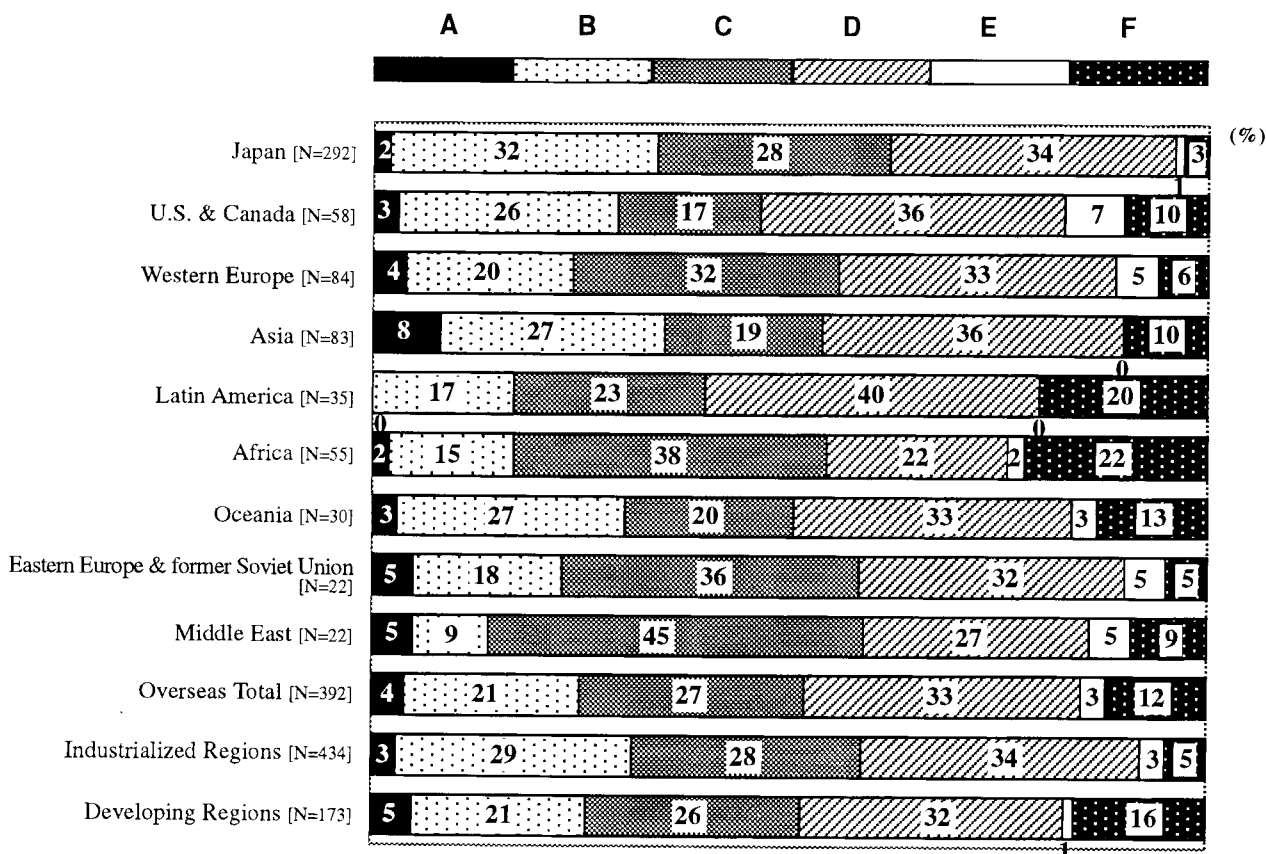
	Japan (292)	United States & Canada (58)	Western Europe (84)	Asia (83)	Latin America (35)	Africa (55)	Oceania (30)	Eastern Europe & former Soviet Union (22)	Middle East (22)	Overseas Total (392)	Industrialized Regions (142)	Developing Regions (173)
Enacting laws or regulations to limit the volume of ground water or river water used	16	17	18	18	20	9	30	14	23	18	18	16
Introducing economic measures, such as additive taxes on water consumption	25	45	41	18	26	15	20	50	27	29	42	19
Developing technologies that improve the efficiency of water usage	25	24	43	45	17	47	43	50	41	39	35	40
Promoting more efficient water use and recycling	32	35	33	43	40	44	37	41	46	39	34	43
Improving irrigation technology, switching crops	4	10	16	10	11	7	30	0	18	12	13	9
Conserving water reserve lands	60	22	11	34	46	31	13	9	9	24	15	35
Constructing reservoirs	2	7	0	10	6	11	7	5	0	6	3	9
Promoting storage and effective use of rainwater (by use of rain barrels, roofs, tanks, etc.)	19	10	11	22	9	31	17	0	14	16	11	22
Promoting awareness of water conservation, etc.	9	16	18	22	31	22	30	14	14	20	17	24
Other	4	9	1	1	6	4	3	5	14	4	4	3
Don't know	0	0	0	0	0	0	0	0	0	0	0	0

Notes: Figures enclosed by a double circle represent answers with the highest number of points. A single circle is used when more than one answer is closely tied for the highest number of points. The Industrialized Regions figures in the chart above do not include Japan, just North America and Western Europe. 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%.

- Both “Developing technologies that improve the efficiency of water usage” and “Promoting more efficient water use...and recycling” were top ranked as the solutions to water shortages by overseas respondents as a whole.
- In Japan, it was “Conserving water reserve lands,” followed by “Promoting more efficient water use...and recycling” in second place. The first choice was correlated to the response for the cause of water shortages in the previous question.
- It was revealing that “Introducing economic measures, such as additive taxes on water consumption” ranked first in North America and Eastern Europe and the former Soviet Union, and second in Western Europe.

3. ENDOCRINE DISRUPTORS

Question: Endocrine disruptors are described as chemical substances that enter human and wildlife bodies and impair endocrine functioning. What is your awareness of these substances? Please select 1 response that most closely resembles your thoughts about them.



A=Since the scientific basis for them is unclear, I don't sense any urgent hazard.

B=Since scientific revelations are ongoing, we should avoid using the chemicals currently thought to pose hazards.

C=It will be too late if we wait for scientific proof, so we should act prudently with regard to all synthetic chemicals.

D=We should establish a stricter testing system for all existing and future synthetic chemicals and publish the test results.

E=Other

F=Don't know.

- On the topic of endocrine disruptors, the response most selected by overseas respondents in the aggregate was “We should establish a stricter testing system...and publish the results,” followed by “...we should act prudently with regard to all synthetic chemicals” and “...we should avoid using the chemicals currently thought to pose hazards.”
- In Japan, the response was similar to the overseas response with “We should establish a stricter testing system...and publish the results,” ranked first, but it was only narrowly higher than the second and third choices, “...we should avoid using the chemicals currently thought to pose hazards” and “...we should act prudently with regard to all synthetic chemicals.”
- “...I don't sense any urgent hazard” was selected by 4% of overseas respondents overall and by 2% of Japanese respondents, indicating a fairly high awareness of the problem.

4. 30-YEAR PREDICTION FOR THE GLOBAL ENVIRONMENT

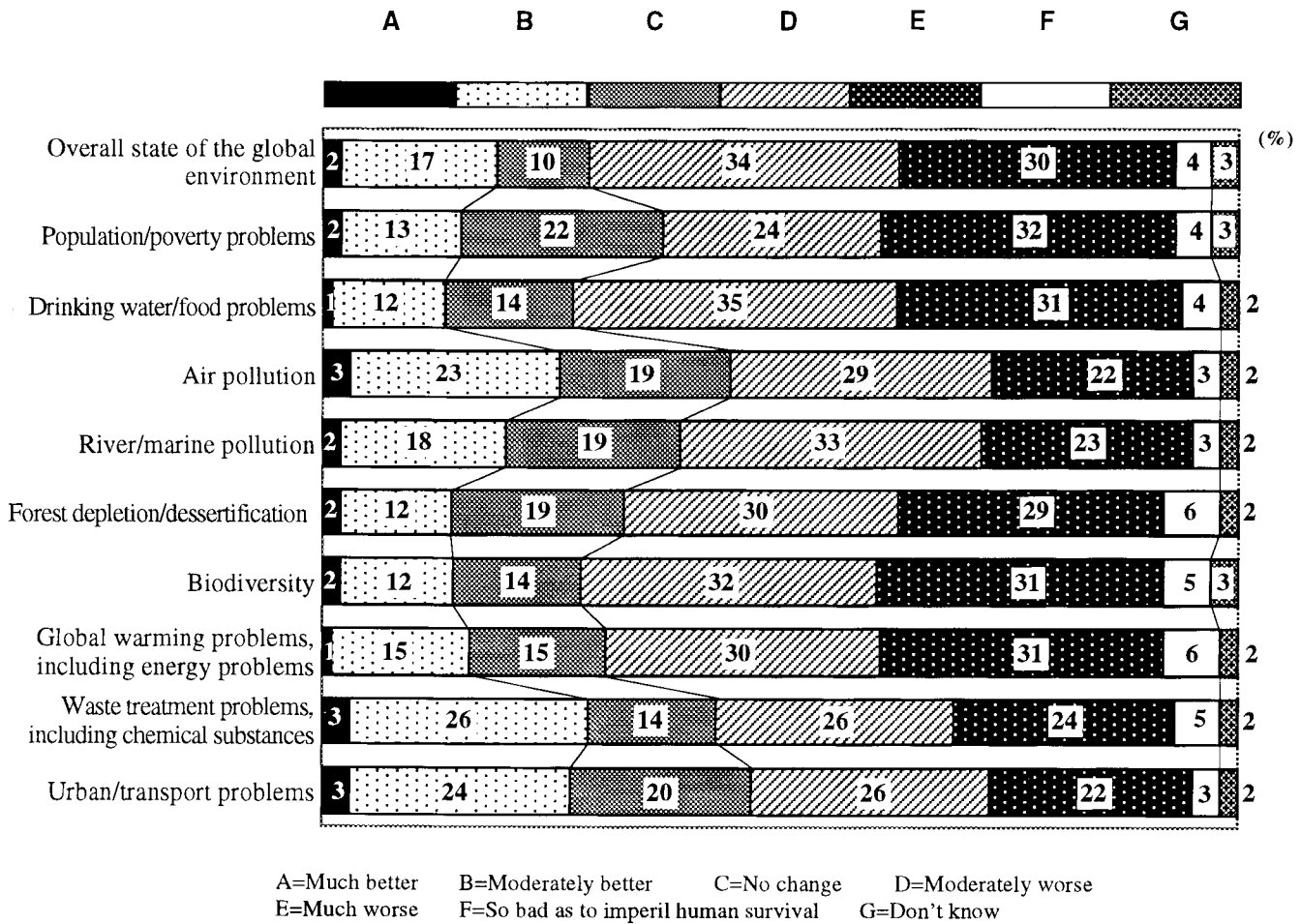
Question : As we stand at the beginning of the 21st century, what do you predict will happen to the global environment after 30 years (after approximately one generation). Please indicate the perception *in your country* of the following 10 items by circling a response on the scale of (a) to (g).

- (1) Overall state of the global environment (2) Population/poverty problems (3) Drinking water/food problems
 (4) Air pollution (5) River/marine pollution (6) Forest depletion/dessertification (7) Biodiversity
 (8) Global warming problems, including energy problems (9) Waste treatment problems, including chemical substances
 (10) Urban/transport problems

	Japan (292)	United States & Canada (58)	Western Europe (84)	Asia (83)	Latin America (35)	Africa (55)	Oceania (30)	Eastern Europe & former Soviet Union (22)	Middle East (22)	Overseas Total (392)	Industrialized Regions (434)	Developing Regions (173)	(%)
Overall state of the global environment	16 69	10 85	18 75	29 58	23 63	31 55	17 83	27 59	9 73	21 68	15 72	28 58	
Population/poverty problems	13 54	3 83	13 67	17 50	23 71	36 55	10 80	41 41	9 86	18 65	12 60	24 56	
Drinking water/food problems	6 73	10 83	12 70	23 64	17 69	33 58	20 73	32 46	9 86	19 68	8 74	25 63	
Air pollution	28 45	16 76	32 49	28 59	17 69	29 55	20 63	32 50	14 69	25 59	27 50	26 60	
River/marine pollution	18 58	16 69	27 51	23 61	20 71	16 64	27 63	27 32	14 77	22 61	19 58	20 64	
Forest depletion/dessertification	9 66	3 74	18 63	24 58	23 63	20 67	17 63	18 55	14 77	18 64	10 66	23 62	
Biodiversity	7 77	9 79	10 70	27 52	26 57	35 55	23 53	27 50	5 73	20 62	8 76	29 54	
Global warming problems, including energy problems	18 62	5 86	12 75	22 60	17 66	22 73	20 67	14 55	5 82	15 70	15 68	21 65	
Waste treatment problems, including chemical substances	24 57	22 71	37 48	31 52	37 51	29 51	27 63	55 27	27 73	32 54	26 57	32 51	
Urban/transport problems	27 44	10 69	25 64	22 53	43 43	40 46	30 57	32 46	27 55	27 55	24 51	32 49	

Notes: The "better" responses include the "Much better" and "Moderately better" categories.
 The "worse" responses include the "Moderately worse," "Much worse" and "So bad as to imperil human survival" categories.

30-Year Prediction for the Global Environment by All Respondents



- In predicting the state of the global environment after 30 years, many respondents foresaw a bleak future: 34% of the total thought that it would be “Moderately worse,” while 30% thought it would be “Much worse” and 4% thought it would be “So bad as to imperil human survival.” These responses reached 68% of the total. Only 2% thought it would be “Much better” and the “Moderately better” camp was only 17%, showing that a majority of respondents were pessimistic. The “No change” faction stood at 10%.
- There was little difference between the overseas totals and the Japanese responses.

Indicator for Predictions of the Global Environment in 30 Years

Indicator (%) = (“Moderately worse” + “Much worse” + “So bad as to imperil human survival”) – (“Much better” + “Moderately better”)

	Japan (292)	United States & Canada (58)	Western Europe (84)	Asia (83)	Latin America (35)	Africa (55)	Oceania (30)	Eastern Europe & former Soviet Union (22)	Middle East (22)	Overseas Total (392)	Industrialized Regions (142)	Developing Regions (173)
Overall state of the global environment	53	74	57	29	40	24	67	32	64	47	57	30
Population/poverty problems	41	79	54	33	49	18	70	0	77	47	49	31
Drinking water/food problems	67	73	58	41	52	26	53	14	77	49	66	38
Air pollution	18	60	17	31	52	25	43	18	55	34	23	34
River/marine pollution	40	54	24	39	51	47	37	5	64	39	39	44
Forest depletion/dessertification	57	71	45	34	40	47	47	36	64	46	56	39
Biodiversity	69	71	61	25	31	20	20	23	68	41	68	25
Global warming problems, including energy problems	44	81	63	39	49	51	47	41	77	55	53	45
Waste treatment problems, including chemical substances	33	48	11	21	14	22	37	-27	45	21	31	20
Urban/transport problems	18	59	39	31	0	6	27	14	27	28	27	7

more than 55% less than 25%

- In order to express the predictions for the environment in 30 years in easy-to-grasp figures, an indicator was calculated using Indicator (%) = (“Moderately worse” + “Much worse” + “So bad as to imperil human survival”) – (“Much better” + “Moderately better”) and applied to each category on a region-by-region basis.
- For the overseas total, the indicator for “Global warming problems...” was the highest at 55%, indicating a severe outlook, and was followed by “Drinking water/food problems” at 49%, and “Population/poverty problems” at 47%. Among Japanese respondents, “Biodiversity” ranked first at 69%, which was followed by “Drinking water/food problems” at 67%, and “Forest depletion/dessertification” at 57%.
- For the overseas total, the lowest indicator and least pessimistic outlook was for “Waste treatment problems,” at 21%, followed by “Urban/transport problems” at 28%, and “Air pollution” at 34%. Among the Japanese respondents, the indicators for “Urban/transport problems” and “Air pollution” both stood at 18% and were followed by “Waste treatment problems” at 33%. Japanese and overseas respondents chose the same three categories.
- Among the North American and Middle Eastern respondents, indicators upward of 55% were common, indicating that many respondents are pessimistic, while the indicators for the African and Eastern Europe and former Soviet Union were often at 25% or below, revealing that fewer respondents from these places are as gloomy about the prospects.

II. REPEAT TOPICS
1. PROGRESS TOWARD AGENDA 21

Question: In 2002, the Rio Plus 10 Summit (follow-up summit to the United Nations Conference on Environment and Development) will be held in South Africa. A comprehensive review of "Agenda 21" selected at the Rio summit in 1992 is expected to be undertaken at this conference. Please indicate the progress made *in your country* toward the following 10 categories taken from the Agenda 21 action plan by circling a response on the scale of (a) to (e) for each category.

Comparison of Perceived Progress* between 1996 and 2001

	Japan		United States & Canada		Western Europe		Asia		Latin America		Africa		Oceania		Eastern Europe & former Soviet Union		Middle East		Overseas Total		Total	
	2001	1996	2001	1996	2001	1996	2001	1996	2001	1996	2001	1996	2001	1996	2001	1996	2001	1996	2001	1996	(%)	
Promotion of environmental education	67	49	74	88	81	66	88	71	80	77	84	88	80	91	91	94	77	91	82	78	76	64
Activities by local governments and citizens' groups	70	52	79	77	80	79	72	65	77	74	65	75	90	86	91	69	64	55	76	74	73	63
Environmental measures by industry	68	53	62	57	76	55	47	48	40	43	40	47	60	71	45	44	45	64	55	52	60	53
Scientific and technological contributions	69	50	71	71	63	61	51	52	17	46	42	50	53	71	45	50	36	82	51	59	59	55
Formation of recycling systems	66	48	79	94	75	70	42	37	26	23	22	34	73	57	23	31	36	46	51	54	57	51
Conservation of forest resources	11	14	48	35	51	38	55	56	49	51	65	81	43	86	23	44	45	36	51	51	34	33
Conservation of biodiversity	11	16	34	49	40	42	55	46	57	51	60	75	50	67	45	56	41	64	48	51	33	35
Greenhouse gas prevention measures	25	19	21	31	49	26	36	32	17	23	22	47	40	38	27	25	14	18	32	30	29	25
Population and poverty problems	16	14	14	22	24	8	41	43	14	37	38	44	33	19	9	13	45	18	28	26	23	20
Lifestyle alteration	7	16	5	29	12	26	27	21	6	20	15	13	33	43	32	19	18	27	17	24	13	20

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

Comparison of Differences between 1996 and 2001

	Japan	United States & Canada	Western Europe	Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total	Total	(%)
Promotion of environmental education	+18	-14	+15	+17	+3	-4	-11	-3	-14	+4	+11	
Activities by local governments and citizens' groups	+17	+3	+1	+7	+3	-10	+4	+22	+9	+3	+10	
Environmental measures by industry	+15	+5	+22	-1	-3	-7	-11	+2	-18	+3	+8	
Scientific and technological contributions	+19	0	+2	-2	-29	-8	-18	-5	-45	-7	+4	
Formation of recycling systems	+18	-15	+5	+6	+3	-13	+16	-9	-9	-3	+6	
Conservation of forest resources	-3	+13	+13	0	-3	-16	-42	-21	+9	0	+1	
Conservation of biodiversity	-5	-15	-1	+9	+6	-15	-17	-11	-23	-3	-2	
Greenhouse gas prevention measures	+6	-11	+23	+4	-6	-25	+2	+2	-5	+1	+4	
Population and poverty problems	+2	-8	+16	-2	-23	-6	+14	-3	+27	+2	+3	
Lifestyle alteration	-9	-24	-14	+6	-14	+2	-10	+13	-9	-7	-8	

Note: Differences are calculated to the first decimal place. Thus, the differences may differ from those in the previous page which are rounded to the nearest integer.

We surveyed the respondents about 10 items from the Agenda 21 action plan, asking if progress had been made in the respondents' countries. The results are arranged in order of the largest responses ("Significant progress" + "Some progress") in the chart and compared with the survey results from five years ago.

- Among overseas respondents, more than 76% reported progress in the categories of "Promotion of environmental education" and "Activities by local governments and citizen's groups." The top six categories (down to "Conservation of forest resources" in the chart) all received positive responses from more than 50% of respondents. The reported progress gradually tapers off for the last four categories at the bottom of the chart from "Conservation of biodiversity" to "Lifestyle alteration."
- In Japan, more than 66% of respondents reported progress in five categories from "Activities by local governments and citizen's groups" and "Environmental measures by industry" up to the middle of the chart "Formation of recycling system." However, less than 25% of respondents reported progress in the bottom five categories from "Conservation of forest resources" to "Lifestyle alteration," indicating extremely little headway is perceived to have been achieved.
- Since the 1998 survey, the "Lifestyle alteration" category has continually been evaluated as having made the least progress.
- Among overseas respondents, the categories judged to have made the most progress from five years ago were "Promotion of environmental education," "Activities by local governments and citizen's groups" and "Environmental measures by industry." However, the improvement for all of these categories was relatively small at four percentage points or less. In contrast, the results from Japanese respondents improved by 15 percentage points or more for the five categories of "Scientific/technological contributions," "Promotion of environmental education," "Formation of recycling systems," "Activities by local governments and citizen's groups," and "Environmental measures by industry."
- The ratings for "Lifestyle alteration" have gotten worse from five years ago. Other noteworthy results were a decrease in the perceived progress for "Scientific/technological contributions" among overseas respondents and for "Conservation of biodiversity" among Japanese respondents.

2. CHANGES IN LIFESTYLE

Question: Although simplifying our lifestyles is thought to be necessary to attain a sustainable society, the answers to past surveys have so far indicated that making these changes will be extremely difficult. Please check the 2 responses you think will be effective as social systems for helping people to alter their lifestyles.

	Japan (292)	United States & Canada (58)	Western Europe (84)	Asia (83)	Latin America (35)	Africa (55)	Oceania (30)	Eastern Europe & former Soviet Union (22)	Middle East (22)	Overseas Total (392)	Industrialized Regions (434)	Developing Regions (173)
To make lighting, air conditioning and water, costs progressively higher above a set consumption level	28	29	25	25	11	6	23	9	27	21	27	16
To introduce environmental taxes	52	41	51	34	17	31	27	50	18	36	51	30
To make it easy for consumers to purchase green products	38	40	45	61	54	56	70	55	50	53	40	58
To promote recycling and expand used goods markets	30	17	17	33	40	46	30	41	46	30	26	38
To expand transport systems that reduce automobile use	32	48	36	33	37	24	27	27	36	34	35	31
To introduce incentives for environmentally friendly houses and long-lasting housing	15	17	19	22	40	24	20	23	14	22	16	26
Other	3	7	5	4	3	6	7	5	5	5	4	4

Notes: Figures enclosed by a double circle represent answers with the highest number of points.

A single circle is used when more than one answer is closely tied for the highest number of points.

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%.

- Among the developed regions, the answer receiving the most responses as a social system for altering peoples' lifestyles was "To introduce environmental taxes..." This was followed by "To make it easy for consumers to purchase green products..." Among the other regions, "To make it easy for consumers to purchase green products..." was the first choice by an overwhelming extent and the second choice was "To promote recycling..."
- Among the developed countries, the responses from Japan and Western Europe were similar.
- It is noteworthy that in the North American responses, the answer selected the most often was "To expand transport systems that reduce automobile use."

IV. Comments from Respondents

This year's questionnaire elicited a total of 232 free comments, including 132 from 50 countries outside Japan and 100 from Japan. The respondents kindly commented on the state of environmental problems in various regions worldwide and thought of policies and ideas for alleviating environmental problems. The themes touched upon in the comments varied widely. We attempted to group them according to topic, but this was difficult because some addressed more than one topic. Some comments also contained suggestions and requests for future survey questions, which we will gratefully take into consideration in designing the next questionnaire. Owing to space considerations, we are only able to list a portion of the comments, including 36 representing 30 countries and 23 from Japan. The name (excluding title), organization, country and processing number of the respondent is included with the comment. Comments from respondents requesting anonymity are marked with an M or F to denote male or female.

Comments from overseas

There is still much support needed to explain environmental problems to people. More NGOs, governments plus local/private organizations need to work as a group to fight/face these problems in order to make it a common challenge for survival of humankind.

Ibrahim Shabau, Senior Agriculture Officer, Agriculture and Forestry Research and Development Section, Ministry of Fisheries, Agriculture and Marine Resources, REPUBLIC OF MALDIVES 071

The environment is an integrated, complicated, fluctuating and fragile whole, with all physical elements including bio-diversity, embracing man. Change to one single part, changes the whole. The distant impact of man on the Polar Regions is beyond doubt.

Lily Venizelos, President, MEDASSET - Mediterranean Association to Save the Sea, GREECE 104

There is so much interest and talk about environmental management, but there is little will on the part of the most influential countries to implement protection measures.

Mohammed Umar, Director, IRETA, University of the South Pacific, SAMOA 132

I think it is very important to implement an incentive system with which the corporations which are operating their business in a sustainable manner are highly evaluated by investors and consumers and consequently perform better financially. It is critical to implement in our business community such an information sharing system. Environmental issues are communication problems.

Shinsuke Kodama, Research Assistant, Center for Sustainable Systems, University of Michigan, A Japanese living in U.S.A. 170

Special attention should be given to the protection of the seas and oceans and the coastal zones where most human activities occur. Governments are not sufficiently serious, particularly the current leadership in the US. Caribbean countries have fairly fragile ecosystems. We are almost totally dependent on our natural resources and coastal environment (tourism). There is a need for more education and awareness building programs to better establish the link between our lifestyle and the degradation of the environment and the consequences for the future. When the public starts demanding higher standards and safeguards then the politicians and the big corporations will be forced to respond.

M, CARICOM Fisheries Unit, BELIZE 206

I feel that the major problems are due to industrial developed countries who should take the lead in finding and implementing solutions.

M, Intl. Center for Agr. Research in the Dry Areas, LEBANON 276

(1)Increasing north-south relations to solve problems

(2)Establishing training courses in public domain

(3)Establishing some committees and creating a framework starting with visiting expert groups from developing countries.

Kamal Abbaspour, Director of Solar Energy Research Group, Energy Dept., Materials and Energy Research Center, IRAN 229

Natural hazards and risks will increase. People (poor people) from underdeveloped countries will suffer much more.

M, Environmental Geology, U. EAFIT, COLOMBIA 232

The state of our environment is a reflection of the nature of our governments. A good broad base democratic governance answers our problems. The poor countries must be relieved of their taxes to build their environment.

Brandford Kyereh, President of the Secretariat, Kindness Club of Africa (Giraffe), GHANA 234

The 3rd world needs to be informed constantly about discarded production processes that are environmentally unfriendly. New friendly inventions should be advertised so the balance of global sustenance is maintained.

M, Human Resources Dept., SGS Ghana Limited, GHANA 184

Environmental problems are a global responsibility of both developing and developed countries. In the beginning, environmental destruction was created by developed countries. Therefore, developed countries must help developing countries in achieving a better environment.

M, The Indonesian Institute of Science, INDONESIA 043

When I started my participation in this questionnaire I said that education was the key issue to make a real change on our environment. I still believe the same, our world needs a strong environmental culture to secure better management of our resources and problems.

Ramon Ostolaza, EHS&C, Burlington Resources Per Ltd., PERU 003

It is important to develop eco-efficiency approach to companies, in order to combine environmental protection and economic growth. To produce more with less resources.

Jorge Marques dos Santos, Corporate Environment Leader, Environment Section, SONAE SGPS, SA, PORTUGAL 370

I am appalled and alarmed at America's refusal to co-operate with its Kyoto promises. I am alarmed by the disappearance of birds (sparrows especially) and animals in England, because it means there is something badly wrong in the atmosphere, not only in agriculture.

Diana Hargreaves, Chair, Life Style Movement, U.K. 102

It all depends on the USA and the Bush administration what we will have in future. They create 25% of the air pollution/global warming and will increase that amount. It is very hard to comprehend the American Society's thinking, as they are responsible for future global warming and life on this earth.

Horst W. Doelle, DSc, Retired, AUSTRALIA 008

Everyone I know is horrified by President Bush's refusal to follow the Kyoto recommendations. For priority? Selfishness? Pride?

N. Petit Maire, Professor, Paleoclimate, CNRS, FRANCE 169

With the USA as the main polluter and not entering into the Kyoto agreements, then no change or ever worse conditions would be expected.

Iyad Abymoghli, Assistant Resident Representataive, Environment Section, UNDP, JORDAN 275

We are entering a period in which Information Technology is seen as the solution to almost every problem. In actual fact, a great amount of IT (including the entertainment industries) is dedicated to diverting people's attention from environmental and ecological fundamentals and convincing people that endless consumption of infinite resources is possible and should be encouraged to promote economic growth. Moreover, powerful vested interests in the fossil fuel industry are now in political control of the U.S. and are dedicated to a supply and consumption rather than a conservation model of energy use.

Dr. Milton McClaren, Professor Emeritus, Education/Biosciences, Simon Fraser University, CANADA 243

More nuclear power to generate electricity is the only proven and existing solution to reduce global warming, acid rain and smog and to produce hydrogen as an alternative clean transportation fuel.

Larry Shewchuk, Manager, AECL, CANADA 098

Population/poverty problems make environment in my country much worse because there are no policies for energy substitution. So people must live and take they can find, like forest, etc., without thinking of the future. The problem is same for biodiversity and all, I think, the other topics are secondary. The management of a right policy of population/poverty problem is very important.

M, Project d'Appui a la Realisation des Plans d'Amenagement Forestiers-PARPAF, REPUBLIQUE CENTRAFRICAINE 149

Forests and wildlife will probably have to give way to population. Family planning and other measures are essential to reduce population pressure on resources.

Erica Mann, Executive Director, Council for Human Ecology-Kenya, KENYA 233

The developed countries should be sincere enough to bail out the developing countries from the shadows of poverty.

S. S. Orhiere, Tech. Director, Tech. Program, AFRIEM, NIGERIA 295

Use of forest products is a big issue in my country, investors from countries in Malaysia, China, Korea and other countries are putting their eyes on us. Are there alternatives to products such as timber + paper?

M, Food Processing Unit, Food Processing, PAPUA NEW GUINEA 096

My specialty is endocrine disruptors. It is difficult to find the funding to prove damage, and then because it is difficult to trace exposures to chemicals whose effects may be delayed for years or decades, and it is not ethically possible to directly experiment on human subjects, it is virtually impossible to arrive at absolutely conclusive proof of damage. Yet, our large increases in the incidence rates of certain developmental, immune, and reproductive problems, cancers and other diseases in human and wildlife indicate that we and the animal food

sources we depend on are threatened. And the proofs implicating certain families of chemicals in this threat are very suggestive. We should vastly lower the proof necessary to restrict chemicals, and make it necessary to prove safety before chemicals and bio-engineered products can be marketed.

M, Self-employed, U.S.A. 163

Watershed management is gaining ground in India. Local governments and communities are actively involved in supporting the watershed development programmes and schemes launched by central and state governments. If watershed related policies and programmes are to be made sustainable, local rural youths ought to be equipped with necessary knowledge and skills for carrying out the various activities. Introduction of a vocational course on watershed management in institutions located in rural areas is essentially needed to foster water harvesting and conservation practices and to effectively deal with much larger issues such as sustainable development of natural resources and improvement of the livelihoods of local people.

Dr. V. S. Mehrotra, Lecturer on "Plant Protection", Agricultural Division, PSS Central Institute of Vocational Education, INDIA 321

Drinking water/food problems have caused death every minute in developing countries and water-borne diseases and teeth decay.

M, Environmental Protection and Community Development, KENYA 325

I do not feel the average Bahamian gives much thought to these issues. There are a few who are very concerned and are working to effect change.

Stacey Wells-Moultrie, Technical Officer, The Bahamas Environment, Science & Technology Commission, THE BAHAMAS 341

People will not change unless: A) Money B) Death C) Taxes

M, Self-employed, TAIWAN 061

Lack of awareness of environmental issues and challenges by the top decision-makers and politicians of developing countries and absence of sense of responsibility for the future generations by leaders is the main reason for me to be pessimistic with regard to the future environmental condition.

M, Environmental Protection Authority, Ethiopia 203

Political instability and lack of commitment from the government sector would largely be responsible.

M, Lumbini Crane Conservation Center, NEPAL 221

We should stop summits and meetings filled with lies and dreams. A more realistic vision should be implemented in order to determine the real threats for the planet Earth. Also, these topics should be understood by local communities of most countries so we should communicate short messages around the world indicating threats and consequences for the human life. Local communities in poor countries can barely understand the meanings of conservation, global warming, energy demand and others.

David Ascanio, Director, Inversiones Morphos CA, VENEZUELA 222

Profit-making dictates the world and mankind attitudes. In the name of profit-making everything is allowed. It undermines ethic and moral standards which distinguish human beings from animals. But the worst is that profit-making is related to power. Criminal activities are covered and are widely tolerated in the name of growth but in reality only very few really benefit for example from the depletion of the rainforest, too many have to suffer.

F, Forestry Section, GTZ, FIJI 345

The real solutions to environmental problems lie in the hands of locally-initiated collective actions, rather than government policies.

Emmanuel C. Talag, Senior Science Research Specialist, Energy Planning and Monitoring Bureau, Department of Energy, PHILIPPINES 374

I am optimistic about future environmental conditions. I have full faith in the creativity and tremendous potential of Indian people and the world community which I am sure will find out desired ways and means to make this planet earth more beautiful, loving and livable.

Dr. D. P. Singh, Environmental Education, PSS Central Institute of Vocational Education, INDIA 381

The environmental impact of information technology is likely to be adverse. Our increasing forays into cyberspace seriously detract from our awareness of the natural world.

David Black, Trustee, Trust Section, Oxleas Wood Challenge Fund, U.K. 385

If the OECD countries and UN do not apply in full scale the polluter-pays principle the losses we cannot move to more sustainable stage.

Ivan Dombalov, Professor, Dept. of Ecology, Balkan Science and Education Centre of Ecology and Environmental Protection; University of Chemical Technology, BULGARIA 394

Comments from Japan

Environmental destruction is intensifying as seen from social science analyses, not just natural science analyses. Rather than chasing after the illusory bluebird in free competition, I would like to admit that resources are finite and work on building the logic, ethics and culture of "contentment."

Soki Oda, President, Worldwatch Japan, JAPAN 284J

To resolve global environmental problems, it is necessary to induce citizens and businesses by using the tax system and regulations to create a society with environmentally friendly lifestyles and an industrial structure with economic merit.

M, Ministry of Agriculture, Forestry and Fisheries, JAPAN 172J

There is a need to determine the total prices of things from manufacturing to disposal. Can we not, for example, realize sustainable resources and a sustainable society by including the costs of reforestation and waste disposal in the prices of paper and wood?

M, Japan International Cooperation Agency, JAPAN 273J

There have been two crises of annihilation in the history of humankind. They are the atomic bomb and the environment (primarily global warming, but endocrine disruptors may become the dark horse). An elite in some of the major countries holds the atomic button and we have managed to escape destruction so far. However, the key to the environment is held in the hand of each human. The egos of nationalists and corporations are the ones at the front, but it is the egos of individuals that lie behind them.

Nobuyoshi Fuguno, Professor, Science and Technology Research Center, Tokai University, JAPAN 058J

Our nation is expressing a certain degree of concern about the environmental problems involving our country, but the awareness of environmental problems that are destroying other countries and regions and the will to do something about them is extremely low in Japan. I wish that Japan would hurry up and become a state that can talk about world-leading global environmental strategies. In particular, it is a big problem that there is no sincere cooperative stance, when you put the issues of offering funds aside, to deal with the environmental problems that arise in developing countries. I think it will be necessary to create a system that can respond more sensitively to world trends.

Katsunori Suzuki, Ministry of the Environment, JAPAN 155J

To make the global environment "better" in 30 years time, diligence, research, a system, development and consensus are required. However, when one looks at the Bush administration's response, one becomes painfully aware of the difficulty facing anyone trying to change the thinking "it's okay if it's good for me or it's okay if it's good for the development of my country." In the 21st century, I think we will need to seek prosperity from a new perspective that is enlightened, kind and warm under a strong leader.

Saeko Takahashi, Nippon Cultural Broadcasting (Bunka Hoso), JAPAN 211J

I currently am engaged in work that uses organic cultivation technology to restore depleted farmland and crops. With the oxygen-depleted soil, the decline in living creatures, the deterioration of water quality and similar problems, I am worried that we will end up leaving nothing to our descendents but an adverse legacy if we don't all make the earth healthier. I fear that all the living creatures will end up extinct if we don't teach our children the correct way to live.

Minoru Yoneda, CEO, Global Environmental Improvement Systems, JAPAN 153J

Although it may appear that concern over environmental problems is higher than before, I think that it is actually continuing to fall. The products that are said to take the environment into consideration are in the end result designed to get people to buy new products, which is connected to increased waste and the development of new products results in the increased environmental burden that accompanies manufacturing. It is inefficient for businesses and consumers as well as governments and academics to carefully consider and formulate solutions to environmental problems separately. At the very least, it will be necessary for everybody to share information.

Hajime Oshitani, Rakuno Gakuen University, JAPAN 127J

We cannot sustain a standard of thought among individuals about environmental problems unless we consciously increase the direct experience of all people of living in an environment that is close to nature from the time that they are little, and not one that is man-made, and unless we learn about the wisdom, knowledge and experience of the aborigines' lifestyle with regard to the earth's natural environment.

Michiko Imai, President, Le Verseau Inc., JAPAN 106J

I think that the level of awareness is greatly divergent between people who are interested and those who are not. The next challenge will be to figure out how we can get the participation of people who have absolutely no interest in it. I guess it will be through environmental education for children and taxes for adults.

F, Nippon Cultural Broadcasting (Bunka Hoso), JAPAN 190J

It is necessary to think about how lifestyles can be changed in developed countries (for example, to create citizens' movements that advise individuals how to implement changes themselves, which would be combined with economic means).

Yokio Higuchi, Society of Automotive Engineers of Japan, Inc., JAPAN 267J

The citizens have not yet thought about it deeply enough to contemplate how they can change their own lifestyles. I have a feeling that they will not get serious unless the measures involve money, such as taxes.

Tetsuji Ogawa, Central Research Institute of Electric Power Industry, JAPAN 054J

Although it is also necessary to cooperate internationally to endeavor to persuade the new American administration, which has declared its withdrawal from the Kyoto Protocol, on the other hand, it is necessary for Japanese academics, the mass media, and non-governmental organizations at every level to work on their American counterparts and develop a movement that will bring about policy changes and get public opinion to draw the attention of the administration and congress to their mistake despite the pressure exerted by the industry lobby.

Tsutomu Yamaguchi, Research Institute of Innovative Technology for the Earth, JAPAN 121J

Long-term responses are required to resolve the earth's environmental problems and since there are many things that require attention, there is no recourse but to deal with them in a slow and measured way without being hasty. Moreover, since there are people with different opinions, we must have sufficient debate with the varying people. In this sense, it will be necessary to do more than simply oppose the recent attitude toward the Kyoto Protocol shown by the Bush administration, and to engage them in a thorough debate of their points and provide a persuasive response.

Keiichi Yokohori, Asia Pacific Energy Resource Centre, the Institute of Energy Resources, JAPAN 097J

Now that America has announced its withdrawal from the Kyoto Protocol, Japan has to endeavor to ratify it and we should promote the movement to gain America's participation.

Hisatoshi Yamamura, Representative Director, CASA, JAPAN 032J

I think it will be difficult to succeed in reducing greenhouse gas rates unless we impose concepts and debate that transcend the governmental, social and economic framework that has sustained the 20th century. Even in our own independent research, we have been able to achieve significant results by reconsidering our waste treatment systems and transport systems. I believe that a country's stance toward dealing with problems determines its direction.

Akira Morishima, Japan Environment Corporation, JAPAN 235J

I think it is important to deepen the understanding of nuclear power, which already plays a large role in supplying power, as an effective measure to counter global warming.

M, Kansai Electric Power Co., Inc., JAPAN 165J

It is not possible to respond by changing the consciousness or awareness of individuals. Economic substantiation or laws and regulations are required.

M, Kamakura Scenic Preservation Society, JAPAN 116J

The levy of environmental taxes is the most important incentive to induce lifestyles oriented toward environmental preservation, and along with this we ought to promote a shift to natural energy sources.

Tatsuhiko Goto, Hokkaido Government, Tokachi Subprefectural Office, JAPAN 061J

It is essential to create a social consensus and system that reduces taxes on human activities that have a role in environmental preservation and adds or increases taxes on activities that do not.

Masayuki Seto, Professor, Department of Environmental and Natural Resource Sciences, Faculty of Agriculture, Tokyo University of Agriculture & Technology, JAPAN 020J

The average citizen does not harbor a deep sense of crisis about global environmental problems and is behind in dealing with them. I think that the introduction of environmental taxes will be essential.

Yasuo Fuse, Environmental Conservation Section, Department of the Environment, Funabashi City, Chiba Prefecture JAPAN 091J

I think that it will be necessary from now on to study substances that affect human genes, such as endocrine disruptors, on a global scale since they have effects that transcend generations.

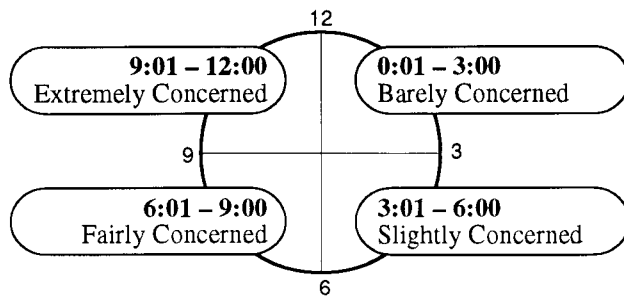
Hikaru Machida, Japan Environment Corporation, JAPAN 100J

I had the occasion to investigate the problem of water pollution last year and was astonished to find the pollution of water due to nitric acid and nitrous compounds originating with agriculture was a fairly severe problem around the world. I think that problems with water quantity and quality, which also involve foodstuffs, will become an even bigger problem in future. In some ways, I think it may become apparent more rapidly than global warming.

Hisashi Yamagata, Dia Research Martech, JAPAN 110J

V. Questionnaire as Distributed to Respondents

1. To what extent do you feel that the current deterioration of the global environment has created a crisis that will affect the continuance of the human race? Mark a time corresponding to the extent of your concern in the boxes below.



Please write your time here.

:

(Example :)

2-1. Although the primary purpose of COP6, held at the Hague in November 2000, was to formulate the international rules for implementing the Kyoto Protocol, the participating countries could not come to agreement and the conference ended without yielding a substantive resolution. In your opinion, what are the most important point(s) that must be cleared for implementation of the Kyoto Protocol, which was created by agreement among the approximately 160 developed and developing countries that participated in the climate change framework convention? Please check up to 2 items.

- ⁽¹⁾ Additional financial support given by developed countries to developing countries.
- ⁽²⁾ Developing countries' promises to participate in the Kyoto Protocol in the near future.
- ⁽³⁾ Setting upper limits to the Kyoto Mechanism (emissions trading, clean development mechanism and joint implementation).
- ⁽⁴⁾ Specification of activities targeted by the CDM (clean development mechanism).
- ⁽⁵⁾ Vetoes over sink projects included as part of the CDM.
- ⁽⁶⁾ Methods to quantify a forest's absorption volume.
- ⁽⁷⁾ Compensation to countries affected by global warming, such as island nations and oil countries.
- ⁽⁸⁾ Introduction of domestic systems assuring the achievement of reduction targets among developed nations.
- ⁽⁹⁾ Other: _____
- ⁽¹⁰⁾ Don't know.

2-2. Global warming countermeasures have become important topics for humankind. Please check all of the items below corresponding to domestic efforts in your country since COP3 (Kyoto Conference) to reduce emissions of greenhouse gases.

- ⁽¹⁾ Development of energy-saving technologies or green products.
- ⁽²⁾ Promotion of natural energy sources (wind power, solar power, etc.).
- ⁽³⁾ Promulgation of laws and regulations or strengthening of penalties aimed at reducing global warming gases.
- ⁽⁴⁾ Greening of the tax system, including the introduction of environmental taxes.
- ⁽⁵⁾ Promotion of energy saving [^(a) industry, ^(b) lifestyles of the general public, ^(c) transportation related].
- ⁽⁶⁾ Greening of industry (self-initiatives, environmental accounting, information disclosure, employee awareness training, etc.).
- ⁽⁷⁾ Self-initiatives by local authorities.
- ⁽⁸⁾ Promotion of education and awareness training for the general public.
- ⁽⁹⁾ Other: _____
- ⁽¹⁰⁾ Don't know.

3-1-1. Water problems are presently increasing in severity around the world with the pollution or desiccation of rivers and ground water due to population increases, agricultural land use, industrialization and urbanization. Please inform us about the water situation in your country. To what extent is the quality of water used in daily life, including drinking water, deteriorating in your country?

- ⁽¹⁾ Acute problem. ⁽²⁾ Mild problem. ⁽³⁾ Okay for now, but a problem in future.
- ⁽⁴⁾ No problem now or in future. ⁽⁵⁾ Don't know.

3-1-2 If you selected answers 1-3 above, check 2 of the underlying causes below.

- ⁽¹⁾ Pollution from agricultural wastes, including harmful substances.
- ⁽²⁾ Pollution from industrial wastes, including harmful substances.
- ⁽³⁾ Pollution from wastewater from the general public.

- ⁽⁴⁾ Devastation of water reserve lands.
- ⁽⁵⁾ Harmful effluents, including adverse soil effects.
- ⁽⁶⁾ Salinization.
- ⁽⁷⁾ Deterioration of water quality due to reductions in river or lake levels.
- ⁽⁸⁾ Other: _____
- ⁽⁹⁾ Don't know.

3-1-3. Please check the 2 items below that you think are the most important for resolving problems with the quality of water used in daily life.

- ⁽¹⁾ Enacting laws and regulations to maintain water quality.
- ⁽²⁾ Building treatment facilities for drinking water and sewage.
- ⁽³⁾ Conservation of water reserve lands.
- ⁽⁴⁾ Developing technologies to cheaply reduce pesticides and other harmful substances in agricultural waste to extremely low concentrations.
- ⁽⁵⁾ Developing wastewater treatment technologies to cheaply reduce harmful substances in industrial waste to extremely low concentrations.
- ⁽⁶⁾ Restraining abuses of water use to secure water volume.
- ⁽⁷⁾ Other: _____
- ⁽⁸⁾ Don't know.

3-2-1. To what extent is water quantity a problem in your country, considering the combined supply of water used in daily life, agriculture and industry?

- ⁽¹⁾ Acute water shortage. ⁽²⁾ Mild water shortage. ⁽³⁾ Okay for now, but shortages in future.
- ⁽⁴⁾ No problem now or in future. ⁽⁵⁾ Don't know.

3-2-2. If you selected answers 1-3 above, check 2 of the underlying causes below.

- ⁽¹⁾ Increased water demand due to increased population.
- ⁽²⁾ Desiccation of river/lake/ground waters due to the excessive use of water for agriculture/industry/daily life.
- ⁽³⁾ Reduced precipitation due to abnormal weather.
- ⁽⁴⁾ Inappropriate management of lake/river/ground waters.
- ⁽⁵⁾ Devastation of water reserve lands (forests).
- ⁽⁶⁾ Lack of water extraction adjustment mechanisms for rivers shared with another country.
- ⁽⁷⁾ Other: _____
- ⁽⁸⁾ Don't know.

3-2-3. Select the 2 measures below that you think are the most important to solving the water shortage for all uses, including agriculture, industry and daily life.

- ⁽¹⁾ Enacting laws or regulations to limit the volume of ground water or river water used.
- ⁽²⁾ Introducing economic measures, such as additive taxes on water consumption.
- ⁽³⁾ Developing technologies that improve the efficiency of water usage.
- ⁽⁴⁾ Promoting more efficient water use (in applications in which technological improvement is not thought necessary) and recycling.
- ⁽⁵⁾ Improving irrigation technology, switching crops.
- ⁽⁶⁾ Conserving water reserve lands.
- ⁽⁷⁾ Constructing reservoirs.
- ⁽⁸⁾ Promoting storage and effective use of rainwater (by use of rain barrels, roofs, tanks, etc.).
- ⁽⁹⁾ Promoting awareness of water conservation, etc.
- ⁽¹⁰⁾ Other: _____
- ⁽¹¹⁾ Don't know.

4. Endocrine disruptors are described as chemical substances that enter human and wildlife bodies and impair endocrine functioning. What is your awareness of these substances? Please select 1 response that most closely resembles your thoughts about them.

- ⁽¹⁾ Since the scientific basis for them is unclear, I don't sense any urgent hazard.
- ⁽²⁾ Since scientific revelations are ongoing, we should avoid using the chemicals currently thought to pose hazards.
- ⁽³⁾ It will be too late if we wait for scientific proof, so we should act prudently with regard to all synthetic chemicals.

- ⁽⁴⁾ We should establish a stricter testing system for all existing and future synthetic chemicals and publish the test results.
- ⁽⁵⁾ Other: _____
- ⁽⁶⁾ Don't know.

5. Although simplifying our lifestyles is thought to be necessary to attain a sustainable society, the answers to past surveys have so far indicated that making these changes will be extremely difficult. Please check the 2 responses you think will be effective as social systems for helping people to alter their lifestyles.

- ⁽¹⁾ To make the cost of lighting, air conditioning, water and similar items progressively higher above a set consumption level.
- ⁽²⁾ To introduce environmental taxes (carbon taxes, greening of automobile taxes, taxes on frozen/hothouse food processors posing a heavy environmental burden).
- ⁽³⁾ To make it easy for consumers to purchase green products by developing and providing low-priced environmentally friendly products.
- ⁽⁴⁾ To promote recycling and expand used goods markets.
- ⁽⁵⁾ To expand transport systems that reduce automobile use.
- ⁽⁶⁾ To introduce incentives for environmentally friendly houses and long-lasting housing.
- ⁽⁷⁾ Other: _____

6. In 2002, the Rio Plus 10 Summit (follow-up summit to the United Nations Conference on Environment and Development) will be held in South Africa. A comprehensive review of "Agenda 21" selected at the Rio summit in 1992 is expected to be undertaken at this conference. Please indicate the progress made in your country toward the following 10 categories taken from the Agenda 21 action plan by circling a response on the scale of (a) to (e) for each category.

		Significant progress		Some progress		Cannot determine		Almost no progress		No progress
(1) Promotion of environmental education	(a)	(b)	(c)	(d)	(e)					
(2) Activities by local governments and citizens' groups	(a)	(b)	(c)	(d)	(e)					
(3) Environmental measures by industry	(a)	(b)	(c)	(d)	(e)					
(4) Scientific and technological contributions	(a)	(b)	(c)	(d)	(e)					
(5) Formation of recycling systems	(a)	(b)	(c)	(d)	(e)					
(6) Conservation of forest resources	(a)	(b)	(c)	(d)	(e)					
(7) Conservation of biodiversity	(a)	(b)	(c)	(d)	(e)					
(8) Greenhouse gas prevention measures	(a)	(b)	(c)	(d)	(e)					
(9) Population and poverty problems	(a)	(b)	(c)	(d)	(e)					
(10) Lifestyle alteration	(a)	(b)	(c)	(d)	(e)					

7. As we stand at the beginning of the 21st century, what do you predict will happen to the global environment after 30 years (after approximately one generation). Please indicate the perception in your country of the following 10 items by circling a response on the scale of (a) to (g).

		Much better		Moderately better		No change		Moderately worse		Much worse		So bad as to imperil human survival		Don't know
(1) Overall state of the global environment	(a)	(b)	(c)	(d)	(e)	(f)	(g)							
(2) Population/poverty problems	(a)	(b)	(c)	(d)	(e)	(f)	(g)							
(3) Drinking water/food problems	(a)	(b)	(c)	(d)	(e)	(f)	(g)							
(4) Air pollution	(a)	(b)	(c)	(d)	(e)	(f)	(g)							
(5) River/marine pollution	(a)	(b)	(c)	(d)	(e)	(f)	(g)							
(6) Forest depletion/dessertification	(a)	(b)	(c)	(d)	(e)	(f)	(g)							
(7) Biodiversity	(a)	(b)	(c)	(d)	(e)	(f)	(g)							
(8) Global warming problems, including energy problems	(a)	(b)	(c)	(d)	(e)	(f)	(g)							
(9) Waste treatment problems, including chemical substances	(a)	(b)	(c)	(d)	(e)	(f)	(g)							
(10) Urban/transport problems	(a)	(b)	(c)	(d)	(e)	(f)	(g)							

8. Feel free to write comments on any topic related to environmental problems. Use additional paper if required.

**Results of the Tenth Annual
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REPORT

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