Foreword

This report summarizes 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.

Sixteen years have already passed since the Earth Summit in Rio de Janeiro, and six years since the Johannesburg Summit. Meanwhile, the importance with which global environmental problems, particularly global warming, must be undertaken has grown ever more urgent; these issues were discussed at the G-8 summit in July in Toyako, Hokkaido, as being of utmost importance, and the 16 leaders of the Major Economies Meeting (MEM) adopted a declaration in which they agreed to "support a shared vision for long-term cooperative action, including a long-term global goal for emission reductions" of greenhouse gases. Nonetheless, the major powers and developing nations failed to agree on an emission target. As such, negotiations regarding the specific path towards emission reduction, including a future framework beyond the Kyoto Protocol, will continue.

In this year's survey, the 17th, the questionnaire was designed to gauge the perceptions of environmental experts from both governmental and private sector organizations around the world, about the progress of endeavors to solve various environmental problems and to highlight how those observations reflect regional characteristics. In addition to the issues addressed annually in the survey, including queries about the Environmental Doomsday Clock and Agenda 21, the questionnaire this year cast light on the most pressing issue of global warming, and the related issues of energy and lifestyle alterations, similar to last year.

Once again, the Foundation received thoughtful responses from countless environmentally conscious experts in the private and public sectors around the world. We would like to extend our heartfelt gratitude to them for taking the time to respond to the survey. In addition, we would like to express our profound appreciation to Professor Akio Morishima, Special Research Advisor of the Institute for Global Environmental Strategies, for continuing to provide invaluable advice at all stages of the project, from the initial survey design, to the analysis of the results.

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

The Asahi Glass Foundation
September 2008

I. Facts about the 17th Annual "Questionnaire on Environmental Problems and the Survival of Humankind"

Response period: Questionnaires were sent out in April 2008 with a return deadline of June 2008.

Questionnaire respondent pool: Environmental experts selected from members of government organizations, academic and research institutions, NGOs, and corporations (based on the Asahi Glass Foundation database).

Questionnaires mailed: 4,369

Questionnaires returned: 732

Response rate: 16.8%

Breakdown of respondents by region, gender, and occupational affiliation:

Region	Number of responses	Percent of total
Developed Regions	481	65.8
Japan	314	42.9
United States & Canada	32	4.4
Western Europe	67	9.2
Asian Four (South Korea, Hong Kong, Taiwan, and Singapore)	68	9.3
Developing Regions	193	26.4
Rest of Asia	119	16.3
Latin America	50	6.8
Africa	24	3.3
Others	57	7.7
Oceania	14	1.9
Eastern Europe & former Soviet Union	28	3.8
Middle East	15	2.0
(Overseas Total)	(418)	(57.0)
Total	732	100.0

Gender		
Male	565	77.2
Female	115	15.7
No response	52	7.1
Total	732	100.0

Occupational Affiliation		
National government	76	10.4
Local government	80	10.9
University or research institution	149	20.4
Nongovernmental organization	133	18.2
Corporation	119	16.3
Others	119	16.3
No response	56	7.5
Total	732	100.0

Notes: * Unless otherwise noted, this report used the 732 responses as the basis for calculating percentages, which are rounded up from the first or second decimal place.

* In this report, "Asia" is all of Asia except Japan. Further, South Korea, Hong Kong, Taiwan, and Singapore are classified as the "Asian Four (A4)." Other Asian countries are classified as the "Rest of Asia (RoA)."
* Japan, United States & Canada, Western Europe, and the Asian Four are classified as "Developed region," and while the remainder of the Rest of Asia, Latin America, and Africa are classified as "Developing region," and Oceania, Eastern Europe & former Soviet Union, and Middle East are classified as "Others."
* 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. In the diagrams, "N" represents the number of valid responses.

II. Summary of Questionnaire Results

A. Repeat Topics

1. Awareness of the Crisis Facing Human Survival (Question 1)
The Environmental Doomsday Clock

- The average time on the environmental doomsday clock for all respondents advanced by 2 minutes to 9:33. Although the movement of the needle was slight, this represents the greatest advancement of the time since the inception of the survey, reflecting the highest sense of crisis and continuing the trend from last year.
- The average time for Japanese respondents advanced by 8 minutes from last year to 9:42.
- The average time for overseas respondents retreated by 2 minutes from last year to 9:26.
- In determining the time on the environmental doomsday clock, "global warming" was most frequently cited as the main environmental condition of concern by respondents from both Japan and overseas. This was followed by "water shortage, food problems," and "deforestation, desertification, loss of biodiversity."
- While the percentage of respondents who selected "global warming" declined slightly in both Japan and overseas, those who selected "water shortage, food problems" increased by approximately 10 points in both Japan and overseas.

2. Progress Toward Agenda 21 (Question 2)

As in previous years, the questionnaire surveyed respondents about the 10 categories of the action plan as outlined in Agenda 21.

- As in previous years, the largest proportion of responses indicating progress continued to be in "promotion of environmental education." In contrast, the category with the least amount of responses indicating progress was "lifestyle alteration."
- Similar to the previous year, the categories in which more than 50% of respondents reported progress included "promotion of environmental education," "activities by local governments and citizens' groups," "scientific and technological contributions," "formation of recycling systems," and "environmental measures by industry."
- In the five categories of "greenhouse gas prevention measures," "conservation of forest resources," "conservation of biodiversity," "population/poverty problems," and "lifestyle alteration," the percentage of respondents who indicated there had been no progress surpassed those who stated progress had been made. Once again, "lifestyle alteration" was the only category in which responses indicating no progress exceeded 50%.

B. Main Focus of the Current Year's Questionnaire

3. The Kyoto Protocol and Post-2012 Approaches (Question 3)

<u>Evaluating the Role of the Kyoto Protocol</u>

- The majority of respondents stated that the Kyoto Protocol should be commended, with a combined 70% selecting either "it presented a systemic model for future international schemes," or "for prompting developed countries to implement emissions reduction objectives ahead of developing countries." The favorable evaluation greatly exceeded the 26% of respondents who stated that the Kyoto Protocol cannot be commended. These respondents selected either "the lack of participation by a few major developed countries limits effectiveness," or "the absence of a system to aggressively promote reduction among developing countries."

<u>Evaluating COP13</u>

- The achievements of COP13 were favorably evaluated, with more than 50% of respondents in every region selecting "it should be commended," and 68% of overall respondents agreeing with the statement.
- The most frequently cited reason for commending the achievements of COP 13 by respondents in all regions was "the United States of America, China, and India agreed to participate." In particular, respondents from developed regions frequently made this selection, at 68%. Furthermore, the second most frequently cited reason by respondents in all regions was "the adoption of the Bali Roadmap."

Considerations Towards a New Post-2012 Framework

- There were regional differences in what respondents selected as the most important considerations in formulating a new post-2012 framework. Whereas 75% of respondents from developed regions selected "emission suppression measures for China, India, and for emerging economies," 49% of respondents from developing regions selected "a numeric reduction target with more stringent legal enforcement powers for developed countries," revealing a significant contrast.

Carbon Tax

- A high percentage of respondents from developed regions indicated awareness of a movement towards the introduction of carbon taxes, with 65% selecting either "carbon taxes have already been adopted," or "the introduction of carbon taxes is being considered." In contrast, only 32% of respondents in developing regions made these selections; instead, those selecting "there are no plans to introduce carbon taxes" comprised 60% of the responses from developing regions.
- Overall, 62% of respondents indicated that carbon taxes would be effective in reducing carbon dioxide emissions, significantly exceeding the 27% who selected "I don't think it will be effective."

Emissions Trading

- Forty-three percent of respondents stated emissions trading will be effective, falling below the 53% who selected "I don't think it will be effective."
- Those who selected "I think it will be effective" most frequently cited the reason "emissions trading utilizes market forces, making it a cost efficient measure," at 62%. This was followed by "it will add momentum to existing corporate efforts," at 35%. Almost no regional differences emerged in these responses.
- Among those who selected "I don't think it will be effective," 37% cited the reason "economic bargaining will be prioritized." This was followed by 24% who selected "purchasing allowances does not lead to meaningful emissions reductions." Regionally, it was notable that 44% of respondents from developed regions selected "economic bargaining will be prioritized."

4. Energy Problems (Question 4)

Renewable Energies

- Overall, nearly two-thirds of respondents indicated strong support for the promotion of solar and wind power generation, with 63% selecting "renewable energies in their current forms are not economically optimal and present problems like cost. But they should be aggressively promoted considering the future of the global environment and the constraints of current sources of energy." On the other hand, those who selected "fossil fuels and nuclear energy should remain the main sources of power generation with renewable energies positioned to fulfill a supplementary role" comprised 11% of the responses.
- "Renewable energies are effective as a decentralized source of energy with high potential for practical use" was the most frequently selected aspect at 53% of the responses overall.
- The highest response with regards to bioethanol and biodiesel was "the use of raw materials for biofuels competes with their use for food supply; thus, it is not desirable to utilize them as a source of energy," at 38%. This was followed by "they should be partially utilized, depending upon the characteristics of the region or the country," at 31%.

Nuclear Power Generation

Approximately two-thirds of respondents overall either support or condone the reliance on nuclear power generation, with a combined 63% selecting either "the use of nuclear power generation should be promoted," "nuclear power generation is extremely trustworthy," or "the current situation should be maintained," for various reasons including the prevention of global warming. On the other hand, 18% of respondents selected "the use of nuclear power generation will become acceptable with enhancements in safety," and 13% chose "nuclear power generation is unacceptable from the standpoints of nuclear waste by-products and safety."

5. Lifestyle Alteration (Question 5)

Awareness Towards Lifestyle Alteration

- Twenty-nine percent of overseas respondents selected “I do not pursue a lifestyle based on throw-away or excessive consumption,” more than double the percentage of respondents in Japan at 14%.
- Overseas response for the combined total of “I do not pursue a lifestyle based on throw-away or excessive consumption,” and “it is possible to alter my lifestyle” surpassed 60%. In particular, the combined total was 81% among respondents in the United States & Canada, revealing a high awareness towards lifestyle alteration.

Factors Hampering Lifestyle Alteration

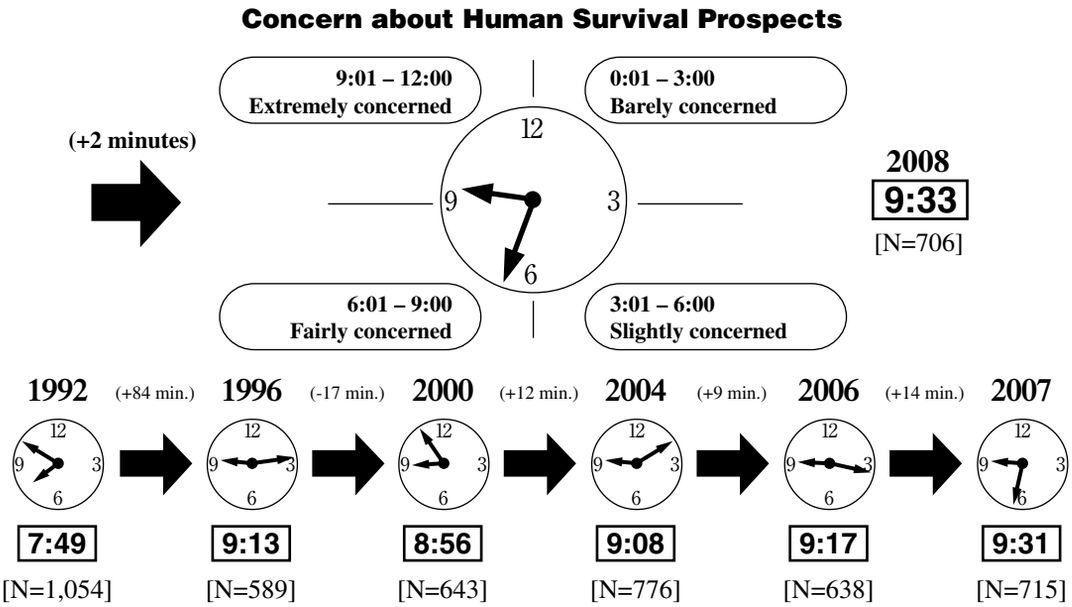
- The most frequently selected obstacle to lifestyle alteration, both overall and in each region, was “while there is recognition for the magnitude of environmental problems, people find it cumbersome to put things into action.”
- Overall, this was followed by “a belief that one person’s changing his lifestyle would not make a difference,” and “while there is recognition for the magnitude of environmental problems, it is difficult to respond due to the relatively high cost of ecological goods.”

III. Questionnaire Results

A. REPEAT TOPICS
1. AWARENESS OF THE CRISIS FACING HUMAN SURVIVAL (QUESTION 1)

1.1 The Environmental Doomsday Clock

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? Write a time within the range 0:01 to 12:00 corresponding to the extent of your concern in the boxes below.



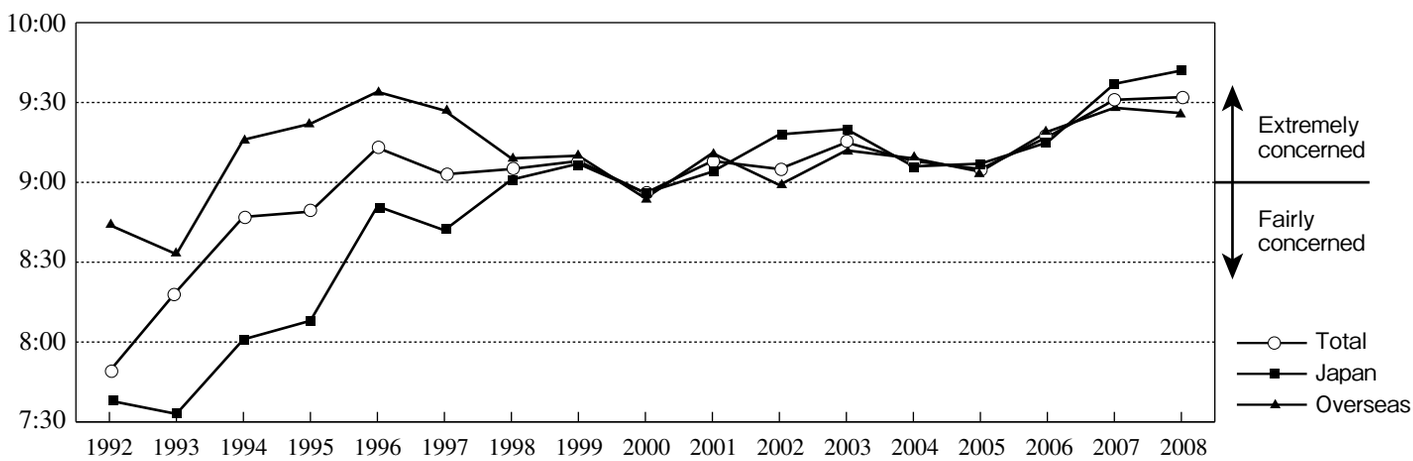
	Number of respondents (2008)	Changes in time from year to year					Changes in average time by region	
		1998	→	2007	→	2008	1998 → 2008	2007 → 2008
Total	706	9:05	→	9:31	→	9:33	+28	+2
Japan	303	9:01	→	9:34	→	9:42	+41	+8
United States & Canada	29	8:40	→	9:40	→	10:13	+93	+33
Western Europe	66	9:37	→	9:23	→	9:44	+7	+21
Asia	184	8:59	→	9:10	→	8:52	-7	-18
Asian Four	68	*	→	9:30	→	8:57	*	-33
Rest of Asia	116	*	→	9:03	→	8:49	*	-14
Latin America	50	9:04	→	9:38	→	9:49	+45	+11
Africa	20	9:08	→	10:02	→	10:31	+83	+29
Oceania	13	9:34	→	10:27	→	10:34	+60	+7
Eastern Europe & former Soviet Union	28	9:44	→	9:20	→	9:37	-7	+17
Middle East	12	8:47	→	9:41	→	9:24	+37	-17
Overseas Total	403	9:09	→	9:28	→	9:26	+17	-2
Male	545	9:01	→	9:30	→	9:32	+31	+2
Female	111	9:25	→	9:35	→	9:44	+19	+9
Developed Regions	466	*	→	9:32	→	9:38	*	+6
Developing Regions	186	*	→	9:21	→	9:16	*	-5
Others	53	*	→	9:44	→	9:48	*	+4

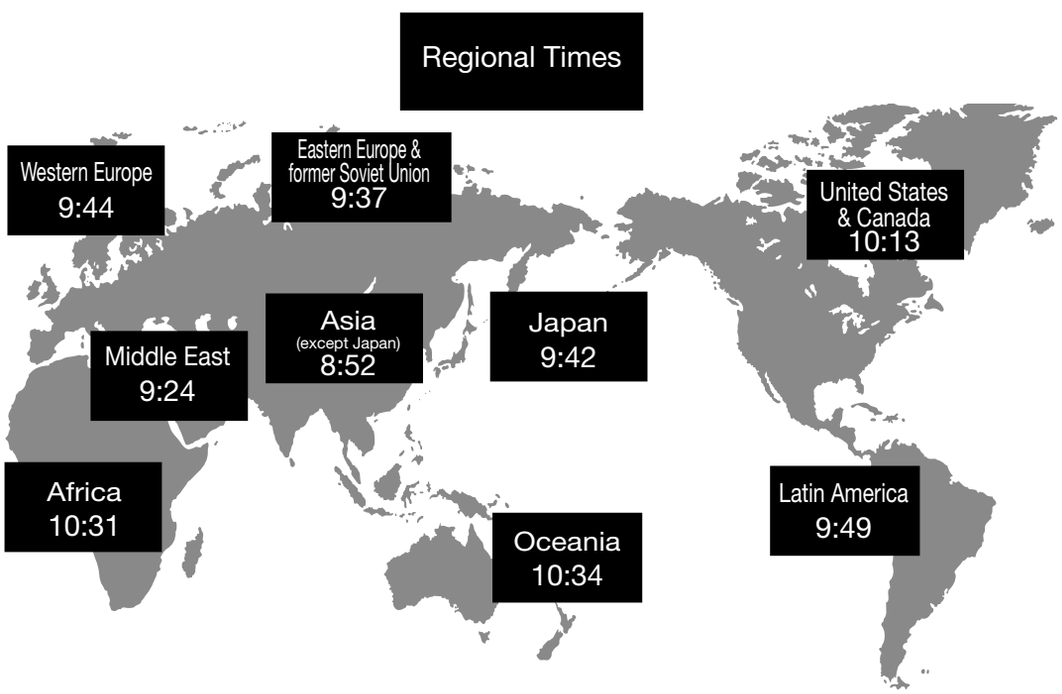
- The average time on the environmental doomsday clock for all respondents advanced by 2 minutes to 9:33. Although the movement of the needle was slight, this represents the greatest advancement of the time since the inception of the survey, reflecting the highest sense of crisis and continuing the trend from last year.

- The average time for Japanese respondents advanced by 8 minutes from last year to 9:42.
- The average time for overseas respondents retreated by 2 minutes from last year to 9:26.
- With the exception of respondents from Asia whose needle retreated 18 minutes to 8:52 and the Middle East whose needle retreated 17 minutes to 9:24, the average time advanced significantly in all regions. Specifically, the average time for respondents in United States & Canada advanced by 33 minutes to 10:13; in Africa, by 29 minutes to 10:31; and in Oceania, by 7 minutes to 10:34, each surpassing the 10 o'clock mark. The average time for respondents in Western Europe advanced 22 minutes to 9:44, and those in Eastern Europe & the former Soviet Union indicated a time of 9:37, an advancement of 17 minutes.
- Both female and male respondents reported advancement in the environmental doomsday clock, with female respondents indicating a larger movement. The average time among male respondents advanced 2 minutes to 9:32, whereas female respondents reported an average time of 9:44, an advancement of 9 minutes.

Changes in the Environmental Doomsday Clock

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total	7:49	8:19	8:47	8:49	9:13	9:04	9:05	9:08	8:56	9:08	9:05	9:15	9:08	9:05	9:17	9:31	9:33
Japan	7:38	7:33	8:01	8:08	8:51	8:42	9:01	9:07	8:56	9:04	9:18	9:20	9:06	9:07	9:15	9:34	9:42
Overseas	8:44	8:33	9:16	9:22	9:34	9:27	9:09	9:10	8:56	9:11	8:51	9:12	9:09	9:04	9:19	9:28	9:26
Overseas - Japan (min.)	66	60	75	74	43	45	8	3	0	7	-27	-8	3	-3	4	-6	-16





1.2: ENVIRONMENTAL CONDITIONS OF CONCERN

When you selected the time, what were the main environmental conditions about which you were concerned? Please select up to three (3) of the following items of concern.

Environmental Conditions of Concern in Determining the Doomsday Clock Time for 2008

	Developed Regions				**Developing Regions**						**Others**				
	Japan [N=314]	United States & Canada [32]	Western Europe [67]	Asian Four [65]	Rest of Asia (121)	Latin America [50]	Africa [24]	Oceania [14]	Eastern Europe & former Soviet Union [28]	Middle East [15]	Overseas Total [418]	**Developed Regions** [478]	**Developing Regions** [195]	**Others** [57]	**Total** [732]
General environmental problems	32	28	22	18	24	20	38	29	25	7	23	28	25	21	27
Global warming	72	66	70	85	59	58	71	50	46	73	65	73	60	54	68
Air pollution, water contamination, river/ocean pollution	20	22	19	52	56	38	21	29	57	60	42	24	47	51	33
Water shortage, food problems	57	44	51	46	46	38	54	43	36	40	45	54	45	39	50
Deforestation, desertification, loss of biodiversity	47	28	39	40	41	64	58	29	36	13	42	44	49	28	44
People's lifestyles, waste-related problems	14	19	25	26	28	24	8	7	43	20	25	18	25	28	20
Environmental problems and economics/ trade-related activities	13	9	13	15	12	16	8	21	36	13	15	13	13	26	14
Population, poverty, status of women	18	44	34	9	15	26	17	50	14	53	23	21	18	33	21
Others	5	16	10	5	4	2	8	7	0	0	6	6	4	2	5
No response	1	3	3	0	4	2	4	7	0	7	3	1	4	4	2

(%)

Notes: Figures enclosed by a double circle represent the answer with the highest number of replies. A single circle is used for the answer with the second highest number of replies. 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 less than three items, causing the aggregate total to be less than 300%.

- In determining the time on the environmental doomsday clock, "global warming" was most frequently cited as the main environmental condition of concern by respondents from both Japan and overseas. This was followed by "water shortage, food problems," and "deforestation, desertification, loss of biodiversity."
- While the percentage of respondents who selected "global warming" declined slightly in both Japan and overseas, those who selected "water shortage, food problems" increased by approximately 10 points in both Japan and overseas.
- While respondents from developed regions, developing regions, and other regions most frequently selected "global warming" as the main environmental condition of concern, the second condition varied by region. Respondents from developed regions selected "water shortage, food problems," while developing regions selected "deforestation, desertification, loss of biodiversity," and other regions selected "air pollution, water contamination, river/ocean pollution."

2. PROGRESS TOWARD AGENDA 21 (QUESTION 2)

Sixteen years have passed since Agenda 21 was adopted as an "action plan for the environment and development" at the Earth Summit in 1992. Please indicate the progress made in your country for the following 10 categories taken from the Agenda 21 action plan.

Comparison of Perceived Progress between 2003 and 2008

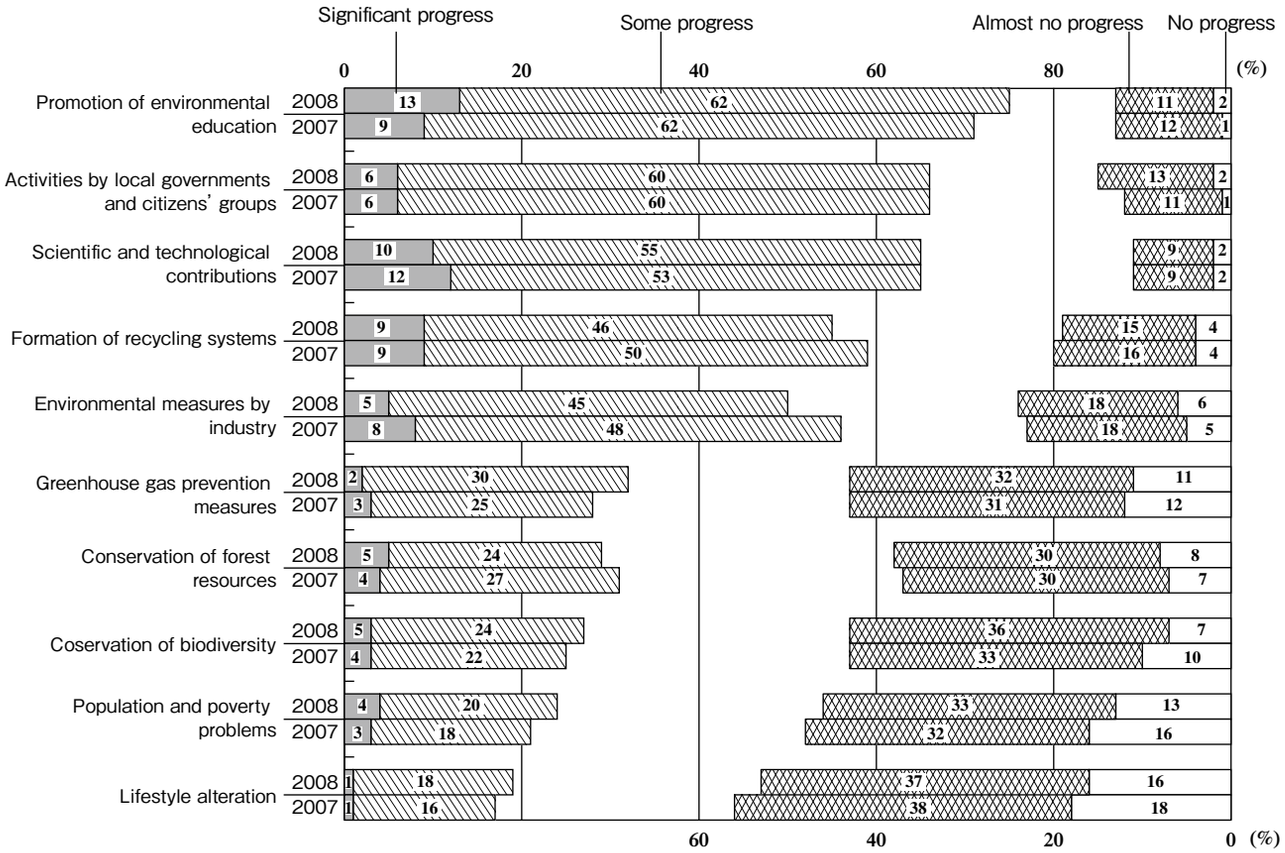
	Japan		United States & Canada		Western Europe		Asia		Asian Four		Rest of Asia		Latin America		Africa		Oceania		Eastern Europe & former Soviet Union		Middle East		Overseas Total		Total		
2008 →	[314]		[32]		[67]		[187]		[68]		[119]		[50]		[24]		[14]		[28]		[15]		[418]		[732]		
2003 →		[315]		[76]		[98]		[88]		[*]		[*]		[37]		[55]		[39]		[66]		[30]		[491]		[806]	
	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
Promotion of environmental education	**68**	71	**81**	76	**87**	80	**84**	77	**79**	*	**87**	*	**74**	78	**63**	82	**100**	87	**71**	74	**87**	77	**82**	78	**76**	76	(%)
Activities by local governments and citizens' groups	**62**	69	**84**	79	**76**	81	**66**	60	**76**	*	**61**	*	**74**	70	**46**	58	**93**	90	**57**	64	**67**	77	**69**	71	**66**	70	
Scientific and technological contributions	**66**	65	**81**	78	**78**	72	**70**	39	**63**	*	**73**	*	**44**	46	**42**	42	**79**	67	**43**	52	**40**	60	**64**	58	**65**	61	
Formation of recycling systems	**52**	70	**72**	70	**81**	65	**52**	45	**65**	*	**45**	*	**38**	32	**33**	27	**86**	72	**43**	27	**53**	53	**56**	50	**54**	58	
Environmental measures by industry	**54**	62	**50**	62	**73**	73	**44**	36	**46**	*	**44**	*	**46**	43	**29**	36	**29**	51	**39**	41	**60**	57	**48**	51	**51**	56	
Greenhouse gas prevention measures	**27**	28	**16**	22	**52**	45	**40**	31	**40**	*	**40**	*	**26**	22	**25**	27	**21**	21	**21**	24	**40**	20	**36**	29	**32**	29	
Conservation of forest resources	**12**	16	**34**	39	**60**	66	**45**	45	**44**	*	**46**	*	**26**	38	**42**	58	**36**	56	**32**	44	**27**	40	**42**	50	**29**	37	
Conservation of biodiversity	**11**	12	**28**	32	**51**	49	**37**	43	**34**	*	**39**	*	**28**	49	**46**	56	**79**	54	**39**	44	**53**	50	**40**	46	**28**	33	
Population and poverty problems	**6**	7	**6**	17	**27**	31	**49**	39	**22**	*	**64**	*	**28**	22	**29**	42	**43**	26	**43**	18	**33**	40	**37**	29	**24**	20	
Lifestyle alteration	**13**	15	**3**	7	**15**	18	**34**	22	**31**	*	**36**	*	**16**	8	**13**	15	**14**	23	**21**	11	**27**	17	**23**	15	**19**	15	

Note: Progress is calculated as the combined total of the "significant progress" and "some progress" categories.

As in previous years, we polled respondents about the progress they felt had been achieved in 10 categories taken from the Agenda 21 action plan. The results are listed in the chart in descending order, starting with categories with the greatest number of responses indicating "progress" (combines "significant progress" and "some progress").

- As in previous years, the largest proportion of responses indicating progress continued to be in "promotion of environmental education." In contrast, the category with the least amount of responses indicating progress was "lifestyle alteration."
- In 8 categories, excluding "scientific/technological contributions" and "environmental measures by industry," a larger proportion of overseas respondents reported progress than those from Japan. The discrepancy was particularly significant with regards to "conservation of forest resources," "conservation of biodiversity," and "population/poverty problems," at 30 points. The discrepancy in the reported progress of "promotion of environmental education" was 14 points, 10 points in "lifestyle alteration," and 8 points each in "activities by local governments and citizens' groups" and "greenhouse gas prevention measures."

Progress toward Agenda 21



- Similar to the previous year, the categories in which more than 50% of respondents reported progress included "promotion of environmental education," "activities by local governments and citizens' groups," "scientific and technological contributions," "formation of recycling systems," and "environmental measures by industry."
- This year again, in the five categories of "greenhouse gas prevention measures," "conservation of forest resources," "conservation of biodiversity," "population/poverty problems," and "lifestyle alteration," the percentage of respondents who indicated there had been no progress surpassed those who stated progress had been made. Once again, "lifestyle alteration" was the only category in which responses indicating no progress exceeded 50%.
- Responses indicating progress in the categories of "promotion of environmental education" and "greenhouse gas prevention measures" increased by 4 points compared to the previous year. On the other hand, reported progress in "formation of recycling systems" and "environmental measures by industry" fell by 5 points and 4 points, respectively.

Comparison of Differences between 2003 and 2008

	Japan	United States & Canada	Western Europe	Asia	Asian Four	Rest of Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total	Total
Promotion of environmental education	-3	5	7	7	*	*	-4	-19	13	-3	10	4	0
Activities by local governments and citizens' groups	-7	5	-5	6	*	*	4	-12	3	-7	-10	-2	-4
Scientific and technological contributions	1	3	6	31	*	*	-2	0	12	-9	-20	6	4
Formation of recycling systems	-18	2	16	7	*	*	6	6	14	16	0	6	-4
Environmental measures by industry	-8	-12	0	8	*	*	3	-7	-22	-2	3	-3	-5
Greenhouse gas prevention measures	-1	-6	7	9	*	*	4	-2	0	-3	20	7	3
Conservation of forest resources	-4	-5	-6	0	*	*	-12	-16	-20	-12	-13	-8	-8
Conservation of biodiversity	-1	-4	2	-6	*	*	-21	-10	25	-5	3	-6	-5
Population and poverty problems	-1	-11	-4	10	*	*	6	-13	17	25	-7	8	4
Lifestyle alteration	-2	-4	-3	12	*	*	8	-2	-9	10	10	8	4

(%)

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

When comparing the responses this year to those from five years ago in 2003,

- Overall, there has been no change in the top five categories in which a high percentage of respondents reported progress. These included “promotion of environmental education,” “activities by local governments and citizens’ groups,” “scientific/technological contributions,” “formation of recycling systems,” and “environmental measures by industry.” The bottom five categories have also remained unchanged, and included “greenhouse gas prevention measures,” “conservation of forest resources,” “conservation of biodiversity,” “population/poverty problems,” and “lifestyle alteration.”
- The category with the largest decline from 2003 to 2008 in the percentage of respondents reporting progress was “conservation of forest resources,” which fell in all regions except Asia.
- The percentage of respondents indicating progress in the “formation of recycling systems” increased from 2003 to 2008 in all regions except Japan and the Middle East. In contrast, the percentage fell significantly in Japan.

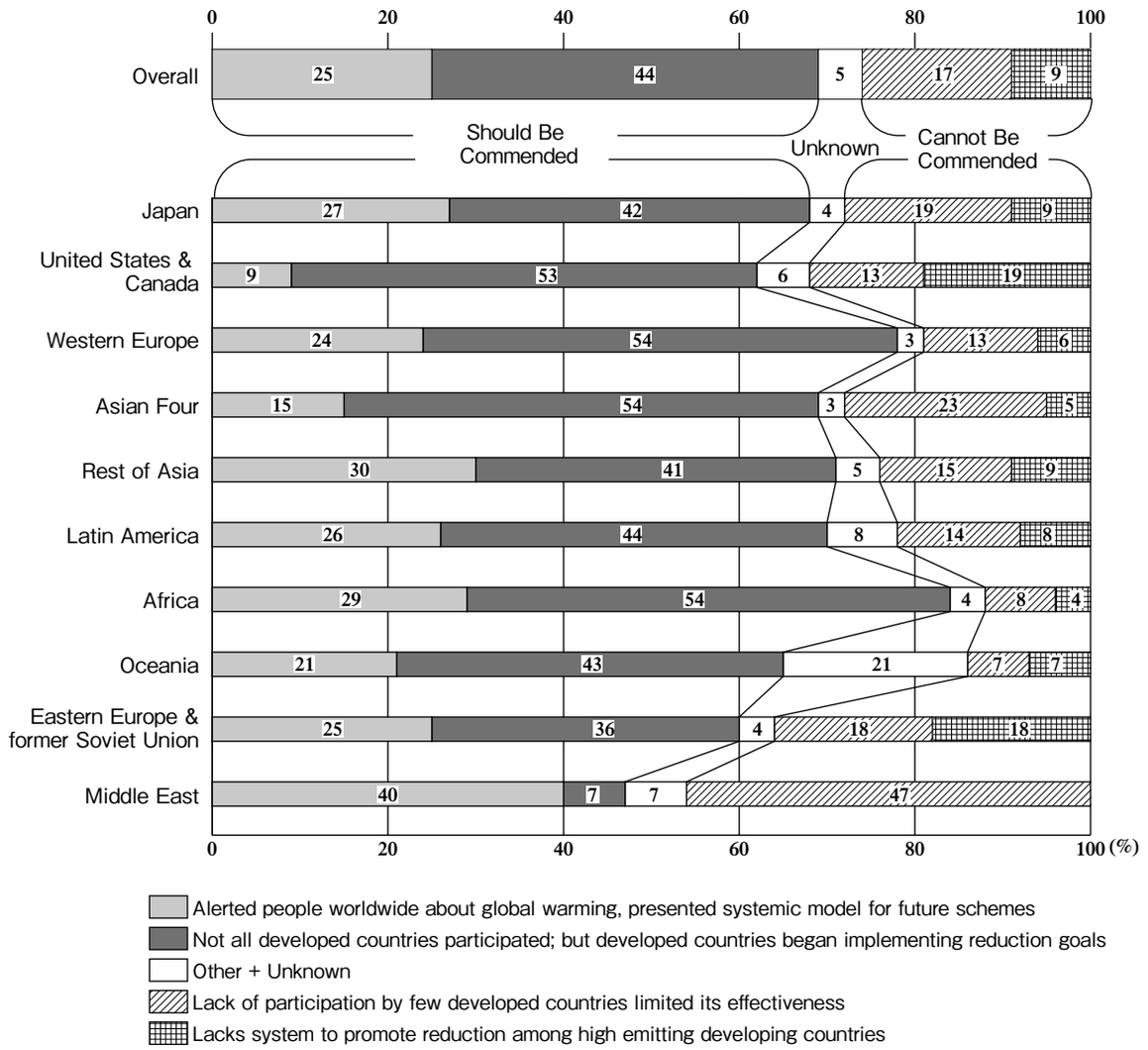
B. MAIN FOCUS OF THE CURRENT YEAR'S QUESTIONNAIRE
3. THE KYOTO PROTOCOL AND POST-2012 APPROACHES (QUESTION 3)

3.1 Evaluating the Role of the Kyoto Protocol

This year marks the beginning of the First Commitment Period of the Kyoto Protocol, bringing to bear emissions reduction obligations for the protocol's signatory developed countries.

How do you evaluate the role that the current Kyoto Protocol has played? Please circle one item from the following list that reflects your opinion.

Evaluating the Role of the Kyoto Protocol



- The majority of respondents stated that the Kyoto Protocol should be commended, with a combined 70% selecting either "it presented a systemic model for future international schemes," or "for prompting developed countries to implement emissions reduction objectives ahead of developing countries." The favorable evaluation greatly exceeded the 26% of respondents who stated that the Kyoto Protocol cannot be commended. These respondents selected either "the lack of participation by a few major developed countries limits effectiveness," or "the absence of a system to aggressively promote reduction among developing countries."
- However, there were regional differences in the evaluation of the Kyoto Protocol. Fewer respondents from the Middle East evaluated the Kyoto Protocol favorably, with less than 50% selecting a statement commending the agreement. This was followed by the United States & Canada and Eastern Europe & the former Soviet Union, where respondents commending the protocol only slightly exceeded 60%. Specifically, less than 10% of respondents from the United States & Canada selected "it presented a systemic model for future international schemes." In contrast, nearly 20% of respondents from the region stated that the Kyoto Protocol cannot be commended because of its "absence of a system to aggressively promote reduction among developing countries," revealing a significant difference from other regions.

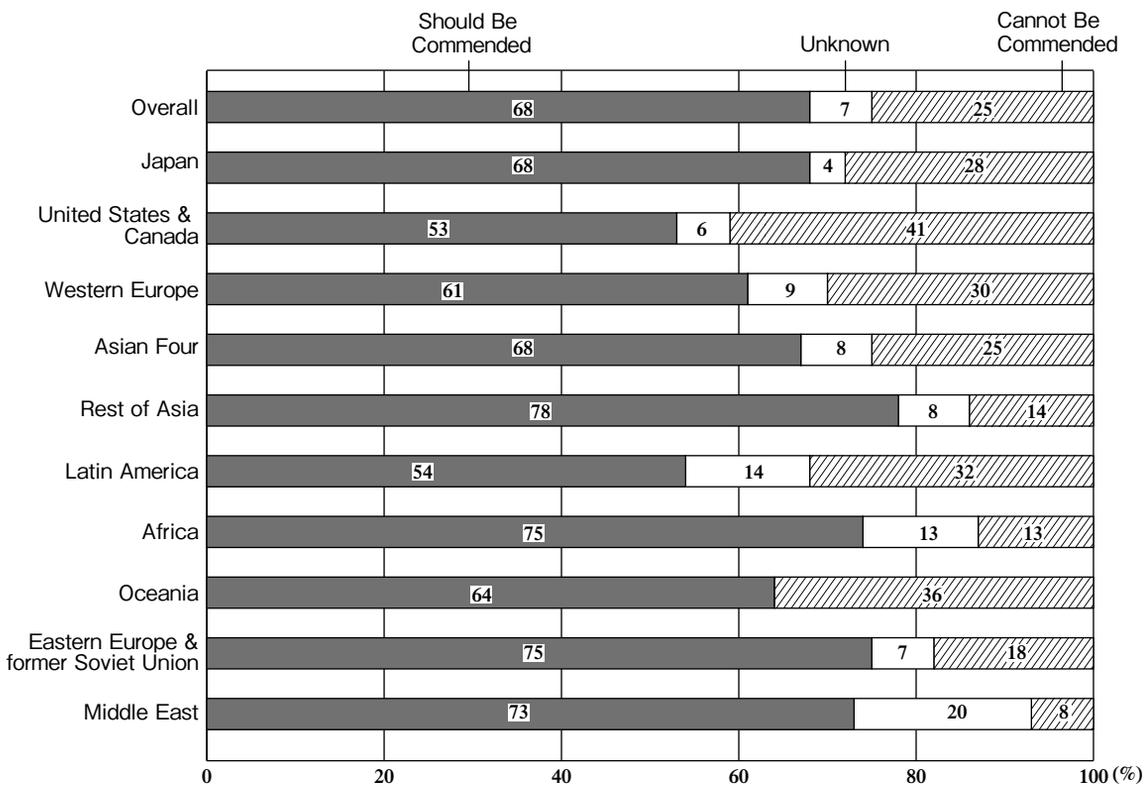
3.2 Post-2012 Approaches

3.2.1 Evaluating COP13

In December 2007, the 13th session of the Conference of the Parties (COP13) of the United Nations Framework Convention on Climate Change (UNFCCC) took place in Bali, Indonesia, with the participation of representatives from 180 countries. The delegates discussed global warming countermeasures, including an approach for the post-2012 period.

How do you evaluate the achievements of COP13? Please select either "it should be commended" or "it cannot be commended" and circle one item from the list that best reflects your rationale.

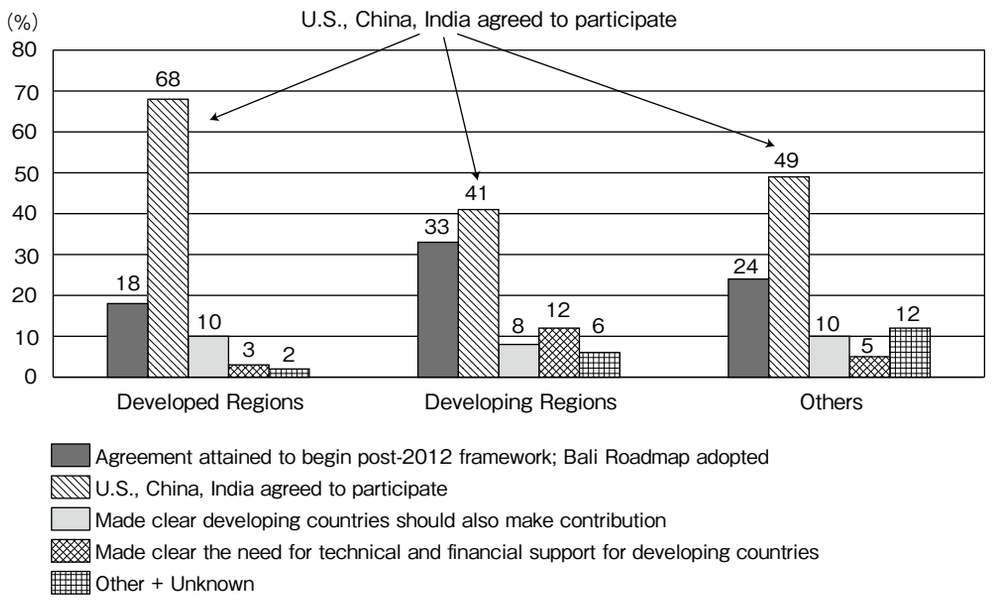
Evaluating COP13



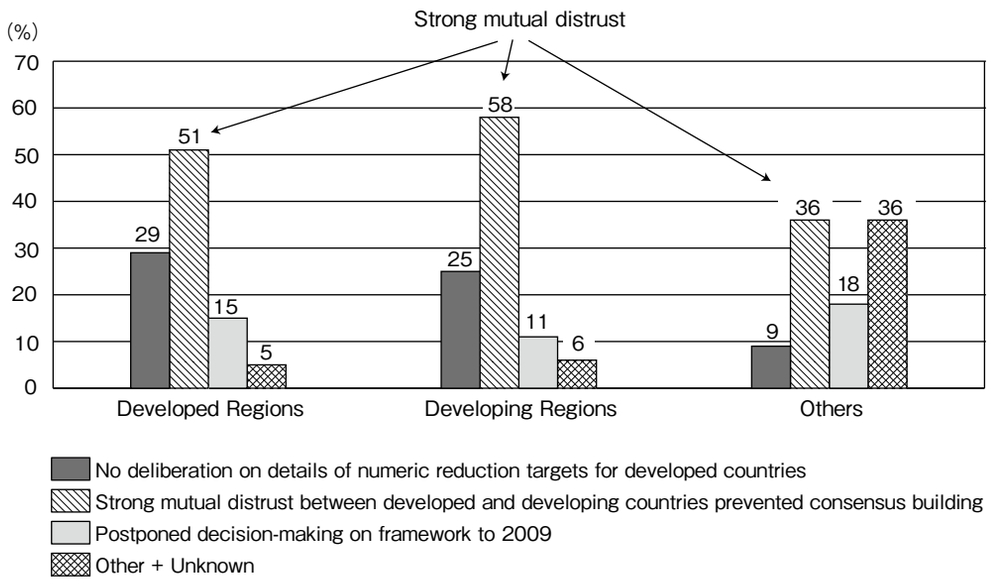
- The achievements of COP13 were favorably evaluated, with more than 50% of respondents in every region selecting "it should be commended," and 68% of overall respondents agreeing with the statement.
- The region with the highest percentage of respondents who commended the achievements of COP13 was the Rest of Asia, at 78%. In contrast, the region with the highest percentage of respondents who stated that COP13 cannot be commended was the United States & Canada, at 41%.
- Correspondingly, a comparatively low percentage of respondents from the United States & Canada and Latin America stated that COP13 should be commended, between 53 and 54%. In addition, the proportion of respondents from Western Europe who stated that COP13 should be commended was also comparatively low, at 61%.

Reasons COP13 Should/Should Not be Commended

Reasons for Commending COP13



Reasons COP13 Cannot be Commended



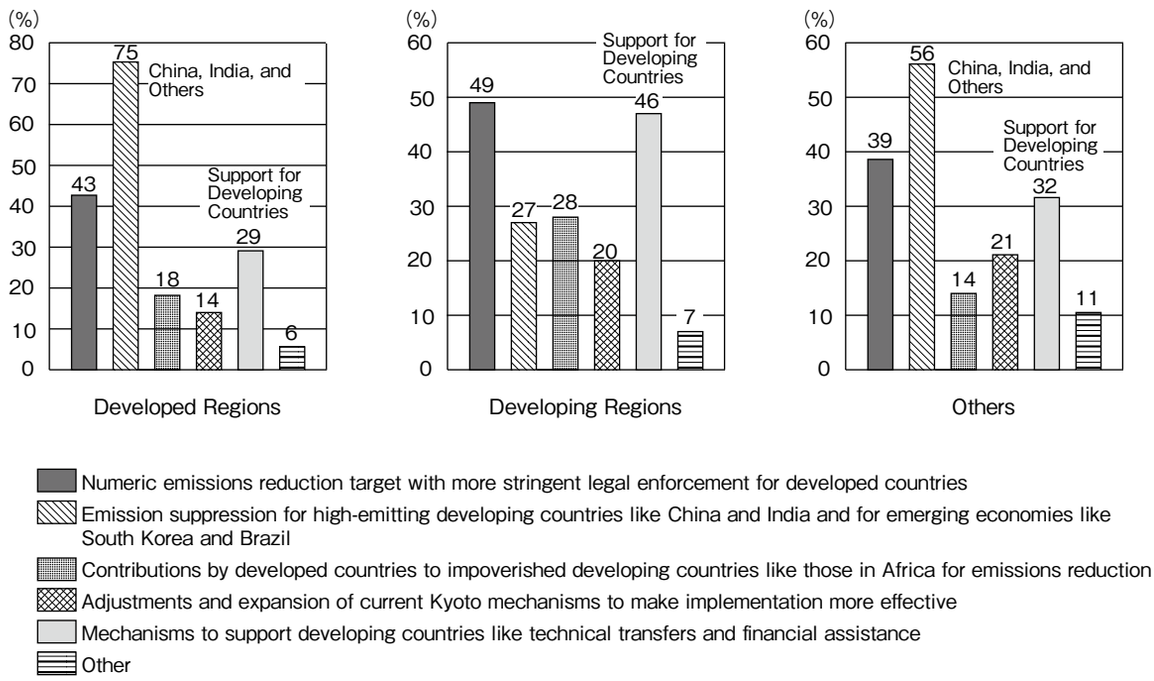
- The most frequently cited reason for commending the achievements of COP13 by respondents in all regions was "the United States of America, China, and India agreed to participate." In particular, respondents from developing regions frequently made this selection, at 68%. Furthermore, the second most frequently cited reason by respondents in all regions was "the adoption of the Bali Roadmap."
- The most frequently cited reason for not commending COP13 by respondents from all regions was "the strong mutual distrust between developed and developing countries." Respondents from both developed and developing regions selected this option, at 51% and 58% respectively.

3.2.2 Considerations Towards a New Post-2012 Framework

It was decided that countries will aim to reach an agreement for a new framework past the First Commitment Period of the Kyoto Protocol by the 15th session of the Conference of the Parties (COP15) in 2009.

Please select two items from the following list that you think are the most important considerations in formulating a new framework.

Considerations Towards a New Post-2012 Framework



- There were regional differences in what respondents selected as the most important considerations in formulating a new post-2012 framework. Whereas 75% of respondents from developed regions selected “emission suppression measures for China, India, and for emerging economies,” 49% of respondents from developing regions selected “a numeric reduction target with more stringent legal enforcement powers for developed countries,” revealing a significant contrast.
- Further, 47% of respondents from developing countries also selected “mechanisms to support developing countries.”

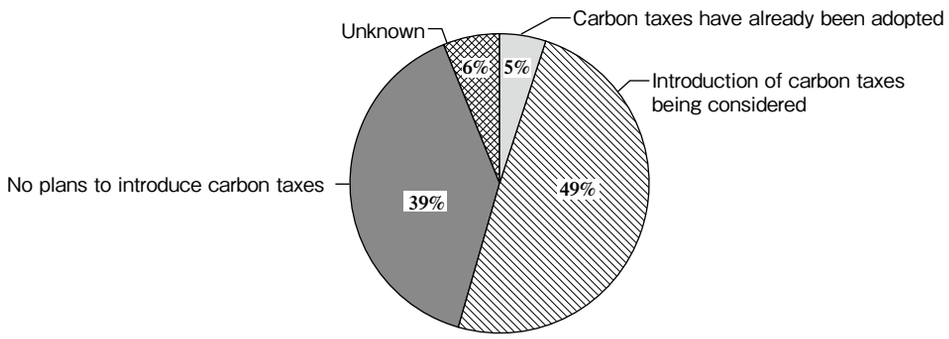
3.2.3 Carbon Tax

The idea of assigning a value to carbon as a measure to reduce emissions has gained ground, with the introduction of a carbon tax being one of the potential schemes. The following questions pertain to the current status of carbon taxes in your country and the thinking around such a measure.

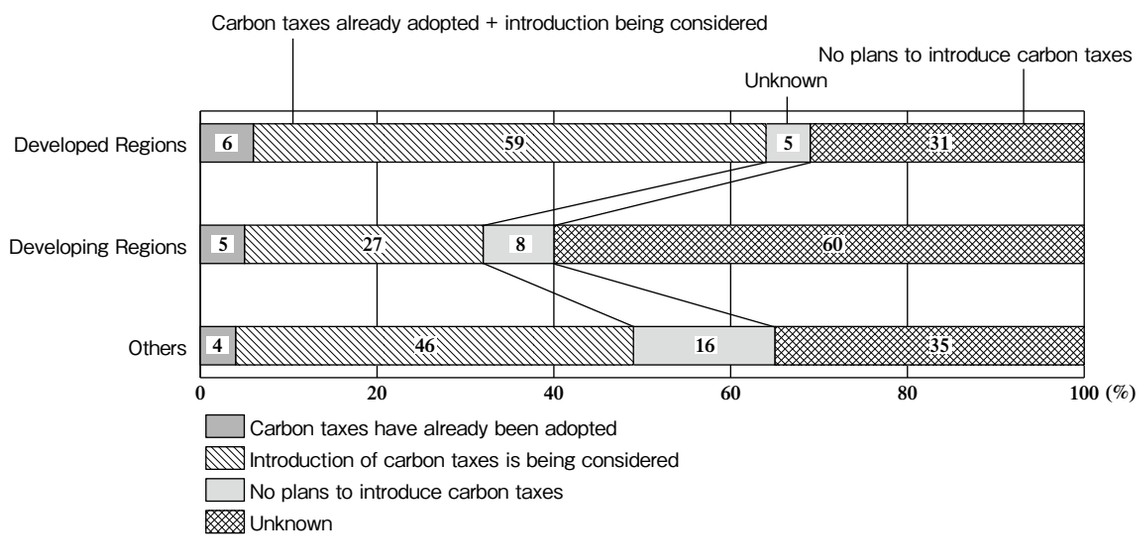
3.2.3.1 The Status of Carbon Taxes Implementation

What is the current status of carbon tax in your country? Please circle one item from the following list.

The Status of Carbon Taxes Implementation—Overall



The Status of Carbon Taxes Implementation—By Region

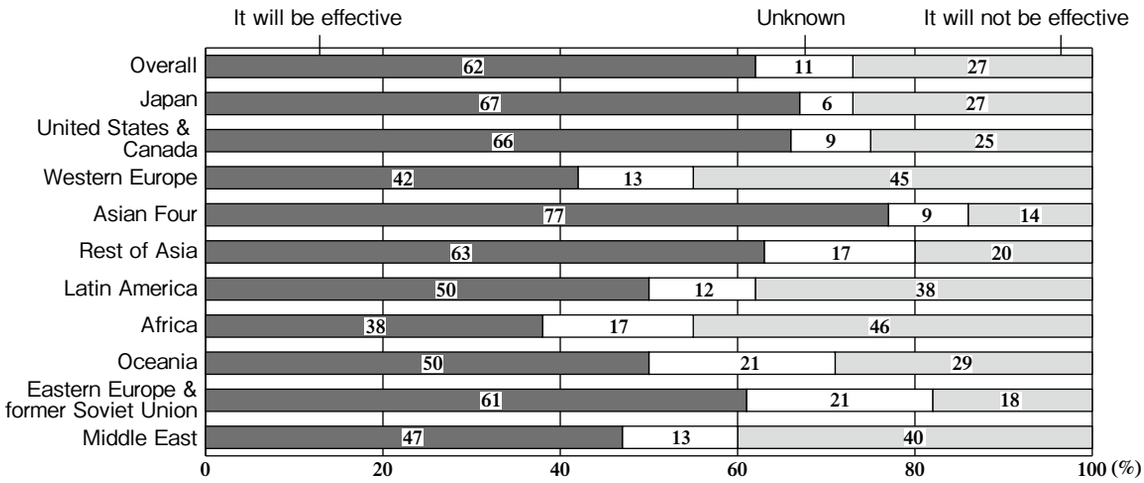


- A high percentage of respondents from developed regions indicated awareness of a movement towards the introduction of carbon taxes, with 65% selecting either "carbon taxes have already been adopted," or "the introduction of carbon taxes is being considered." In contrast, only 32% of respondents in developing regions made these selections; instead, those selecting "there are no plans to introduce carbon taxes" comprised 60% of the responses from developing regions.

3.2.3.2 Effectiveness of Carbon Tax

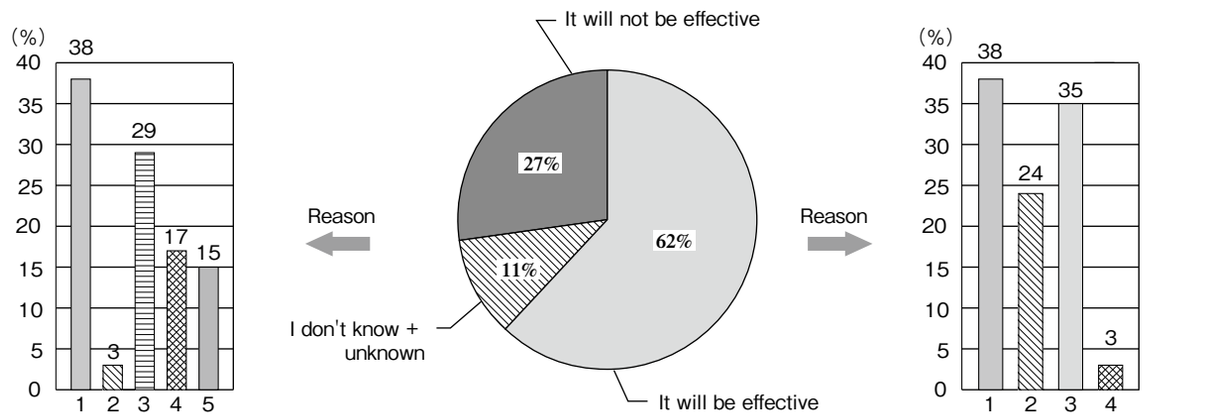
Do you think that carbon taxes will be effective in reducing emissions? Please select either "I think it will be effective," "I don't think it will be effective," or "I don't know." If you selected one of the first two options, please also circle one item from the subsequent list that best reflects your rationale.

Effectiveness of Carbon Tax in Reducing CO2—Overall



- Overall, 62% of respondents indicated that carbon taxes would be effective in reducing carbon dioxide emissions, significantly exceeding the 27% who selected "I don't think it will be effective."
- However, differences emerged on a regional basis. Respondents from Western Europe and Africa who selected "I think it will be effective" comprised 42% and 38% of the answers respectively, falling behind those who selected "I don't think it will be effective," which comprised 45% and 46% of the responses respectively.

Reasons for the Effectiveness/Non-Effectiveness of Carbon Tax



1. The effectiveness of a carbon tax is uncertain
2. Risk of undermining international competitiveness
3. Lead to higher costs, increase burden on consumers, result in negative effect on economy
4. Encourage relocation of production sites to developing countries
5. Other

1. Suppress demand, promote replacement of higher energy saving goods, encourage conservation of fossil fuel
2. Tax proceeds can be utilized for global warming countermeasures
3. Promote transformation of lifestyles and working styles
4. Other

- Thirty-eight percent of respondents who stated carbon taxes will be effective chose as their reason "a carbon tax will promote the replacement of goods with higher energy saving, and encourage the conservation of fossil fuels," followed by 35% who chose "it will promote the transformation of lifestyles and working styles."
- Thirty-eight percent of respondents who stated carbon taxes will not be effective chose as their reason "the effectiveness of a carbon tax is uncertain," followed by 29% who chose "it will increase the burden on consumers, resulting in a negative effect on the economy."

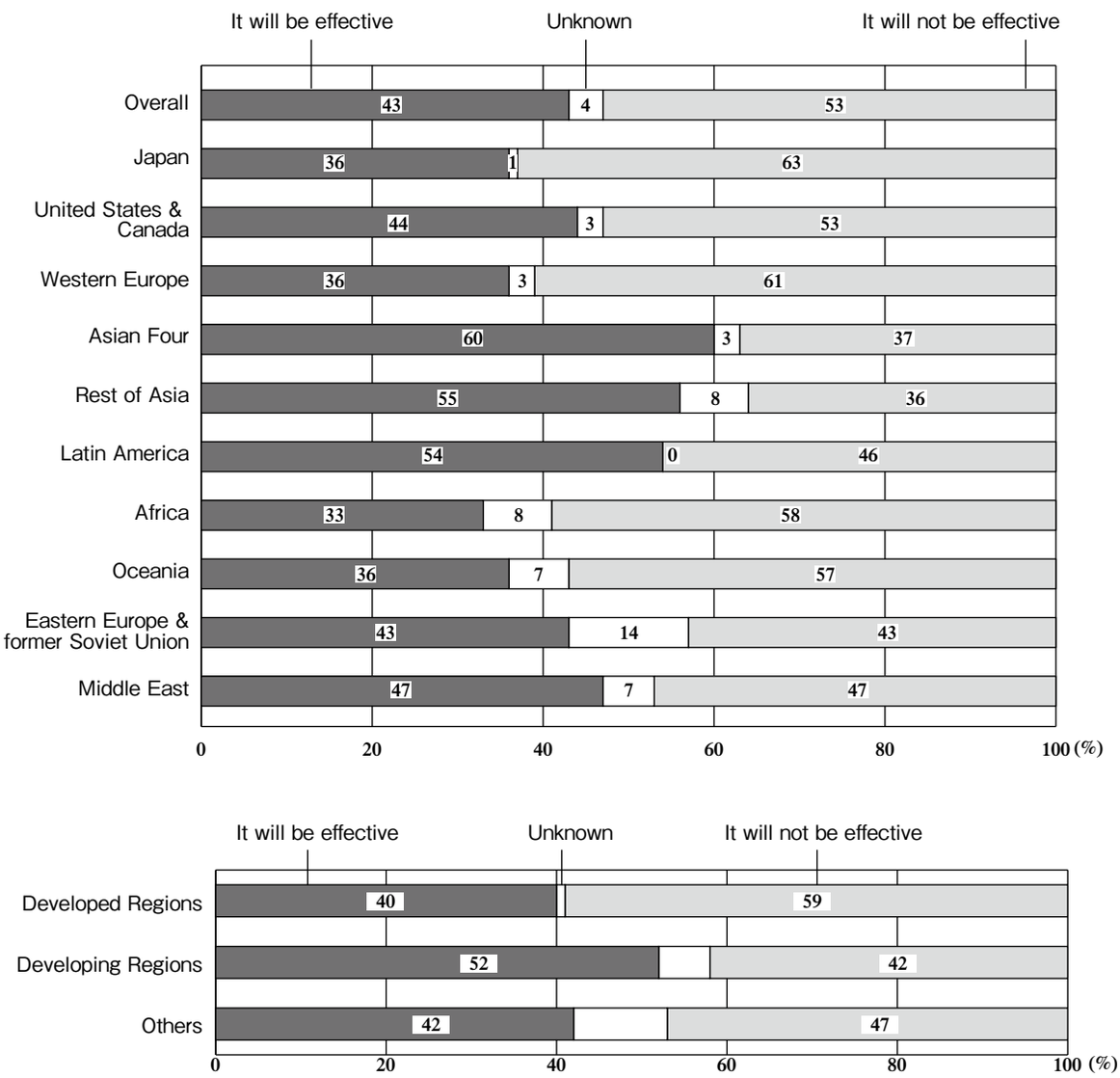
3.2.4 Emissions Trading

A system of emissions trading was highlighted in the Kyoto Protocol as a potent measure to curb greenhouse gas emissions, and in 2005, the European Union began their Greenhouse Gas Emission Trading Scheme (EU-ETS). The following questions pertain to the future of emissions trading.

3.2.4.1 Effectiveness of Emissions Trading

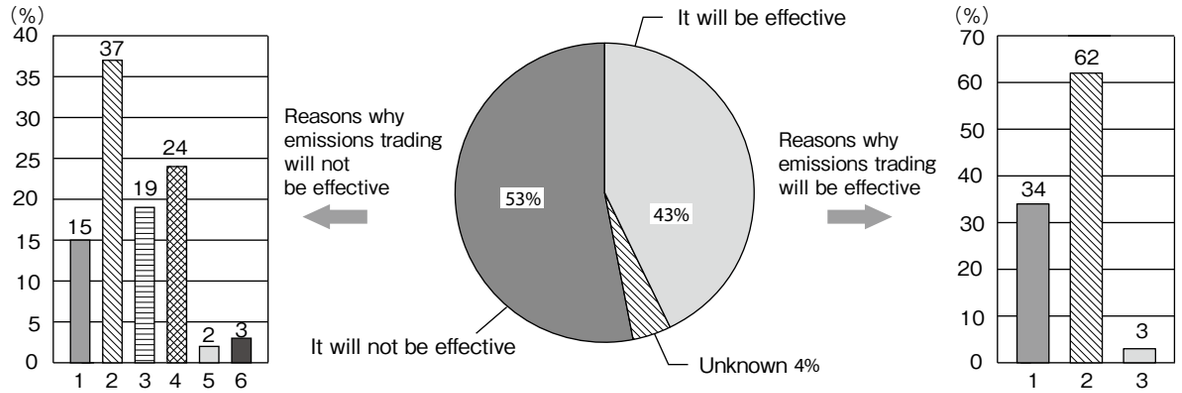
Do you think that emissions trading mechanisms will be effective in reducing carbon dioxide emissions? Please select either "I think it will be effective" or "I don't think it will be effective," and also circle one item from the list that best reflects your rationale.

Effectiveness of Emissions Trading in Reducing CO2



- Forty-three percent of respondents stated emissions trading will be effective, falling below the 53% who selected "I don't think it will be effective."
- There was a significant discrepancy between respondents from developed and developing regions with regards to the effectiveness of emissions trading. Whereas 40% of respondents from developed regions selected "I think it will be effective," the percentage of respondents from developing regions who made this selection was much higher, at 52%.
- In reverse, 59% of respondents from developed regions selected "I don't think it will be effective," while 42% of respondents from developing countries made this selection.

Effectiveness of Emissions Trading—Overall

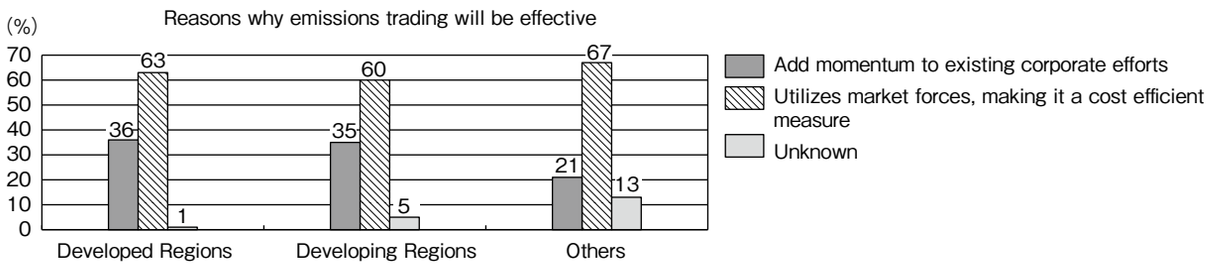


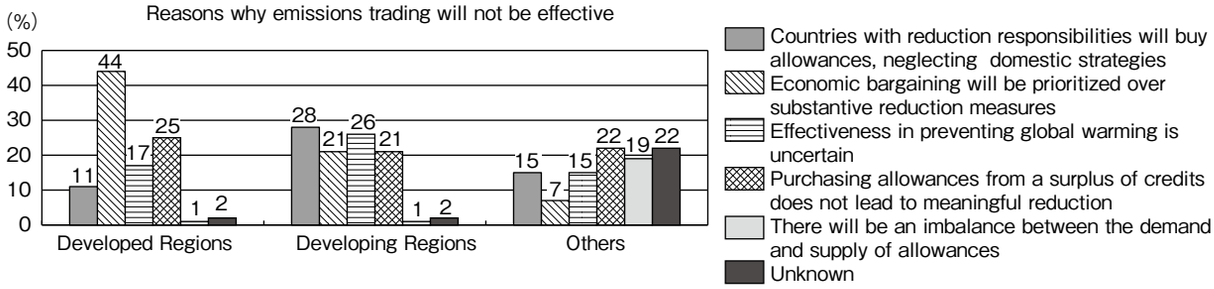
1. Countries with reduction responsibilities will buy allowances, neglecting domestic strategies
2. Economic bargaining will be prioritized over substantive reduction measures
3. Effectiveness in preventing global warming is uncertain
4. Purchasing allowances from a surplus of credits does not lead to meaningful reduction
5. There will be an imbalance between the demand and supply of allowances
6. Unknown

1. Add momentum to existing corporate efforts
2. Utilizes market forces, making it a cost efficient measure
3. Unknown

- Those who selected "I think it will be effective" most frequently cited the reason "emissions trading utilizes market forces, making it a cost efficient measure," at 62%. This was followed by "it will add momentum to existing corporate efforts, at 35%. Almost no regional differences emerged in these responses.
- Among those who selected "I don't think it will be effective," 37% cited the reason "economic bargaining will be prioritized." This was followed by 24% who selected "purchasing allowances does not lead to meaningful emissions reductions."

Effectiveness of Emissions Trading—By Region





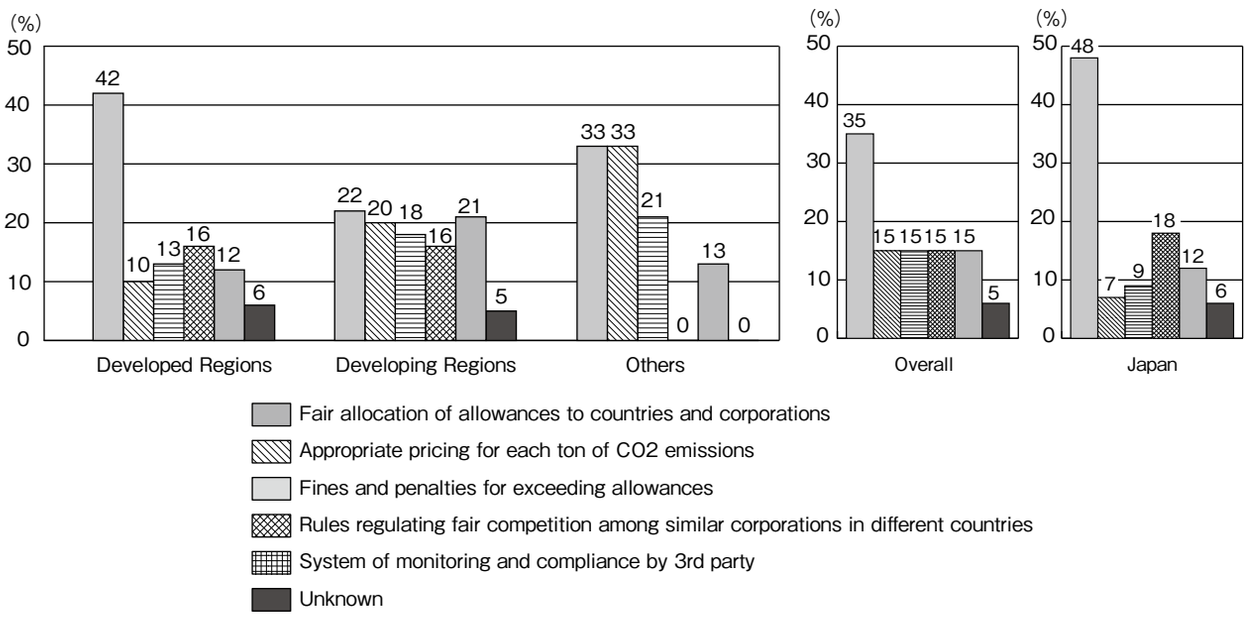
- Regionally, it was notable that 44% of respondents from developed regions selected "economic bargaining will be prioritized."

If you chose “it will be effective” in the previous question, please also answer the following two questions.

3.2.4.2 Important Factors in Promoting Emissions Trading

What do you think is the most important factor in promoting emissions trading schemes if they are to be effective? Please circle one item from the following list that best reflects your opinion.

Most Important Factor in Promoting Emissions Trading

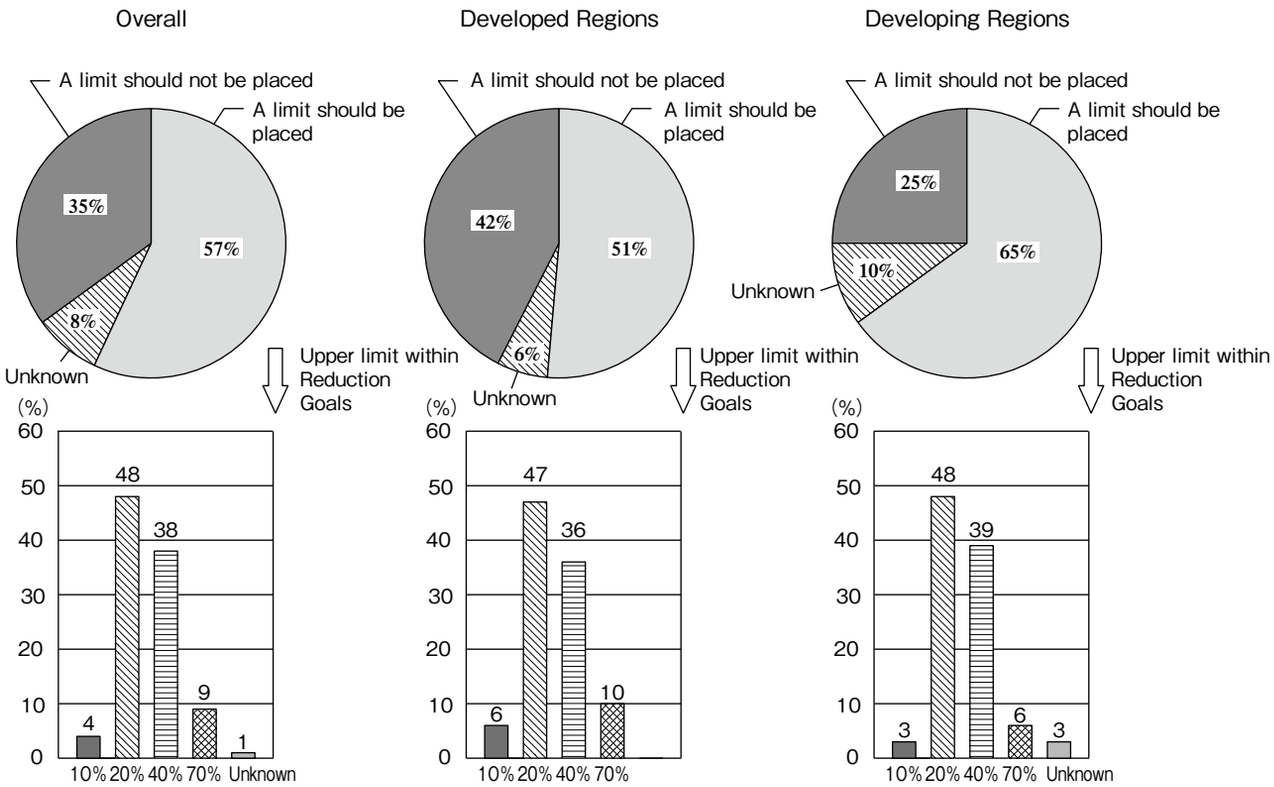


- Overall, “a fair allocation of allowances to countries and corporations” received the highest response as the most important factor in promoting emissions trading, at 35%. Respondents selected each of the remaining responses at approximately the same frequency, around 15%.
- Regionally, respondents from developed regions most frequently selected “a fair allocation of allowances to countries and corporations” as the most important factor, at 42%.
- Nearly half of the respondents from Japan selected “a fair allocation of allowances,” at 48%.

3.2.4.3 Limits on Proportion that Emissions Trading, CDM, JI Can Occupy in Emissions Reduction Target

In reaching reduction goals, do you think a limit should be placed on the proportion that emissions trading, Clean Development Mechanism, and Joint Implementation can occupy within the target? Please select either "a limit should be placed" or "a limit should not be placed." If you select "a limit should be placed," please also indicate what level it should be. (Related question in the 1998 questionnaire.)

Limits on Emissions Trading, CDM, and JI in Reduction Targets



- More than 50% of respondents in every region stated that a limit should be placed, with 57% of respondents overall agreeing with the statement. However, differences emerged between developed and developing regions. Whereas 51% of respondents from developed regions stated that a limit should be placed, the percentage of respondents from developing regions was higher, at 65%. On the other hand, 42% of respondents from developed regions stated that a limit should not be placed, whereas a lower percentage of respondents from developing regions agreed with the statement, at 25%.
- Overall, 48 percent of respondents selected "up to 20%" as the limit that mechanisms should occupy within reduction targets, followed by 38% of respondents who selected "up to 40%," comprising a combined total of 86% of responses. Almost no differences emerged between developed and developing regions in these responses.

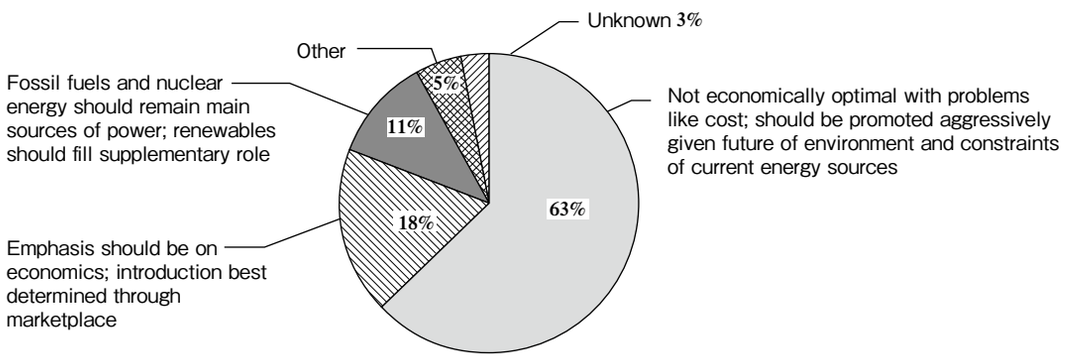
4. ENERGY PROBLEMS (QUESTION 4)

4.1 Renewable Energies

4.1.1 Promoting the Use of Solar Power and Wind Power

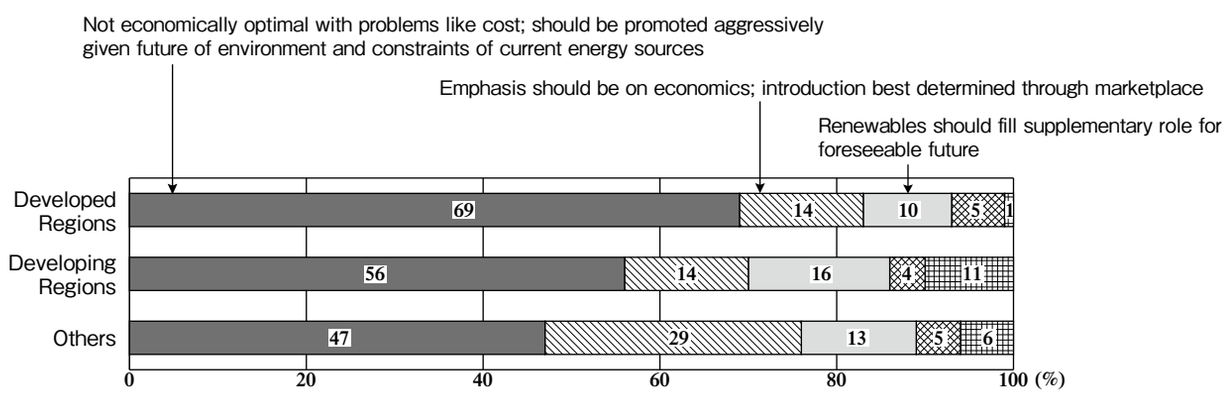
In the previous year's questionnaire, solar power and wind power were identified as the most desirable forms of renewable energy. What is your opinion on promoting their use from a global perspective? Please circle one item from the following list that best reflects your opinion.

Promoting the Use of Solar Power and Wind Power



- Overall, nearly two-thirds of respondents indicated strong support for the promotion of solar and wind power generation, with 63% selecting "renewable energies in their current forms are not economically optimal and present problems like cost. But they should be aggressively promoted considering the future of the global environment and the constraints of current sources of energy." On the other hand, those who selected "fossil fuels and nuclear energy should remain the main sources of power generation with renewable energies positioned to fulfill a supplementary role" comprised 11% of the responses.

Promoting the Use of Solar Power and Wind Power—By Region

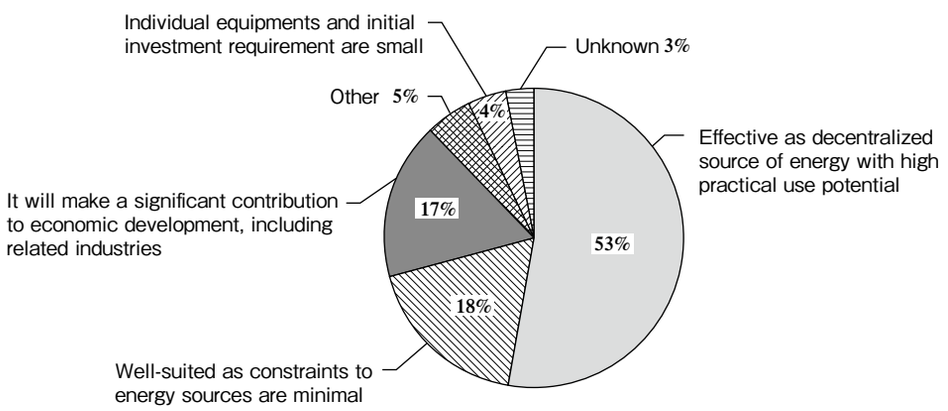


- Sixty-nine percent of respondents in developed regions stated renewable energies "should be aggressively promoted considering the future of the global environment and the constraints of current sources of energy," making it the most frequently selected response and reflecting a prevailing position that a shift in energy source is urgently needed. In contrast, while 47% of respondents in developing regions also selected this statement, an additional 29% chose "introduction is best determined through relying on the movements of the marketplace" and 13% selected "fossil fuels and nuclear energy should remain the main sources of power for the foreseeable future." Those who selected the two latter statements comprised a combined 42% of the responses, revealing a conservative perspective towards introducing renewable energies that could hamper economic growth.

4.1.2 Evaluating Renewable Energies

What aspects of renewable energies do you think will be valued as they are introduced in your country? Please circle one item from the following list that best reflects your opinion.

Evaluating Renewable Energies Upon Their Introduction—Overall

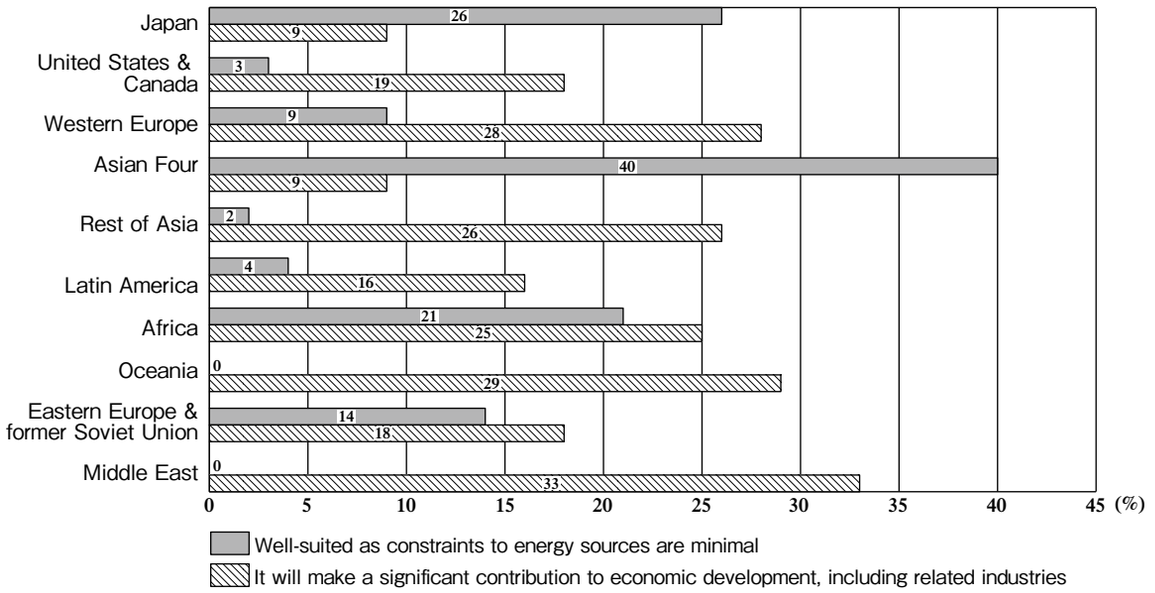


Evaluating Renewable Energies Upon Their Introduction

	Developed Regions				Developing Regions						Others				
	Japan [N=314]	United States & Canada [32]	Western Europe [67]	Asian Four [65]	Rest of Asia (121)	Latin America [50]	Africa [24]	Oceania [14]	Eastern Europe & former Soviet Union [28]	Middle East [15]	Overseas Total [418]	**Developed Regions** [478]	**Developing Regions** [195]	**Others** [57]	**Total** [732]
															(%)
Effective as decentralized source of energy with high practical use potential	◎56	◎63	◎48	◎38	◎57	◎68	◎33	◎50	◎39	◎47	◎51	◎53	◎57	◎44	◎53
Well-suited as constraints to energy sources are minimal	○26	3	9	◎40	2	4	21	0	14	0	11	○24	5	7	○18
Individual equipments and initial investment requirement are small	2	0	0	6	5	6	13	7	14	○7	5	2	6	11	4
It will make a contribution to economic development, including related industries	9	○19	○28	9	○26	○16	○25	○29	○18	○33	○22	13	○24	○25	17
Other	5	9	13	3	5	4	0	7	4	0	6	6	4	4	5
Unknown	2	6	1	3	4	2	8	7	11	13	5	2	4	11	3

◎ : Highest number of replies ○ : Second highest number of replies

Evaluating Renewable Energies Upon Their Introduction—By Region

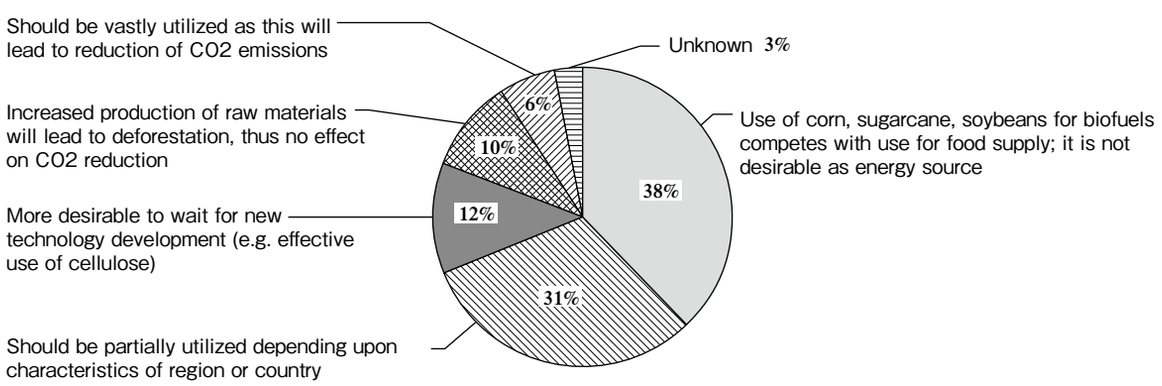


- "Renewable energies are effective as a decentralized source of energy with high potential for practical use" was the most frequently selected aspect at 53% of the responses overall, indicating a favorable view of its possibilities for application.
- Forty percent of respondents in the Asian Four region selected "well-suited for my country as the constraints to the energy sources are minimal," becoming the only region where the selection exceeded "renewable energies are effective as a decentralized source of energy with high potential for practical use."
- Respondents from developing regions and other regions chose "it will make a significant contribution to my country's economic development, including those through related industries" at 24% and 25% respectively, indicating a high level of expectation for new business opportunities. More specifically, this response was frequently selected by respondents in the Middle East, Oceania, Rest of Asia, and Western Europe.
- There were significant regional differences in the rate of response for "well-suited for my country as the constraints to the energy sources are minimal." Whereas a high percentage of respondents from Asian Four, Japan, and Africa selected this statement at 40%, 26%, and 21% respectively, other regions made this selection at much lower rates.

4.1.3 Bioethanol and Biodiesel

There has been much attention paid to bioethanol and biodiesel as potential fuels to replace gasoline and diesel fuel. What do you think about this development? Please circle one item from the following list that best reflects your opinion.

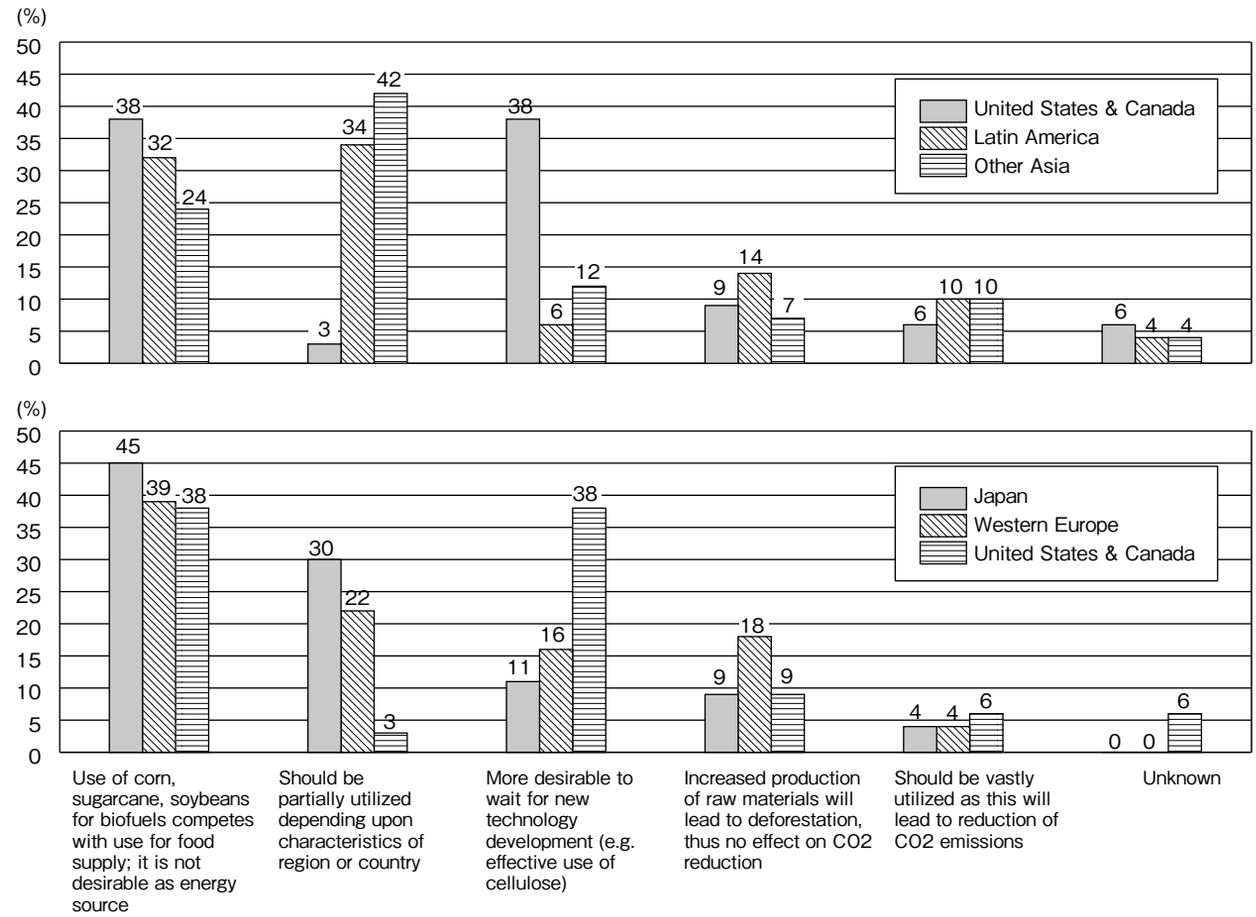
Bioethanol and Biodiesel—Overall



- The highest response with regards to bioethanol and biodiesel was "the use of raw materials for biofuels competes with their use for food supply; thus, it is not desirable to utilize them as a source of energy," at 38%. This was followed by "they should be partially utilized, depending upon the characteristics of the region or the country," at 31%.

- Whereas those who selected biofuels "should be vastly utilized as this will lead to the reduction of carbon dioxide emissions" remained at 6%, approximately 50% responded negatively, selecting statements indicating concern for "competing with the food supply" and "result in deforestation."
- On the other hand, the combined total of "they should be partially utilized, depending upon the characteristics of the region or the country," and "it would be more desirable to wait for the development of new technology" exceeded 40% of the responses, reflecting a positive perspective towards the use of biofuels provided adequate consideration for the food supply.

Bioethanol and Biodiesel—By Region



	Developed Regions				Developing Regions			Others		
	Japan [N=314]	United States & Canada [32]	Western Europe [67]	Asian Four [65]	Rest of Asia (121)	Latin America [50]	Africa [24]	Oceania [14]	Eastern Europe & former Soviet Union [28]	Middle East [15]
Should be vastly utilized as this will lead to reduction of CO2 emissions	4	6	4	8	10	10	8	7	0	0
Should be partially utilized depending upon characteristics of region or country	(30)	3	(22)	◎42	◎42	◎34	(21)	◎36	◎36	7
Use of raw materials for biofuels competes with use for food; it is not desirable as energy source	(45)	◎38	◎39	(35)	(24)	(32)	◎50	(21)	(21)	◎67
Increased production of raw materials will lead to deforestation and thus will have no effect on CO2 reduction	9	(9)	18	8	7	14	4	14	14	0
More desirable to wait for new technology development (e.g. effective use of cellulose)	11	◎38	16	5	12	6	8	(21)	18	0
Unknown	0	6	0	3	4	4	8	0	11	(27)

(%)

◎ : Highest number of replies ◯ : Second highest number of replies

- More respondents selected “they should be partially utilized, depending upon the characteristics of the region or the country,” in Asian Four, Rest of Asia, Latin America, Oceania, and Eastern Europe & the former Soviet Union than “the use of raw materials for biofuels competes with their use for food supply; thus, it is not desirable to utilize them as a source of energy.”
- Respondents from the United States & Canada most frequently selected “it would be more desirable to wait for the development of new technology” and “the use of raw materials for biofuels competes with their use for food supply; thus, it is not desirable to utilize them as a source of energy,” each at 38%.

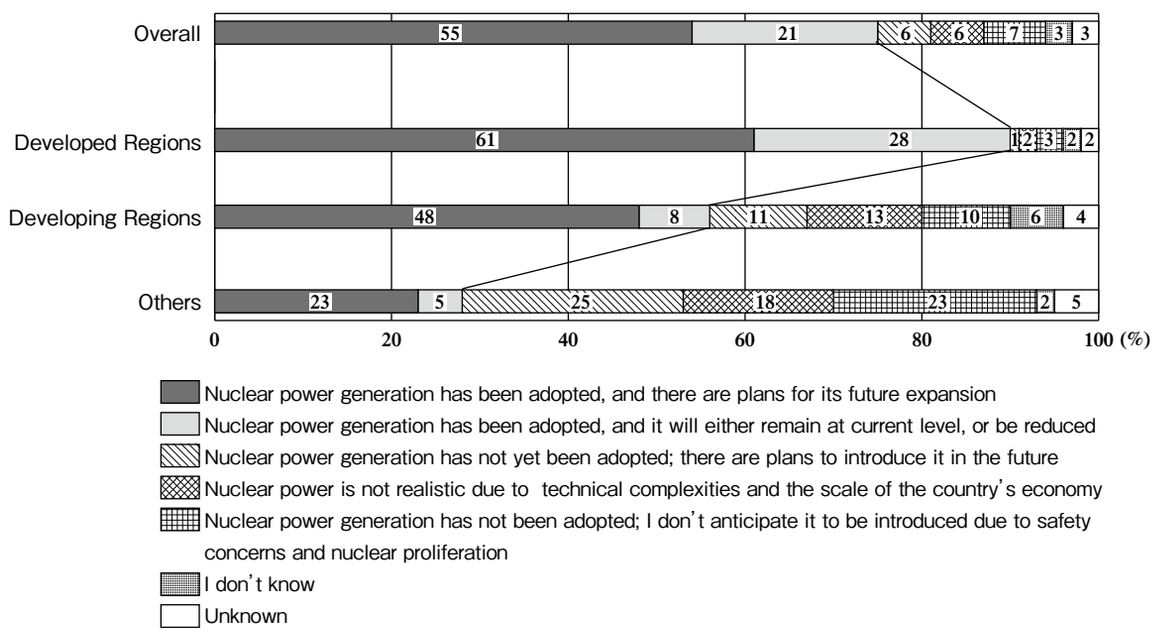
4.2. Nuclear Power Generation

The belief that reliance on nuclear power generation is inevitable to reduce carbon dioxide emissions is becoming more prevalent.

4.2.1 The Status of Nuclear Power Generation in Respondents’ Regions

What is your opinion on the state of nuclear power generation in your country? Please circle one item from the following list that best reflects your opinion.

The State of Nuclear Power Generation in the Respondent’s Region

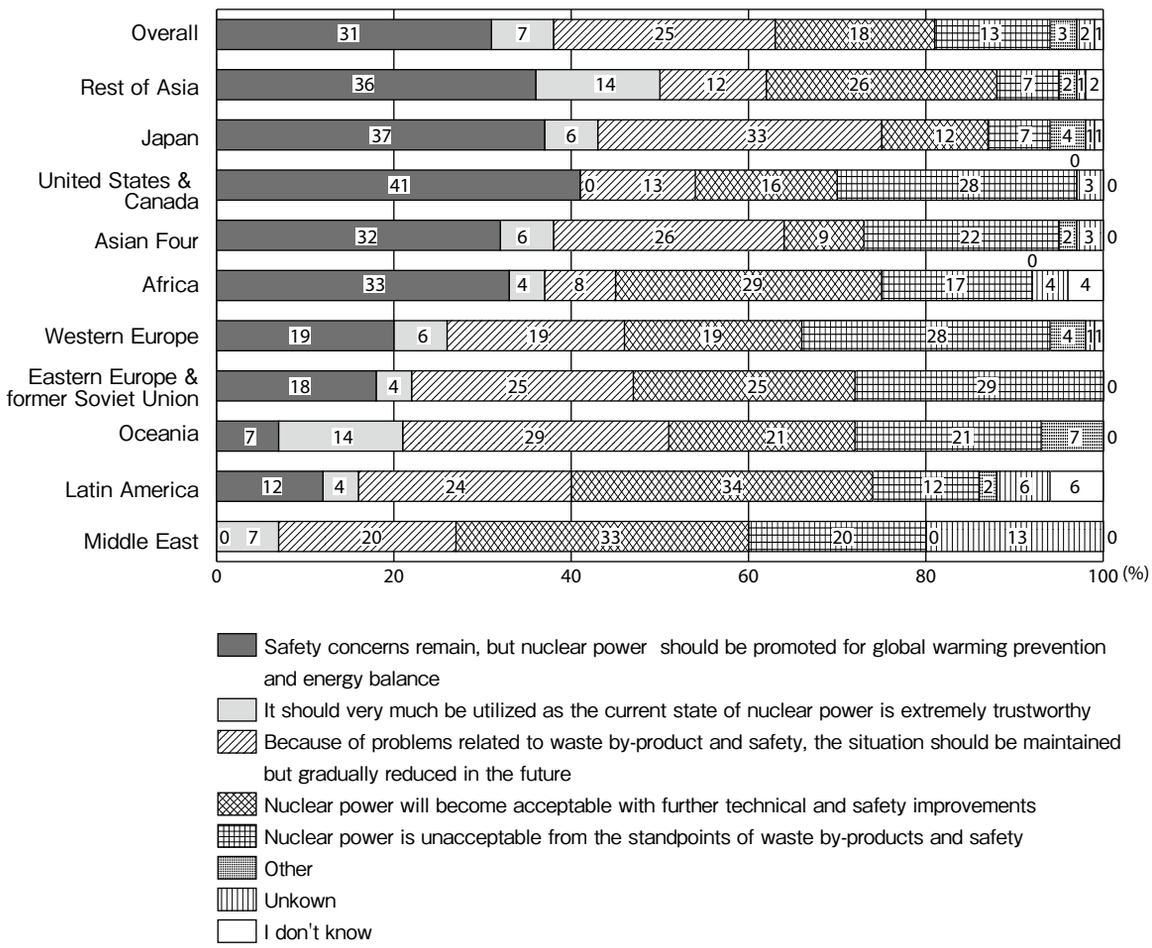


- Overall, 76% of respondents were from countries where nuclear power generation had been adopted. By region, the percentages were 89% for respondents in developed regions, 58% for developing regions, and 28% for other regions.

4.2.2 Opinions on Nuclear Power Generation

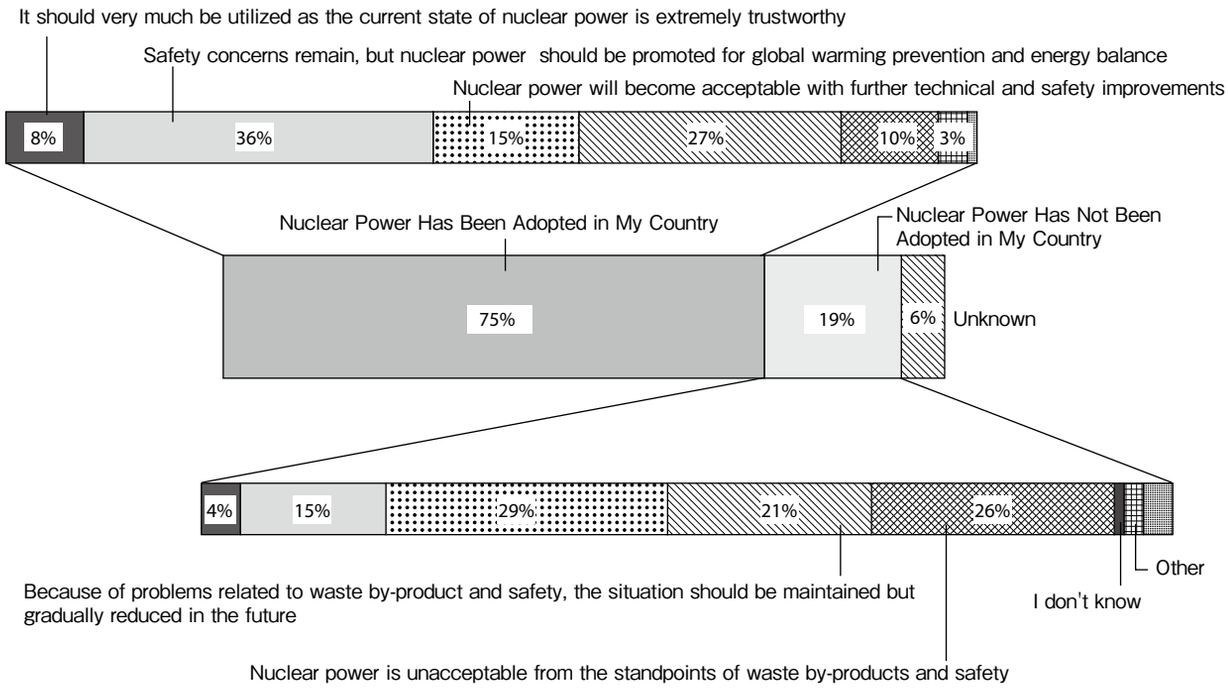
What is your opinion on nuclear power generation? Please circle one item from the following list that best reflects your opinion.

Opinions on Nuclear Power Generation



- Approximately two-thirds of respondents overall either support or condone the reliance on nuclear power generation, with a combined 63% selecting either “the use of nuclear power generation should be promoted,” “nuclear power generation is extremely trustworthy,” or “the current situation should be maintained,” for various reasons including the prevention of global warming. On the other hand, 18% of respondents selected “the use of nuclear power generation will become acceptable with enhancements in safety,” and 13% chose “nuclear power generation is unacceptable from the standpoints of nuclear waste by-products and safety.”
- The regions with a high percentage of respondents who indicated an affirmative position by stating nuclear power generation should be utilized (combined total of “nuclear power generation should be promoted” and “nuclear power generation is extremely trustworthy”) were Rest of Asia at 50%, Japan at 43%, and the United States & Canada at 41%.
- A large majority of respondents in Japan and the Rest of Asia indicated the necessity of nuclear power generation for the prevention of global warming. A combined 88% of respondents in the two regions selected either of the aforementioned affirmative statements, “the current situation should be maintained,” or “the use of nuclear power generation will become acceptable with enhancements in safety.
- While approximately two-thirds of respondents in the United States & Canada and Western Europe also made this selection, at 69% and 64% respectively, an additional 28% in each region stated that nuclear power generation was unacceptable from the standpoints of waste by-products and safety.

Opinions on Nuclear Power Generation—
A Comparison of Responses from Regions With and Without Nuclear Power



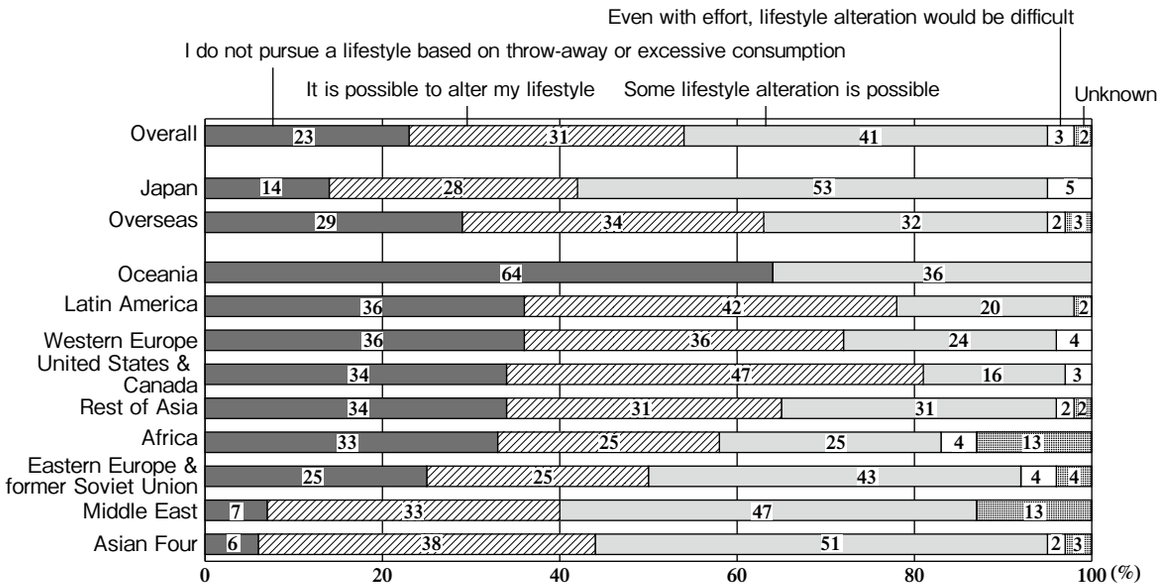
- Differences in opinions emerged between regions that had already adopted nuclear power generation and those that had yet to do so. Forty-four percent of respondents in regions that had adopted nuclear power generation selected either it "is extremely trustworthy" or it "should be promoted," more than doubling the 19% of respondents from regions without nuclear power who made this selection.
- Further, 26% of respondents from regions without nuclear power selected it "is unacceptable from the standpoints of nuclear waste by-products and safety," more than doubling the percentage of respondents from regions with nuclear power who made this selection.

5. LIFESTYLE ALTERATION (QUESTION 5)

5.1 Awareness Towards Lifestyle Alteration

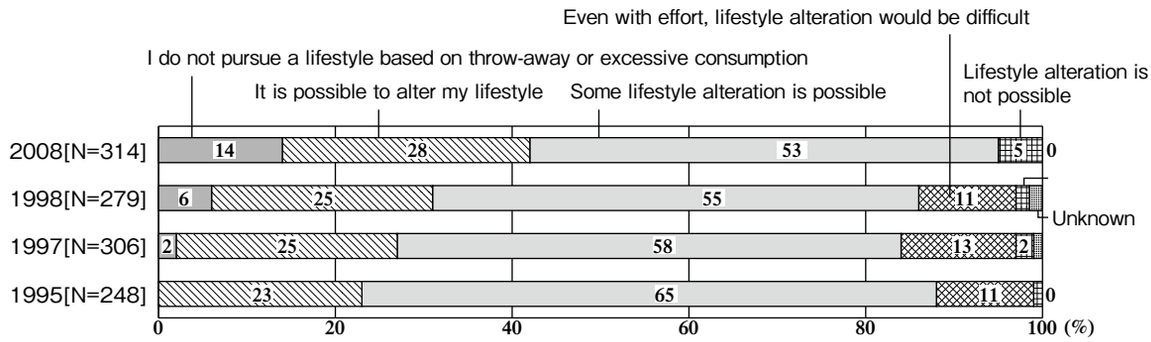
In this year's questionnaire we would like to revisit the question about altering lifestyles based on disposable and excessive consumption. Please circle one item from the following list that best reflects your opinion.

Awareness towards Lifestyle Alteration



- Twenty-nine percent of overseas respondents selected "I do not pursue a lifestyle based on throw-away or excessive consumption," more than double the percentage of respondents in Japan.
- Respondents in six overseas regions, including Oceania, Latin America, the United States & Canada, Rest of Asia, and Africa, made this selection at a relatively high rate of more than 30%.
- Overseas response for the combined total of "I do not pursue a lifestyle based on throw-away or excessive consumption," and "it is possible to alter my lifestyle" surpassed 60%. In particular, the combined total was 81% among respondents in the United States & Canada, revealing a high awareness towards lifestyle alteration.
- Overall, combined responses for "lifestyle alteration would be difficult" and "lifestyle alteration is not possible" were 3%.
- Japan had the highest response rate for "lifestyle alteration would be difficult" at 5%, while those from Eastern Europe & former Soviet Union had the highest response rate for "lifestyle alteration is not possible" at 4%.

Awareness towards Lifestyle Alteration—Changes in Japan

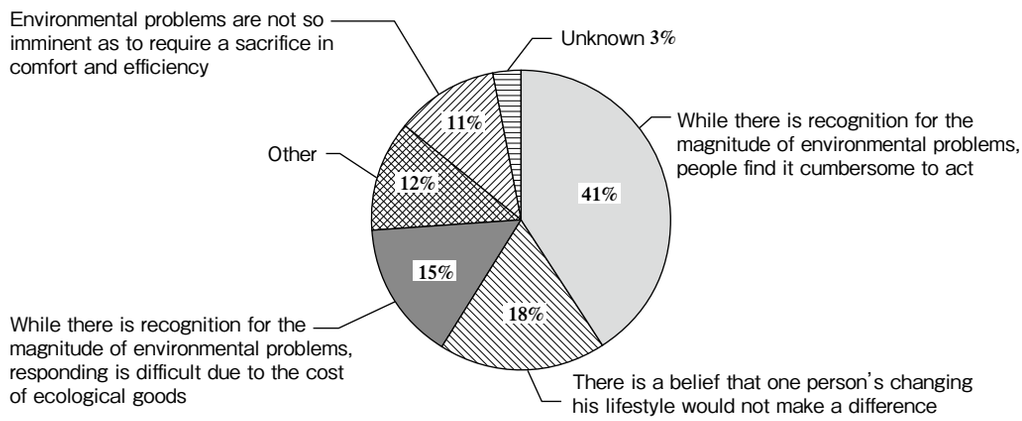


- Since questions regarding lifestyle alteration were posed only to Japanese respondents until 1998, a 10-year comparison was made based on responses from Japan. In 2008, 14% of respondents selected "I do not pursue a lifestyle based on throw-away or excessive consumption," more than double the percentage from 1998. In reverse, only 5% of respondents selected either "lifestyle alteration would be difficult" or "lifestyle alteration is not possible" in 2008, which represents less than half of the percentage in 1998, revealing a heightened awareness towards environmental problems through individual lifestyle alteration.

5.2 Factors Hampering Lifestyle Alteration

The questionnaire results on Agenda 21 also revealed that lifestyle alteration has made little progress. What do you think are the factors hampering lifestyle alteration where you live? Please circle one item from the following list that best reflects your opinion.

Factors Hampering Lifestyle Alteration—Overall



Factors Hampering Lifestyle Alteration

	Developed Regions: Japan [N=314]	United States & Canada [32]	Western Europe [67]	Asian Four [65]	Developing Regions: Rest of Asia (121)	Latin America [50]	Africa [24]	Oceania [14]	Others: Eastern Europe & former Soviet Union [28]	Middle East [15]	Overseas Total [418]	**Developed Regions** [478]	**Developing Regions** [195]	**Others** [57]	**Total** [732]
While there is recognition for the magnitude of environmental problems, people find it cumbersome to act	◎45	◎28	◎36	○54	◎37	◎42	◎38	◎29	◎25	◎27	◎38	◎44	◎38	◎26	◎41
There is a belief that one person's changing his lifestyle would not make a difference	○18	25	○28	8	14	○26	○25	7	21	13	○18	○19	18	16	○18
While there is recognition for the magnitude of environmental problems, responding is difficult due to the cost of ecological goods	12	0	9	○14	○26	16	17	○21	◎25	○20	17	11	○22	○23	15
Other	12	◎28	12	8	11	10	4	14	4	7	11	13	10	7	12
Environmental problems are not so imminent as to require a sacrifice in comfort and efficiency	11	9	13	9	12	4	4	○21	18	13	11	11	9	18	11
Unknown	1	9	1	8	1	2	13	7	7	○20	5	3	3	11	3

(%)

◎ : Highest number of replies ○ : Second highest number of replies

- The most frequently selected obstacle to lifestyle alteration, both overall and in each region, was "while there is recognition for the magnitude of environmental problems, people find it cumbersome to put things into action."
- Overall, this was followed by "a belief that one person's changing his lifestyle would not make a difference," and "while there is recognition for the magnitude of environmental problems, it is difficult to respond due to the relatively high cost of ecological goods."
- Compared to developed regions, a lower proportion of respondents in developing regions and other regions selected "while there is recognition for the magnitude of environmental problems, people find it cumbersome to put things into action." The second most frequently selected factor by respondents in developing regions and other regions was "while there is recognition for the magnitude of environmental problems, it is difficult to respond due to the relatively high cost of ecological goods," bringing to light the substantive difficulties people in these regions face in responding to environmental problems compared to developed regions, despite high levels of awareness.

IV. Comments from Respondents

This year's questionnaire elicited a total of 240 free comments, including 122 from 48 countries outside Japan and 118 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. 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 55 representing 28 countries and 37 from Japan. The name, title, organization, country and processing number of the respondent are included with the comment. Comments from respondents requesting anonymity are marked with an M or F to denote male or female.

Comments from overseas

Significant change of lifestyle can only be imposed by governments. Voluntary efforts to reduce their footprint by individuals are nice but will never have a significant impact on the environment.

M, Aggregates & Concrete, France 008

During the last two years, public opinion among all age groups in my country – young people are especially– concerned and are willing to take action. Politicians are talking, but taking little action of importance.

M, previously UNEP, Norway, 009

There is a general sense of apathy in the world these days concerning environmental issues. There is a small group of people who do care and a VERY large group who don't really care, and that say, 'so what," and think that one individual can't really make a difference so they choose not to change or seek change. Money talks. This will not change until there are serious economic benefits given those who do change or serious economic costs for those who do not change.

M, Canadian Museum of Nature, Canada, 017

Solving problems, like poverty, food availability and healthcare, are powerful ways to increase the public awareness to the global environmental problems of the Planet. It's cheaper and faster than the Kyoto way.

Joao M. A. Soares, Adviser of the Board, Portucel Soporcel Group, Portugal, 022

Our survival as a species depends upon the clear unambiguous understanding of the demands we place on nature, the limits of nature to satisfy those demands, and the deliberate action of our species to live therein. Anything else detracts from the root cause of all of our environmental problems.

M, Power Industry, Canada 025

This has been a year where general public awareness of environmental issues has become much greater. In many cases, there is a growing market for "green" products and services, permitting opportunistic businesses to become leaders and also providing an impetus for government leadership. In general, regulations and infrastructure lag behind, making it more difficult for individuals and businesses to make significant changes. For example, those willing to recycle often have limited access to effective recycling facilities, and health, zoning or technical regulations may not permit more energy efficient or less consumptive alternatives to be used. Consumers seeking green products or services still lack credible international (and/or national) certification of good green alternatives – in fact the proliferation of certification programs at many levels may just confuse. Clear initiatives to remove institutional barriers may be a critical next step.

Dr. Edward W, Manning, President, Tourisk Inc., Canada 030

I think it will only be possible to achieve results by beginning to capture people's conscience at a very early age, from the home and the school. A child should know that the world will cease to exist in the form we know today if we don't all collaborate; nothing is served when schools teach children to care for the environment but nothing is done in the home. And secondly, is the need to raise genuine consciousness of the governments involved. Economic interests always precede (other priorities) in the administration in place, and if this is the case, nothing will be accomplished. The first is tedious, the second appears one day at a time, lamentably like a fairy tale.

F, Eco-Argentina, Argentina, 031

Everybody should be concerned with environmental problems. But those who have full stomachs should be more active in dealing with environmental problems. With full stomachs, we can think clearly and with clear thought, we can act accordingly.

Setijati D. Sastrapradja, Chair, Naturindo, Indonesia, 063

Kyoto – while a flawed exercise at least has now started to have impact on public perceptions – to be more effective the emphasis should be on the economic and ecological benefits of energy conservation and not bogged down in complex carbon trading processes.

Devid Rodier, senior consultant retired from Hatch and Noranda Inc., Canada 072

Regarding biofuels, ethanol and biodiesel from traditional sources are considered 1st generation biofuels which is a transition technology into 2nd and 3rd generation biofuels. We must recognize the need with consideration regarding land dedicated for food purposes and agricultural boundaries avoiding deforestation actions, but also our minds to a new way of doing things. An opportunity and a solution might be closer if we decide to let these biofuels take a wedge and in the future evolve into new technologies.

Sergio Musmanni, Executive Director, National Cleaner Production Center, Costa Rica, 073

Global warming is linked into so many other aspects of global change. That addressing effectively requires their inclusion (i.e., sustaining forest systems, coral reefs and their biodiversity/productivity). We cannot address global warming by addressing carbon alone. It must be a sustainable approach.

Laurie Wayburn, President, The Pacific Forest Trust, U.S.A., 088

All nations must now share the burden in proportion to their ability (economic) to do so. The world must address global energy needs in a cooperative manner.

M, World Wide Fund For Nature Hong Kong, Hong Kong, 098

Water availability and quality is the number one issue both for drinking purposes and agricultural use. Rising energy prices have put every sector of society on the back forest.

Dr. M. Ashraf Poswal, Regional Director, CAB International, Pakistan, 102

The change in lifestyle and the de-carbonization of the economy depends on programs to educate and train the leadership and players in society.

M, Brazil, 104

Ignorance about the environment, energy flow, mandatory cycle of water and carbon, nitrogen, sulfur, et cetera abound. Biotic potential of all population of organisms always expands, in principle, beyond the capacity of the environment to support the expansion. Our economic reckoning counts crucialities as "externalities." For example, soil, air, and water quality; anthropocentrism; education and community organization; evolutionary history; technology of science to dismiss all but the most recent investigation results. I see little hope for any future but war, petulance with continuation of massive government duplicity to curb human population expansionism. The Asahi Glass Foundation provides support but limited amelioration.

Lynn Margulis, Department of Geosciences, University of Massachusetts, U.S.A., 109

Stop nuclear power. No future. So bad to rely on it because humans will still destroy the environment with no care. Oil and gas equals nuclear power, bad in the long term. I would like to adopt new technology and be more friendly with the environment, and to use renewable energies.

Salah Salim Said Al-Hajri, Ministry of Environment and Climate Affairs, Oman, 131

Individuals need more encouragement to undertake lifestyle alteration but governments should play a role in giving their citizens better choices and making grants available for energy conservation and renewable energy generation locally.

Ms. Agroforestry, U.K., 134

The environment should be treated as a dress which has to be washed, ironed, and kept clean. This is the knowledge that our governments have to instill in the students in order to fight global warming challenge. Conservation of water sources, protecting river banks, preventing soil erosion, planting trees, and knowing the dangers of rivers and air pollution should be part of the environmental education, which has to be practical. A university graduate should be examined on these areas at the village level, and a certificate awarded to subsidize his/her C.V. at the time of employment instead of a baptismal card. Otherwise, global warming will proliferate as the increased population is set to consume, but not ready to replenish the resources availed by a few. Environmental conservation is a jembe, not a pen alone. Excellent theory without a serious practice is nothing.

Yucabeth Ongondo, Chairperson, Kogola W. Group-CBO, Kenya, 136

The use of GM crops and nuclear fission, to meet the growing demands of future populations, is an absurdity. The arguments employed to justify this are fallacious because one must accept projected population estimates as fact rather than possibility, estimates that may be valid if nothing is done to curb the current rate of growth. We cannot enjoy a sustainable, sane utilization of planetary resources unless we confront, rather than evade, the urgent need to control population growth.

David Black, Trustee, Oxleas Wood Challenge Fund Trust, U.K., 151

I think if people start acting similarly between what they say and what they do, most of the environmental problems could be solved.

M, Sajeev Seva Samiti, India, 153

All around us, everyone now appreciates the threat and consequences of climate change. What is critical now is a national programme on lifestyle alteration to minimize individuals' impulses on climate change.

Kefiboa K. Blay, Executive Chairman, Centre for Social and Community Advancement, Ghana, 168

Most of the environmental degradation and people losses will be in tropical developing countries, with rapidly expanding populations and economic expectations. Most alterations should be placed in helping those, for example, SIDS in the Pacific need urgent help as they lack capacity and resources.

Cline Wilkinson, Global Coordinator, Global Coral Reef Monitoring Network, Australia, 169

Urban waste management should be enhanced and people should be constantly made conscious about the best ways to dispose of any waste and they should be trained on methods like source segregation of waste.

Lennen Maazamba, Administration Officer, Ministry of Environment and Tourism, Zimbabwe, 173

Environmental Issues (Indian context)

- Atmospheric temperature increases coupled with shifting natural precipitation patterns have led to loss in annual staple food yields.
- Changing cropping behavior edible to cash crops (corn biofuel) resulting in severe food shortages.
- Civil conflicts involving natural resources (notably forests, arable land and water) through development of special export processing zones (EPZs) on a damaging scale.
- Net forest loss ensuring in reduced carbon heat sinks.
- Burgeoning middle class with disposable incomes have led to wasteful consumption.
- Mindless industrialization and urbanization having a detrimental effect on urban environment.
- Sub-continent's rich biodiversity (flora and fauna) is being decimated at an alarming rate through weak legislations and convictions.

Gagan Druir, Technical Manager, WSP Engineering Services Ltd., India, 188

Consumerism is growing, especially in India and parts of Europe (two places I know well) despite global financial woes. India is on an economic upsurge with a burgeoning middle class making the same consumer demands as its counterpart society elsewhere. This is reflected in increased energy consumption, pollution and waste. Migrant movements from Eastern to Western Europe carry high consumer expectations as people enjoy cheap commodities previously denied. It is simply human nature to aspire to better things without considering other costs. However, informed individuals, industries and governments can work to change consumer patterns and behavior without compromising quality of life. Those who know and understand the complexity of the current crises must remain committed to environmental education at all levels, the development of clean technologies and to enforceable national and international legislation.

M, Australia 194

I think that in this day and age, we cannot give ourselves the luxury to think about what is desirable for our economies over a transformation starting with the way of thinking about the problem, clear through to renewable energy substitutions. We must do this urgently for the sake of our future generations.

Sergio Torrest Morales, Subdirector, Comisión Nacional de Áreas Naturales Protegidas, Mexico, 202

In view of ever-growing environmental crisis in terms of global warming, pollution, and poverty, threatening the very existence of life on the Earth, it has become imperative to adopt steadfastly a viable and holistic spatio-functional strategy for establishing a symbiotic man-land relationship so as to achieve the goal of sustainable development compatible to social, economic, and ecological welfare of man in the world.

Dr. R. V. Verma, Director, Institute for Regional Development Studies, India, 209

The environmental problems must be given more importance by the affluent society. The developing countries must adopt more eco-friendly view of development, instead of imitating the West.

V.J. George, Chief Executive, Coastal Educational Cultural Trust, India, 210

There is a need to promote greener lifestyle among the people, so that we can preserve our biodiversity and respond well to the health problems being caused due to environmental upheavals.

M, PSS Central Institute of Vocational Education, NCERT, India, 215

Creating really sustainable development depends heavily on the ability of governments and business to be able to effectively collaborate. Governments should define and provide clear "playing fields" on a global basis for business to respond and bring about long needed change in energy sourcing and efficiency as well as in mobility.

M, Falck Group, Italy, 220

Developing countries such as mine should be adequately rewarded for the amount of forest being preserved through measures implemented by the government. Standing forest contributes significantly to carbon sequestration and holds huge amount of carbon. In this regard we are maintaining our rainforest which is about 75% of the total country. We are not being compensated for this. However, if we are to cut down this forest and replant then we would be compensated. This would result in the release of a significant amount of carbon into the atmosphere. Measure must be developed and implemented to address this problem since the Kyoto Protocol is lacking in this area. We as a country prepare to maintain our forest once we can be compensated.

Khalid Alladin, Senior Environmental Officer, Environmental Protection Agency, Guyana, 222

The United Nations should strengthen their championing of environmental programs and support the programs of the nongovernmental organizations.

Horacio de Beláustegui, President, Fundación Biosfera, Argentina, 225

In my home country, there are many problems coming in the first rank before environmental problems. No cooperation until now from foreign donors has been directed to the NGOs away from the state or governmental regime. It means that a lot of NGOs are only in name, but they are dependent and go parallel with the government. It is really our judge here at all. Thanks.

M, University professor, Egypt, 237

Our current energy model, based on petroleum, presents clear symptoms of depletion. For this reason, one of the most important challenges of years to come will be to advance in a new model based on renewable non pollutant energies and which the supply is guaranteed. To fight in an effective way against climate change it is necessary to adopt a new economic prototype in which the price of the goods and services include not only the cost of manufacture, but also the environmental cost…. On the other hand, it is necessary to emphasize that the Government is not the only one responsible for the Sustainable Development of Honduras. Implication of all the socioeconomic groups is needed. The effective accomplishment of the aims of the sustainable Development is to have successful coercions of the actors of the society to a common form, which are: the private sector, public companies, the associations, the NGO, the unions and the citizens.

Jose Roberto Leiva Flores, Executive Director, BCSD Honduras, 241

The world economic system appears to have blind inertia towards limitless growth based purely on economic rules. We must change the global model.

Marco Octavio Ribera Arismendi, Investigation Coordinator, Liga de Defensa del Medio Ambiente, Bolivia, 246

Survival of mankind is a too extreme formulation. Mankind will not disappear whatsoever will be the environmental conclusions.

Claude Lorius, CNRS, France, 255

With regards to question number 1, I believe that throughout the process, the anxiety surrounding the environment has been about the poor and vulnerable populations who will always be more affected. But I believe that ultimately, humanity will have to make changes as part of the principle of survival and evolution.

Karen Denisse Aguilar Ponce, Institutional Director, Fundación para el Eco-desarrollo y la Conservación, Guatemala, 256

Economy has a high priority in my country. Sometimes, it would make the environment as a marginal activity. But, currently the situation has started to improve, development is doing in line with environmental conservation.

F, Ministry of Environment, Indonesia, 262

Implementation of a viable development strategy keeping ecological balance in view is required. This assumes a greater urgency if we look at the rapid pace at which the national resources are being degraded and depleted.

Dr. S. K. Shringi, Lecturer, Government of India, India 263

The world has to move towards much lower level of consumption rates for achieving the goals of sustainable development. Consumption rates of energy, ecological and the food and fiber resources should be taken beyond the marketing system i.e. they are available for sale with clear restrictions designed on the basis of threshold levels with respect to continuous availability. The world is well aware of the scarcity of these resources, their use, their role and their present existence in this world but still there is a lack of willingness to act. Education alone has been proven insufficient to make people think rationally towards the use of these resources.

The interdependence among the availability of life-supporting resources, individual standard of living, the quality of the environment, environmental resource management, and population density are well understood but did not lead to desired results. Although we humans have demonstrated effective environmental conservation in certain cases (e.g., water) overall we have a disappointing record in protecting essential resources from over-exploitation in the face of rapidly growing population (Pimentel and Pimentel, 1996). To reverse the consumption pattern in the world the main responsibility lies within the worst culprits. The developed countries like USA must take initiative. This does not imply that both developed and developing countries cannot use their resources more efficiently than they are at present through the implementation of appropriate policies and technologies. As the adage goes …"World has enough resources for everybody's need. World has no resources for everybody's greed"…

Azher uddin Khan, CEO, Clear Production Institute, Pakistan, 269

It is necessary to increase environmental education, both formal and informal, from infancy, at a global level. This way, the new generations will emerge with an automatic sense of responsibility in the protection of the environment. The exchange and flows of correspondence are important, among people interested in this subject, including those who come from poorer classes who are interested in their precarious subsistence. The world is in a discussion about economic, political, and environmental debacles, the latter of which will decide its continued survival. So it must decide; we are at that moment, but tomorrow will be too late…

Waldo I. Tapia Contreras, Coordinator, Universidad Adulto Magor, Cuba, 276

Reduce oil-gas-coal consumption as much as possible at benefit for future generations.

Prof. Eugen Seibold, Professor of University Freiburg, Germany, 279

In Jamaica, most of the rest of the Caribbean and perhaps the greater part of the developing world face a grave dilemma in being able to deal with the real and present situation of increasing population, urban drift, decreasing GDP and the resulting increase in poverty levels leading to increased crime and violence to give the needed attention to environmental matter. The resources for increased environmental vigilance and action are just not there. There is therefore the need to provide these countries with the resources to increase capacity and capability to deal with environmental issues. This can be done through the development of mechanisms to reward these countries for "green" activities such as carbon sequestration etc.

M, Caribbean Agricultural Research and Development Institute,Jamaica, 282

Water pollution is a worsening environmental problem that has existed throughout the history of industrialization and has spread all over the world. In many developing countries, industries develop at the expense of many environmental resources and water is the most important one of them. Water pollution will endanger human beings, all creatures and the environment; therefore serious attention should be paid to it.

Yadong Zhang, Chief Director, Green Longjiang, China, C-003

Most people know it is important to protect the environment, but it is difficult for them to take action. Leadership is needed to call for real actions, so is government policies for restriction. Industrial pollution remains a serious problem in many countries. Apparently every government has to make a choice between environment-protecting policies and economic growth, though all of them hope for a better development. This requires the action of international organizations for environment protection to restrict each country. Since we have only one earth, we should collaborate and fight against environment pollution.

Chaoyang, Wang, Secretary-general,
Baoding Association for Environment Protection, China, C-005

The devastation of the Mesopotamian civilization has demonstrated that unscientific development of agricultural irrigation is destructive to ecological environment: the inappropriate exploitation of water resources has overlooked water use for ecological purposes; over irrigation and over use of chemical fertilizer have resulted in pollution of water sources and further led to secondary salinization and desertification, which reduces our land and water resources; disappearance of marshes and destruction of bio-diversity have caused frequent bio-disasters. Therefore, I strongly suggest that serious attention should be paid to the planning and management of land exploitation, irrigation and the related environment problems.

Zhenglun He, Director, Senior Engineer,
Beijing Green Hope Environmental Culture Development Centre, China, C-006

Environment issues are closely related with the problem of poverty, human rights and peace. We will have to consider all of these issues if we hope to solve the environment problem. In China some aspects such as public rights to know and public participation are expected to be improved. Our citizens should be granted more rights to supervise the behaviors of governments and enterprises with regards to environment issues.

M, GreenSOS Green Student Organizations, China,C-012

The environment problem is essentially an issue that concerns whether human beings and nature can live harmoniously with each other. Our development should not be disturbed; meanwhile we have to maintain sustainable growth and ensure our children's living condition. At present environment problems have given rise to serious diseases that have affected human beings, and resulted in decrease of species, which is potentially dangerous for the development of people. The environment problem is one that concerns all human society, and is an outcome of economic development. The developed countries should take more responsibility for the problem, and it is incorrect if they try to avoid their duty of improving the environment merely because they have built a good environment in their own countries, since they have transferred most of the pollution to the developing countries. Their citizens consume the products while keeping the sources of pollution in developing countries. Therefore, developed countries have the responsibility to help less developed ones to take care of their environment.

Qingbao Zhen, Director, Department of Organization Development & Liaison, All-China Environment Federation, China, C-018

One of the major problems that we encounter is the over-exploitation of unrenewable resources. It is irrational for people to exploit natural resources without considering their scarcity. We should turn our attention to those resources that have been massively exploited, that we regard as garbage or filthy (such as human or animal excrement), and reconsider their quantity, effectiveness and sustainability for recycling and exploitation. The extensive use of marsh gas and marsh fertilizer in rural parts of China has proved itself as an effective way to solve the environment problem.

M, Yunnan Eco Network, China, C-035

Westernized life-style has been over-spread in China, and many practices and habits of thriftiness and self-control in the traditional Chinese culture are discarded. It is mandatory that some traditional customs favoring environment protection should be revitalized. The doctrine of the mean shall be emphasized, while extravagance and waste should be opposed.

Zhongmin Zhang, Chairman, Green Friend Association, China, C-055

All governments should give their attention to environment protection. Relevant education should be promoted among the public so that they may have a sense of responsibility for environment protection. There should be more exchange of information between different countries, since environment protection is a global issue rather than a national one. The United Nations shall take the duty of supervision and evaluation by giving encouragements or penalties in public.

Yongyuan Shao, Chairman, Nanjing Green Home Volunteer Association, China, C-058

The idea of pursuit of ecological civilization and sustainable development at the global level should be shared by different countries in the world to cooperate with each other in building a better environment and making solutions to related problems. Developed countries and major developing countries shall make efforts to control global warming. Agreements such as "Greenhouse Gas Emission Trading Scheme" could merely serve as a temporary solution in the current situation. If we are expecting an essential change, more energy should be devoted to the modification of people's life-style, increase in cooperation and sense of responsibility for global environment.

Tao Han, Chief Secretary, Beijing Association for Promotion of Healthy Environment and Public Education, China, C-063

More investigation should be made to help people find out the essential causes of environment problems, including overconsumption, expansion of lust, and the misbelief that all problems of human beings can be solved by technologies. It is important to find different ways for people to change their belief and life-style, so that each individual may do less damage to the environment, including restraint of one's desires, the use of recycled products, anti-overconsumption, and reduction in personal energy use. The expansion of the culture of overconsumption from developed countries and especially from the States is the major cause for global environment problems. A thrifty lifestyle should be promoted and people should oppose overconsumption. The thought that consumption is the source of economic growth should be changed. The ultimate goal that people are seeking is happiness rather than economic growth. Overconsumption only brings sorrow and pain rather than happiness.

Meishan Guo, Research Fellow, Lize Zhonghe Research Institute, China, C-067

When promoting and implementing sustainable development policies, regulations and mechanisms, individual countries continue to adopt an approach that takes their own national interest and economic welfare (including the development of new business opportunities) as its starting point, rather than making sustainable development itself the main focus of their efforts. To ensure effective global collaboration on sustainable development, initially the emphasis will need to be placed on individual nations' energy conservation and carbon dioxide emission reduction strategies, with international organizations' standards and regulatory mechanisms playing a supporting role. This will lay the foundations for expanding the scope of collaboration to include Joint Implementation and emissions trading.

LU, Wen-Hung (W.H. Lu), Assistant Researcher, Architecture and Building Research Institute, Ministry of the Interior ,Environmental Control Group,Taiwan, T001

R&D activity relating to the adoption of energy saving technology and the development of alternative energy sources in the transportation sector (including cars, aircraft, ships, trains and mass transit systems) should be stepped up. Government subsidy and incentive mechanisms must be adjusted to take into account today's key issues; governments need to face up to the reality of these issues, and adopt a more proactive stance towards the promotion of measures to combat these problems as quickly as possible.

M, Taiwan,T003

Comments from Japan

I believe solving environmental problems will remain extremely difficult as long as society insists on maintaining and following the existing economic rules. I believe a shift in paradigm is essential, in which human value and happiness are no longer measured based on economic wealth. Instead, I hope for a new social system where it could be proven that human value and happiness are realized through the stabilization of our living environment in which we exist through maintaining the Earth's ecosystem. While many advocate a balance between the environment and the economy, I believe this is a fairy tale given the current state of the society that is so obsessed with money. In order to attain such a balance, the world's major powers must gather strong willpower to overcome its own self-interest to steadfastly and holistically implement reforms. But unfortunately, I am afraid that such a dramatic change won't take place until the Environmental Doomsday Clock advances to 11:59 and 55 seconds, and the five seconds remaining will not be enough for a healing process. The goal of halving greenhouse gases by the year 2050 only has a meaning when there is a specific road map. It is necessary for us to continue to pay attention and watch how seriously the current prime minister means his statements.

M, Mitsubishi Materials Corporation, Japan, 002

Although the future of environmental problems is in a state of uncertainty, I hope that it will reverse itself at the last moment through the wisdom and determination of humankind. While global warming is of course a significant problem, countries must also cooperate and urgently strengthen their undertaking of water resource problems and the closely linked issue of food supply, which could be even more devastating, with the potential to destabilize the world.

M, Manufacturing Industries Bureau, Ministry of Economy, Trade and Industry, Japan, 003

Looking at people who purchase bottled water and tea out of vending machines at twice the price of gasoline while they either race to stock up on gasoline purchases or withhold them due to the expiration of the provisional gasoline taxes and at the media reports fanning these flames, they provide a painful realization about the difficulties of gaining the understanding and cooperation of citizens to prevent global warming. I also deeply felt the need for well-grounded environmental education.

Tsutomu Yamaguchi, Chairman of the Board of Directors, Examination Center for Electrical Engineer, Japan, 006

We must move from a time of thinking to a time of action. While there is recognition for the necessity of undertaking environmental problems, it is lamentable that the eyes of the society are not turned to the environment and instead are focused on other issues like their mistrust of politics and the spate of crime.

Saeko Muzuno, Announcer, Nippon Cultural Broadcasting, Japan, 012

On emissions trading, has the European Union which has taken the lead, seen its beneficial effects? I believe there needs to be an examination on the flow of money and whether or not emissions trading schemes are leading to a genuine reduction of carbon dioxide. This is also the case for other measures like the introduction of carbon taxes; whether it be the development of energy use technology that doesn't produce carbon dioxide, the development of other types of new fuels, or the development of technology to solidify carbon, unless they become utilized for technological development for further energy conservation and lead to a construction of a system with a genuine effect to greatly reduce emissions, they are devoid of meaning. From an international perspective, should there be an acceleration in the transfer of manufacturing functions from Japan, a country with energy conservation technology, to other countries that have emission credits, the effect would be akin to putting the cart before the horse.

Noriyoshi Kato, Senior Technical Manager
Technical and Engineering Division, Nippon Paper Group, Japan, 021

Now that "the environment" has become a buzzword, what is important is to build our towns in a decentralized way so that energy is produced locally and consumed locally. Further, industry must redouble their efforts to strengthen and promote technological development to overcome global warming.

Isao Sakamoto, Director, Sakamoto's PV Systems, Japan, 028

The problem of climate change is extremely important. However, it will not be appropriate for a discussion to treat climate change as if it were the only issue of significance, while completely neglecting all other environmental problems go unchallenged.

Katsunori Suzuki, Professor,
Kanazawa University Frontier Science Organization, Japan, 032

While I believe tremendous efforts are made towards its resolution, the current economic system has become so enormous that it has taken a life of its own and has become uncontrollable by human power. I feel that measures currently taken cannot bring a halt to this trend; it will only reach its ultimate destination.

Ryosuke Kishimoto, Chief Researcher, Division of the Natural Environment,
Nagano Environmental Conservation Research Institute, Japan, 066

The global environment has been rapidly deteriorating in just the last 100 years due to population growth and economic development. There are some who think we should overcome this with technological innovation, which is certainly important. But it is also apparent that these issues aren't so simple that they can be solved by technology alone. Without reconsidering the way of modern civilization which has centered on materialism, and confronting in earnest the fundamental question about human happiness, we will be in danger of reaching an irreparable point where we would pass on a legacy of misfortune onto future generations.

Munehiro Matsuda, Editor-in-Chief,
Monthly Journal of Global Environment, Sankei Shimbun, Japan, 075

The most urgent imperative is to teach young people, especially starting in elementary school, how critical a situation the Earth's environment is in.

M, technical consulting industry, Japan, 081

"Think globally, act locally." Global environmental problems are issues universally affecting all of humankind, which require the cooperation and engagement of the entire globe. With a sense of mission as a local public servant, I would like to continue to consider environmental problems on a global scale and to advance actual practices on a local scale.

Hirofumi Morimoto, Assistant Manager,
Environment and Living General Affairs Division
Government of Wakayama Prefecture, Japan, 104

Based on ecological field surveys and research, restore indigenous, multi-layered community forests to absorb and fix carbon dioxide. Everyone should immediately begin planting trees, starting from the ground their feet stand on.

Akira Miyawaki, Director,
IGES—Japanese Center for International Studies in Ecology, Japan 108

Although the importance of the issue concerning global warming is recognized within developed nations, even within these countries, the problem has not reached people's consciousness deeply enough to transform their lifestyles; let alone in developing countries, thus I have doubts about the possibility of preventing global warming by the end of the 21st century. Alongside lifestyle alterations, I believe that by utilizing renewable energies and with a rapid acceleration of technological development of CCS, a strategy led by technology should be pursued.

Akio Hosoi, Department of Environmental Safety, Teijin Ltd., Japan, 117

Even though Japan may fulfill its obligation to the Protocol on global warming, as long as emerging countries don't strengthen their measures, it is clear that global warming will accelerate overall. It is time for Japan not only to advance global warming prevention, but to think in earnest about adaptation including population problems and a shift in energy.

M, Hokkaido Environment Foundation, Japan, 135

Because environmental problems by nature are strongly correlated to a cluster of problems like development, poverty, peace, and human rights and are indeed integrated with them, there are frequent clashes of interests. In addition, although interest in environmental problems is increasing at citizens' level, as the response from corporations and the government is inadequate and the problems cross boundaries, it is necessary to draw a strategic roadmap and a blueprint from an integrated point of view.

Hajime Oshitani, Professor,
Department of Environmental Systems, Rakuno Gakuen University, Japan, 140

The endeavor to solve the problems is inadequate. Additionally, there will be no impact with numeric targets if they are in an in-progress state. The cooperation between the government and the business sector must be strengthened. At the bottom line is a need to strengthen governmental strategies.

Kenji Kita, Executive Director, Sompo Japan Environment Foundation, Japan, 150

The largest obstacle to solving environmental problems lies in the fundamental structure of the society, which aims to expand production and secure profits. A solution will not come about through individual initiatives alone when society turns a blind eye to the structural problems.

Kozo Ninomiya, Senior Scientist, Frontier Research Center for Global Change, Japan Agency for Marine-Earth Science and Technology, Japan, 163

In an environment filled with academics who make fickle agreements, others who make apathetic statements towards climate change, and polemicists who don't venture beyond the boundaries of trivial debate, it will take much more time before a high quality debate can lead the masses.

Akira Harada, former Director, Japan Meteorological Agency, former professor, National Defense Academy of Japan, Japan, 166

As someone who has investigated human-induced global warming for more than 40 years, I feel as though we have finally reached the point we should be in, with heightened public opinion towards global warming prevention around the world. But at the same time, I am also paying attention to those debates opposing prevention measures irresponsibly appearing in the mass media.

Satoshi Nitta, Japan, 167

Measures to counter the problem of seaborne waste are also becoming an urgent imperative. It is necessary to have more active discussions about forming a regulatory system.

Hiroshi Kaneko, Director, Partnership Office, Japan, 180

There is a need for an organization like "Monitors without Borders" (consisting of members like academics, journalists, and employees of the United Nations) to visit countries and publicize the status of their compliance. Japan ought to reconstruct the foundation for future development through developing technology related to the environment.

Takeshi Gamo, Director, Maritime Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan, 181

In recent years, I myself have been interested in the problem of biodiversity conservation. I believe that the change in land use caused by the increased production of biofuels and the conservation of land which have retained biodiversity such as forests and wetlands will not go together. This is a particular situation in which an improvement in one area of environmental problems has been linked to the environmental destruction of another.

Masahiro Takahashi, Researcher, Institute for Global Environmental Strategies, Japan, 191

I have been working in an area in a corporation to cope with environmental problems, but the reality is that it is not possible to be blind to securing profits while implementing measures. Little by little, we do execute measures we can actually accomplish, no matter how small they are. While I do acknowledge that corporate efforts are the most important, it is also a fact that greenhouse gas emissions from individual households have continued to be on the rise. It is critical for people to engage in solutions no matter how small, even after they have returned to their homes and become fellow citizens. What is truly important is to have a reform in people's awareness so that every citizen is conscious of the problem and does every little thing he/she can carry out. While companies hold educational activities for employees, it is also important for the government to more forcefully promote their educational programs. Although the problem may be difficult, it cannot be solved if there is emission reduction on one hand but continued leakage on the other. Although it is not easy, I believe that what is most important is for people throughout the world to be conscious of the problem. I pray that every little step will build up to be a large movement forward. And I will continue to carry out my practices.

Shigeru Saito, General Manager, Environmental Management Department, Citizen Business Expert Co., Japan, 196

Even though we are in a crisis situation, both the government and citizens alike think as though it is happening away from them. I feel as though it is showing the deterioration in humanity of Japanese people, compared to the European Union countries. I think we need to remember and bring back the pride and wisdom of Japanese people.

Konoe Fujimura, Co-Director, Japan Association of Environment and Society for the 21st Century, Japan, 205

Many environmental problems, including global warming, is a result of an amassing of those small individual activities. Thus, it is difficult for people to understand the relationship between their individual lifestyles and environmental problems. In addition to visualizing the burden our individual lives place on the planet (including indirect effects), I believe it is necessary to engage in a combined endeavor, including environmental education starting in early childhood, campaigns to curb excessive consumption, and political processes.

Satoshi Fujioka, Senior Staff,
Department of Environment, Agriculture, Forestry and Fishery
Government of Osaka Prefecture, Japan, 214

In order to respond to climate change and other phenomenon caused by global warming, efforts are necessary not only to reduce greenhouse gases but to reduce artificial heat emission, heat storage in the ground and atmospheric pollutants, in other words the reduction of gas, heat, and atmospheric pollutants. In order to promote ESD, economic self-reliance through ecological economic activities must be advanced throughout the world.

Michiko Imai, President, Le Verseau Inc., Japan, 215

While I fundamentally support the idea of providing financial support and promoting technology transfers to developing countries through the utilization of CDMs, the standards of evaluation and operating regulations should be stringently applied; they should not be relaxed to the demands of developing countries and to a certain sector of developed countries. There is a great risk for international emissions trading schemes in their current forms to become hijacked by political maneuvering and the money games of financial institutions and brokers; a more in-depth scheme must be designed internationally. On the other hand, the discussion in our country about the post-Kyoto Protocol framework is too limited to debates on trivial details, like whether or not to implement an emissions trading scheme. A more strategic discussion needs to take place from a much bigger picture and more long-term perspective, including the promotion and strengthening of the development and use of new forms of energy, land use strategies that incorporate global warming countermeasures, and scientific and technological development strategies. While I personally find aspects of emissions trading difficult to support, it is apparent that we will need to implement a scheme in our country as well; thus, we urgently need to move forward on creating a framework to be introduced domestically.

Hisakazu Kato, Professor Emeritus, Nagoya University, Japan, 233

I fear that "global environmental strategies" are often misused as a tool of international negotiation and domestic political warfare. I hope for a calmer discussion based fundamentally on scientific knowledge.

M, Corporate Social Responsibility Division, Tokuyama Corporation, Japan, 245

Because there are a variety of different opinions on the environment, I am torn between the different ways of thinking. I would like to know how things really are.

F, The Kao Foundation for Arts and Sciences, Japan, 246

Because there isn't one academic discipline called environmental studies, citizens cannot understand what the environmental problem is. As a result, although awareness is at a high level, it is not accompanied by action. There has been a rapid increase in citizens under duress. The creation of a new way of thinking that integrates businesses and government (the transition from a civilization based on underground resources to a life civilization) is an urgent imperative.

Hideki Ishida, Professor,
Graduate School of Environmental Studies, Tohoku University, Japan, 249

Global environmental problems were brought on by the activities overall of human beings which pursued a convenient and comfortable life. A marked characteristic of environmental problems is that each and every human being is both a perpetrator and a victim. As such, it is necessary for each of us as citizens of the Earth to come to the realization about the seriousness of the problem, transform our way of thinking, and begin engaging in solutions ourselves. In Kanagawa Prefecture, to begin taking initiative and tackle what is possible now in preventing global warming, we issued the "Cool Renaissance Declaration" this past January and we are engaged in projects to propagate electric vehicles and solar power. By maximizing the progressive and cooperative powers of Kanagawa Prefecture, I would like to transmit and spread global warming prevention endeavors from Kanagawa to the rest of the country, and to the world.

Shigefumi Matsuzawa, Governor, Kanagawa Prefecture, Japan, 286

It is important not to become caught in programs like emissions trading, which are part of the money games of America and Europe that invite confusion on the world economy through financial capitalism. Japan and Asia should construct a cooperative framework of effective global environmental strategies like the propagation of energy conservation equipments.

M, Nippon Steel Corporation, Japan, 289

The current system of the economy and trade is built on bending and transforming the environment, both the nature and the resources, to suit human desire. It is a system that places a high value on aggregating cheap labor and resources from around the world by paying unjustly low wages using the magic of foreign exchange and the use of fossil fuels, which doesn't allow for the internalization of the burden and the cost to the global environment. Further, a sector of the financial market highly evaluates businesses that maximize nonexistent desires. There needs to be a change in the rules to create a sustainable planet grounded in what each of the world's region and people collectively and truly need.

M, Ministry of the Environment, Japan, 291

It is said that financial losses from climate change will reach staggering amounts. If we don't put consistent and steadfast actions into place now, there will be a large price to be paid. There is no time to sit by the sidelines. As energy consumption consistently grows, I truly hope that even for nuclear power generation to expand consistently based on accurate understanding.

Takeshi Abiru, Consultant, Japan Atomic Power Company, Japan, 293

Environmental problems have been brought about by the civilized society which is supported by scientific technology. Today, modern technology has surpassed the original capabilities of human beings; not only have we paid an immense price for mass energy consumption and the deterioration of the environment, it now has even come to threaten human existence. Be that as it may, the refuge for our hearts as we live our lives does not lie in civilization, but in traditional culture. It has been long since "coexistence with nature" began to be advocated. Standing from a scientific perspective, we must accelerate the transformation of our values to become a society respectful of culture. We are faced with the need to integrate and amass all of our wisdom in order for future generations to live a rich life on this planet.

Satoru Kitajima, Board Member and Consultant,
The Association of National Trusts in Japan, Japan, 299

Restated, environmental problems are energy problems. As such, I would like for the national government to steadfastly engage in creating a system for the development and propagation of next generation energies that don't burden the environment like hydrogen and renewable energies. In the rural localities, in addition to increasing citizens' awareness for energy conservation and renewable energies, I would also like to support businesses with the hope of amassing industries related to renewable energies that take advantage of the unique characteristics of the region.

Yasushi Furukawa, Governor, Saga Prefecture, Japan, 300

Environmental problems are a domestic issue as well as a foreign policy issue. In order to cope with the problem, instead of being swayed by the heat around it from both within the country and abroad, we must carefully formulate our game plan and tactics, be hard-nosed about our actions, and reach a positive conclusion for the good of the country and for the world.

Katsusada Hirose, Governor, Oita Prefecture, Japan, 304

Question 3. The Kyoto Protocol and Post-2012 Approaches

3.1. Evaluating the Role of the Kyoto Protocol

%

	Japan	U.S.A & Canada	Western Europe	Asian Four	Rest of Asia	Latin America	Africa	Oceania	E.Europe & former Soviet Union	Middle East	Overseas Total	Total	Devel-oped Regions	Develop-ing Regions	Others
	[314]	[32]	[67]	[68]	[119]	[50]	[24]	[14]	[28]	[15]	[418]	[732]	[481]	[193]	[57]
1. It should be commended for alerting people about global warming as an issue requiring a global response, and for presenting a model for future international schemes	27	9	24	15	30	26	29	21	25	40	24	25	24	29	28
2. It is unfortunate that the Kyoto Protocol did not garner participation of all developed countries; it should be credited for prompting them to establish reduction objectives and begin implementation	42	53	54	54	41	44	54	43	36	7	46	44	46	44	30
3. It cannot be commended due to the lack of participation by a few major developed countries and consequently its limited effectiveness	19	13	13	24	14	14	8	7	18	47	16	17	18	13	23
4. It cannot be commended; it lacks a system to aggressively promote reduction among high greenhouse gas-emitting developing countries	9	19	6	4	9	8	4	7	18	0	8	8	8	8	11
5.Other	2	3	1	0	1	2	0	0	0	0	1	1	2	1	0
Unknown	2	3	1	3	4	6	4	21	4	7	4	3	2	5	9

3.2. Post-2012 Approaches

3.2.1. Evaluating COP 13

%

It should be commended	68	53	61	69	77	54	75	64	75	73	68	68	67	71	72
It cannot be commended	28	41	30	24	14	32	13	36	18	7	23	25	28	19	19
Unknown	4	6	9	7	8	14	13	0	7	20	9	7	5	10	9

Reasons COP 13 Should Be Commended

%

	Japan	U.S.A & Canada	Western Europe	Asian Four	Rest of Asia	Latin America	Africa	Oceania	E.Europe & former Soviet Union	Middle East	Overseas Total	Total	Developed Regions	Developing Regions	Others
	[215]	[17]	[41]	[47]	[92]	[27]	[18]	[9]	[21]	[11]	[284]	[499]	[320]	[137]	[41]
1. An agreement was attained to begin negotiations on the post-2012 framework and the Bali Roadmap was adopted, charting the course for negotiations through completion in 2009	14	18	24	32	32	30	44	33	24	18	29	23	18	33	24
2. The U.S., a non-participant in the Kyoto Protocol, and China and India, which did not bear reduction obligations, agreed to participate in formulating a new post-2012 framework	75	47	49	55	40	41	44	67	48	36	46	58	67	41	49
3. It made clear that developing countries should also make a reasonable contribution	8	18	12	9	11	0	6	0	19	0	10	9	9	8	10
4. It elucidated the need to provide technical and financial support towards developing countries	2	6	10	4	14	11	6	0	5	9	10	6	3	12	5
5. Other	0	6	2	0	0	7	0	0	0	0	1	1	1	1	0
Unknown	0	6	2	0	3	11	0	0	5	36	5	3	1	4	12

Reasons COP 13 Cannot Be Commended

%

	[88]	[13]	[20]	[16]	[17]	[16]	[3]	[5]	[5]	[1]	[96]	[184]	[137]	[36]	[11]
1. It lacked specific details of whether or not to establish numeric reduction targets for developed countries.	35	8	15	31	29	19	33	20	0	0	20	27	29	25	9
2. The strong distrust between developed and developing countries denied the opportunity for consensus on emissions reduction by developing countries.	58	31	20	69	53	69	33	40	40	0	46	52	51	58	36
3. It postponed decision-making about the framework past the First Commitment Period of the Kyoto Protocol to 2009.	6	38	50	0	12	13	0	0	40	0	22	14	15	11	18
4. Other	1	15	10	0	6	0	0	40	20	0	8	5	4	3	27
Unknown	0	8	5	0	0	0	33	0	0	100	4	2	1	3	9

3.2.2. Consideration Towards a New Post-2012 Framework

%

	Japan	U.S.A & Canada	Western Europe	Asian Four	Rest of Asia	Latin America	Africa	Oceania	E.Europe & former Soviet Union	Middle East	Overseas Total	Total	Developed Regions	Developing Regions	Others
	[314]	[32]	[67]	[68]	[119]	[50]	[24]	[14]	[28]	[15]	[418]	[732]	[481]	[193]	[57]
1. A numeric emissions reduction target with more stringent legal enforcement powers for developed countries	37	59	49	54	50	50	38	50	29	47	49	44	43	48	39
2. Emission suppression measures for high-emitting developing countries like China and India, and for emerging economies like South Korea and Brazil	85	63	55	56	23	30	38	64	61	40	43	61	75	26	56
3. Fair and effective contributions by developed countries to impoverished developing countries for emissions reduction	17	22	24	18	31	20	33	14	14	13	23	21	18	28	14
4. A more effective implementation of the Kyoto mechanisms through adjustments and expansion	13	6	24	13	24	10	17	7	29	20	18	16	14	20	21
5. Mechanisms to support developing countries such as technical transfers and the establishment of a fund for financial assistance	32	28	24	21	47	54	29	36	32	27	35	34	29	47	32
6. Other	4	13	1	0	2	6	0	14	0	0	3	3	4	3	4
Unknown	1	0	4	6	1	6	17	0	7	13	5	3	2	4	7

3.2.3 Carbon Tax

3.2.3.1 The Status of Carbon Taxes Implementation

%

1. Carbon taxes have already been adopted	2	16	22	3	4	6	4	0	7	0	8	5	6	5	4
2. Introduction of carbon taxes is being considered	56	56	54	74	29	20	33	64	39	40	44	49	58	27	46
3. There are no plans to introduce carbon taxes	38	22	19	18	58	66	54	36	32	40	40	39	31	60	35
Unknown	4	6	4	6	8	8	8	0	21	20	8	6	5	8	16

3.2.3.2. Effectiveness of Carbon Tax

%

1. I think it will be effective	67	66	42	78	62	50	38	50	61	47	58	62	65	56	54
2. I don't think it will be effective	27	25	45	13	20	38	46	29	18	40	28	27	27	28	26
3. I don't know	5	6	9	3	9	10	4	14	7	0	7	7	6	9	7
Unknown	1	3	4	6	8	2	13	7	14	13	7	4	2	7	12

Reasons Carbon Taxes will be Effective

%

	Japan	U.S.A & Canada	Western Europe	Asian Four	Rest of Asia	Latin America	Africa	Oceania	E.Europe & former Soviet Union	Middle East	Overseas Total	Total	Developed Regions	Developing Regions	Others
	[211]	[21]	[28]	[53]	[74]	[25]	[9]	[7]	[17]	[7]	[241]	[452]	[313]	[108]	[31]
1. Carbon taxes will raise prices for fossil fuels. This will suppress demand, promote energy saving goods, and encourage conservation of fossil fuels	39	33	61	40	23	28	11	71	47	57	36	38	41	23	55
2. Tax proceeds can be utilized for a wide range of global warming countermeasures	30	10	0	23	23	36	33	14	12	0	19	24	25	27	10
3. Carbon tax would promote the transformation of lifestyles, and there will be an announcement effect that encourages energy conservation	28	43	36	36	51	36	56	14	41	29	41	35	31	48	32
4.Other	2	10	4	2	1	0	0	0	0	0	2	2	3	1	0
Unknown	0	5	0	0	1	0	0	0	0	14	1	1	1	1	3

Reasons Carbon Taxes will not be Effective

%

	[84]	[8]	[30]	[9]	[24]	[19]	[11]	[4]	[5]	[6]	[116]	[200]	[131]	[54]	[15]
1. The effectiveness of a carbon tax is uncertain	45	25	37	33	46	32	27	0	20	0	32	38	41	37	7
2. There is a risk of undermining international competitiveness of export industries	4	13	0	0	4	0	0	0	0	0	2	3	3	2	0
3. Carbon tax will lead to higher costs of goods and services and will increase burden on consumers, resulting in a negative effect on the economy	24	25	27	56	17	37	45	0	60	50	32	29	27	30	40
4. It will encourage the relocation of production sites to developing countries	15	13	27	11	17	5	18	50	20	0	17	17	18	13	20
5. Other	12	25	3	0	4	16	9	25	0	0	8	10	10	9	7
Unknown	0	0	7	0	13	11	0	25	0	50	9	6	2	9	27

3.2.4. Emissions Trading

3.2.4.1 Efffectiveness of Emissions Trading

%

	Japan	U.S.A & Canada	Western Europe	Asian Four	Rest of Asia	Latin America	Africa	Oceania	E.Europe & former Soviet Union	Middle East	Overseas Total	Total	Devel-oped Regions	Develop-ing Regions	Others
	[314]	[32]	[67]	[68]	[119]	[50]	[24]	[14]	[28]	[15]	[418]	[732]	[481]	[193]	[57]
1. I think it will be effective	36	44	36	60	55	54	33	36	43	47	49	43	40	52	42
2. I don't think it will be effective	63	53	61	37	38	46	58	57	43	47	46	53	59	42	47
Unknown	1	3	3	3	7	0	8	7	14	7	5	3	2	5	11

Reasons Emissions Trading will be Effective

%

	[112]	[14]	[24]	[41]	[66]	[27]	[8]	[5]	[12]	[7]	[204]	[316]	[191]	[101]	[24]
1. It will add momentum to existing corporate efforts	37	21	17	49	41	22	38	20	17	29	33	34	36	36	21
2. Emissions trading utilizes market forces, making it a cost efficient measure	63	79	75	51	56	67	63	80	75	43	62	62	63	59	67
Unknown	0	0	8	0	3	11	0	0	8	29	5	3	1	5	13

Reasons Emissions Trading will not be Effective

%

	[199]	[17]	[41]	[25]	[45]	[23]	[14]	[8]	[12]	[7]	[192]	[391]	[282]	[82]	[27]
1. Countries with reduction responsibilities will purchase allowances and neglect domestic strategies	7	6	29	28	22	39	21	25	8	14	24	15	12	27	15
2. Economic bargaining will be prioritized over substantive measures to reduce emissions	48	41	27	40	16	17	43	0	8	14	24	37	44	21	7
3. Its effectiveness cannot be stated with certainty at this stage	17	24	12	20	24	26	29	13	17	14	20	18	17	26	15
4. Purchasing allowances from a surplus of credits does not lead to meaningful emissions reductions	26	18	29	12	29	17	7	13	42	0	22	24	25	22	22
5. There will be an imbalance between the demand and supply of allowances	2	0	0	0	4	0	0	38	17	0	4	3	1	2	19
Unknown	1	12	2	0	4	0	0	13	8	57	6	3	2	2	22

3.2.4.2. Important Factors in Promoting Emissions Trading

%

	Japan	U.S.A & Canada	Western Europe	Asian Four	Rest of Asia	Latin America	Africa	Oceania	E.Europe & former Soviet Union	Middle East	Overseas Total	Total	Developed Regions	Developing Regions	Others
	[112]	[14]	[24]	[41]	[66]	[27]	[8]	[5]	[12]	[7]	[204]	[316]	[191]	[101]	[24]
1. A fair allocation of emissions allowances to countries and corporations	48	29	42	34	24	15	13	0	42	43	28	35	43	21	33
2. Appropriate pricing for each ton of carbon dioxide emissions	7	14	17	10	17	26	25	60	17	43	19	15	9	20	33
3. A system of fines and penalties for companies that exceed their emissions allowances	9	7	13	27	17	19	25	0	33	14	19	15	13	18	21
4. Rules regulating fair competition among similar business corporations from different countries	18	0	17	17	15	19	13	0	0	0	13	15	16	16	0
5. A system of monitoring and compliance by a third party organization	12	50	4	5	20	22	25	40	8	0	17	15	12	21	13
Unknown	6	0	8	7	8	0	0	0	0	0	5	5	6	5	0

3.2.4.3. Limits on Proportion that Emissions Trading, CDM, and JI Can Occupy in Emissions Reduction Targets

%

1. A limit should be placed	51	57	38	56	67	63	63	60	75	71	60	57	51	65	71
2. A limit should not be placed	43	43	58	32	24	26	25	40	25	14	31	35	42	25	25
Unknown	6	0	4	12	9	11	13	0	0	14	8	8	7	10	4

Value of Upper Limit within Reduction Goals

%

	[57]	[8]	[9]	[23]	[44]	[17]	[5]	[3]	[9]	[5]	[123]	[180]	[97]	[66]	[17]
1. Under 10%	4	0	0	17	2	6	0	0	0	0	5	4	6	3	0
2. Up to 20%	47	25	44	57	55	29	60	33	67	20	48	48	47	48	47
3. Up to 40%	40	75	11	22	39	41	40	33	22	80	37	38	36	39	41
4. Up to 70%	9	0	44	4	5	12	0	33	11	0	9	9	10	6	12
Unknown	0	0	0	0	0	12	0	0	0	0	2	1	0	3	0

Question 4. Energy Problems

4.1. Renewable Energies

4.1.1 Promoting the Use of Solar Power and Wind Power

%

	Japan	U.S.A & Canada	Western Europe	Asian Four	Rest of Asia	Latin America	Africa	Oceania	E.Europe & former Soviet Union	Middle East	Overseas Total	Total	Developed Regions	Developing Regions	Others
	[314]	[32]	[67]	[68]	[119]	[50]	[24]	[14]	[28]	[15]	[418]	[732]	[481]	[193]	[57]
1. Renewable energies are not economically optimal, but should be promoted given the future of the environment and constraints of current energy sources	77	53	57	53	42	52	67	64	46	67	51	62	69	48	56
2. Emphasis should be placed on the economics of renewable energies; their introduction is best determined through the market	8	19	22	31	35	24	13	21	7	20	26	18	14	30	14
3. Fossil fuels and nuclear energy should remain the main sources of power, with renewable energies fulfilling a supplementary role	12	3	9	9	17	4	8	7	29	0	11	11	10	12	16
4. Other	3	22	9	3	3	10	4	0	7	0	6	5	5	5	4
Unknown	1	3	3	4	3	10	8	7	11	13	6	3	2	6	11

4.1.2. Evaluating Renewable Energies

%

1. Renewables are effective as a decentralized source of energy with high potential for practical use.	56	63	48	38	57	68	33	50	39	47	51	53	53	57	44
2. Well-suited for my country as the constraints due to the energy sources are minimal	26	3	9	38	3	4	21	0	14	0	11	18	24	5	7
3. Well-suited for my country as individual equipment and initial investment are small	2	0	0	6	5	6	13	7	14	7	5	4	2	6	11
4. It will make a significant contribution to my country's economic development, including those through related industries	9	19	28	9	27	16	25	29	18	33	22	17	12	24	25
5. Other	5	9	13	4	4	4	0	7	4	0	6	5	6	4	4
Unknown	2	6	1	4	4	2	8	7	11	13	5	3	2	4	11

4.1.3. Bioethanol and Biodiesel

%

	Japan	U.S.A & Canada	Western Europe	Asian Four	Rest of Asia	Latin America	Africa	Oceania	E.Europe & former Soviet Union	Middle East	Overseas Total	Total	Developed Regions	Developing Regions	Others
	[314]	[32]	[67]	[68]	[119]	[50]	[24]	[14]	[28]	[15]	[418]	[732]	[481]	[193]	[57]
1. They should be vastly utilized as this will lead to the reduction of carbon dioxide emissions	4	6	4	7	10	10	8	7	0	0	7	6	5	10	2
2. They should be partially utilized, depending upon the characteristics of the region or the country	30	3	22	41	42	34	21	36	36	7	32	31	29	37	28
3. The use of corn, sugar cane, and soybeans as raw materials for biofuels competes with their use for food; it is not desirable to utilize them for energy	45	38	39	34	24	32	50	21	21	67	33	38	42	30	33
4. The increased production of these raw materials will result in deforestation and thus will have no contribution to carbon dioxide reduction	9	9	18	9	7	14	4	14	14	0	10	10	10	8	11
5. It would be more desirable to wait for the development of new technology	11	38	16	4	13	6	8	21	18	0	13	12	13	10	14
Unknown	0	6	0	4	4	4	8	0	11	27	5	3	1	5	12

4.2. Nuclear Power Generation

4.2.1 The Status of Nuclear Power Generation in Respondents' Regions

%

1. Nuclear power generation has been adopted, and there are plans for its future expansion	67	66	36	57	66	18	21	0	39	13	46	55	61	48	23
2. Nuclear power generation has been adopted, and it will either remain at current level, or be reduced	28	16	27	34	7	12	0	0	11	0	15	21	28	7	5
3. Nuclear power generation has not yet been adopted, but there are plans to introduce it	0	3	7	0	7	16	25	7	21	47	10	6	1	11	25
4. Adopting nuclear power generation is not realistic due to the level of technical complexities and the scale of the country's economy	1	9	6	0	8	20	25	36	11	13	10	6	2	13	18
5. Nuclear power generation has not been adopted, and I don't anticipate it to be introduced due to safety concerns and proliferation problems	0	3	19	3	6	18	13	57	11	13	11	7	3	10	23
6. I don't know	3	0	3	1	4	10	4	0	4	0	4	3	2	6	2
Unknown	2	3	1	4	2	6	13	0	4	13	4	3	2	4	5

4.2.2 Opinions on Nuclear Power Generation

%

	Japan	U.S.A & Canada	Western Europe	Asian Four	Rest of Asia	Latin America	Africa	Oceania	E.Europe & former Soviet Union	Middle East	Overseas Total	Total	Developed Regions	Developing Regions	Others
	[314]	[32]	[67]	[68]	[119]	[50]	[24]	[14]	[28]	[15]	[418]	[732]	[481]	[193]	[57]
1. It should very much be utilized as the current state of nuclear power generation is extremely trustworthy	6	0	6	6	14	4	4	14	4	7	8	7	6	10	7
2. While safety concerns remain, the use of nuclear power generation should be promoted for global warming prevention and energy balance	37	41	19	34	34	12	33	7	18	0	26	31	34	28	11
3. The use of nuclear power generation will become acceptable with further technical improvements and safety enhancements	12	16	19	9	26	34	29	21	25	33	22	18	13	28	26
4. Because of nuclear waste by-product and safety concerns, the current situation should be maintained but with an eye towards gradual reduction	33	13	19	25	13	24	8	29	25	20	18	25	29	15	25
5. The use of nuclear power generation is unacceptable from the standpoints of nuclear waste by-products and safety	7	28	28	21	8	12	17	21	29	20	18	13	13	10	25
6. I don't know	1	0	1	0	3	6	4	0	0	0	2	1	1	4	0
7. Other	4	0	4	1	2	2	0	7	0	0	2	3	3	2	2
Unknown	1	3	1	4	1	6	4	0	0	20	3	2	2	3	5

Question 5. Lifestyle Alteration

5.1 Awareness Towards Lifestyle Alteration

%

1. I do not pursue a lifestyle based on throw-away or excessive consumption	14	34	36	6	34	36	33	64	25	7	29	23	17	35	30
2. It is possible to alter my lifestyle	28	47	36	40	30	42	25	0	25	33	34	31	32	33	21
3. Some lifestyle alteration is possible	53	16	24	49	32	20	25	36	43	47	32	41	46	28	42
4. Even with effort, lifestyle alteration would be difficult	5	3	4	1	2	0	4	0	0	0	2	3	4	2	0
5. Lifestyle alteration is not possible	0	0	0	0	0	0	0	0	4	0	0	0	0	0	2
Unknown	0	0	0	4	2	2	13	0	4	13	3	2	1	3	5

5.2. Factors Hampering Lifestyle Alteration

%

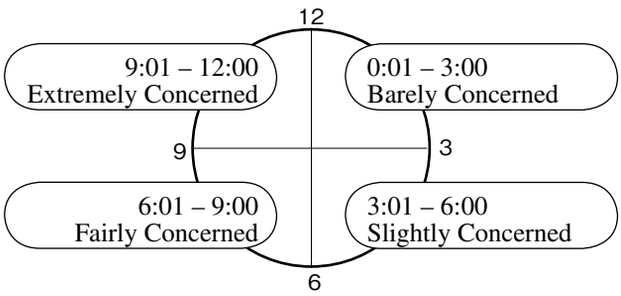
	Japan	U.S.A & Canada	Western Europe	Asian Four	Rest of Asia	Latin America	Africa	Oceania	E.Europe & former Soviet Union	Middle East	Overseas Total	Total	Developed Regions	Developing Regions	Others
	[314]	[32]	[67]	[68]	[119]	[50]	[24]	[14]	[28]	[15]	[418]	[732]	[481]	[193]	[57]
1. While there is recognition for the magnitude of environmental problems, people find it cumbersome to put things into action	45	28	36	51	38	42	38	29	25	27	38	41	43	39	26
2. Environmental problems are not so imminent as to require a sacrifice in comfort and efficiency	11	9	13	10	11	4	4	21	18	13	11	11	11	8	18
3. There is a belief that one person's changing his lifestyle would not make a difference	18	25	28	9	13	26	25	7	21	13	18	18	19	18	16
4. While there is recognition for the magnitude of environmental problems, it is difficult to respond due to the relatively high cost of ecological goods	12	0	9	13	26	16	17	21	25	20	17	15	11	22	23
5. Other	12	28	12	7	11	10	4	14	4	7	11	12	13	10	7
Unknown	1	9	1	9	1	2	13	7	7	20	5	3	3	3	11

VI. Questionnaire as Distributed to Respondents

I. REPEAT TOPICS

1. Environment Doomsday Clock

1-1. 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? Write a time within the range 0:01 to 12:00 corresponding to the extent of your concern in the boxes below.



Please write your time here.

☐ : ☐

(Example 10 : 35)

Please write your time here. : (Example 10:35)

1-2. When you selected the time above, what were the main environmental conditions about which you were concerned? Please circle up to three (3) of the following items of concern.

- ☐ (1) General environmental problems
- ☐ (2) Global warming
- ☐ (3) Air pollution, water contamination, river/ocean pollution
- ☐ (4) Water shortage, food problems
- ☐ (5) Deforestation, desertification, loss of biodiversity
- ☐ (6) Peoples' lifestyles, waste-related problems
- ☐ (7) Environmental problems and economic/trade related activities
- ☐ (8) Population, poverty, status of women
- ☐ (9) Others: _____

2. Progress Toward Agenda 21

Sixteen years have passed since Agenda 21 was adopted as an "action plan for the environment and development" at the Earth Summit in 1992. Please indicate the progress made in your country for the following 10 categories taken from the Agenda 21 action plan by circling one (1) letter 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) Scientific/technological contributions	(a)		(b)		(c)		(d)		(e)
(4) Formation of recycling systems	(a)		(b)		(c)		(d)		(e)
(5) Conservation of forest resources	(a)		(b)		(c)		(d)		(e)
(6) Conservation of biodiversity	(a)		(b)		(c)		(d)		(e)
(7) Greenhouse gas prevention measures	(a)		(b)		(c)		(d)		(e)
(8) Population/poverty problems	(a)		(b)		(c)		(d)		(e)
(9) Lifestyle alteration	(a)		(b)		(c)		(d)		(e)
(10) Environmental measures by industry	(a)		(b)		(c)		(d)		(e)

II. MAIN FOCUS OF THE CURRENT YEAR'S QUESTIONNAIRE

3. The Kyoto Protocol and Post-2012 Approaches

3-1. Evaluating the Role of the Kyoto Protocol

This year marks the beginning of the First Commitment Period of the Kyoto Protocol, bringing to bear emissions reduction obligations for the protocol's signatory developed countries.

How do you evaluate the role that the current Kyoto Protocol has played? Please circle one item from the following list that reflects your opinion.

1. The Kyoto Protocol should be commended for politically alerting people worldwide about global warming as an issue requiring a global response, and for presenting a systemic model for future international schemes.
2. While it is unfortunate that the Kyoto Protocol did not garner the participation of all developed countries, it should be credited for prompting developed countries to establish emissions reduction objectives and begin implementing them ahead of developing countries.
3. The Kyoto Protocol cannot be commended due to the lack of participation by a few major developed countries and consequently its limited effectiveness.
4. The Kyoto Protocol cannot be commended with regards to the absence of a system to aggressively promote reduction among high greenhouse gas-emitting developing countries.
5. Other (Please specify:)

3-2. Post-2012 Approaches

3-2-1. Evaluating COP13

In December 2007, the 13th session of the Conference of the Parties (COP 13) of the United Nations Framework Convention on Climate Change (UNFCCC) took place in Bali, Indonesia, with the participation of representatives from 180 countries. The delegates discussed global warming countermeasures, including an approach for the post-2012 period.

How do you evaluate the achievements of COP13? Please select either "it should be commended" or "it cannot be commended" and circle one item from the list that best reflects your rationale.

It should be commended.

Reason:

1. A formal agreement was attained to begin negotiations on the framework past the First Commitment Period of the Kyoto Protocol, and the Bali Roadmap was adopted, charting the course for negotiations through its completion in 2009.
2. The United States of America, which did not participate in the Kyoto Protocol, and China and India, which did not bear emissions reduction obligations in the protocol, agreed to participate in formulating a new post-2012 framework.
3. It made clear that developing countries should also make a reasonable contribution.
4. It elucidated the need to provide technical and financial support towards developing countries.
5. Other (Please specify:)

It cannot be commended.

Reason:

1. It did not allow for deliberation on the specific details of whether or not to establish numeric reduction targets for developed countries.
2. The strong mutual distrust between developed and developing countries denied the opportunity for specific consensus building on emissions reduction by developing countries.
3. It postponed decision-making about the framework past the First Commitment Period of the Kyoto Protocol to 2009.
4. Other (Please specify:)

3-2-2 Considerations Towards a New Post-2012 Framework

It was decided that countries will aim to reach an agreement for a new framework past the First Commitment Period of the Kyoto Protocol by the 15th session of the Conference of the Parties (COP 15) in 2009. Please select two items from the following list that you think are the most important considerations in formulating a new framework.

1. A numeric emissions reduction target with more stringent legal enforcement powers for developed countries.
2. Emission suppression measures for high-emitting developing countries like China and India, and for emerging economies like South Korea and Brazil.
3. Fair and effective contributions by developed countries to impoverished developing countries like those in Africa for emissions reduction.
4. A more effective implementation of the current Kyoto mechanisms by making adjustments and expanding them.
5. Mechanisms to support developing countries such as technical transfers and the establishment of a fund for financial assistance.

6. Other (Please specify:)

3-2-3 Carbon Tax

The idea of assigning a value to carbon as a measure to reduce emissions has gained ground, with the introduction of a carbon tax being one of the potential scheme. The following questions pertain to the current status of carbon taxes in your country and the thinking around such a measure.

3-2-3-1. What is the current status of carbon taxes in your country? Please circle one item from the following list.

1. Carbon taxes have already been adopted.
2. The introduction of carbon taxes is being considered.
3. There are no plans to introduce carbon taxes.

3-2-3-2. Do you think that carbon taxes will be effective in reducing emissions? Please select either "I think it will be effective," "I don't think it will be effective," or "I don't know." If you selected one of the first two options, please also circle one item from the subsequent list that best reflects your rationale.

I think it will be effective.

Reason:

1. The addition of a carbon tax will result in rising prices for fossil fuels. This will suppress demand, promote the replacement of goods with higher energy saving, and encourage the conservation of fossil fuels.
2. Tax proceeds can be utilized for a wide range of global warming countermeasures.

3. A carbon tax would promote the transformation of lifestyles and working styles, and there will be an announcement effect that encourages energy conservation.
4. Other (Please specify)

I don't think it will be effective.
Reason:
1. The effectiveness of a carbon tax is uncertain.
2. There is a risk of undermining the international competitiveness of export industries.
3. A carbon tax will lead to higher costs of goods and services and will increase the burden on consumers, resulting in a negative effect on the economy.
4. It will encourage the relocation of production sites to developing countries.
5. Other (Please specify:)

I don't know.

3-2-4 Emissions Trading
A system of emissions trading was highlighted in the Kyoto Protocol as a potent measure to curb greenhouse gas emissions, and in 2005, the European Union began their Greenhouse Gas Emission Trading Scheme (EU-ETS). The following questions pertain to the future of emissions trading.

3-2-4-1. Do you think that emissions trading mechanisms will be effective in reducing carbon dioxide emissions? Please select either "I think it will be effective" or "I don't think it will be effective," and also circle one item from the list that best reflects your rationale.

I think it will be effective.
1. It will add momentum to existing corporate efforts.
2. Emissions trading utilizes market forces, making it a cost efficient measure.

I don't think it will be effective.
1. Countries with emissions reduction responsibilities will purchase allowances and neglect their domestic strategies.
2. Economic bargaining will be prioritized over substantive measures to reduce emissions.
3. Its effectiveness in preventing global warming cannot be stated with certainty at this stage.
4. Purchasing allowances from a surplus of credits does not lead to meaningful emissions reductions.
5. There will be an imbalance between the demand and supply of allowances.

If you chose "it will be effective" in the previous question, please also answer the following two questions.

3-2-4-2. What do you think is the most important factor in promoting emissions trading schemes if they are to be effective? Please circle one item from the following list that best reflects your opinion.
1. A fair allocation of emissions allowances to countries and corporations
2. Appropriate pricing for each ton of carbon dioxide emissions
3. A system of fines and penalties for companies that exceed their emissions allowances
4. Rules regulating fair competition among similar business corporations from different countries
5. A system of monitoring and compliance by a third party organization

3-2-4-3. In reaching reduction goals, do you think a limit should be placed on the proportion that emissions trading, Clean Development Mechanism, and Joint Implementation can occupy within the target? Please select either "a limit should be placed" or "a limit should not be placed." If you select "a limit should be placed," please also indicate what level it should be. (Related question in the 1998 questionnaire.)

A limit should be placed
Under 10% Up to 20% Up to 40% Up to 70%

A limit should not be placed

4. Energy Problems
4-1 Renewable Energies
4-1-1. It is said that a shift from the use of fossil fuels to renewable energies is indispensable in reducing carbon dioxide emissions. In the previous year's questionnaire, solar power and wind power were identified as the most desirable forms of renewable energy. What is your opinion on promoting their use from a global perspective? Please circle one item from the following list that best reflects your opinion.
1. Renewable energies in their current forms are not economically optimal and present problems like cost. But they should be aggressively promoted considering the future of the global environment and the constraints of current sources of energy.

2. Emphasis should be placed on the economics of renewable energies; their introduction is best determined through relying on the movements of the marketplace.
3. Fossil fuels and nuclear energy should remain the main sources of power generation for the foreseeable future, with renewable energies positioned to fulfill a supplementary role.
4. Other (Please specify:)

4-1-2. What aspects of renewable energies do you think will be valued as they are introduced in your country? Please circle one item from the following list that best reflects your opinion.

1. Renewable energies are effective as a decentralized source of energy with high potential for practical use.
2. Well-suited for my country as the constraints due to the energy sources are minimal.
3. Well-suited for my country as individual equipments are small and the requirements of initial investment are less.
4. It will make a significant contribution to my country's economic development, including those through related industries.
5. Other (Please specify:)

4-1-3. There has been much attention paid to bioethanol and biodiesel as potential fuels to replace gasoline and diesel fuel. What do you think about this development? Please circle one item from the following list that best reflects your opinion.

1. They should be vastly utilized as this will lead to the reduction of carbon dioxide emissions.
2. They should be partially utilized, depending upon the characteristics of the region or the country.
3. The use of corn, sugar cane, and soybeans as raw materials for biofuels competes with their use for food supply; thus, it is not desirable to utilize them as a source of energy.
4. The increased production of these raw materials will result in deforestation and thus will have no contribution to carbon dioxide reduction.
5. It would be more desirable to wait for the development of new technology (e.g., the effective use of cellulose).

4-2. Nuclear Power Generation

The belief that reliance on nuclear power generation is inevitable to reduce carbon dioxide emissions is becoming more prevalent.

4-2-1. What is your opinion on the state of nuclear power generation in your country? Please circle one item from the following list that best reflects your opinion.

1. Nuclear power generation has been adopted, and there are plans for its future expansion.
2. Nuclear power generation has been adopted, and it will either remain at current level, or be reduced in the future.
3. Nuclear power generation has not yet been adopted, but there are plans to introduce it in the future.
4. Adopting nuclear power generation is not realistic due to the level of technical complexities and the scale of the country's economy.
5. Nuclear power generation has not been adopted, and I don't anticipate it to be introduced due to concerns over its safety and the problems of nuclear proliferation.
6. I don't know.

4-2-2. What is your opinion on nuclear power generation? Please circle one item from the following list that best reflects your opinion.

1. It should very much be utilized as the current state of nuclear power generation is extremely trustworthy.
2. While safety concerns remain, the use of nuclear power generation should be promoted from the standpoints of global warming prevention and energy balance.
3. The use of nuclear power generation will become acceptable with further technical improvements and enhancements in safety.
4. Because of problems related to nuclear waste by-product and safety concerns, the current situation should be maintained but with an eye towards gradual reduction in the future.
5. The use of nuclear power generation is unacceptable from the standpoints of nuclear waste by-products and safety.
6. I don't know.
7. Other (Please specify:)

5. Lifestyle Alteration
Solving environmental problems requires each individual to alter a way of life based on disposable and excessive consumption and continue to do so, on a long-term basis.

5-1. In this year's questionnaire we would like to revisit the question about altering lifestyles based on disposable and excessive consumption. Please circle one item from the following list that best reflects your opinion.

1. I do not pursue a lifestyle based on throw-away or excessive consumption.
2. It is possible to alter my lifestyle.
3. Some lifestyle alteration is possible.
4. Even with effort, lifestyle alteration would be difficult.
5. Lifestyle alteration is not possible.

5-2. The questionnaire results on Agenda 21 also revealed that lifestyle alteration has made little progress. What do you think are the factors hampering lifestyle alteration where you live? Please circle one item from the following list that best reflects your opinion.

1. While there is recognition for the magnitude of environmental problems, people find it cumbersome to put things into action.
2. Environmental problems are not so imminent as to require a sacrifice in comfort and efficiency.
3. There is a belief that one person's changing his lifestyle would not make a difference.
4. While there is recognition for the magnitude of environmental problems, it is difficult to respond due to the relatively high cost of ecological goods.
5. Other (Please specify:)

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