

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

REPORT

THE ASAHI GLASS FOUNDATION

September 1999

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Foreword

This report contains the results of the eighth annual “Questionnaire on Environmental Problems and the Survival of Humankind,” a survey conducted by the Asahi Glass Foundation since 1992.

Seven years have passed since the United Nations Conference on Environment and Development, or Earth Summit, was held in Rio de Janeiro, and with each year the severity of global environmental problems and the importance of finding solutions grow ever greater. At the Fourth Conference of Parties to the United Nations Framework Convention on Climate Change (COP4) held in Buenos Aires in November 1998, progress was difficult to achieve since these problems are intertwined with each country’s national interests. Nonetheless, some process is being achieved in mustering the will to restore damaged ecology and create a sustainable society.

As in past years, the questionnaire was designed to gauge the perceptions of respondents, mainly environmental experts from both governmental and private-sector organizations, regarding the progress of environmental conservation efforts and to highlight regional differences in opinion. In addition to the issues addressed in previous surveys—including queries about the Environmental Doomsday Clock, Agenda 21 and lifestyle changes—the main questions on this year’s questionnaire asked about the outcomes and future of COP4 and attitudes about carbon taxes. It also addressed issues related to recycling and bicycle use.

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

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

Jiro Furumoto
Chairman
Asahi Glass Foundation
September 1999

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

Response period: Questionnaires were sent out in April 1999 with a return deadline of June 1999.

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

Questionnaires mailed: 3,220

Questionnaires returned: 597

Response rate: 18.5%

Breakdown of respondents by region, sex and occupational affiliation:

Region	Number of responses	Percent of total
Japan	293	49.1
United States & Canada	59	9.9
Western Europe	79	13.2
Asia (outside Japan)	60	10.1
Latin America	27	4.5
Africa	39	6.5
Oceania	13	2.2
Eastern Europe & former Soviet Union	14	2.3
Middle East	12	2.0
No response	1	0.2
Total	597	100.0

Sex

Male	486	81.4
Female	95	15.9
No response	16	2.7
Total	597	100.0

Occupational affiliation

Central government	94	15.7
Local government	95	15.9
University or research institution	118	19.8
Nongovernmental organization	131	22.0
Corporation	65	10.9
Other	79	13.2
No response	15	2.5
Total	597	100.0

- Notes:
1. This report used the 597 responses as the basis for calculating percentages, which were rounded up from the first or second decimal place.
 2. Since the responses that were not attributable to a particular region were written on the overseas version (English) of the questionnaire, they were included in the "overseas total."
 3. Please note that where it is marked "Percentages are based on the total number of responses," the total number of responses refers to the total number of responses to that question, not to the total number of respondents to the survey.

II. Summary of Questionnaire Results

Perception of the Immediacy of a Crisis Involving Human Survival (Environmental Doomsday Clock)

- The average time indicated by the respondents was 9:08. This is the fourth consecutive year in which the average has ventured into the “extremely urgent” quadrant. Nevertheless, it remains at the leading edge of the quadrant.
- The level of concern has risen in Japan from the prior year. Last year the average response was 9:01, the first time it had registered in the “extremely urgent” quadrant. This year’s average was 9:07, on par with the level of concern overseas, which was 9:10.
- Asia and the Middle East indicated relatively high concern with times later than 9:30 while Western Europe and Oceania favored responses earlier than 9:00, indicating less concern.

I. This Year’s Special Topics

1. Fourth Session of the UNFCCC Conference of the Parties (COP4) in Buenos Aires

1) Evaluation of the Outcome of COP4

- While 62% of overseas respondents thought that COP4 was “unsuccessful,” this number was barely over 52% for Japanese respondents. More Japanese respondents were of the opinion that it was “successful” than their North American and Western European counterparts.
- The main reason for thinking it “unsuccessful” by both Japanese and overseas respondents was that “Concrete steps toward implementing the Kyoto Protocol were left virtually undebated.” On the other hand, the reason most cited for thinking it successful was “The fact that the 170 signatory countries gathered in one place to devise strategies for the reduction of greenhouse gases.”

2) The Pros and Cons of Emissions Trading as a Method of Reducing Greenhouse Gases

- Among overseas respondents, 52% thought that emissions trading was not an effective means of emission reduction. In Japan, this opinion was supported by 51%, indicating a similar trend.
- The reason most selected for it being “unsuccessful” by overseas respondents, at 31%, was “Neglect of concerted domestic efforts by the developed countries in the future will provoke a negative reaction from developing countries.” In Japan, the largest group, at 37%, selected “It places higher priority on economic tactics for dealing with emission rights than on actual reductions.”
- However, “Greater reduction can be achieved for the same cost because the market mechanism is the most cost-effective method to reduce greenhouse gases” was the most commonly cited reason for thinking it “successful” by both Japanese and overseas respondents.

3) Will It Be Possible to Reach the Reduction Targets for 2008-2012 If COP Continues at this Pace?

- Those answering “No” to reduction targets being achieved amounted to 63% among overseas respondents and 73% among Japanese respondents, indicating an overwhelming majority with this opinion.
- Among respondents from developed countries in North America and Western Europe, 73% replied “No,” while this number was only 55% for respondents from developing countries in Asia, Latin America and Africa, showing that respondents from developed countries view this issue with less latitude.

2. Carbon Taxes

- Among all overseas regions, 62%, or a majority of respondents, approved of carbon taxes, while this number reached 79% in Japan.
- The reason most cited for approval was “Energy conservation can be promoted” by both overseas and Japanese respondents.
- However, different reasons were given for disapproval. The reason cited by the majority of overseas respondents was “Carbon dioxide emissions from developing countries will increase with the shift of manufacturing plants from the industrialized countries to them.” The reason most cited by Japanese respondents was “The efficacy is far from certain.”

3. Recycling of Waste Products

1) Items Separated from Household Waste for Recycling or Reuse

- Among both the developed and developing countries, recycling is most advanced for products such as newspapers and magazines, glass bottles, metals cans and plastic products.
- Recycling is the least advanced for rubber and waste oil in the developed countries and for waste oil, rubber and batteries in the developing countries.

- Although recycling is slightly more advanced in developed countries than in developing countries, it is noteworthy that the recycling of old clothes, compostable garbage, waste oil and bicycles is notably behind in Japan compared with North America and Western Europe.

2) Who Should Bear the Main Cost of Recycling?

- Among overseas respondents, 46% believed that the costs of recycling should be borne by “Consumers, Corporations & Governments” and 22% thought it should be borne by “Consumers & Corporations.” Western European respondents were the only ones among the overseas respondents to reverse this order.
- Japanese respondents leaned toward the Western European view with 44%, or the largest group, selecting “Consumers & Corporations.”

3) The Most Critical Condition for Promoting Recycling

- Among overseas respondents, a majority thought that the most critical condition for establishing a successful recycling program was “The introduction of a point-of-purchase deposit system that refunds purchasers when products are returned for recycling.” This was closely followed by “Creation of a law-based recycling system throughout society that encompasses everything from reclamation to remanufacturing.” However, these priorities were reversed among respondents from North America and Western Europe.
- Twice as many Japanese respondents chose the “Creation of a law-based recycling system,” as “The introduction of a point-of-purchase deposit system.”

4. Use of the Bicycle for Urban Transport

1) Proactive Use of the Bicycle

- An overwhelming 90% of overseas and Japanese respondents alike approved of urban bicycle use.

2) Strategies for Promoting Bicycle Use

- Among overseas respondents, an overwhelming majority selected “To expand the infrastructure for the safe use of bicycles, such as bicycle-only road networks, etcetera” as the most necessary means of promoting bicycle usage. This was followed by “Creation of transport systems and infrastructure based on the assumption of widespread bicycle use,” and “The idea that riding a bicycle is ‘good’ and ‘attractive’ should be spread among the public.”
- Japanese respondents shared the first two priorities, but the difference between them was negligible, while “Sufficient bicycle parking space should be set aside and supported by national and local governments” came in third.

II. Questions Continued from Past Surveys

1. Progress of the Agenda 21 Action Plan

- Compared with the results of four years ago, it is noteworthy that both overseas and Japanese respondents thought that the most progress had been made with regard to “Environmental measures by industry,” “Promotion of environmental education,” and “Scientific and technological contributions.” Among these choices, “Environmental measures by industry” were thought to have improved the most, rising 8 points above the prior results.
- Conversely, it is noteworthy that, compared with four years ago, respondents from both overseas and Japan thought that little progress had been made with regard to “Lifestyle alteration” and “Conservation of forest resources.” These items fell 10 points.

2. Lifestyle Alteration

1) Largest Obstacle to the Alteration of Lifestyles

- The majority of overseas respondents thought that the largest obstacle to the alteration of lifestyles was “Environmental problems are not so impending as to be given precedence over comfort and efficiency.” By region, North American and Western European respondents chose “Environmental problems are not so impending as to be given precedence over comfort and efficiency,” while a majority of respondents from developing countries selected “Media information on environmental problems is not persuasive.”
- In Japan, the greatest number of respondents thought that it was “Although the importance of environmental issues is recognized, implementing solutions is bothersome.”

2) Most Effective Strategy to Improve Environmental Awareness in Order to Alter Lifestyles

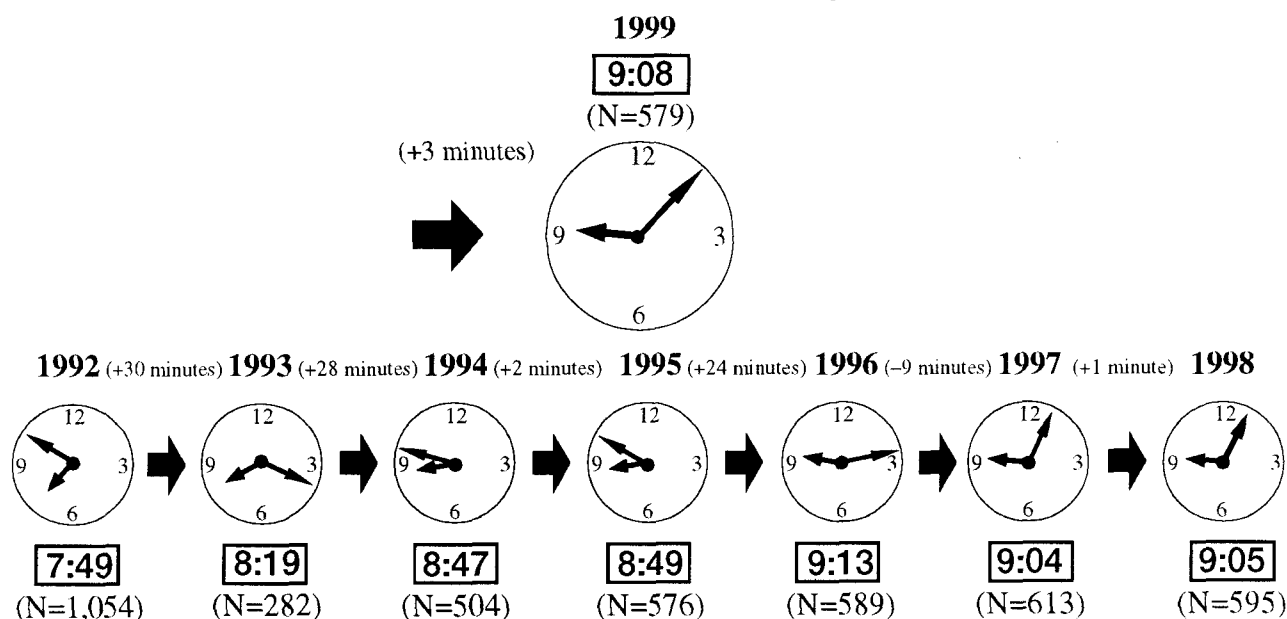
- A large majority of overseas and Japanese respondents supported “Environmental education from kindergarten upward” as the most effective strategy to improve environmental awareness.
- The second-ranked strategy was “Development of green products, such as electric cars, etcetera” for overseas respondents and “News from the media raising public awareness about the issues” for Japanese respondents.

III. Questionnaire Results

1. PERCEPTION OF THE IMMEDIACY OF A CRISIS INVOLVING HUMAN SURVIVAL (ENVIRONMENTAL DOOMSDAY CLOCK)

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

Concern about Human Survival Prospects



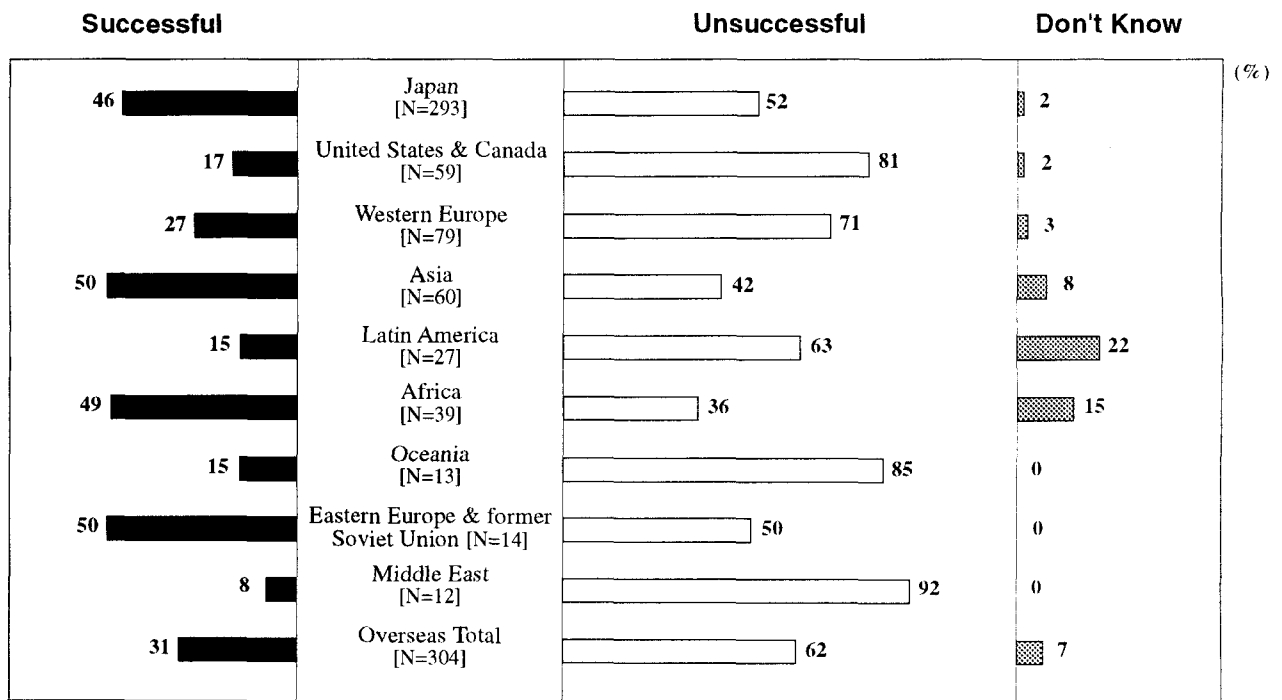
	Number of respondents	Changes in time from year to year			Changes in average time by region		
		'95	'98	→	'99	1995 → 1999	1998 → 1999
Total	579	8:49	9:05	→	9:08	19	3
Japan	288	8:08	9:01	→	9:07	59	6
United States & Canada	59	8:52	8:40	→	9:03	11	23
Western Europe	77	9:02	9:37	→	8:46	-16	-51
Asia	55	9:41	8:59	→	9:47	6	48
Latin America	26	9:23	9:04	→	9:14	-9	10
Africa	36	9:33	9:08	→	9:13	-20	5
Oceania	13	9:44	9:34	→	8:52	-52	-42
Eastern Europe & former Soviet Union	14	9:29	9:44	→	9:21	-8	-23
Middle East	10	9:09	8:47	→	9:32	23	45
Overseas Total	291	9:22	9:09	→	9:10	-12	1
Male	470	8:46	9:01	→	9:01	15	0
Female	94	8:57	9:25	→	9:35	38	10

- The average time indicated by the respondents was 9:08. This is the fourth consecutive year in which the average has ventured into the “extremely urgent” quadrant. Nevertheless, it remains at the leading edge of the quadrant.
- The average time for overseas respondents was 9:10.
- The level of concern has risen in Japan from the prior year. Last year the average response was 9:01, the first time it had registered in the “extremely urgent” quadrant. This year’s average was 9:07, on par with the level of concern overseas, which was 9:10.
- Asia and the Middle East indicated times later than 9:30 while Western Europe and Oceania favored responses earlier than 9:00.
- As in the previous year, females expressed a greater level of concern than males.

2. FOURTH SESSION OF THE UNFCCC CONFERENCE OF THE PARTIES (COP4) IN BUENOS AIRES

Question 2: In November 1998, representatives of 170 countries conferred in Buenos Aires with the goal of implementing the Kyoto Protocol at the Fourth Session of the UNFCCC Conference of the Parties (COP4), the first such meeting held in a developing country.

2-1. How would you rate the outcome of COP4? Please select one option below and one reason for it.



- As a group, 62% of overseas respondents thought that COP4 was “unsuccessful,” significantly outweighing the 31% who thought it “successful.” Many Asian and African respondents supported the “successful” viewpoint.
- In Japan, 52% of respondents thought it unsuccessful, compared with 46% thinking it successful, a much smaller ratio than for overseas respondents.
- Among the developed economies, the percentage of respondents answering successful was only 17% in North America and 27% in Western Europe, a relatively smaller ratio than in Japan.

Reason for “Unsuccessful” Response

	Japan (166)	United States & Canada (63)	Western Europe (66)	Asia (32)	Latin America (22)	Africa (14)	Oceania (12)	Eastern Europe & former Soviet Union (10)	Middle East (13)	Overseas Total (232)
Developing country participation off agenda	20	25	8	22	23	21	17	20	31	19
No debate about implementing Kyoto Protocol	61	37	55	41	50	29	42	20	38	43
EU/US positions stymied discussion	13	24	38	34	27	43	17	50	31	32
Other	4	13	0	3	0	7	25	10	0	6
No response	2	2	0	0	0	0	0	0	0	0

Notes: *Percentages are based on the total number of responses.
Circled figures represent the answer with the highest score.

- Excluding responses from Africa, Eastern Europe and the former Soviet Union, the most quoted reason by overseas respondents (43%) why COP4 was considered unsuccessful was that “Concrete steps toward implementing the Kyoto Protocol were left virtually undebated.” At 32%, the next most common reason was “The EU and US positions toward establishing binding targets for ‘Emissions Trading’ were opposed, which stymied real discussion at COP4.”
- At 61%, or 18 percentage points more than the overseas result, respondents in Japan favored “Concrete steps toward implementing the Kyoto Protocol were left virtually undebated.” The next reason, cited by 20% of Japanese respondents, was that “The issue of participation by developing countries was removed from the official agenda.” This response stands out from the responses favored by the overseas respondents as a whole.

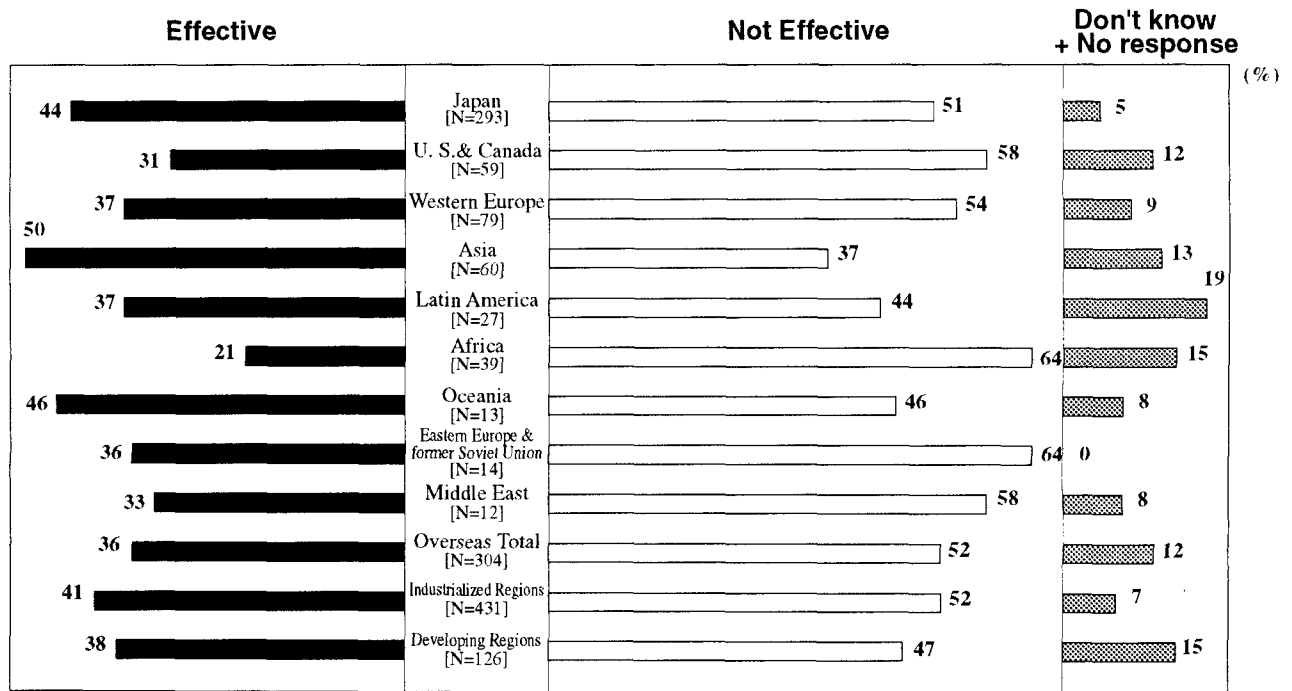
Reason for “Successful” Response

	Japan (139)	United States & Canada (10)	Western Europe (21)	Asia (30)	Latin America (4)	Africa (22)	Oceania (2)	Eastern Europe & former Soviet Union (7)	Middle East (1)	Overseas Total (98)
Adoption of Buenos Aires Action Plan	31	20	52	37	0	18	0	29	0	31
Voluntary controls by three non-signatories	20	0	5	0	0	9	0	0	0	3
170 countries participating in the COP4	46	80	38	63	75	68	100	71	100	63
Other	2	0	0	0	25	0	0	0	0	1
No response	1	0	5	0	0	5	0	0	0	2

Notes: *Percentages are based on the number of responses.
Circled figures represent the answer with the highest score.
Since the sample sizes for the Middle East, Oceania, Latin America, Eastern Europe and former Soviet Union are small, the figures for these regions should be considered merely to be rough indications.

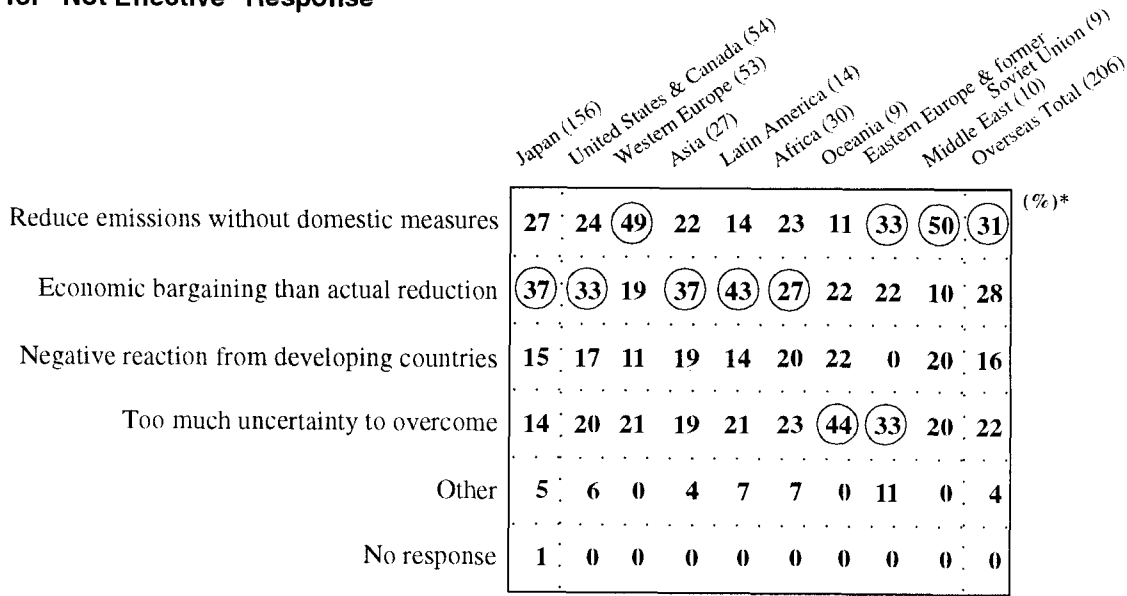
- Excluding responses from Western Europe, 63% of the respondents that thought COP4 successful cited “The fact that the 170 signatory countries gathered in one place to devise strategies for the reduction of greenhouse gases” as their reason. At 31%, the next most cited reason was “Adoption of the Buenos Aires Action Plan.” Together, these responses amounted to more than 90% of the total.
- In Japan, 46% of the “successful” respondents gave the former reason while 31% cited the latter reason. A further 20% gave “The references made by Argentina, Kazakhstan and Korea, three countries that did not accede to the Kyoto Protocol reduction and control obligations, to voluntarily tackle emission control” as the reason, a result that stands out from other countries.

2-2. In your opinion, do you believe that 'Emissions Trading' is an effective means of emission reduction? Please select one option below and one reason for it if you answer Option A or B.



- Among overseas respondents, 52% thought that emissions trading was not an effective means of emission reduction, while 36% replied that it would be effective.
- A similar trend was in evidence in Japan, with 51% choosing the “not effective” response and 44% the “effective” response.
- A majority of respondents from Asia favored the “effective” option. Among the African respondents, the choice of “not effective” far outweighed the “effective” response.

Reason for “Not Effective” Response



Notes: *Percentages are based on the number of responses.

Circled figures represent the answer with the highest score.

Since the sample sizes for Eastern Europe, the former Soviet Union and Oceania are small, the figures for these regions should be considered merely to be rough indications.

- Among overseas respondents, the most cited reason for selecting the “not effective” option, at 31%, was “Neglect of concerted domestic efforts by the developed countries in the future will provoke a negative reaction from developing countries.” At 28%, the next reason was “It places higher priority on economic tactics for dealing with emission rights than on actual reductions.”
- The reasons were reversed in Japan, with 37% selecting the “It places higher priority” option and 27% choosing the “Neglect of concerted domestic efforts” option.

Reason for "Effective" Response

	Japan (132)	United States & Canada (18)	Western Europe (30)	Asia (32)	Latin America (10)	Africa (8)	Oceania (6)	Eastern Europe & former Soviet Union (5)	Middle East (4)	Overseas Total (113)
Greater reduction for same cost	59	67	73	28	50	50	67	60	75	55
Regulations more effective than cap	29	11	10	41	40	38	33	20	25	26
Workable solution modeled on U.S. SO ₂ precedent	5	11	7	28	0	13	0	0	0	12
Other	5	11	7	3	10	0	0	20	0	6
No response	2	0	3	0	0	0	0	0	0	1

(%)*

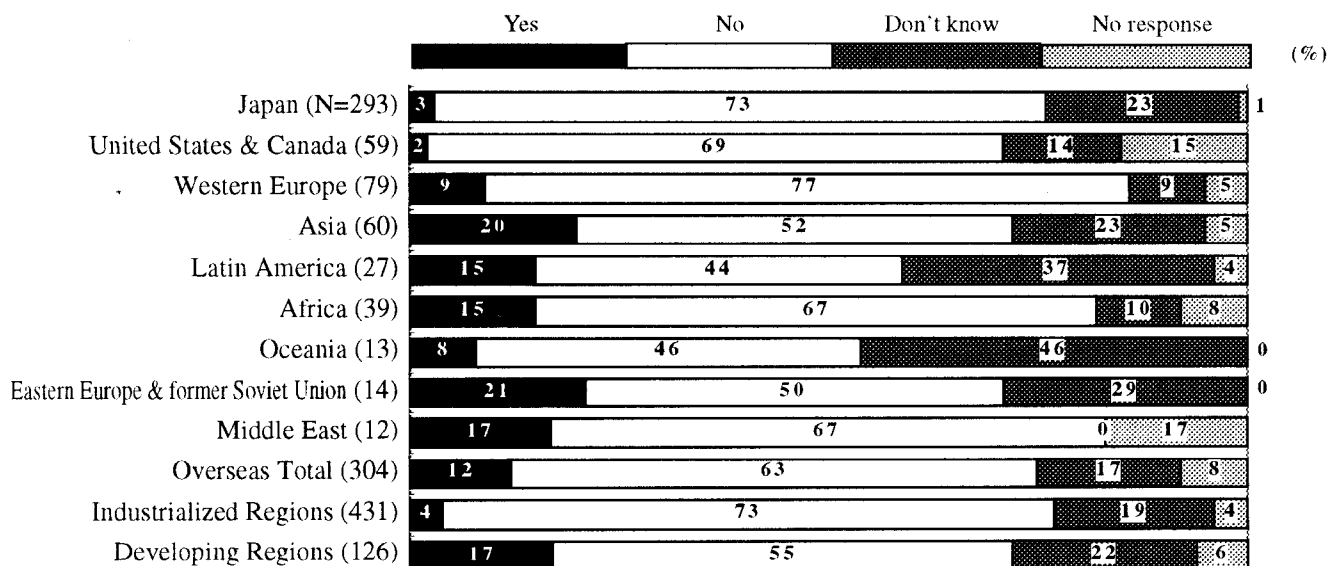
Notes: *Percentages are based on the total number of responses.

Circled figures represent the answer with the highest score.

Since the sample sizes for the Middle East, Eastern Europe, former Soviet Union, Oceania and Africa are small, the figures for these regions should be considered merely to be rough indications.

- Among overseas respondents, the most cited reason for selecting the "effective" option, at 55%, was "Greater reduction can be achieved for the same cost because the market mechanism is the most cost-effective method to reduce greenhouse gases." At 26%, the next reason was "Regulations based on 'Emissions Trading' can function more effectively than a mere 'Total Emissions Cap' since the method compensates for inadequate domestic countermeasures." Among Asian respondents, the priority of these reasons was reversed.
- The Japanese response was similar to the total overseas response, with 59% choosing the first reason above and 29% the second.

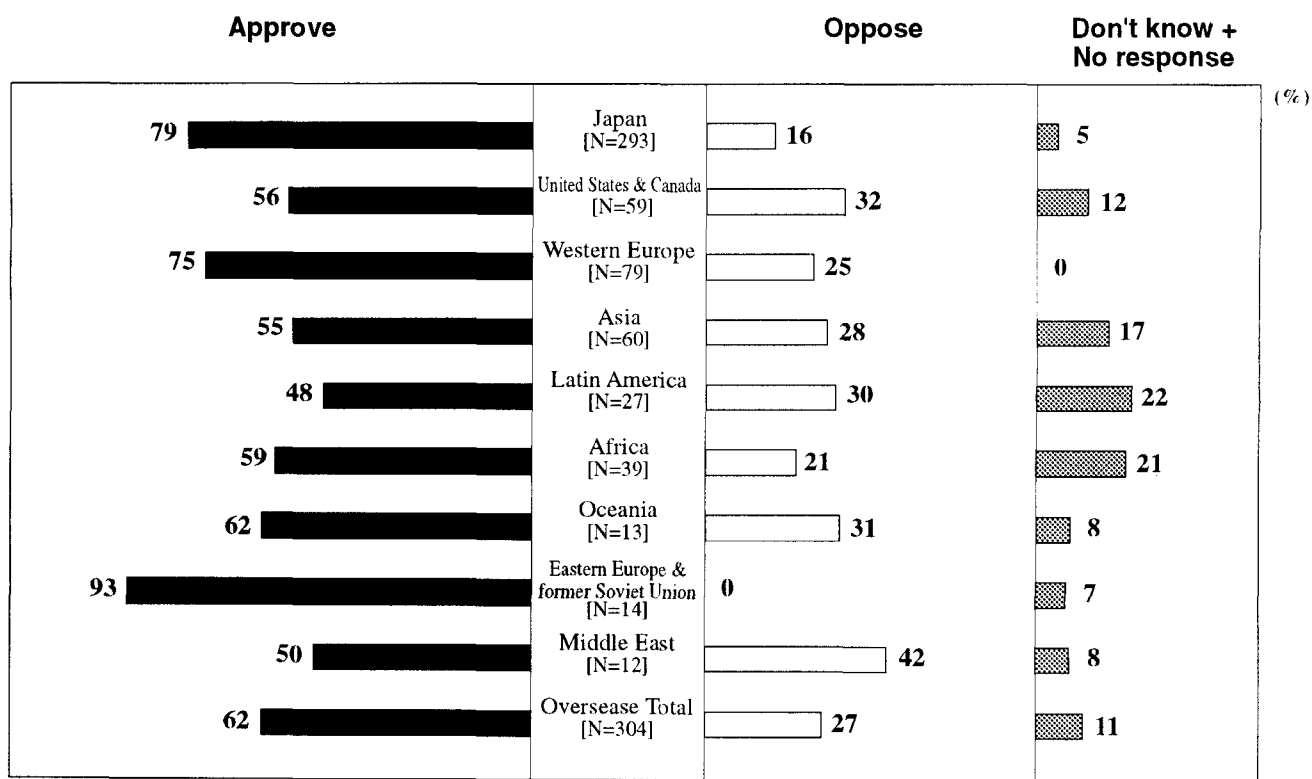
2-3. At COP4, discussion focused on mechanisms such as 'Emissions Trading' without real debate about emission reduction in industrialized countries. Do you think that the reduction targets for the 2008-2012 period can be achieved if the COP process continues to advance at this pace?



- Among overseas respondents, those answering "No" to reduction targets being achieved amounted to an overwhelming 63%, compared to the 12% who said "Yes."
- The Japanese "No" response, at 73%, was 10 percentage points higher than the average overseas response.
- Among respondents from developed countries, 73% replied "No," while this number was only 55% for respondents from developing countries, showing that respondents from developed countries view this issue with less latitude.

3. CARBON TAXES

Question 3: Carbon taxes attempt to control fossil fuel consumption by taxing natural gas, gasoline and electric power generation from thermal plants, and other uses of fossil fuels. What is your opinion of the imposition of carbon taxes? Please select one option below and one reason for it if you answer Option A or B.



- Among overseas respondents, more approved of carbon taxes than opposed them, with the approvers reaching 62% and opposed numbering 27%.
- At 79%, most Japanese respondents approved of carbon taxes. Only 16% were opposed.
- A majority of respondents from developed and developing countries alike approved, but the developed country average of 75% was higher than the developing country average of 55%.

Reason for "Approve" Response

	Japan (24)	United States & Canada (39)	Western Europe (69)	Asia (38)	Latin America (15)	Africa (26)	Oceania (8)	Eastern Europe & former Soviet Union (15)	Middle East (7)	Overseas Total (218)
Energy conservation can be promoted	32	38	57	42	40	23	13	27	43	41
Users forced to economize	29	33	19	18	33	38	25	33	0	25
Tax proceeds fund countermeasures	11	21	9	21	20	23	25	13	43	17
Announcements will raise awareness	24	0	7	18	7	15	25	20	14	11
Other	4	8	7	0	0	0	13	7	0	5
No response	0	0	1	0	0	0	0	0	0	0

Notes: *Percentages are based on the total number of responses.

Circled figures represent the answer with the highest score.

Since the sample sizes for the Middle East and Oceania are small, the figures for these regions should be considered merely to be rough indications.

- Among the overseas respondents approving of carbon taxes, 41% cited the reason as "Energy conservation can be promoted to industry and households because increased prices of fossil fuels and related products will regulate demand for these products." At 25%, "Since users are forced to economize with fossil fuels, global warming countermeasures can be implemented at the least cost" was next.
- Japanese respondents gave the same reasons as above, with the first appealing to 32% and the second to 29%, demonstrating a smaller gap between the two than among the overseas respondents. In addition, a further 24% cited the reason as "Announcements appealing for energy conservation will raise the awareness of citizens and change behavior."

Reason for "Opposed" Response

	Japan (52)	United States & Canada (20)	Western Europe (22)	Asia (18)	Latin America (8)	Africa (10)	Oceania (4)	Eastern Europe & former Soviet Union (0)	Middle East (8)	Overseas Total (90)
Efficacy is uncertain	37	35	36	6	25	20	75	0	13	27
Consumer burden will grow in developing countries	19	10	9	28	0	30	0	0	13	14
Negative economic effect in developing countries	6	5	9	33	38	20	0	0	25	18
CO ₂ emission increases from developing countries	21	40	36	28	38	30	0	0	50	34
Other	17	10	5	6	0	0	25	0	0	6
No response	0	0	5	0	0	0	0	0	0	1

Notes: *Percentages are based on the total number of responses.

Circled figures represent the answer with the highest score.

Since the sample sizes for Oceania, the Middle East and Latin America are small, the figures for these regions should be considered merely to be rough indications.

- Among the overseas respondents opposing carbon taxes, 34% cited the reason as "Carbon dioxide emissions from developing countries will increase with the shift of manufacturing plants from the industrialized countries to them." At 27%, "The efficacy is far from certain" was next. At 18%, "It will have a negative effect on developing countries, which will have to import goods from industrialized countries at higher prices" was the third choice of the entire group, but the first choice of the majority of Asian and Latin American respondents.
- Among Japanese respondents the order of the first two reasons was reversed with "The efficacy is far from certain" being chosen by 37% and "Carbon dioxide emissions from developing countries" being chosen by 21%, showing a much smaller difference between the two.

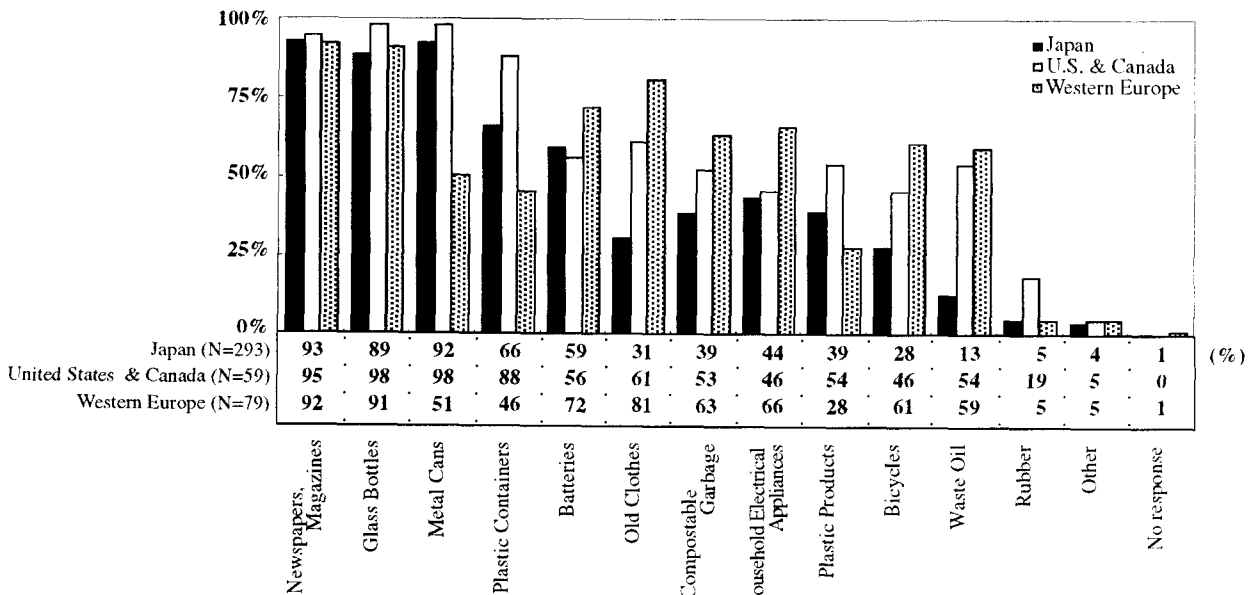
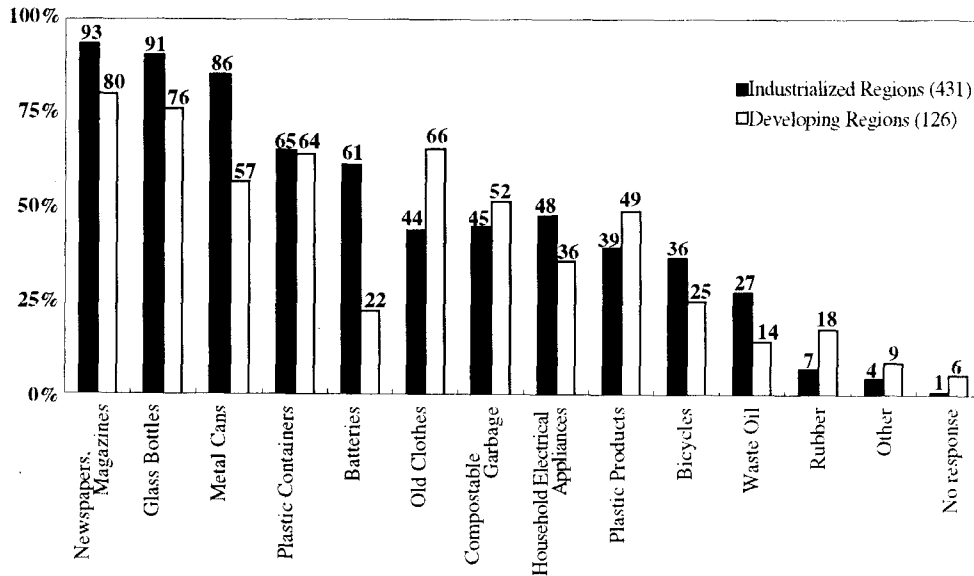
4. RECYCLING OF WASTE PRODUCTS

Question 4: The recycling of waste products is essential to the creation of a sustainable society.

4-1. Please select all items below that you separate from your household waste for recycling or reuse.

	Newspapers, Magazines	Glass Bottles	Metal Cans	Plastic Containers	Batteries	Old Clothes	Compostable Garbage	Household Electrical Appliances	Plastic Products	Bicycles	Waste Oil	Rubber	Other	No response	Number of circles	(%)
Japan (N=293)	93	89	92	66	59	31	39	44	39	28	13	5	4	1	5	
United States & Canada (N=59)	95	98	98	88	56	61	53	46	54	46	54	19	5	0	9	
Western Europe (N=79)	92	91	51	46	72	81	63	66	28	61	59	5	5	1	9	
Asia (N=60)	92	87	75	78	22	82	68	47	70	30	18	23	3	3	7	
Latin America (N=27)	74	74	52	44	44	52	33	26	30	22	15	7	4	7	4	
Africa (N=39)	67	62	33	56	8	51	38	26	31	18	8	15	21	8	4	
Oceania (N=13)	92	92	77	85	46	54	69	38	62	31	31	15	0	0	7	
Eastern Europe & former Soviet Union (N=14)	71	57	36	36	50	50	43	43	21	29	36	7	7	7	4	
Middle East (N=12)	58	33	50	25	17	25	33	25	17	17	17	0	0	25	2	
Overseas Total (N=304)	86	83	63	62	44	66	55	45	43	38	36	13	6	4	6	

Note: Circled figures are selected by 50% or more of respondents.

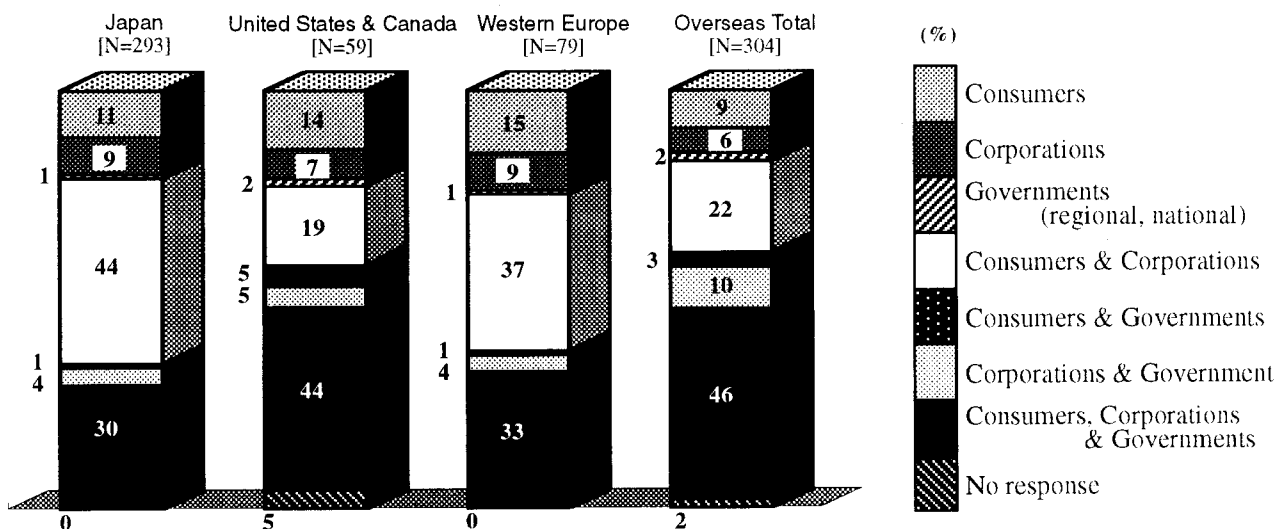


- Recycling for products such as newspapers and magazines, glass bottles, metals cans and plastic products is the most advanced among the developed and developing countries alike.
- In the developed countries, recycling is the least advanced for rubber and waste oil. Among developing countries, it is least advanced for waste oil, rubber and batteries.
- Compared with North America and Western Europe, the recycling of old clothes, compostable garbage, waste oil and bicycles is notably behind in Japan.

Question 4-2: Who do you believe should bear the costs of recycling? Please select one option below.

	Consumers	Corporations	Governments (regional, national)	Consumers & Corporations	Consumers & Governments	Corporations & Government	Consumers, Corporations & Governments	No response
Japan (N=293)	11	9	1	44	1	4	30	0
United States & Canada (N=59)	14	7	2	19	5	5	44	5
Western Europe (N=79)	15	9	1	37	1	4	33	0
Asia (N=60)	3	3	2	20	3	13	52	3
Latin America (N=27)	4	0	4	15	0	15	63	0
Africa (N=39)	0	13	3	10	3	15	56	0
Oceania (N=13)	15	8	0	15	8	15	38	0
Eastern Europe & former Soviet Union (N=14)	7	0	0	29	7	21	36	0
Middle East (N=12)	8	0	0	17	8	17	50	0
Overseas Total (N=304)	9	6	2	22	3	10	46	2

Note: Circled figures represent the answer with the highest score.



- Among overseas respondents, 46% believed that the costs of recycling should be borne by “Consumers, Corporations & Governments” and 22% thought it should be borne by “Consumers & Corporations.” Western European respondents were the only ones among the overseas respondents to reverse this order.
- Among Japanese respondents, 44% selected “Consumers & Corporations,” while only 30% selected “Consumers, Corporations & Governments,” the reverse of the overseas average.
- Among respondents from developing countries, 56%, or more than half, selected “Consumers, Corporations & Governments,” a much higher figure than for the developed nation total, which, including Japan, was 33%. In the developing countries, the portion of respondents selecting “Consumers” as the sole bearer of the costs was only 2%, compared with 12% in the developed countries.

Question 4-3: In addition to promotion of the concept, what are the two most critical conditions for establishing a successful recycling program in your country.

	Japan (293)	United States & Canada (59)	Western Europe (79)	Asia (60)	Latin America (27)	Africa (39)	Oceania (13)	Eastern Europe & former Soviet Union (14)	Middle East (12)	Overseas Total (304)
Law-based recycling system	74	53	53	40	33	38	38	36	33	44
POP deposit system	37	41	49	33	37	56	62	79	42	46
Recycling technology	25	24	35	47	37	41	38	21	58	37
Educational initiatives	17	27	16	33	33	18	38	21	17	25
Information campaign by government and media	15	19	20	25	33	26	23	21	25	23
Appeals by corporations to recover materials	18	7	9	7	11	3	8	7	8	7
No response	1	10	5	5	0	0	0	0	0	4

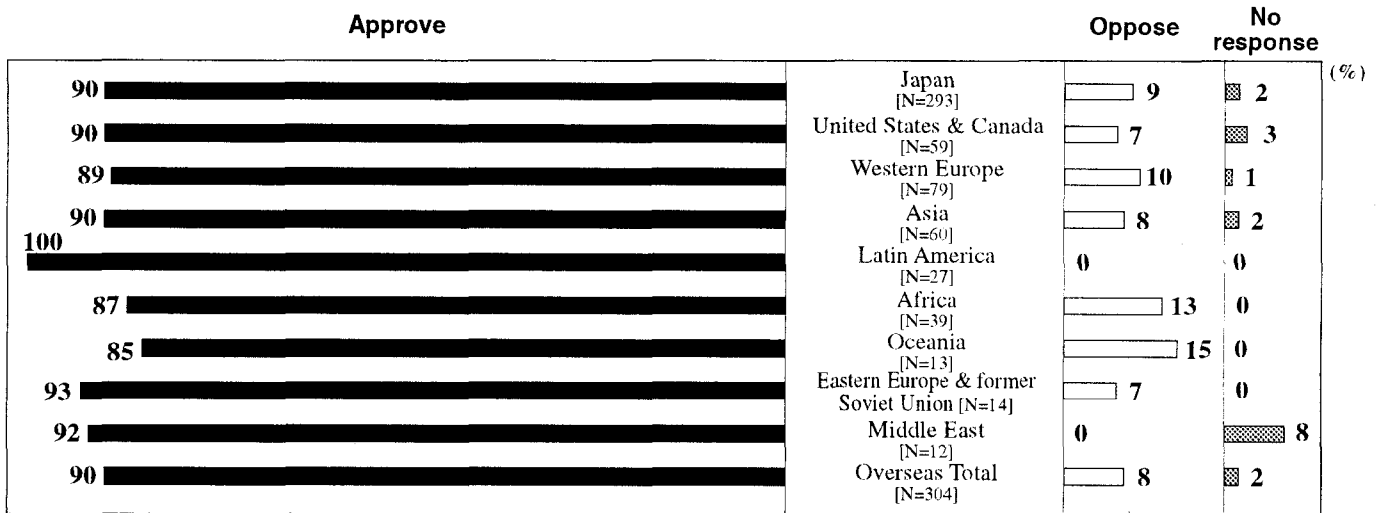
Notes: Figures enclosed by a double circle represent the answer with the highest number of points. A single circle is used when more than one answer is closely tied for the highest number of points. Please note that the totals for the various regions should add up to 200% since respondents were asked to select two items. However, some respondents marked no items or only one item, causing the aggregate total to be less than 200%.

- Among overseas respondents, a majority thought that the most critical condition for establishing a successful recycling program was “The introduction of a point-of-purchase deposit system that refunds purchasers when products are returned for recycling.” The next most cited option was “Creation of a law-based recycling system throughout society that encompasses everything from reclamation to remanufacturing,” followed by “The development of recycling technology.”
- In North America and Western Europe among the developed nations, the support was greatest for “Creation of a law-based recycling system,” which was closely followed by “The introduction of a point-of-purchase deposit system.” Among the Asian, Latin American and Middle Eastern respondents, “The development of recycling technology” was favored, while the majority of respondents from Latin America, Africa, Oceania, Eastern Europe and the former Soviet Union supported “The introduction of a point-of-purchase deposit system.”
- Among Japanese respondents, twice as many chose the “Creation of a law-based recycling system,” over “The introduction of a point-of-purchase deposit system.”

5. USE OF THE BICYCLE FOR URBAN TRANSPORT

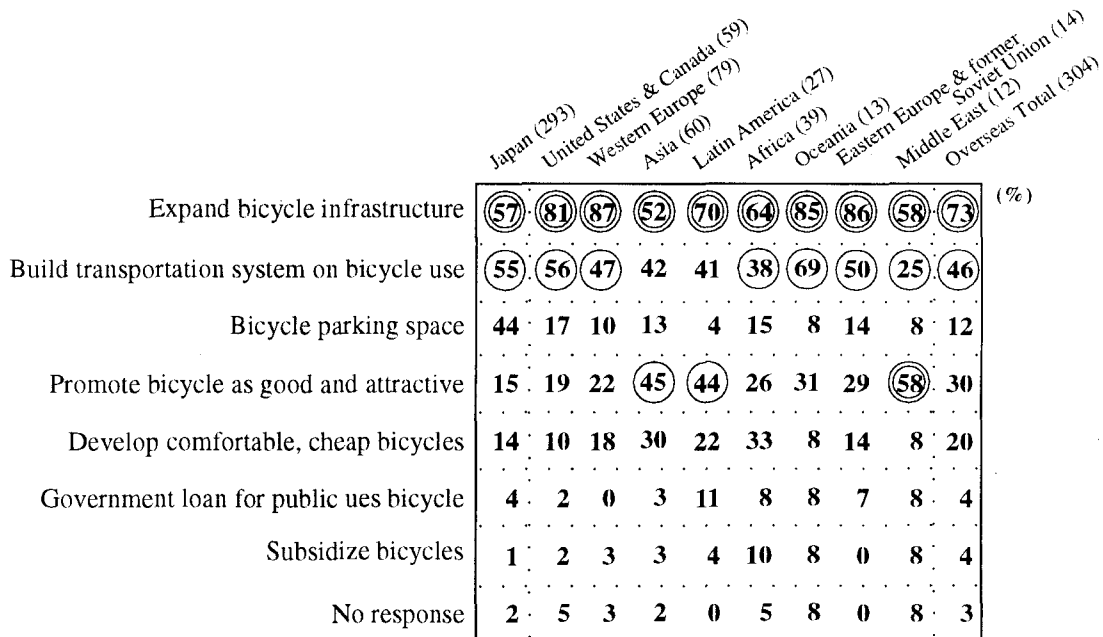
Question 5: Automotive exhaust is a major contributor to air pollution and greenhouse gases. Although there are already many examples of bicycles being widely adopted for urban transport in combination with public transport to combat air and noise pollution, there are also some regions banning bicycles.

5-1. Do you approve of bicycles being used as a method of urban transport? Please select one option.



- Among overseas and Japanese respondents alike, an overwhelming 90% approved of urban bicycle use.

5-2. Please select two items that you consider to be the most necessary to promote bicycle usage in your country.



Notes: Figures enclosed by a double circle represent the answer with the highest number of points. A single circle is used when more than one answer is closely tied for the highest number of points. Please note that the totals for the various regions should add up to 200% since respondents were asked to select two items. However, some respondents marked no items or only one item, causing the aggregate total to be less than 200%.

- Among overseas respondents, an overwhelming majority selected “To expand the infrastructure for the safe use of bicycles, such as bicycle-only road networks, etcetera” as the most necessary means of promoting bicycle usage. This was followed by “Creation of transport systems and infrastructure based on the assumption of widespread bicycle use,” and “The idea that riding a bicycle is ‘good’ and ‘attractive’ should be spread among the public.”
- Japanese respondents shared the first two priorities, but the difference between them was negligible, while “Sufficient bicycle parking space should be set aside and supported by national and local governments” came in third.
- Support for “The idea that riding a bicycle is ‘good’ and ‘attractive’” hovered at a low level among respondents from developed regions, but was supported by a majority of respondents from the Middle East, Asia and Latin America.

6. PROGRESS OF THE AGENDA 21 ACTION PLAN

Question 6: Since the Earth Summit was held in Rio de Janeiro in June 1992, to what extent has progress been achieved in items (1) to (10) below? For each item, circle the best response from (a) to (e), considering the situation in your own country only.

Comparison of Perceived Progress* between 1995 and 1999

	Japan		United States & Canada		Western Europe		Asia		Latin America		Africa		Oceania		Eastern Europe & former Soviet Union		Middle East		Overseas Total		Total		
	1999	1995	1999	1995	1999	1995	1999	1995	1999	1995	1999	1995	1999	1995	1999	1995	1999	1995	1999	1999	1995	1999	1995
Promotion of environmental education	56	49	73	72	81	56	85	90	93	85	85	77	85	77	93	57	92	81	83	75	70	64	(%)
Activities by local governments and citizens' groups	53	54	76	68	82	67	77	69	78	67	67	65	85	82	71	57	75	81	77	68	65	62	
Environmental measures by industry	65	55	49	60	75	51	42	47	56	31	46	31	62	36	29	64	33	81	53	45	59	49	
Scientific and technological contributions	62	57	59	64	61	58	58	50	59	42	36	37	69	50	43	57	42	50	56	50	59	53	
Formation of recycling systems	40	45	71	68	62	71	40	40	30	31	31	21	85	59	14	29	17	50	50	46	45	46	
Conservation of biodiversity	14	11	37	40	35	38	40	47	44	56	51	53	46	68	43	50	50	44	41	48	28	32	
Conservation of forest resources	10	19	44	52	34	33	43	58	52	48	51	63	46	55	29	50	42	56	42	50	26	37	
Greenhouse gas prevention measures	25	18	20	60	34	33	23	29	19	25	21	27	46	36	50	29	8	19	26	31	26	26	
Measures to alleviate population and poverty problems	15	15	12	20	14	17	33	52	33	29	38	45	31	41	7	21	33	19	23	33	19	25	
Lifestyle alteration	9	20	15	48	8	35	17	26	7	10	15	15	8	36	0	7	33	19	13	25	11	23	

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

Comparison of Differences between 1995 and 1999

	Japan	United States & Canada	Western Europe	Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total	(%)
Promotion of environmental education	+7	+1	+25	-5	+8	+8	+8	+36	+11	+8	
Activities by local governments and citizens' groups	-1	+8	+15	+8	+11	+2	+3	+14	-6	+9	
Environmental measures by industry	+10	-11	+24	-5	+25	+15	+26	-35	-48	+8	
Scientific and technological contributions	+5	-5	+3	+8	+17	-1	+19	-14	-8	+6	
Formation of recycling systems	-5	+3	-9	0	-1	-10	+26	-15	-33	+4	
Conservation of biodiversity	+3	-3	-3	-7	-12	-2	-22	-7	+6	-7	
Conservation of forest resources	-9	-8	+1	-15	+4	-12	-9	-21	-14	-8	
Greenhouse gas prevention measures	+7	-40	+1	-6	-6	-6	+10	+21	-11	-5	
Measures to alleviate population and poverty problems	0	-8	-3	-19	+4	-7	-10	-14	+14	-10	
Lifestyle alteration	-11	-33	-27	-9	-3	0	-28	-7	+14	-12	

In this year's questionnaire, as in the last, we asked the extent of progress achieved in 10 categories, which were ranked in order of frequency and compared with the 1995 results from four years ago.

- In contrast to the selection of the "Promotion of environmental education" as the item considered by a majority of the overseas respondents to have progressed, the majority of Japanese respondents selected "Environmental measures by industry." "Promotion of environmental education" ranked third in Japan. However, "Lifestyle alteration" was selected by a majority of both overseas and Japanese respondents as the item that had progressed the least.
- Items perceived "to have progressed" by Japanese respondents, but that remain more than 20 points below the evaluation of overseas respondents are "Promotion of environmental education," "Activities by local government and citizens' groups," "Conservation of biodiversity" and "Conservation of forest resources."
- Compared with the results of four years ago, it is noteworthy that both overseas and Japanese respondents thought that progress had been made with regard to "Environmental measures by industry," "Promotion of environmental education," and "Scientific and technological contributions." Among these choices, "Environmental measures by industry" were thought to have improved the most, rising 8 points above the prior results.
- Conversely, it is noteworthy that, compared with four years ago, the entire group of respondents from overseas and Japan thought that little progress had been made with regard to "Lifestyle alteration" and "Conservation of forest resources." These items fell between 8 and 12 points.
- Another noteworthy finding was that the number of North American respondents judging that progress is being made with regard to "Greenhouse gas prevention measures" and "Lifestyle alteration" was 30 percentage points lower than four years ago.

7. LIFESTYLE ALTERATION

Question 7: According to the Agenda 21 section of this survey, which has been administered annually since 1993, there has been little progress made toward environmentally positive changes in peoples' lifestyles which are important to the resolution of environmental problems.

7-1. Please select two items from below that you think are the largest obstacles to the alteration of lifestyles.

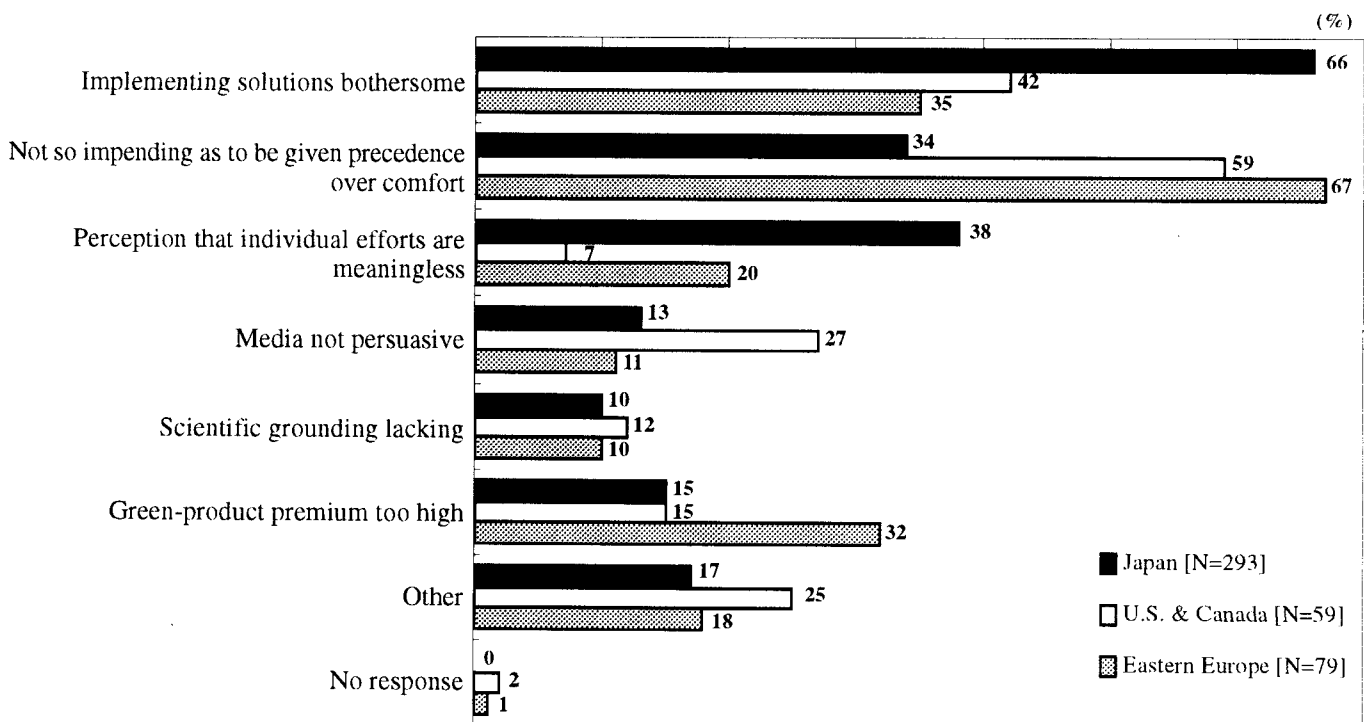
	Japan (293)	United States & Canada (59)	Western Europe (79)	Asia (60)	Latin America (27)	Africa (39)	Oceania (13)	Eastern Europe & former Soviet Union (14)	Middle East (12)	Overseas Total (304)
Implementing solutions bothersome	66	42	35	25	48	36	38	50	42	37
Not so impending as to be given precedence over comfort	34	59	67	32	30	36	62	36	50	49
Perception that individual efforts are meaningless	38	7	20	5	7	3	15	21	8	11
Media not persuasive	13	27	11	28	52	46	15	43	33	29
Scientific grounding lacking	10	12	10	50	33	36	15	29	17	25
Green-product premium too high	15	15	32	38	15	21	38	14	0	25
Other	17	25	18	13	7	15	8	7	25	16
No response	0	2	1	2	0	0	0	0	8	1

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

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

Please note that the totals for the various regions should add up to 200% since respondents were asked to select two items.

However, some respondents marked no items or only one item, causing the aggregate total to be less than 200%.



- Among overseas respondents, the majority thought that the largest obstacle to the alteration of lifestyles was “Environmental problems are not so impending as to be given precedence over comfort and efficiency,” which was followed by “Although the importance of environmental issues is recognized, implementing solutions is bothersome.” In third place came “Media information on environmental problems is not persuasive.” There was a trend toward particular responses in each region. In North America and Western Europe, the “Environmental problems are not so impending as to be given precedence over comfort and efficiency” response received the most support. In Latin America and Africa, it was “Media information on environmental problems is not persuasive.” In Asia, it was “The scientific grounding for understanding the state of crisis of the global environment is lacking.”
- In Japan, the majority of respondents thought that it was “Although the importance of environmental issues is recognized, implementing solutions is bothersome,” followed by “Changing one’s personal lifestyle will barely have any effect on the problem,” and “Environmental problems are not so impending as to be given precedence over comfort and efficiency.”

Question 7-2: Please select the two options below that you feel are the most effective strategies for improving citizen awareness.

	Japan (293)	United States & Canada (59)	Western Europe (79)	Asia (60)	Latin America (27)	Africa (39)	Oceania (13)	Eastern Europe & former Soviet Union (14)	Middle East (12)	Overseas Total (304)
Scientific grounding	22	32	19	23	22	21	38	29	50	25
Green projects	19	34	39	27	19	15	46	29	33	30
Environmental education	62	58	67	72	89	77	54	64	50	68
Public information dissemination	16	5	9	18	30	26	31	14	8	15
Media coverage raising public awareness	29	17	18	22	22	23	0	36	25	20
Promote the idea that riding a bicycle is ‘attractive’	27	25	37	27	15	28	23	21	25	28
Other	18	19	10	7	4	5	0	7	8	9
No response	0	5	0	3	0	0	0	0	8	2

Notes: Figures enclosed by a double circle represent the answer with the highest number of points. A single circle is used when more than one answer is closely tied for the highest number of points. Please note that the totals for the various regions should add up to 200% since respondents were asked to select two items. However, some respondents marked no items or only one item, causing the aggregate total to be less than 200%.

- Among overseas respondents, the majority supported “Environmental education from kindergarten upward” as the most effective strategy to improve environmental awareness. This response had a significant lead in support over the second-ranked “Development of green products, such as electric cars, etcetera.”
- In Japan, “Environmental education from kindergarten upward” attracted the most respondents, while “News from the media sparking debate about the issues” came in second. There was also large difference in support between these two responses.
- “Environmental education from kindergarten upward” was the choice for respondents from both developing and developed nations. There were no significant differences in opinion between the two groups with regard to this issue.

IV. Comments from Respondents

As part of this year's survey, we received 88 comments from overseas respondents in 34 countries and 114 comments from Japanese respondents for a total of 202 comments. The comments informed us of the state of environmental problems in regions around the world as well as schemes and ideas for restoring the global environment. The themes of the comments ranged widely from environmental policies to education, global warming and recycling problems. Many of the comments touched upon more than one theme, making them difficult to classify. Nevertheless, we attempted to group them into similar categories. We were also very pleased to receive advice and requests for the survey questions, which we will use to formulate next year's questionnaire.

Since space considerations prevent us from reprinting all the comments, we have included 40 from overseas respondents in 24 countries and 27 from Japanese respondents in the space below. We hope you will find them interesting and informative. This section contains a selection of respondents' comments elicited by Question 8. Each comment is accompanied by the respondent's name, organization, country, and office registration number. Where the respondent has requested anonymity, only his or her gender, if indicated, is denoted by an M or F.

There is a concept to be raised; it's the notion of a time scale very different between ecological process and decision process. The first one is long and the lifetime of political deciders is far shorter. Thus, decisions for long time are not taken and opposite effects are not corrected. In the case of my country, Monaco, the political life of the Prince, actually 50 years, permits long-term decisions, to correct or adapt former decisions. The political time is more adapted to the ecological time. My reflection is: in the majority if the political system could the ecological question stay in political hands or should we go through some governance system?

M, Foreign Affairs, MONACO 024

To advance environmental protection and sustainability in general, in my opinion there are two main pillars: legislation and education. Legislation plus enforcement is necessary to avoid "free riders" who pollute the environment while others invest in environmental protection. Education at all levels of the educational system is crucial to raise awareness throughout the entire population. Good luck with this survey and best regards from Germany!

Dr. Christiane von Finckenstein-Wang, Environmental Policy, Volkswagen AG, GERMANY 033

Governments need to become less linked to economic performance & more in tune with social conditions.

D. Dougherty, Consulting & Audit Canada, CANADA 047

It is very essential to act first on local damage. Many people are killed or made ill in developing countries by dirty water, lack of sanitation, fumes from cooking with food, and dust and lead in city air. Soils impoverished by erosion or poisoned with badly used chemicals make it harder for developing countries to feed their people. Solving these environmental problems brings the biggest gains to health and wealth.

Dr. Laxmi Kant Dadhich, NGO Section, Paryavaran Parishad Environmental Society, INDIA 072

There has to be serious political will on the part of government to bring about positive change for the environment.

N. Nithiyananthan, Protection Society Malaysia, MALAYSIA 095

India is facing many environmental problems. In recent years, however, there has been growing awareness and commitment to environmental issues. As a result, the Government has taken several steps such as makeshift facilities for pollution causing factories/industries, introduction of land-free petrol, replacement of older vehicles with new ones (loan facility was extended by the Government), etc. The Indian universities are also working on introducing "Environmental Education" as a compulsory component of the curriculum in all the courses offered by them. I think community participation supported by stringent laws in certain areas can also bring about better results in implementing environment management programmes.

Dr. V. S. Mehrotra, Agriculture Section, PSS Central Institute of Vocational Education (NCERT), INDIA 126

Environmental problems are very much important. The most important problems are population growth and climate change. All the countries should try to adopt a new way of development. All should concentrate on environmental protection as the focus of development strategy. All the nations should help each other for solving the problems. The industrialized countries, wealthy countries should help poor countries to control their population, otherwise they will suffer as well. All the world should fight for peace and prevent more wars. In this regard NGOs have a crucial role. They should be supported. They should be able to gather together and support each other. Governments will not help peoples.

H. Taravati, World Watch Association in Iran, IRAN 199

As baby boomers age, there is a fixation among governments on health care. Billions of \$ spend on health

“remediation,” while environmental budgets are cut, which is where more \$ should be spent (preventing health problems).
M, ICF Consulting Canada Inc., CANADA 309

Two issues of importance are not addressed in this survey. These are: the increasing impact of diesel fuel pollution and what to do about it; and, what to do about resistance/opposition to environmental improvement by vested economic interests, etc. solely upon markets to solve environmental problems is a delusion. Many of these interest only short-term profits and not long-term benefits.

Paulette Hammond & Tony Langbehn, Maryland United for Peace and Justice, Inc., U. S. A. 278

When you compare the money and manpower costs of promoting environmental strategies on the one hand and dealing with environmental damage on the other, I think it is necessary to work toward a framework that makes both sides pay off economically with education about optimal, environmentally friendly policies.

Keiichi Yokohori, President of Asia Pacific Energy Resource Centre, The Institute of Energy Resources, Japan, JAPAN J039

As with *Prius*, I believe that the development of outstanding environmental technologies and systems will have a significant effect if they emerge one after the other. On a systems level, I think that it will be necessary to press forward with green taxes.

Seiji Ippoi, Director of Planning Section, Global environmental Division, Environmental Agency, JAPAN J287

The key issue is, in my view: People want to travel, move and live comfortable lives. They have little individual power to do so in an environmentally clean way. Companies have an incentive to offer alternatives if they are taxed for unsustainable products & practices. Governments can only tax together. Hence: (1) International governance is the key. (2) Once a tax is there, use it for the development of a new energy source.

Dr. ir. G.M. van den Top, Programme Environment & Development, Centre of Environmental Science, Leiden University, THE NETHERLANDS 075

Many laws are enacted as well as conferences. The issue is they are not followed, lack of monitoring, dumping and smuggling.

Antonio M. Claparols, Ecological Society of the Philippines, PHILIPPINES 145

Before we look to individuals to change their lifestyles, we should first think about building a social system that does not waste energy. How much unnecessary energy is wasted at night? This also applies to garbage. How can garbage be reduced if things are made from the beginning so that they produce waste? Its analogous to saying drive so that you don't encounter traffic jams in a road system that is designed to have traffic jams. Relying on environmental education from kindergarten onward will not be timely. There is a greater need for environmental education of the business, political and government spheres.

Hiroaki Tsutsumi, Professor of Environmental and Symbiotic Science, University of Kumamoto, JAPAN J007

I have been purchasing beer in bottles for the past year, but some say “bottled beer produces more CO₂ than canned beer if you consider the CO₂ emitted in the transport of the empty bottles.” I believe that what is required is a system that allows people to readily and objectively evaluate and publicize information about the environmental burden of products throughout their lifecycles.

M, The Ministry of Health and Welfare, JAPAN J224

Establish an economic framework or system that raises the selling price of products that place a large burden on the environment and that do not employ a market mechanism (subsidise lifestyles that promote conservation, etc.) [an environmental tax in the larger sense of the word].

Akira Tsubouchi, Councilor of Environmental Policy Division, Fukui Prefectural Office, JAPAN J076

A system that supports and guides behaviors' a variety of recycling systems, a tax on BADS (especially gasoline taxes), a tax system with fees that increase as household consumption of electricity and gas rise (the large power premium system)

M, Osaka Prefectural Government, JAPAN J125

We cannot be non-violent to nature, if we are violent to each other.

M.S. Swaminathan, M.S. Swaminathan Research Foundation, INDIA 014

There is no urgency felt by people in developing countries about the environmental crisis. Unless an environmental disaster happens, people do not care so much about how they can help save the planet. It is imperative that we come up with an effective public awareness campaign to educate people on how to take care of the environment.

Caroline Manuel-Ubaldo, Communications, WWF-Philippines, PHILIPPINES 019

I am very deeply concerned by the lack of awareness driven mainly by selfishness. It leads directly to the destruction of mankind. I feel disheartened.

Nakaha Stanislas, Burundi Embassy, KENYA 078

Environmental Education needs to be a compulsory part of the national curriculum of any country.
Matthew Wynne, Eco-Schools Officer, Tidy Britain Group, U. K. 090

In my so called developed country, environmental issues are still only ideas in the minds of most people. And, as is the nature of ideas, they come and go. They have yet to move into the emotional realm and be felt strongly enough to move people forward into action. We are still in the first stages of denial. ... "These things are simply not happening to us!" It would be a great pity if we had to wait for the discomfort to become so great that we were forced to change. By then it would be too late for lasting change to take place. Education, critical discourse, inspired leadership and political will are the elements needed to construct and guide the social change necessary for a globally sustainable future.

Carole Douglas, Greenline Group Pty Ltd., NEW ZEALAND 112

"In the end we will conserve only what we love, we will love only what we understand, we will understand only what we are taught."

Ms. Lily Venizelos, MEDASSET - Mediterranean Association Save the Sea Turtles, GREEK 124

As soon as all people have been made to understand why they must be environmentally friendly, what they must conserve and how they can do it. This is why I think E.E. should be practiced 10 times of what is being carried out now, I very much agree with this (= 7-2.(3) Environmental education from kindergarten upward.)

M. Mokolodi Nature Reserve, BOTSWANA 224

It is important that Corporations understand sustainability as a real issue and as a management factor like any other. As it is needed a deep cultural change, governments should invest strongly in education programs - takes time but stays! Polluter-payer principles should be implemented in harder ways.

Jorge Marques dos Santos, SONAE, PORTUGAL 242

There can be no improvement in the environment without the strict enforcement of the PPP (polluter pays principle).
Masayuki Seto, Professor, Department of Environment and Natural Resource Science of Faculty of Agriculture, Tokyo University of Agriculture & Technology, JAPAN J067

I think that it is necessary to understand why the post industrial revolution world of today is extraordinary from the perspective of human and global history. Moreover, I believe that problems are posed by anthropocentric thinking and thinking that humans can manage the other animals because they are the most advanced them. Although I have reason to believe that this reasoning will gradually infiltrate the collective consciousness, the problem is that action will be taken on the basis of that thinking. I am pessimistic about this matter.

Cyoei Imada, Special Adviser, Strategic Environmental Planning Division, Planning and Coordination Bureau, Environment Agency, JAPAN J028

I believe that ongoing efforts to explain the scientific basis in plain language are required.

Hiroyuki Kitamura, retired a person in this March, JAPAN J047

I think it is important to promote research on environmental problems, ranging from fundamental to applied research, and to integrate it into society.

M. Ministry of Education, Science, Sports and Culture, JAPAN J122

I think we should (maybe?) be celebrating the fact that a frugal lifestyle is resulting from the Japanese economy's stagnation. However, this is something that depends upon the business cycle and I don't think it is a intentional change in lifestyle. Since we have come to this state, how about taking this opportunity to provide guidance about the benefits of a simple life and to gradually advocate this in the media? If we make out that a simple lifestyle is actually "chic," surely this will be effective, particularly among the young.

Mayumi Sakuma, JAPAN J205

The reason that it is understood intellectually but not translated into action is that there is a feeling that there will be no visible change even if the action is taken. Although environmental education will have some effect over the long term, only economic tools can be thought of as effective means of changing lifestyles over the short term. This is because no matter how unconcerned individuals are about the environment, their concern is bound to be focused on their wallets.

Ryo Fujikura, Professor, Faculty of Economics, Ritsumeikan University, JAPAN J206

It is exceedingly difficult to spread [consciousness] about global environmental problems among citizens. This is result of them being difficult to perceive. It is necessary, without brandishing a sword over their heads, to spread propaganda about the fact that [solutions to] problems close to people, such as waste reduction, recycling and green purchasing, are ultimately connected to [solutions to] global environmental problems.

Masaaki Sakurai, Managing Director of Japan Environmental Association, JAPAN J254

Although it has long been said that the current attitudes about mass production and mass consumption in developed countries border on the criminal, Japanese society is still not making a move toward a sustainable society. There is hardly any awareness within the country about last year's UNDP report which dealt with this problem in a major way. To change this tendency, I think we can only continue to strive earnestly without ever giving up.
Katsunori Suzuki, Deputy Director of Japan Acid Rain Research Centre, JAPAN J281

Lack of information and understanding about the criticality of altering one's lifestyle is a major impediment. Another problem is that of non-availability of eco-friendly alternatives. Therefore, the need of the hour is to promote environmental education, the transfer of environmentally sound technologies and R&D.
F, Consumer Unity & Trust Society (CUTS), INDIA 157

In pursuit of efficiency in society at large, it is difficult to get individuals to change their lifestyles.
M, Kushiro International Wetland Centre, JAPAN J088

I suspect that the reason why lifestyles cannot be changed is that it is difficult to understand quantitatively exactly how much impact our behaviors have on the environment. Using the LCA method, etcetera, I think that we must use pictures that can be easily understood by anyone to show consumers the burden that a particular product places upon the environment. I also think that we must inform people in more easily understood terms how much energy would be saved simply by everyone making changes in their lifestyles.
Ryusuke Oda, School of Science and Engineering, Waseda University, JAPAN J233

I think that it would be effective to introduce economic means, such as incentives for private enterprises to obtain ISO 14001 certification to enhance business dealings.
Chikako Mizutani, Supervisor of Environment Protection Division, Department of the Environment, Aichi Prefectural Government, JAPAN J178

This questionnaire completely misses one of the most significant global crises faced by the world today. The misuse of oceanic (living) marine resources is at an all-time high, and will prove to have a greater impact on mankind than any other issue of man-induced environmental perturbation. While all environmental problems are linked by both root cause (e.g. overpopulation and overutilization of resources, or global warming and destruction of phytoplankton) the problems of overfishing and bycatch/bykill are already having tragic consequences for society and the global ecosystem. I believe the effect of this problem is just beginning to reach the steepest part of the curve and will accelerate rapidly from here, with dire consequences.
Scott A. Eckert, Ph.D., Hubbs-Sea World Research Institute, U.S.A. 003

The last two years had showed me that people in the cities don't care about environmental problems because they think that the "environment" is the rainforest, the whales, or some abstract concepts that scientists use. On the other side, people in the highland or native communities have a better idea of what the environment is and means and how important it is for the survival of humankind, but they have to survive right now so they have to clear the rainforest or kill the wildlife so their community can survive. Maybe this means that the wrong people are living in the wrong places?
Carlos Ramon Ostolaza Fernandez, PERU 023

Although the chemicals issues and global warming pose serious problems which need to be tackled right away at the national and the international level, it seems to me, that the most imminent problem - and one which touches large parts of the developing world- is that of the effectiveness of the use of biomass. More than 40% of global potential annual growth in biomass is currently being appropriated by humans. The space left for "Wild Nature" is becoming still more narrow, and loss of biodiversity is one of the results. Of more immediate importance to humans are the problems in agriculture, resulting from decreasing cropland per person (population growth) and the lack of available freshwater in agricultural areas to sustain an adequate production. Unsustainable cutting of forests is part of the problem and significant expansion of Official Development Assistance is urgently required to enhance biomass-efficiency and sustainable use of the product of photosynthesis.
Bent Anker Nielsen, Ministry of Environment and Energy, DENMARK 031

Success from environmental initiatives in many cases has come when value has been added - either companies seeing value in new opportunities, cost reductions, etc. from going beyond compliance or individuals seeing opportunities to improve their quality of life through the choices that they make. The focus of the communication needs to be value creation for everybody.
F, DuPont, U.S.A. 054

It is important that environmental initiatives are easy to do, - it should be a natural behavior, since "normal" people should not use much time to read a lot of information of how to behave in an eco-sound manner.
Kirsten Sander, Architect m.a.a., DENMARK 156

Today humankind is crawling in the Third World War. Resources are being spent on the armaments race instead of education and environment protection. Appendix: I distributed the questionnaire among our working group.

Yuly Schipakin, Per Department of the Socio-Ecological Union, RUSSIA 132

There have been several countries that have recently conducted nuclear experiments. The development of these weapons, which can have impacts on a global scale, are a potential source of global environmental problems. As such, they should be dealt with as one of the environmental problems.

Shuichi Miyabe, Sub-Chief of Overseas Division, Japan Forest Technical Association., JAPAN J229

Environmental crisis has its greater expression in tremendous conflicts of Africa and Balkans. No possibility of hope in this crazy world?

Manuel A. Fernandez, Taller Educacion Ambiental, ICE Universiade Santiago, SPAIN 069

Information from tropical developing countries is particularly lacking in preparation of global environmental resource model.

M. Smithsonian Tropical Research Institute, REPUBLIC OF PANAMA 174

In my country, there is a great need to educate people against ground and underground water pollution.

M. Directorate of Occupational Health and Safety Services, KENYA 139

Environmental problems in Ghana have worsened since 1960. Temperature in the forest zone has risen from 22.53 to 26.27 °C(average). Rainfall (mean annual) has declined from 1567 mm to 1350.1 mm. These are results from a thesis I have just completed this March, 1999.

Ketiboa K. Blay, National Assoc. of Agribusiness Societies (NAAS), GHANA 080

Advanced countries and donor agencies (EU, JICA, IDRC, USALD) have been very generous and forthcoming in providing funds for environmental projects and education. The UN agencies have also been helpful with funding environmental projects.

Peter Barnes, Pasture & Range Management, Animal Research Institute, GHANA 129

Having served in NGO field, most of the donors have been funding national NGOs. They must assist smaller NGOs like us to work at grassroot levels.

M. Environmental Conservation Group, INDIA 107

Poverty alleviation is a pre-requisite for environmental promotion in developing countries such as Sri Lanka. The poor are both victims and agents of environmental damage as recognized both by the "EARTH SUMMIT" and the Government of Sri Lanka (SAARC).

Kumaran Fernando, United Nations Association of Sri Lanka, SRI LANKA 185

I think this survey is extremely well done, easy to fill out, and thought-provoking. Perhaps some consideration should be given to the impact of pollutants on human health. Environmental diseases, I think, are endangering the future of the human species. If we continue to poison the air we are breathing, the food we are eating, the water we are drinking, the human species will not survive. Also, perhaps trade and the environment; and the effects of deregulation and privatization should be considered - perhaps in a second questionnaire!

Elizabeth Mann Borgese, International Ocean Institute, Dalhousie University, CANADA 201

Should be a recognition that nuclear energy is part of the solution for the time being. This requires addressing the waste issue once and for all.

M. AECL, CANADA 196

It is a shame nuclear power is brought forward as a solution for the greenhouse problem.

P. de Ryk, Wise International, THE NETHERLANDS 213

If on the one hand it is though necessary to impose taxes on fossil fuels (carbon tax), I have grave concerns that nuclear power generation will end up being promoted as a result.

Atsuo Unami, Professor of Department of Human Development, School of Humanities and Culture, Tokai University, JAPAN J083

No matter how well environmental problems are publicized, they do not generate a sense of urgency. The proof of this is the proliferation of large passenger vehicles and RVs in urban areas that squander gasoline. The sentiment that ensued in the wake of the oil shock has been thoroughly forgotten. Although the doubling of petroleum prices would force everyone to recognize the problem as one of their own, this is not likely to come about in the short term. Accordingly, we should implement the necessary measures, such as the introduction of carbon taxes, without delay.

Hiroshi Nagano, Director of Japan Science and Technology Corporation, JAPAN J146

Although there still may be many problems associated with measures such as the daylight savings system and environmental taxes (including carbon taxes), the effect of their implementation would be profound in the sense of promoting serious thought among the populace about environmental problems. I am in favor of the daylight savings system.

Kozo Yamagaki, Councilor of Forest Policy Research Institute, JAPAN J024

I think that companies that make, sell and promote products that could be considered “waste tech” should have to take responsibility for recycling those products when they are discarded. This would drive up the price of their products, but that would probably have the effect of making more durable products more popular anyway, and it would help solve the problem of all the disposable products needing to have money spent on them to recycle their parts.

F, U. S. A. 225

I think governments should promote purchasing of recycled goods by only funding agencies, schools, etc., that use recycled paper, etc. If enough places bought recycled items, the costs would go down allowing even more use of the recycled products.

Janet K. Cook, Cook's Fantastic Homeschool, U. S. A. 226

Regional authorities are collecting resources citing this as resource recycling. However, since their strategies depend on subsidies and subsidizing collection, they are completely ignoring market principles and in many cases have destroyed the previously existing recycling market. I think that as long as recycling is not conducted on a private basis on an economic foundation, the resources are only being collected and will accumulate, which does not really constitute recycling. I think we should re-evaluate the direction being taken with funds used to foster and expand recycled product markets.

M, Dia Research Martech, JAPAN J011

My opinion is that is the final time for people to do something for their environment.

Raicevic Miroslan, The Association of Montenegrin-Japanese Friendship, YUGOSLAVIA 235

The public will accept higher prices if necessary for local and global environmental protection. Special interests and lack of effective leadership in industry and government are the biggest barriers to progress.

M, (unknown but in Asia) 281

When one speaks of global environmental problems, I think we should make a clear distinction between the “environment” and “environmental problems,” and one should also keep in mind the differences between the various spatial levels (regions, broader region, countries, continents, the entire globe, etcetera), and think of appropriate strategies for the respective level.

Yoshio Yoshida, Faculty of Geo-environmental Science, Risyo University, JAPAN J153

The problem is that the various attempts and concerned entities are pursuing a scattered approach. I think that a consolidated approach is required.

I believe that if America were to present a well-defined position regarding global environmental problems, the EU and other countries would demonstrate some understanding of it and follow suit. I believe that there are various political means of soliciting this stance from the U.S., but logically, it is to introduce a system that sets fundamental per capita emissions limits based on population. This would make it equal for both developed and developing nations.

M, Hokkaido Prefecture, JAPAN J010

It is becoming more and more apparent that global environmental problems are of a broad scope. In particular, I would like to see more attention paid to environmental hormones (substances that have been internally altered), which have largely gone unnoticed and may be linked to the very existence of human beings.

Hisashi Nitta, Professor of Department of Human Development, School of Humanities and Culture, Tokai University, JAPAN J080

The problem of environmental hormones has cropped up, and attention has been drawn to the implications for the ecology and wild animals since “Silent Spring,” but human regard for the natural earth, which is the well-spring of the human race in both material and spiritual senses is exceedingly weak.

Hideo Obara, Professor, Kagawa Nutrition University, JAPAN J156

I teach about the importance of the air, water and soil through organic agriculture. I think that the fastest way to teach people about the importance of environmental conservation is through their stomachs.

Minoru Yoneda, CEO, Global Environment Improvement Systems, JAPAN J222

V. Questionnaire as Distributed to Respondents

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

12	9	3	6
9:01 – 12:00 Extremely concerned	0:01 – 3:00 Not concerned at all	Please write your time here. [] : []	
6:01 – 9:00 Quite concerned	3:01 – 6:00 Slightly concerned	(*Example 10 : 35)	
6			

2. In November 1998, representatives of 170 countries conferred in Buenos Aires with the goal of implementing the Kyoto Protocol at the Fourth Session of the UNFCCC Conference of the Parties (COP4), the first such meeting held in a developing country.

2-1. How would you rate the outcome of COP4? Please select one option below and one reason for it.

A. Effective

Reason

- ⁽¹⁾ Adoption of the Buenos Aires Action Plan, which will devise a mechanism for such flexible measures as 'Emissions Trading,' 'Joint Implementation' and the 'Clean Development Mechanism,' at COP6 in the year 2000.
- ⁽²⁾ The references made by Argentina, Kazakhstan and Korea, three countries that did not accede to the Kyoto Protocol reduction and control obligations, to voluntarily tackle emission control.
- ⁽³⁾ The fact that the 170 signatory countries gathered in one place to devise strategies for the reduction of greenhouse gases.
- ⁽⁴⁾ Other: _____

B. Not Effective

Reason

- ⁽¹⁾ The issue of participation by developing countries was removed from the official agenda.
- ⁽²⁾ Concrete steps toward implementing the Kyoto Protocol were left virtually undebated.
- ⁽³⁾ The EU and US positions toward establishing binding targets for 'Emissions Trading' were opposed and real discussion was stymied at COP4.
- ⁽⁴⁾ Other: _____

2-2. Flexible measures, such as 'Emissions Trading,' were adopted in the Kyoto Protocol as the supplementary method of reducing greenhouse gas emissions from industrialized countries by an average of 5.2% from 1990 levels over five years starting in 2008. At COP4, the EU and US positions toward binding targets for 'Emissions Trading' were opposed and real discussion of reduction targets was stymied. In your opinion, do you believe that 'Emissions Trading' is an effective means of emission reduction? Please select one option below and one reason for it if you answer Option A or B.

A. Effective

Reason

- ⁽¹⁾ Greater reduction can be achieved for the same cost because the market mechanism is the most cost-effective method to reduce greenhouse gases.
- ⁽²⁾ Regulations based on 'Emissions Trading' can function more effectively than a mere 'Total Emissions Cap' since the method compensates for inadequate domestic countermeasures.
- ⁽³⁾ It might be regarded as a workable solution because it is modeled on the precedent of the US SO₂ (Sulfurous Acid Gas) allowance trading scheme.
- ⁽⁴⁾ Other: _____

B. Not Effective

Reason

- ⁽¹⁾ It neglects the fact that countries obliged to reduce emissions can purchase emission rights from countries such as Russia without implementing domestic measures.
- ⁽²⁾ It places higher priority on economic tactics for dealing with emission rights than on actual reductions.
- ⁽³⁾ Neglect of concerted domestic efforts by the developed countries in the future will provoke a negative reaction from developing countries.
- ⁽⁴⁾ There is ample reason to fear that, contrary to the US SO₂ allowance trading scheme, there is too much uncertainty to overcome, such as the possibility that new emitters from both public and private sectors will enter the market, uncertainty over who bears responsibility for defaults (non-compliance), and problems with emission measurement data and trading methods.
- ⁽⁵⁾ Other: _____

C. Don't Know

2-3. At COP4, discussion focused on mechanisms such as 'Emissions Trading' without real debate about emission reduction in industrialized countries. Do you think that the reduction targets for the 2008-2012 period can be achieved if the COP process continues to advance at this pace?

- ⁽¹⁾ Yes ⁽²⁾ No ⁽³⁾ Don't Know

3. Carbon taxes attempt to control fossil fuel consumption by taxing natural gas, gasoline and electric power generation from thermal plants, and other uses of fossil fuels. What is your opinion of the imposition of carbon taxes? Please select one option below and one reason for it if you answer Option A or B.

A. Approve

Reason

- ⁽¹⁾ Energy conservation can be promoted to industry and households because increased prices of fossil fuels and related products will regulate demand for these products.
- ⁽²⁾ Since users are forced to economize with fossil fuels, global warming countermeasures can be implemented at the least cost.
- ⁽³⁾ Tax proceeds can fund global warming countermeasures, such as R&D into alleviation.
- ⁽⁴⁾ Announcements appealing for energy conservation will raise the awareness of citizens and change behavior.
- ⁽⁵⁾ Other: _____

B. Oppose

Reason

- ⁽¹⁾ The efficacy is far from certain.
- ⁽²⁾ The consumer burden will grow through more expensive goods and services.
- ⁽³⁾ It will have a negative effect on developing countries, which will have to import goods from industrialized countries at higher prices.
- ⁽⁴⁾ Carbon dioxide emissions from developing countries will increase with the shift of manufacturing plants from the industrialized countries to them.
- ⁽⁵⁾ Other: _____

C. Don't Know

4. The recycling of waste products is essential to the creation of a sustainable society.

4-1. Please select all items below that you separate from your household waste for recycling or reuse.

- Packaging: ⁽¹⁾ Plastic Containers ⁽²⁾ Metal Cans ⁽³⁾ Glass Bottles
- Daily Items: ⁽⁴⁾ Newspapers, Magazines ⁽⁵⁾ Plastic Products ⁽⁶⁾ Old Clothes ⁽⁷⁾ Rubber
- ⁽⁸⁾ Waste Oil ⁽⁹⁾ Batteries
- Food: ⁽¹⁰⁾ Compostable Garbage
- Large Items: ⁽¹¹⁾ Household Electrical Appliances ⁽¹²⁾ Bicycles
- Other: _____

4-2. Who do you believe should bear the costs of recycling? Please select one option below.

- ⁽¹⁾ Consumers ⁽²⁾ Corporations ⁽³⁾ Governments (regional, national)
- ⁽⁴⁾ Consumers & Corporations ⁽⁵⁾ Consumers & Governments
- ⁽⁶⁾ Corporations & Government ⁽⁷⁾ Consumers, Corporations & Governments

4-3. In addition to promotion of the concept, what are the two most critical conditions for establishing a successful recycling program in your country.

- ⁽¹⁾ Creation of a law-based recycling system throughout society that encompasses everything from reclamation to remanufacturing.
- ⁽²⁾ The introduction of a point-of-purchase deposit system that refunds purchasers when products are returned for recycling.
- ⁽³⁾ The development of recycling technology.
- ⁽⁴⁾ Information campaigns by local authorities and the media.
- ⁽⁵⁾ Educational initiatives in schools through textbooks and extracurricular activities.
- ⁽⁶⁾ Appeals by corporations for consumers to recover materials.

5. Automotive exhaust is a major contributor to air pollution and greenhouse gases. Although there are already many examples of bicycles being widely adopted for urban transport in combination with public transport to combat air and noise pollution, there are also some regions banning bicycles.

5-1. Do you approve of bicycles being used as a method of urban transport? Please select one option.

- ⁽¹⁾ Approve ⁽²⁾ Oppose

5-2. Please select two items that you consider to be the most necessary to promote bicycle usage in your country.

- (1) To expand the infrastructure for the safe use of bicycles, such as bicycle-only road networks, etcetera.
- (2) Creation of transport systems and infrastructure based on the assumption of widespread bicycle use.
- (3) Sufficient bicycle parking space should be set aside and supported by national and local governments.
- (4) National and local governments should bear a portion of the costs of bicycle purchases.
- (5) Local governments should loan bicycles for public use.
- (6) The idea that riding a bicycle is 'good' and 'attractive' should be spread among the public.
- (7) Bicycles that can be ridden comfortably, even on hills, and reduced-cost bicycles should be developed.

6. Since the Earth Summit was held in Rio de Janeiro in June 1992, to what extent has progress been achieved in items (1) to (10) below? For each item, circle the best response from (a) to (e), considering the situation in your own country only.

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 and 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) Measures to alleviate population and 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) |

7. According to the Agenda 21 section of this survey, which has been administered annually since 1993, there has been little progress made toward environmentally positive changes in peoples' lifestyles which are important to the resolution of environmental problems.

7-1. Please select two items from below that you think are the largest obstacles to the alteration of lifestyles.

- (1) Although the importance of environmental issues is recognized, implementing solutions is bothersome.
- (2) Environmental problems are not so impending as to be given precedence over comfort and efficiency.
- (3) Changing one's personal lifestyle will barely have any effect on the problem.
- (4) Media information on environmental problems is not persuasive.
- (5) The scientific grounding for understanding the state of crisis of the global environment is lacking.
- (6) The premium for ecologically sound products is too high.
- (7) Other: _____

7-2. Please select the two options below that you feel are the most effective strategies for improving citizen awareness.

- (1) Scientific grounding allowing the appreciation of environmental problems, such as global warming.
- (2) Development of green projects, such as electric cars, etcetera.
- (3) Environmental education from kindergarten upward.
- (4) Public dissemination of government-sponsored environmental problem surveys and information.
- (5) News from the media sparking debate about the issues.
- (6) Promotion of social attitudes that portray energy conservation as 'chic.'
- (7) Other: _____

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

**Results of the Eighth Annual
"Questionnaire on Environmental Problems and the Survival of Humankind"**

REPORT

**September 1999
Published by the Asahi Glass Foundation**

2nd Floor, Science Plaza, 5-3, Yonbancho
Chiyoda-ku, Tokyo 102-0081, Japan
Phone +813 5275 0620
Fax +813 5275 0871

Produced by IRJ PR Services, Inc.

*If you have inquiries regarding this questionnaire,
please contact Mr. Kunii at the Asahi Glass Foundation.*

af THE ASAHI GLASS FOUNDATION

2nd Floor, Science Plaza, 5-3, Yonbancho,
Chiyoda-ku, Tokyo 102-0081, Japan
Phone +81 3 5275 0620 Fax +81 3 5275 0871
E-Mail: post@af-info.or.jp
Home Page Address: <http://www.af-info.or.jp>

Printed on recycled paper.