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

REPORT

THE ASAHI GLASS FOUNDATION

September 1998

Contents

Foreword

This report contains the results of the seventh annual "Questionnaire on Environmental Problems and the Survival of Humankind" conducted by the Asahi Glass Foundation.

Six 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. In December 1997, the Third Conference of Parties to the United Nations Framework Convention on Climate Change (COP3) was held in Kyoto. Although at COP3 the interests of many countries clashed and a number of issues were left unsolved, the decision to adopt legally binding restrictions was a major step on the way to halting global warming.

As in surveys carried out in past years, this year's questionnaire was designed to gauge the perceptions of respondents, mainly specialists from both governmental organizations (GOs) and nongovernmental organizations (NGOs) concerned with global environmental problems, regarding the progress of efforts to conserve the environment since the Earth Summit. The questionnaire was also aimed at grasping regional differences with regard to these problems. This year's questionnaire included questions from past surveys about the "time clock" measuring crisis perception and the items of Agenda 21. In addition, new topics covered expectations for the results of COP3 as well as subjects closely related to stopping global warming, such as energy and a carbon tax.

Once again, the Foundation would like to thank the many members of GOs and NGOs throughout the world who took the time to respond. In addition, the Foundation would like to express its gratitude to Professor Akio Morishima of the Faculty of Law of Sophia University for again providing invaluable advice at all stages of the project.

In closing, we welcome the opinions and advice of people from many fields of endeavor regarding the questionnaire, so that future surveys may yield even more comprehensive and relevant results.

September 1998
Asahi Glass Foundation

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

Response period: Questionnaires were sent out in April 1998 with a return deadline in June 1998.

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: 3,315

Questionnaires returned: 595

Response rate: 17.9%

Breakdown of respondents by age, sex and occupational affiliation:

Region	Number of responses	(Percent of total)
Japan	279	46.9
United States & Canada	62	10.4
Western Europe	60	10.1
Asia (outside Japan)	54	9.1
Latin America	33	5.5
Africa	51	8.6
Oceania	21	3.5
Eastern Europe & the former Soviet Union	18	3.0
Middle East	15	2.5
No response	2	0.3
Total	595	100.0

Sex		
Male	475	79.8
Female	109	18.3
No response	11	1.8
Total	595	100.0

Occupational affiliation		
Central government	130	21.8
Local government	104	17.5
University or research institution	107	18.0
Nongovernmental organization	141	23.7
Other	104	17.5
No response	9	1.5
Total	595	100.0

Notes: 1. All percentages in this analysis were calculated based on the 595 replies received. Percentages are rounded to the nearest tenth in most cases with some rounded to the nearest hundredth.
2. The two replies of "No response" recorded under "Region" were for respondents from outside Japan and so are included in the overseas total, when applicable.

II. Summary of Questionnaire Results

New Survey Questions—Evaluating COP3 and Global Warming Countermeasures

1. Outcome of COP3 in Kyoto

- Commitment period for reducing greenhouse gases in economically advanced countries (2008–2012)
  Regarding this period, the respondents were about split down the middle, with 46% saying this was too late and 45% deeming it was appropriate.
- The "basket approach" to reducing greenhouse gas emissions
  This adoption of this approach was approved of by 58% of respondents and by two-thirds of respondents from Eastern Europe & the former Soviet Union.
- National targets for emissions reductions or permissible increases in emissions
  Regarding the emissions reductions targets for the European Union (EU), Canada, and Japan, 40%–44% of respondents thought them too lax and 35%–40% thought them appropriate. For the United States, Russia, and Australia, about 60% of respondents thought the targets too lax.
- Flexibility in meeting emissions targets through four methods: emissions trading, joint implementation, a clean development mechanism, and the net approach (sinks)
  Respondents from economically advanced regions—Japan, the United States & Canada, and Western Europe—showed strong support for allowing up to 20% of a country's target to be met through these methods. Respondents from developing regions—Asia, Latin America, and Africa— showed the most support, believing that a country should be allowed to meet up to 40% of its target through these methods.
- Timing and extent of participation by developing countries in targets for the reduction of emissions of greenhouse gases and encouragement from economically advanced countries
  Asked their opinion on this issue, the most common response, at 32%, from economically advanced regions was that developed regions should set a good example. The second most common response, at 26%, was that developed countries should support environmental initiatives in developing countries. The top two responses from developing regions were the same, but in reverse order. The overall top three responses were, in order: developed countries should support environmental initiatives in developing countries; developed countries should offer technology and funding free of charge; and a funding mechanism for fighting global warming should be promoted.
- The start of restrictions on emissions in developing regions
  When asked when restrictions on emissions in developing regions should begin, 65% of respondents from developed countries and 48% of respondents from developing countries chose "2010–2014," the earliest choice offered by the survey.
- Hopes for the outcome of COP4
  Respondents from industrialized countries showed more support for a system of sanctions to be enacted when targets set at COP3 are not achieved compared with the establishment of guidelines for use of the four flexibility provisions as a supplementary measure. In particular, respondents from Japan and developing regions showed more support for the establishment of guidelines for use of the four flexibility provisions than for a system of sanctions. Respondents from developing nations were most strongly in favor of more leadership and commitment from economically developed countries, followed by the establishment of guidelines for use of the four flexibility provisions.

2. Important Factors for Reducing Emissions of Greenhouse Gases

Clear regional differences were seen in responses to the question on this topic. Respondents from industrialized countries thought the most important factors are changes in the overconsumption lifestyles of ordinary people—the most popular response, followed by changes in mass-production and overconsumption-throwaway–type systems, and use of environmental taxes and levies to restrict environmental destruction. Respondents from developing countries cited environmental education as the most important factor, followed by protection of forests and promotion of replanting, and the development of technology that promotes a switch to recyclable energy resources.

3. Nuclear Power–Generated Electricity as an Alternative to Thermal Power–Generated Technology

The majority of respondents from Japan (33%) and overseas (35%) indicated that current nuclear technologies should be completely rethought. The next most popular response was that nuclear power should not be adopted because improvements in its safety look extremely difficult to achieve, which garnered a 35% response rate overseas. Only 26% of Japanese respondents replied that nuclear power should not be adopted, the lowest such percentage for industrialized regions. On the other hand, the idea that nuclear

power as we know it today is acceptable garnered the least support, with 11% of non-Japanese respondents and 14% of Japanese respondents.

4. **The Validity of the Carbon Tax as a Measure to Counter Global Warming**
   - An overwhelming majority—74%—of respondents from all regions indicated that they were in favor of introducing a carbon tax. For respondents from Japan, this figure was 77%.
   - For those respondents in favor of the tax, the most often chosen reason was to encourage energy conservation at businesses and households. This response was particularly common among respondents from Western Europe and the United States & Canada. The most commonly chosen reason for respondents from Japan was to combat global warming at the least cost, followed closely by to educate the public about conserving energy.
   - Only about a quarter of all respondents were opposed to introducing a carbon tax, and among these respondents the most commonly chosen reason was because the benefits of such a tax are uncertain.
5. **The Adoption of a Daylight Saving Time System**
   - About 63% of non-Japanese respondents are from countries that have adopted daylight saving time. For regions where daylight saving time has been adopted, 90% of respondents are in favor of the system. For regions where daylight saving time has not been adopted, 62% of respondents are in favor of the system. In Japan, 59% of respondents are in favor of daylight saving time; although the majority, this is still the lowest percentage of all regions surveyed.
   - When asked to choose reasons why they are in favor of daylight saving time, the most often chosen answer by respondents from regions where daylight saving time has been adopted was the achievement of energy conservation without infrastructure investment or technological progress, followed by the idea that putting daily lives in tune with nature enables people to turn away from excess use of resources. The number one and two responses for respondents from regions where daylight saving time has not been adopted were the reverse order of these two.
   - Respondents from regions where daylight saving time has been adopted who are against daylight saving time were a small minority, but the reason they cited most often was that it upsets people's daily routines and is unnatural. The most common reason cited by respondents who are against daylight saving time from regions where it has not been adopted was that daylight saving time is problematic for reasons related to climate and cultural factors.

Questions Continued from Past Surveys

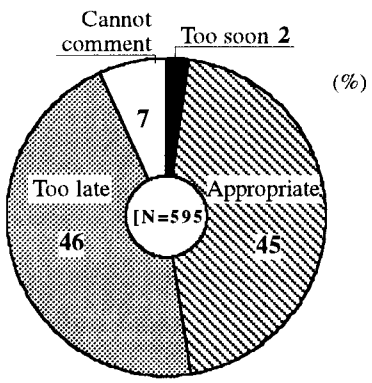
6. **Humanity in Crisis**
   - The overall average time response was 9:05, the third year in a row to exceed 9:00 and register within the range of extreme concern.
   - The average time for respondents from Japan entered the range of extreme concern with 9:01 for the first time. This compares with an average time of 8:08 for Japan three years ago, which stood in sharp contrast to the overseas average of 9:22.
   - Particularly strong concern was registered by respondents from Western Europe, Eastern Europe & the former Soviet Union, and Oceania.
7. **Progress on Environmental Issues since the Earth Summit**
   - Compared with three years ago, items for which progress was more highly evaluated in 1998 were environmental education, activities by local governments and citizens' groups, and environmental protection policies of the industrial sector. In particular, the evaluation of progress in environmental protection policies of the industrial sector was up eight percentage points.
   - Items for which progress was evaluated particularly harshly were efforts to alter lifestyles, efforts to solve problems such as poverty and overpopulation, and policies to conserve the Earth's diversity. Compared with three years ago, the percentage of respondents citing "significant progress" or "some progress" for these items declined by six percentage points or more. In particular, progress in efforts to alter lifestyles was down 12 percentage points. Progress in policies to conserve forests also declined by six percentage points.
   - Respondents from Africa, Latin America and other developing regions tended to favorably evaluate progress in efforts to solve problems such as poverty and overpopulation, policies to conserve forests, and policies to conserve biodiversity. However, responses from Japan and other industrialized regions did not indicate progress. The reverse was true for formation of recycling systems and science and technology's contributions, which were highly evaluated by industrialized regions and not so by developing regions.

III. Questionnaire Results

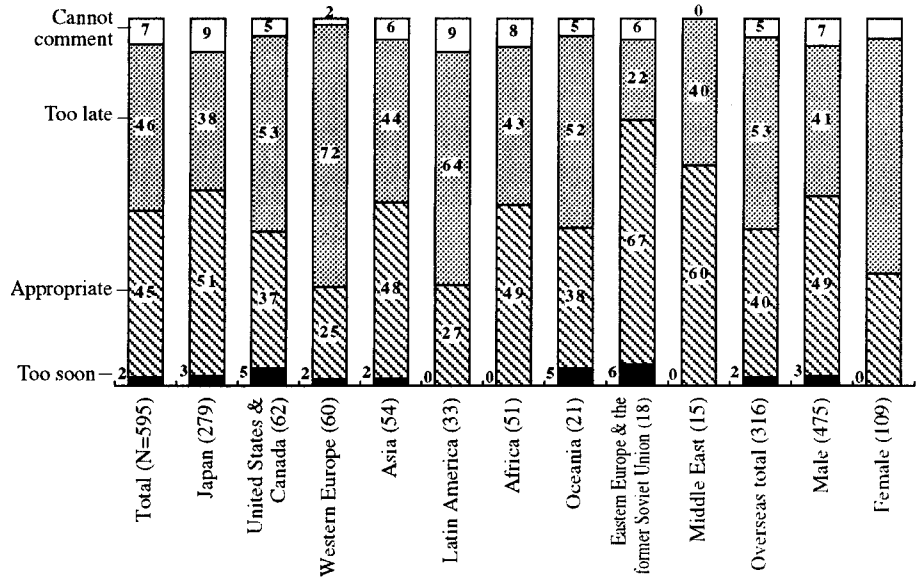
1. OUTCOME OF THE CONFERENCE OF PARTIES TO THE THIRD UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (COP3) IN KYOTO

Question 1-1: In the five years between 2008 and 2112, economically advanced countries are to reduce their total emissions of greenhouse gases to below 1990 levels by 5.2%.

A) How do you feel about the decision to set the commitment period between 2008 and 2112?

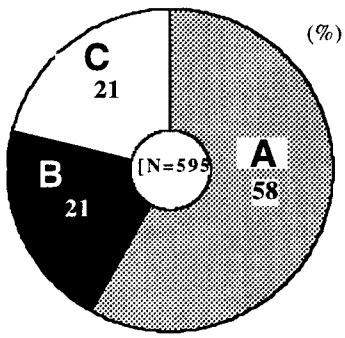


*N=number of responses



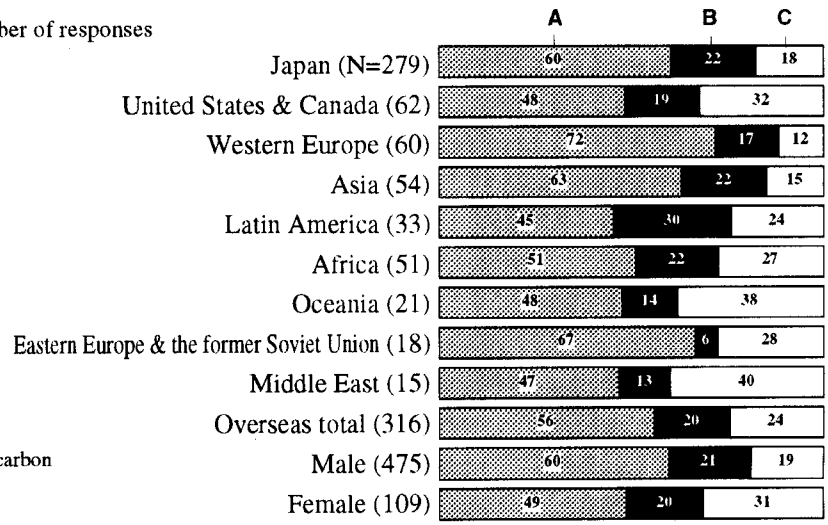
- About 46% of respondents from all regions indicated that the commitment period is set too late, and 45% indicated that it was appropriate, showing a wide split in opinions.
- More than 60% of respondents from Western Europe and Latin America deemed the commitment period too late, and more than 60% of respondents from Eastern Europe & the former Soviet Union and the Middle East indicated that the commitment period was appropriate.
- Female respondents were strongly critical, with 64% answering that the commitment period was too late. Conversely, only 41% of male respondents chose this response.

B) How do you feel about adopting the "basket approach" to reducing greenhouse gas emissions? This approach involves translating the global warming effect of carbon dioxide, methane, and nitrous oxide, in addition to three types of fluorocarbon gases, into the warming effect of carbon dioxide and setting targets for all six gases at once.



A = I agree with this method.
B = I think the method should be used only for carbon dioxide, methane, and nitrous oxide.
C = Cannot comment

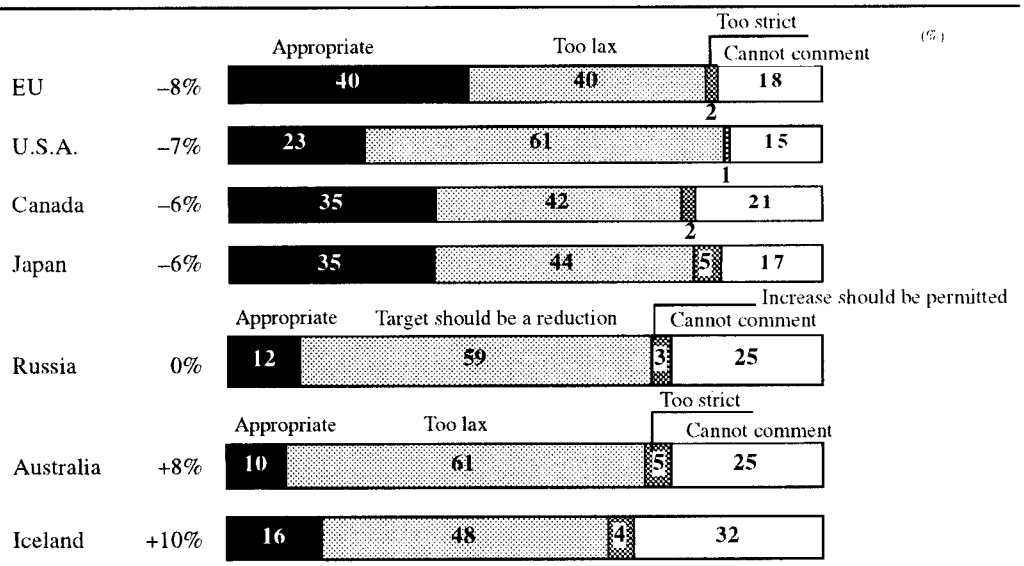
*N=number of responses



- For all regions, respondents who expressed agreement with the method were in the majority. In particular, more than two-thirds of respondents from Western Europe and Eastern Europe & the former Soviet Union indicated agreement. The region with the lowest support level was Latin America, at 45%.
- Compared to other questions, the percentage of people responding "Cannot comment" was high, at 21%.

C) The following chart shows targets for emissions reductions or permissible increases in emissions for various countries and regions. For each country or region, please circle the item that best describes your opinion of the target.

Regional Comparison



EU Respondents indicating that the EU's target was too lax and those indicating that it was appropriate each garnered 40% support.

U.S.A. At 61%, many more respondents believed the U.S. target was too lax rather than appropriate.

Canada Respondents indicating that Canada's target was too lax totaled 42%, and those who felt it appropriate made up 35%.

Japan Japan's target was viewed as too lax by 44% of respondents, about the same as for Canada's target. This is greater than the 35% who viewed it as appropriate.

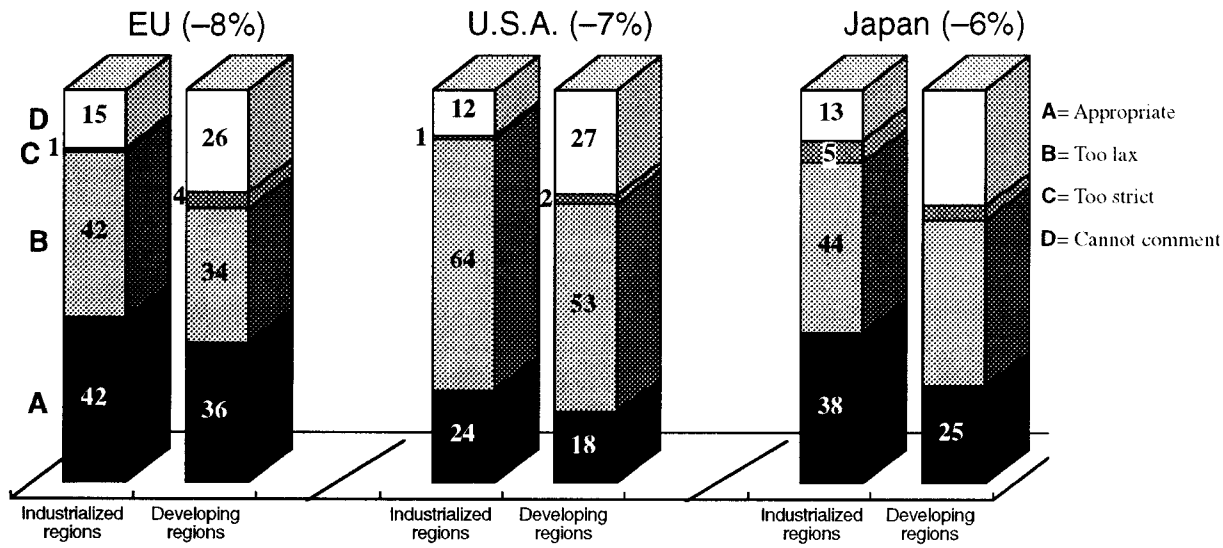
Russia Nearly 60% of respondents felt that Russia should have a stricter target.

Australia A large majority, at 61%, felt that Australia's permissible increase was too large.

Iceland As with Australia's target, a majority felt Iceland's permissible increase was too large.

- About 40%–44% of respondents felt that emissions reductions targets for the EU, Canada, and Japan were too lax, and 35%–40% deemed them appropriate.
- About 60% of respondents felt the targets for the United States, Russia, and Australia were too lax.

Comparison of Opinions of Industrialized and Developing Regions on Emissions Targets for the EU, U.S.A., and Japan

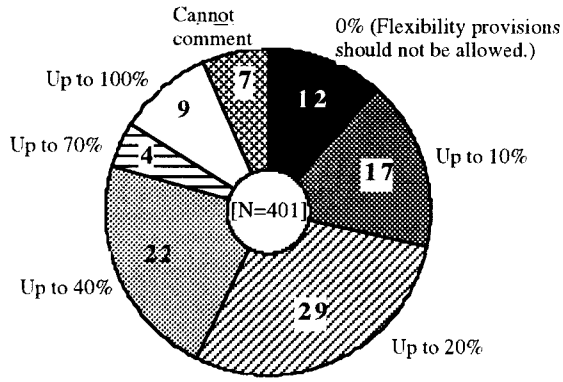


Notes: Industrialized regions included Japan, the United States & Canada, and Western Europe. The number of responses was 401. Developing regions included Asia outside of Japan, Latin America, and Africa. The number of responses was 138.

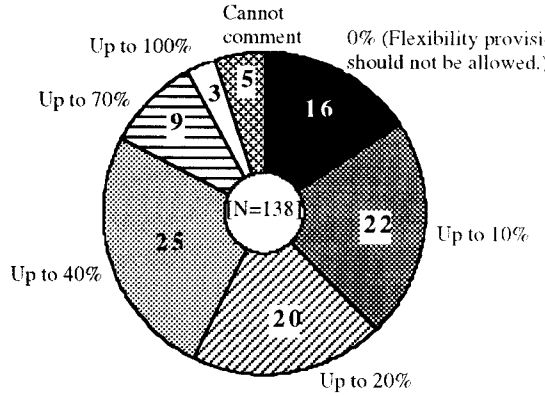
- Compared with respondents from industrialized regions, respondents from developing regions were more likely to answer that targets were too lax for the United States and Japan and less likely to answer that they were appropriate.

D) Countries have been granted some flexibility in meeting their emissions targets via four methods. These are 1) emissions trading, 2) joint implementation, 3) a clean development mechanism, and 4) the net approach (sinks). In your opinion, up to what percent of a country's emissions target can be permissibly met through these methods?

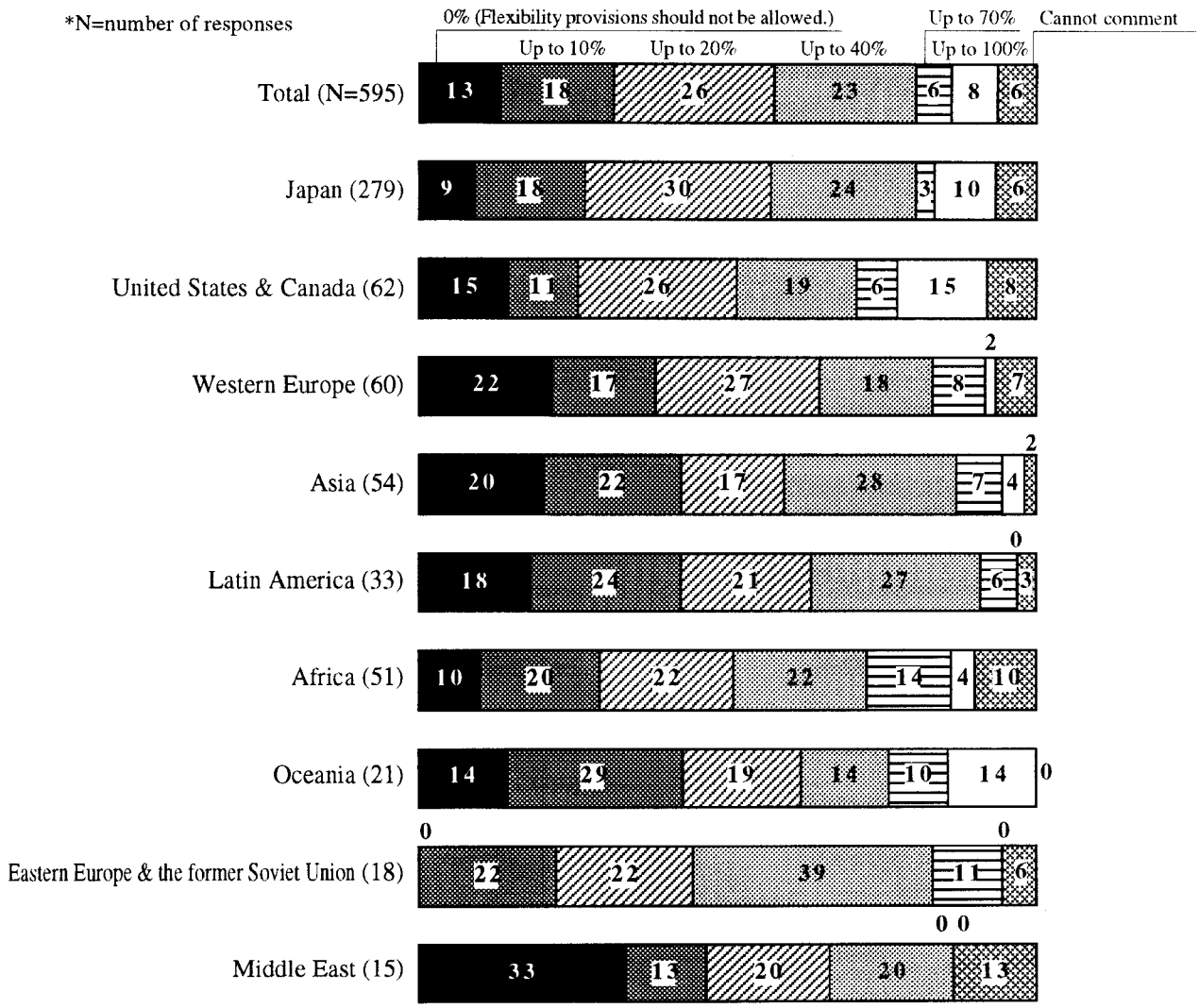
Economically Advanced Regions



Developing Regions



*N=number of responses



- At 29%, the most commonly chosen response from industrialized regions was "up to 20%." However, at 25%, the most commonly chosen response for respondents from developing regions was "up to 40%." Fifteen percent of respondents from the United States & Canada chose "Up to 100%," the highest such percentage from any region. Overall, 8% of respondents chose "Up to 100%."
- Eighty percent of respondents from economically advanced regions and 84% of respondents from developing regions chose responses allowing from 0% to 40%.
- Approximately 33% of respondents from the Middle East were very strict on this issue, answering "0%," followed by 22% of respondents from Western Europe, and 20% of respondents from Asia.

Question 1-2: In the future, developing nations' carbon dioxide emissions are expected to surpass those of industrialized countries.

A) What do you think is the most important action that economically advanced countries should take to encourage the active participation of developing nations in reducing greenhouse-gas emissions?

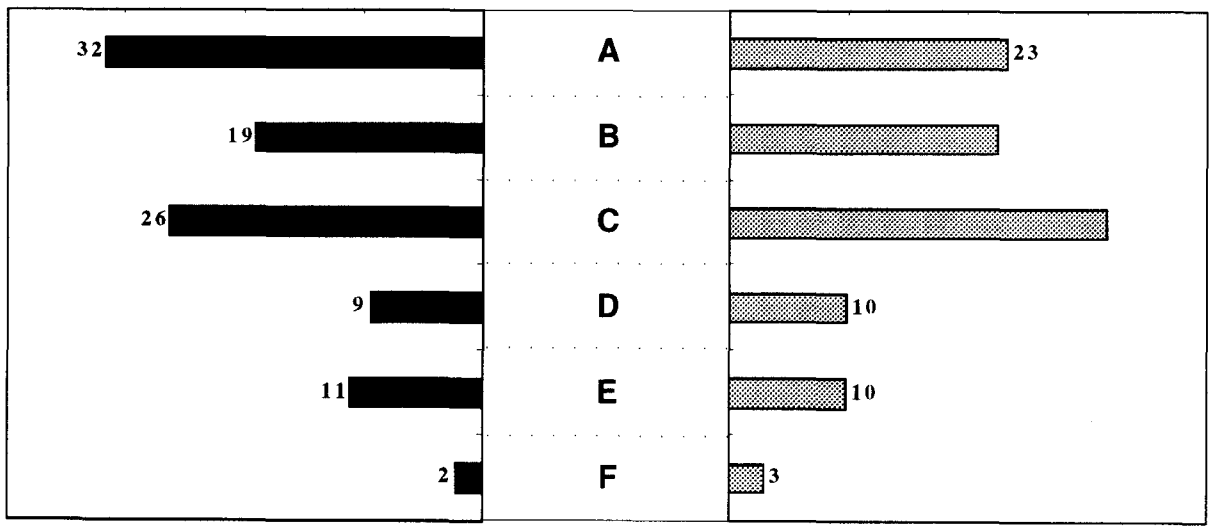
(%)

	Japan (279)	United States & Canada (62)	Western Europe (60)	Asia (54)	Latin America (33)	Africa (51)	Oceania (21)	Eastern Europe & the former Soviet Union (18)	Middle East (15)	Overseas total (316)	Male (475)	Female (109)
A. The developed countries, which are responsible for the greenhouse effect in the first place, should first show concrete results in reducing emissions and thus set a good example.	◎37	○21	○22	27	18	23	24	25	◎25	○23	◎30	○26
B. Economically advanced countries should help developing countries reduce their greenhouse-gas emissions by offering technology and funding free of charge.	18	○21	○23	◎32	18	15	◎29	15	○25	○22	20	22
C. Economically advanced countries should support environmental initiatives in developing countries by sending personnel to conduct environmental education and providing monetary and other assistance to combat poverty, which is a major factor behind environmental destruction in developing countries.	31	15	18	23	◎27	◎43	19	◎30	19	○24	○27	◎28
D. Industrialized countries should support the efforts of developing countries to fight global warming through the promotion of a funding mechanism.	7	15	12	5	21	8	10	20	6	12	10	11
E. Economically advanced countries should accept the plan to reduce their emissions levels below 1990 levels by a uniform 35% by the year 2020, as proposed by the developing countries.	6	○21	○22	13	9	8	14	10	8	15	11	12
F. No response	1	6	3	0	6	4	5	0	19	4	3	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.

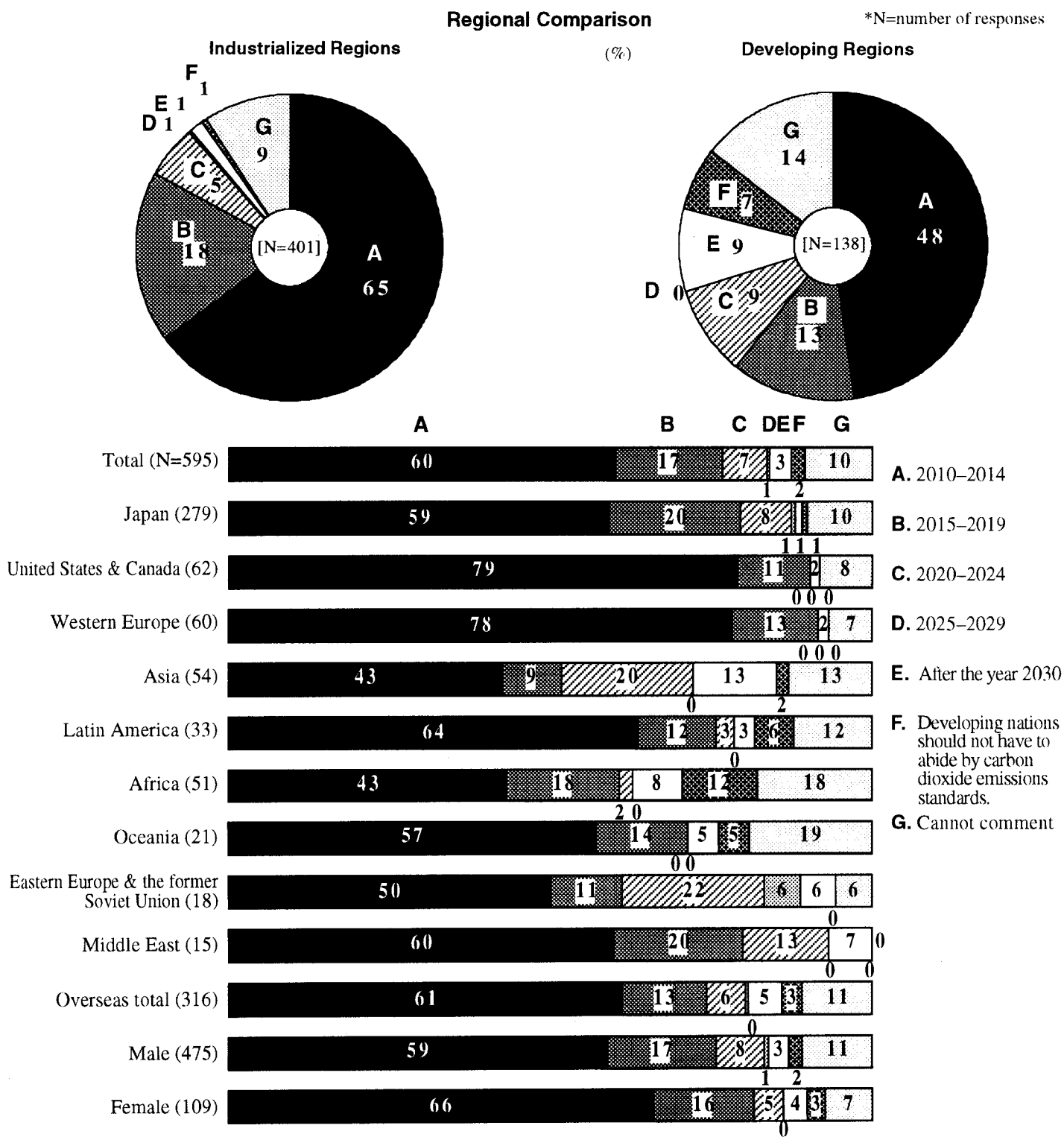
Comparison by Region

*N=number of responses



- The most common response, at 32%, from economically advanced regions was that developed regions should set a good example. The second most common response, at 26%, was that developed countries should support environmental initiatives in developing countries. The top two responses from developing regions were the same, but in reverse order.
- The top three answers from respondents from industrialized countries were, in order of popularity, environmental education, technology and free funding, and the promotion of a funding mechanism. These answers garnered response rates of 26%, 19%, and 9%, respectively. These three all involve support from industrialized regions. Respondents from developing countries had the same top three answers, with response rates of 32%, 23%, and 10%, respectively.
- A relatively high 37% of respondents from Japan indicated that developed regions should set a good example. Interestingly, only 22% of respondents from the United States & Canada and Western Europe indicated that developed regions should set a good example, about on a par with the 21% of respondents from these regions who indicated that economically advanced nations should reduce their emissions levels below 1990 levels by a uniform 35%.

B) When should restrictions on emissions begin in developing countries?



- The earliest available response, 2010–2014, garnered support from 60% of all respondents. Industrialized regions showed 65% support, and respondents from the United States & Canada and Western Europe showed nearly 80% support.
- Forty-eight percent of respondents from developing countries also showed support for beginning restrictions between 2010 and 2014, indicating hopes for early implementation.

Note: Respondents interpreted this question in two ways. Some saw "When should restrictions begin" as referring to the time period in which restrictions on emissions of carbon dioxide should begin to show results (given that restrictions are set to take effect in economically advanced countries between 2008 and 2012). However, other respondents saw "When should restrictions begin" as referring to the time period in which goals for emissions reductions should be initially set so that lower emissions of carbon dioxide may be realized in the future (1998 for economically advanced countries). After reaching about 87 respondents for confirmation, each interpretation was made by approximately half of the respondents.

Question 1-3: In November 1998, COP4 will be held in Buenos Aires. What do you hope will be COP4's outcome? Please choose two.

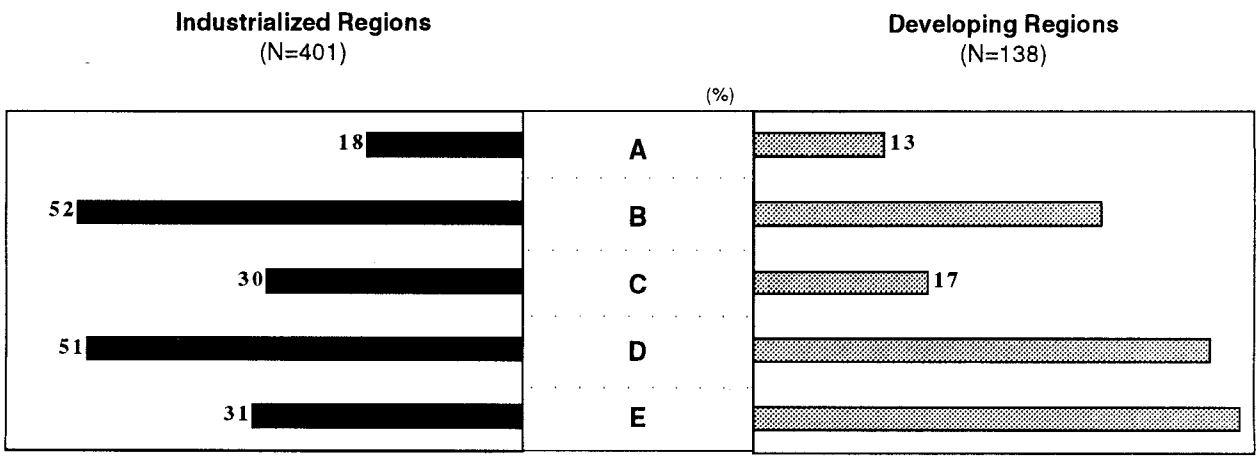
(%)

	Japan (279)	United States & Canada (62)	Western Europe (60)	Asia (54)	Latin America (33)	Africa (51)	Oceania (21)	Eastern Europe & the former Soviet Union (18)	Middle East (15)	Overseas total (316)	Male (475)	Female (109)
A. Stricter emissions targets	15	21	30	11	12	16	14	11	20	18	17	14
B. Establishment of an international monitoring system and a system of sanctions to be enacted when emissions targets are not achieved	50	(58)	(52)	37	36	31	(48)	(67)	(67)	(47)	(47)	(55)
C. The setting of a date for the start of emissions restrictions for developing countries	37	11	13	13	27	16	10	33	27	16	27	21
D. The establishment of guidelines for the use of the four flexibility provisions—emissions trading, joint implementation, a clean development mechanism, and the net approach (sinks)	(57)	39	33	43	(52)	45	38	22	-	38	(47)	47
E. More leadership and commitment from economically developed countries on combating global warming	26	47	42	(50)	48	(47)	43	28	33	44	35	39
No response	2	3	2	0	3	2	0	0	7	2	2	0

Notes: Figures enclosed by a circle represent the answer with the highest number of points.
Respondents were asked to choose two answers, so the total for each region is basically 200%. However, some respondents chose only one or no answers, so for some regions the total is less than 200%.

Regional Comparison

*N=number of responses



- Many respondents from economically developed regions showed support for a system of sanctions to be enacted when emissions targets set at COP3 are not achieved and for the establishment of guidelines for the use of the four flexibility provisions. In particular, respondents from Japan showed much more support than respondents from the United States & Canada and Western Europe for the establishment of guidelines for use of the four flexibility provisions.
- Respondents from developing regions showed support for more leadership and commitment from economically developed countries and for the establishment of guidelines for the use of the four flexibility provisions.

2. IMPORTANT FACTORS FOR REDUCING EMISSIONS OF GREENHOUSE GASES

Question 2: What factors do you think are most important for reducing emissions of greenhouse gases in your country? Please choose three and rank them, in order of importance (with "1" being the most important), in the blanks provided below.

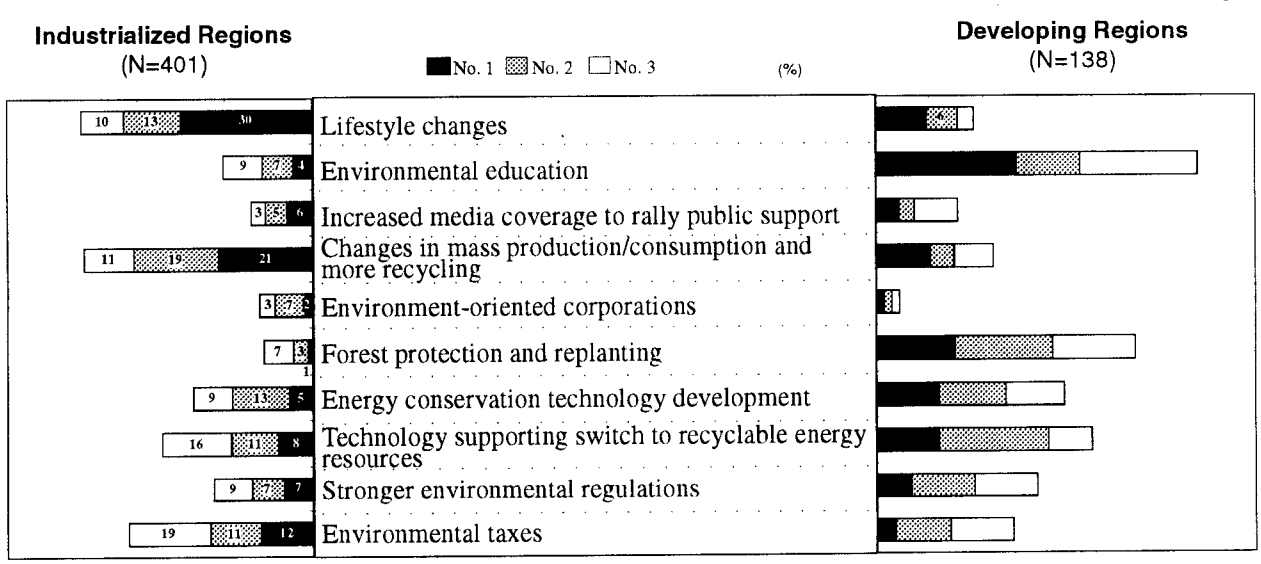
(%)

	Japan (279)	United States & Canada (62)	Western Europe (60)	Asia (54)	Latin America (33)	Africa (51)	Oceania (21)	Eastern Europe & the former Soviet Union (18)	Middle East (15)	Overseas total (316)	Male (475)	Female (109)
Changes in the overconsumption lifestyles of ordinary people	(54)	(45)	(53)	31	15	6	(38)	33	13	32	(45)	33
Promotion of environmental education	21	16	23	(59)	(61)	(59)	19	17	(53)	(38)	28	40
Increased coverage of the global warming problem in the mass media to help rally public support	15	13	10	13	15	18	14	22	13	14	14	17
Changes in mass-production and overconsumption-throwaway–type systems and the promotion of recycling	(59)	37	35	26	21	18	19	6	33	27	(43)	(41)
Shifts to environment-oriented corporations	10	21	13	4	6	4	24	17	20	12	10	15
Protection of forests and establishment of institutions to promote replanting	9	15	18	(39)	(55)	(53)	29	6	13	30	20	21
Development of technologies to help realize energy conservation and environmentally sound products	23	39	38	35	36	33	29	(67)	40	(38)	31	28
Development of technology that promotes a switch to recyclable energy resources or those that do not emit carbon dioxide	34	(42)	27	30	45	47	(52)	(50)	33	(39)	35	(47)
Strengthening of environmental conservation regulations, including those governing emissions standards	20	31	27	31	18	35	(38)	17	(47)	30	25	25
Use of environmental taxes and levies to restrict environmental destruction	41	39	(50)	22	27	27	(38)	(67)	33	36	40	32

Notes: Percentages represent the total of answers ranked 1, 2, and 3.
Unclear responses have not been shown on this graph.
Figures enclosed by a double circle show the top answer for the region.
Figures enclosed by a single circle show the number two answer for the region.
Respondents were asked to choose three answers, so the total for each region is basically 300%. However, some respondents chose only one or two or no answers, so for some regions the total is less than 300%.

Regional Comparison

*N=number of responses

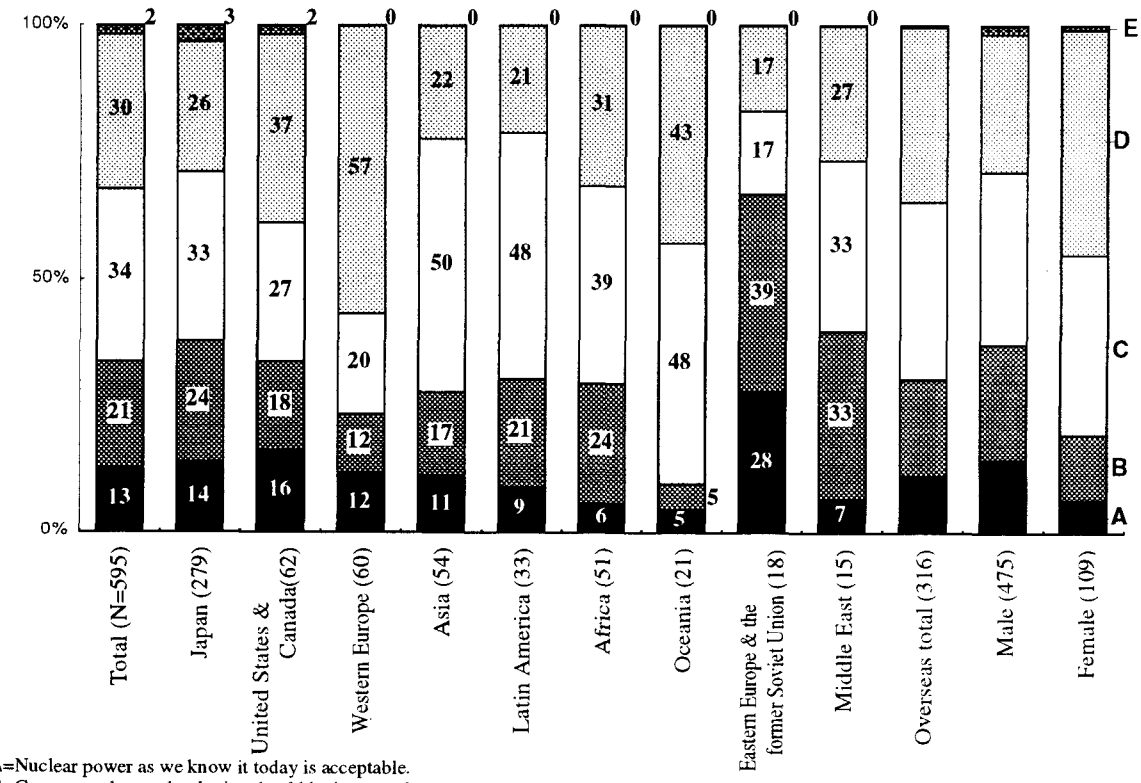


- Clear regional differences were seen in responses to the question on this topic. Respondents from industrialized countries thought the most important factors are changes in the overconsumption lifestyles of ordinary people—the most popular response, followed by changes in mass-production and overconsumption-throwaway–type systems, and use of environmental taxes and levies to restrict environmental destruction. Respondents from developing countries cited environmental education as the most important factor, followed by protection of forests, and the development of technology that promotes a switch to recyclable energy resources or those that do not emit carbon dioxide.

- The top response for Oceania was switching to recyclable energy resources. The top responses for Eastern Europe & the former Soviet Union were the development of technologies to help realize energy conservation and the use of environmental taxes and levies. The top response for the Middle East was the promotion of environmental education.
- Few respondents indicated as important shifts to environment-oriented corporations or increased coverage of global warming in the mass media.

3. NUCLEAR POWER-GENERATED ELECTRICITY AS AN ALTERNATIVE TO THERMAL POWER-GENERATED TECHNOLOGY

Question 3: Before the Industrial Revolution, the concentration of carbon dioxide in the atmosphere was 280 parts per million (ppm). Today, this has risen to 360 ppm. Nuclear power-generated electricity results in far fewer carbon dioxide emissions than thermal power-generated electricity. How do you feel about the use of nuclear energy as a substitute for fossil fuels?

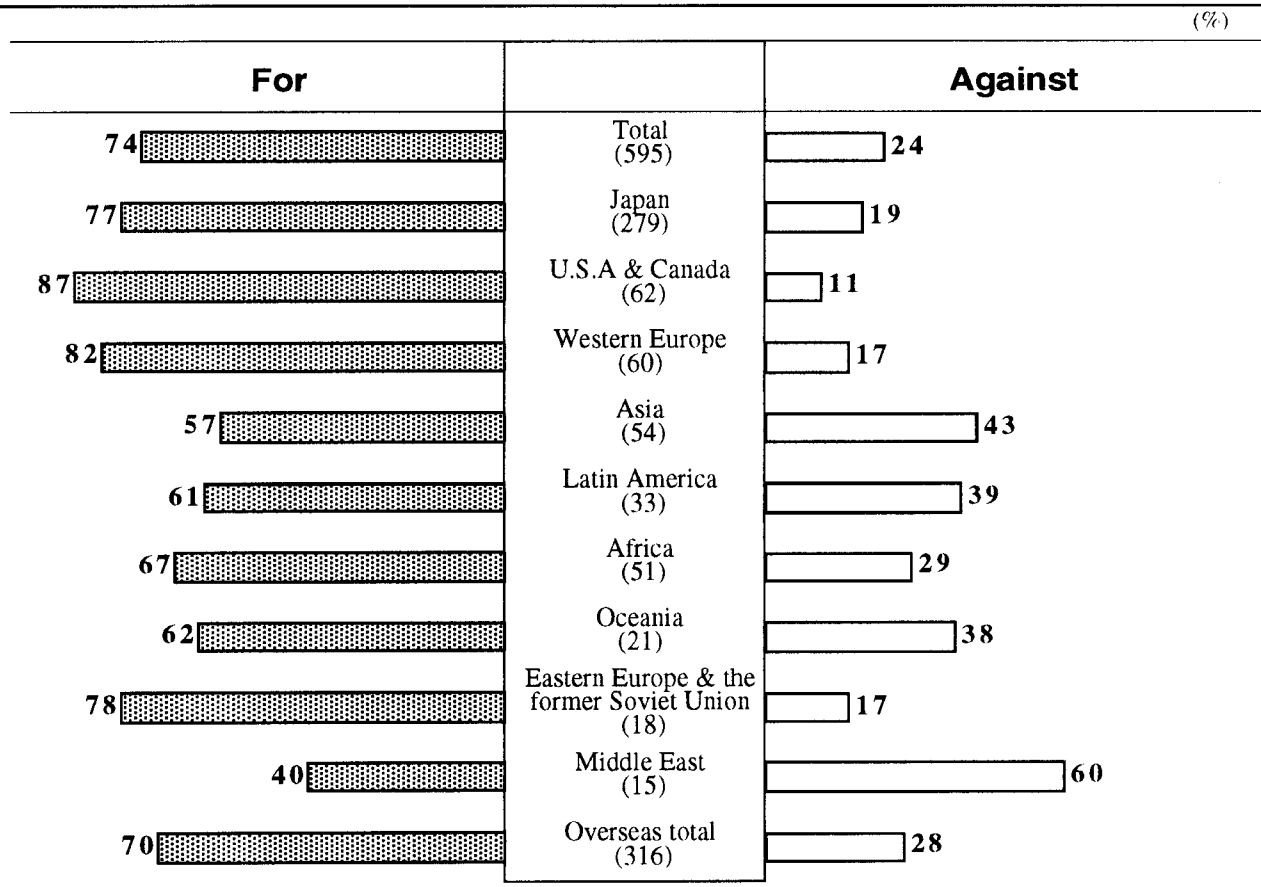


A=Nuclear power as we know it today is acceptable.
B=Current nuclear technologies should be improved and adopted when they become more safe.
C=Current nuclear technologies should be completely rethought, and research and development should be carried out with the aim of providing enhanced safety and economic feasibility.
D=Improvements in the safety of nuclear power look extremely difficult to achieve, so nuclear power should not be adopted.
E=Cannot comment

- About 35% of overseas respondents answered that current nuclear technologies should be completely rethought, and 34% responded that nuclear power should not be adopted because improvements in safety look extremely difficult to achieve. Thus, these two answers received nearly the same level of support from non-Japanese respondents.
- By region, 46% of respondents from the United States & Canada and Western Europe indicated that nuclear power should not be adopted, versus only 24% of respondents from these areas that answered current nuclear technologies should be completely rethought. For respondents from developing regions, 46% answered that current nuclear technologies should be completely rethought, while only 25% indicated that nuclear power should not be adopted. This would seem to indicate that respondents from developing regions have higher expectations for technological advances. Respondents from Oceania were more or less split, with a more than 40% response rate for each of these two answers. Conversely, respondents from Eastern Europe & the former Soviet Union had a less than 20% response rate for each of the two answers.
- For Japan, 33% of respondents showed support for completely rethinking current nuclear technologies, versus 26% who indicated opposition to adopting nuclear power at all.
- The least popular response was that nuclear power as we know it today is acceptable. Only 11% of overseas and 14% of Japanese respondents chose this answer. However, 28% of respondents from Eastern Europe & the former Soviet Union chose this answer.
- Fully 44% of female respondents believed nuclear power should not be adopted, much higher than the 27% of male respondents who indicated the same.

4. THE VALIDITY OF THE CARBON TAX AS A MEASURE TO COUNTER GLOBAL WARMING

Question 4: The carbon tax is a measure aimed at restricting consumption of fossil fuels by taxing electricity, natural gas, gasoline and other energy sources related to the emission of carbon dioxide. Currently, five countries—Denmark, Finland, the Netherlands, Norway and Sweden—have instituted a carbon tax. Do you feel that a carbon tax should be introduced as a means to counter global warming? If yes, then please go to A. If no, then please go to B. In either case, choose two reasons and rank them, in order of importance, in the blanks below.



Note: Unclear responses have not been shown on this graph.

Pros and cons of introducing a carbon tax

- An overwhelming majority—74%—of respondents from all regions indicated that they were in favor of introducing a carbon tax. About 77% of respondents from Japan were in favor of such a tax.
- About 80% of respondents from Japan and other economically advanced countries, as well as Eastern Europe & the former Soviet Union, indicated approval of such a tax. This is in accord with answers to Question 2, in which many respondents from Western Europe, Japan, and other developed regions indicated that environmental taxes and levies were an important factor for reducing emissions of greenhouse gases. A majority of respondents from developing regions showed support. The only exception was that 60% of respondents from the Middle East indicated opposition to the tax.

Reasons for supporting the introduction of a carbon tax

(%)

	Japan (216)	United States & Canada (54)	Western Europe (49)	Asia (31)	Latin America (20)	Africa (34)	Oceania (13)	Eastern Europe & the former Soviet Union (14)	Middle East (6)	Overseas total (222)	Male (350)	Female (81)
Higher-priced fossil fuels will reduce demand and encourage energy conservation at businesses and households.	51	(78)	(84)	48	(60)	(47)	(54)	(50)	(83)	(65)	(61)	(49)
A carbon tax will enable us to promote strategies that combat global warming at the least cost.	(54)	26	45	29	20	44	31	29	17	33	45	38
By instituting a carbon tax, we can raise funds for technological R&D related to global warming.	31	43	27	39	50	35	46	43	50	38	35	35
To achieve the reductions in carbon dioxide emissions targeted at COP3, we must use all available means.	19	26	22	19	30	21	23	29	33	24	20	30
A carbon tax has value as a way to educate the public about conserving energy.	44	26	22	(55)	40	44	46	(50)	17	36	37	47

Notes: Unclear responses have not been shown on this graph.
Percentages represent the total of answers ranked 1 and 2.
The sample size for the Middle East is small, so please view these figures for reference only.
A circle indicates the most commonly chosen response for a given region.

Reasons for not supporting the introduction of a carbon tax

(%)

	Japan (54)	United States & Canada (7)	Western Europe (10)	Asia (23)	Latin America (13)	Africa (15)	Oceania (8)	Eastern Europe & the former Soviet Union (3)	Middle East (9)	Overseas total (88)	Male (117)	Female (24)
The benefits of a carbon tax are uncertain.	44	57	(80)	48	(54)	47	(63)	(67)	56	(56)	(52)	50
The introduction of a carbon tax could cause companies to lose international competitiveness.	19	14	10	13	8	-	13	-	11	9	13	13
A carbon tax will result in higher prices of goods and services and thus increase the burden on consumers.	(52)	14	30	43	46	47	13	33	(78)	41	46	42
A carbon tax will increase reliance on nuclear energy, which does not produce carbon dioxide.	19	29	10	4	8	20	25	-	22	14	14	25
If the prices of products made in economically advanced countries are raised by a carbon tax, then the economies of developing countries that import those products will be negatively affected.	9	14	-	30	31	33	38	33	11	25	20	13
Companies will move production to developing nations, where emissions of carbon dioxide will increase.	43	(71)	70	(57)	46	(53)	50	(67)	22	53	47	(58)

Notes: Unclear responses have not been shown on this graph.
Percentages represent the total of answers ranked 1 and 2.
The sample size for regions other than Japan is small, so please view these figures for reference only.
A circle indicates the most commonly chosen response for a given region.
Respondents were asked to choose two answers, so the total for each region is basically 200%. However, some respondents chose only one or no answers, so for some regions the total is less than 200%.

Reasons for introducing a carbon tax

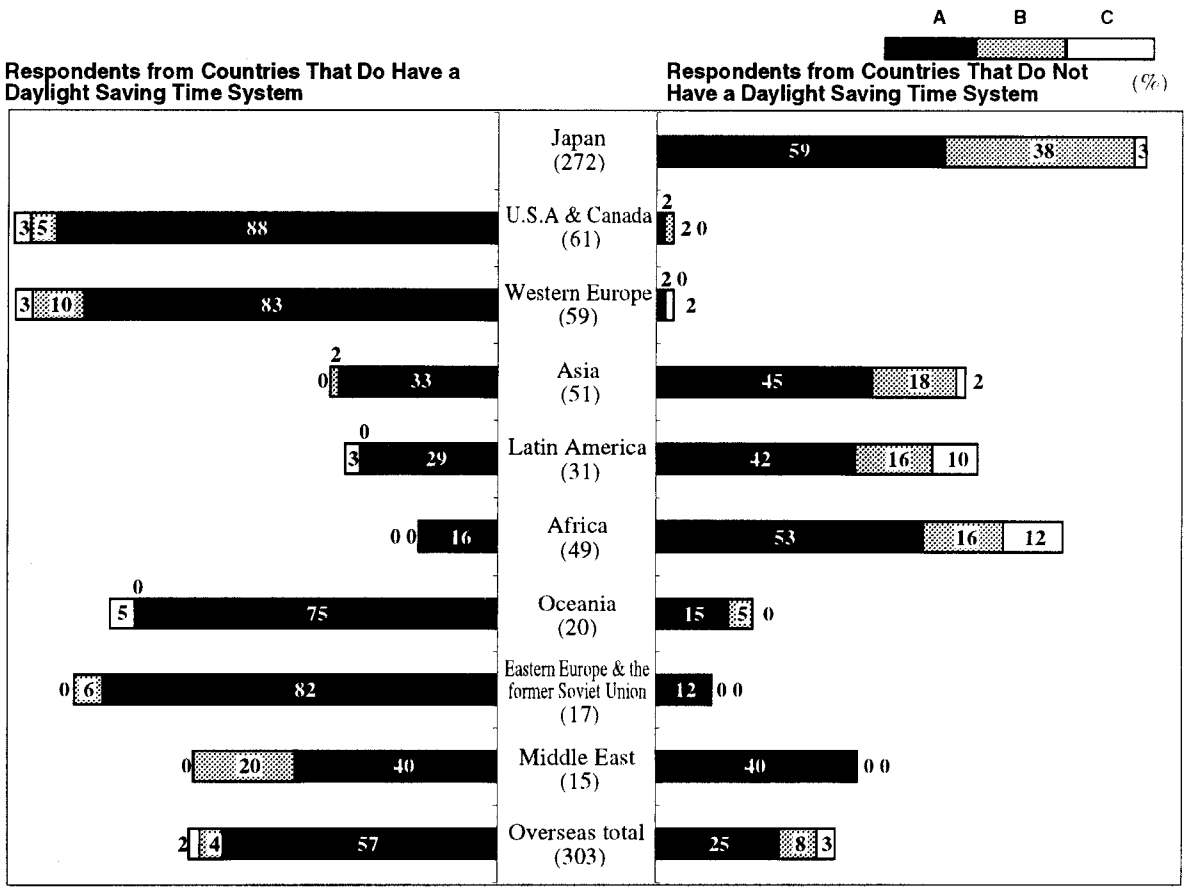
- The most often chosen reason was to encourage energy conservation at businesses and households, particularly by respondents from Western Europe and the United States & Canada.
- The most commonly chosen reason by respondents from Eastern Europe & the former Soviet Union was that a carbon tax is a way to educate the public about conserving energy.
- The most commonly chosen reason by respondents from Japan was promoting strategies that combat global warming, followed by encouraging energy conservation at businesses and households and educating the public about energy conservation.

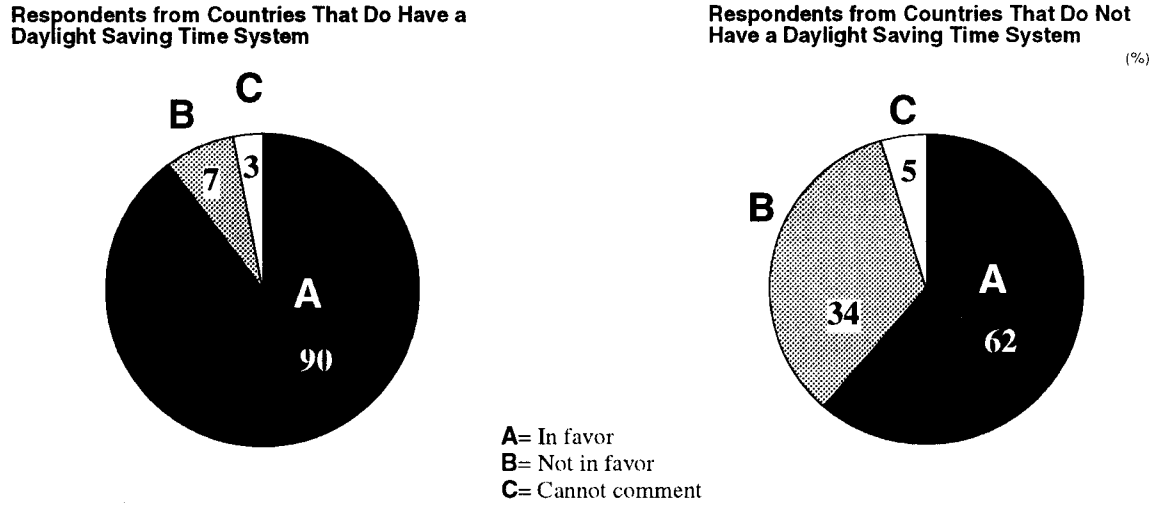
Reasons for opposing a carbon tax

- Only about a quarter of all respondents were opposed to introducing a carbon tax. Among these respondents, the most commonly chosen reason was because the benefits of such a tax are uncertain, followed by an increased burden on consumers and production shifts causing increased carbon dioxide emissions in developing nations.
- In particular, respondents from Japan felt that a carbon tax would increase the burden on consumers.

5. THE ADOPTION OF A DAYLIGHT SAVING TIME SYSTEM

Question 5: Approximately 70 countries in Europe and around the world have adopted a daylight saving time system. Does your country have daylight saving time? Are you in favor of such a system? If yes, please answer A below. If no, please answer B below.





Current adoption of daylight saving time

- More than half of respondents not from Japan or developing countries have experienced daylight saving time, with about 63% of them from countries that currently have a daylight saving time system.

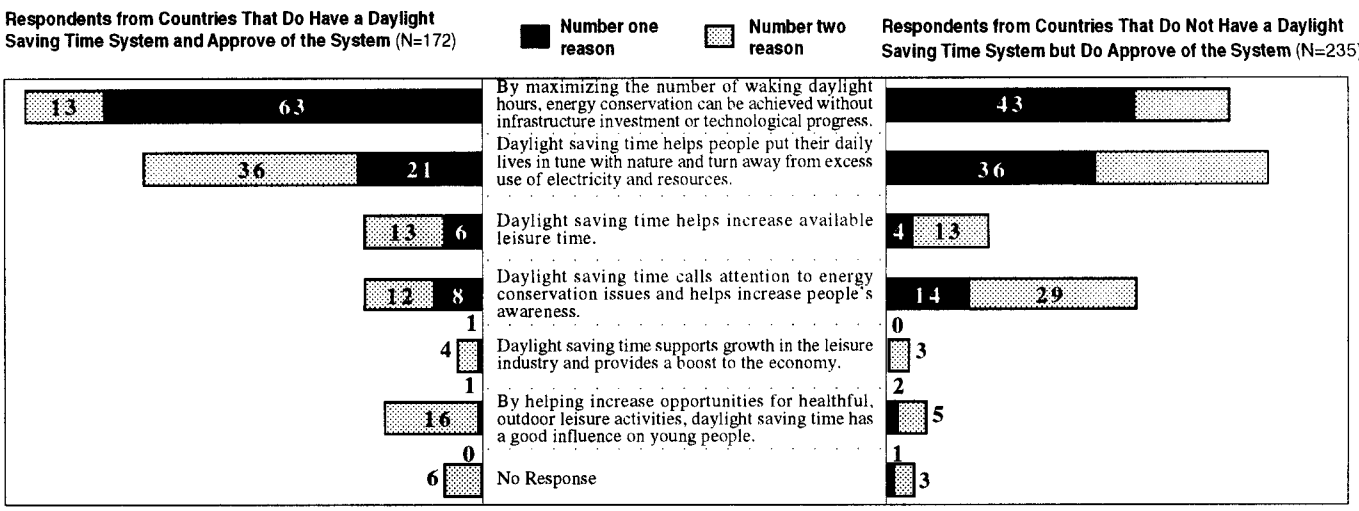
Support for the daylight saving time system

- For regions where daylight saving time has been adopted, 90% of respondents are in favor of the system. For regions where daylight saving time has not been adopted, 62% of respondents are in favor of the system.
- In Japan, 59% of respondents are in favor of daylight saving time; although the majority, this is still the lowest percentage of all regions surveyed.

Reasons for Approval of Daylight Saving Time System

*N=number of responses

(%)

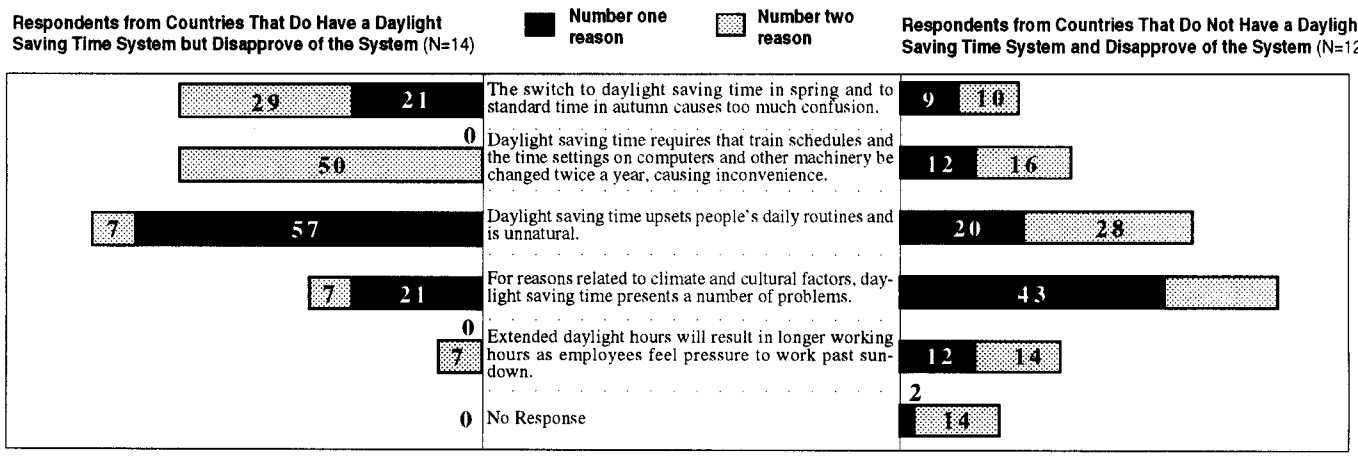


- For respondents from regions where daylight saving time has been adopted, the number one reason why they supported the system was the achievement of energy conservation without infrastructure investment or technological progress and the number two reason was that putting daily lives in tune with nature enables people to turn away from excess use of resources. The number one and two responses for respondents from regions where daylight saving time has not been adopted were the reverse order of these two.

Reasons for Disapproval of Daylight Saving Time System

*N=number of responses

(%)



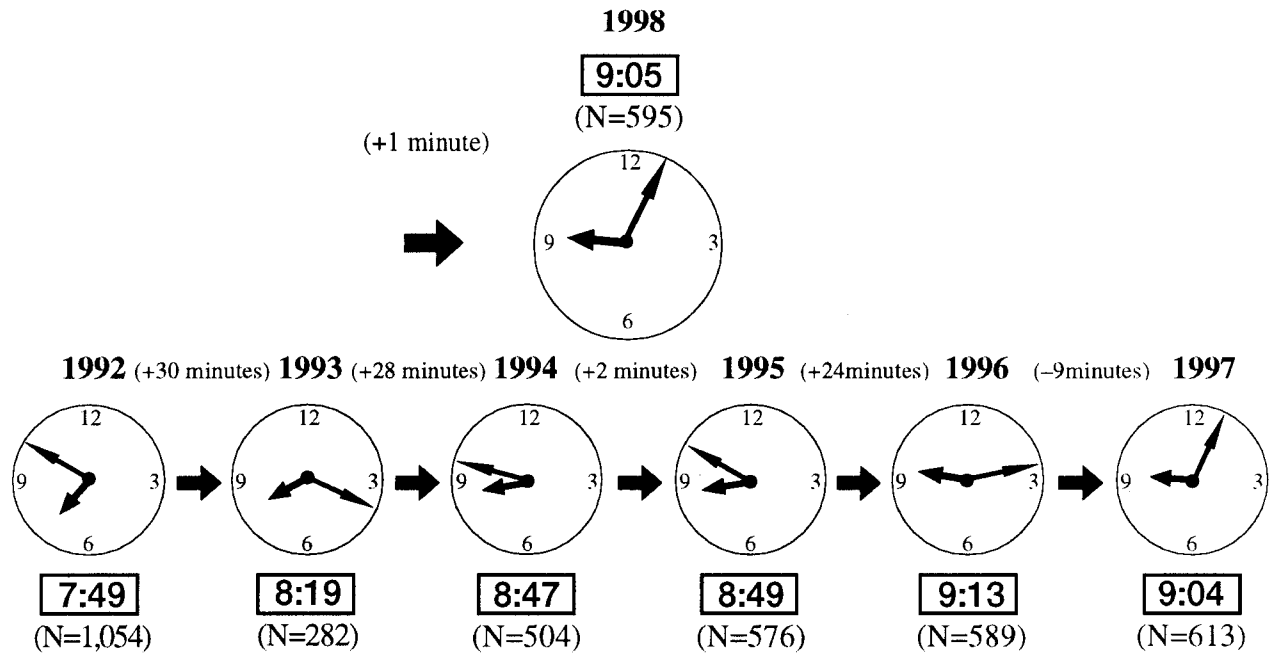
Note: The sample size is small so these figures are for reference only.

- Respondents from regions where daylight saving time has been adopted who are against daylight saving time were a small minority, but the reason they cited most often was that it upsets people's daily routines and is unnatural.
- The number one reason cited by respondents who are against daylight saving time from regions where it has not been adopted was that daylight saving time is problematic for reasons related to climate and cultural factors, followed by the number two reason that it upsets people's daily routines and is unnatural.
- The number one reason cited by Japanese respondents who are against daylight saving time was climate and cultural factors, followed by the opinion that daylight saving time upsets people's daily routines and is unnatural.

6. HUMANITY IN CRISIS

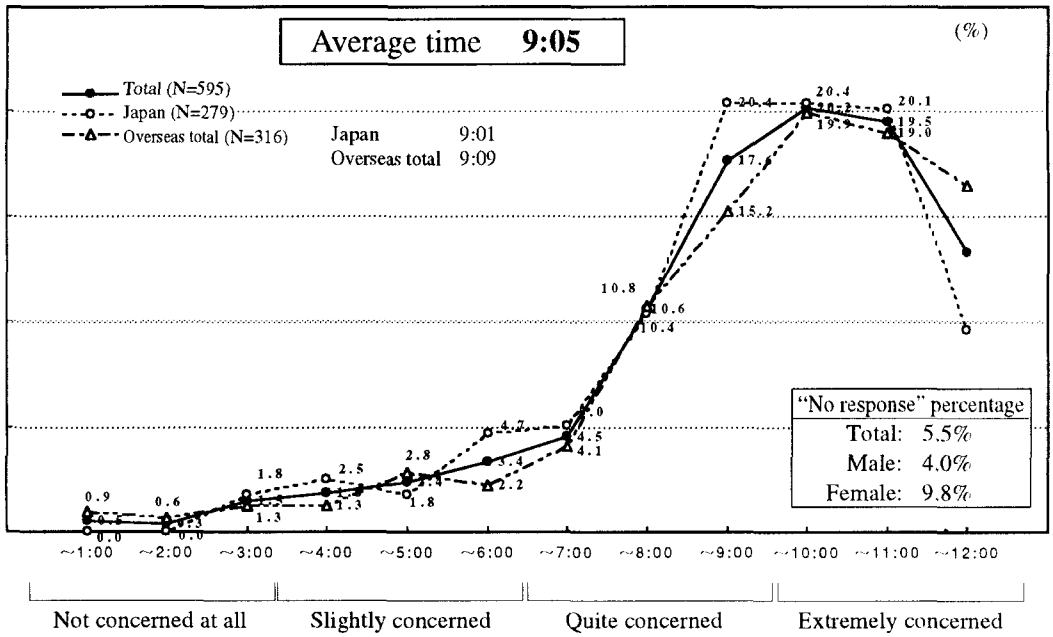
Question 6: Indicate with a time your concern about the survival prospects of humankind in light of the deterioration of the environment, taking into consideration the times and associated concern levels shown on the clock below.

Concern about the Survival Prospects of Humankind



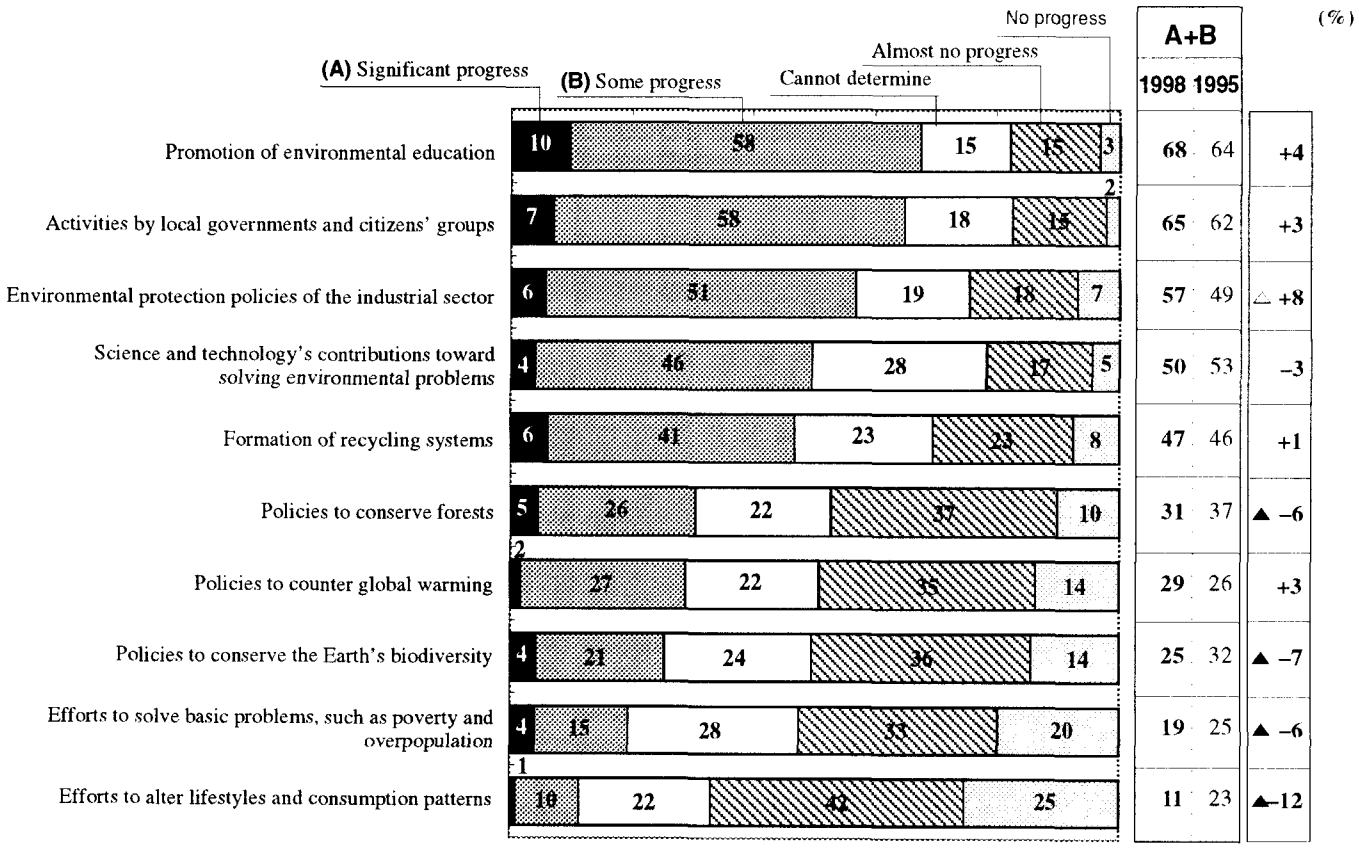
	Number of respondents	Changes in time from year to year				Changes in average time by region	
		'95	'97	→	'98	1995 → 1998	1997 → 1998
Total	595	**8:49**	**9:04**	→	**9:05**	**16**	**1**
Japan	279	**8:08**	**8:42**	→	**9:01**	**53**	**19**
United States & Canada	62	**8:52**	**9:09**	→	**8:40**	**–12**	**–29**
Western Europe	60	**9:02**	**9:53**	→	**9:37**	**35**	**–16**
Asia	54	**9:41**	**9:25**	→	**8:59**	**–42**	**–26**
Latin America	33	**9:23**	**9:26**	→	**9:04**	**–19**	**–22**
Africa	51	**9:33**	**9:15**	→	**9:08**	**–25**	**–7**
Oceania	21	**9:44**	**8:52**	→	**9:34**	**–10**	**42**
Eastern Europe & the former Soviet Union	18	**9:29**	**9:37**	→	**9:44**	**15**	**7**
Middle East	15	**9:09**	**9:33**	→	**8:47**	**–22**	**–46**
Overseas total	316	**9:22**	**9:27**	→	**9:09**	**–13**	**–18**
Male	475	**8:46**	**8:57**	→	**9:01**	**15**	**4**
Female	109	**8:57**	**9:30**	→	**9:25**	**28**	**–5**

- The overall average time response was 9:05, the third year in a row to exceed 9:00 and register within the range of extreme concern.
- Overseas response times were 18 minutes earlier overall, for an average time of 9:09.
- The average time for respondents from Japan entered the range of extreme concern with 9:01 for the first time and was only eight minutes earlier than the average non-Japanese response. This compares with an average time of 8:08 for Japan three years ago, which stood in sharp contrast to the overseas average of 9:22.
- Particularly strong concern was registered by respondents from Western Europe, Eastern Europe & the former Soviet Union, and Oceania.
- The average time reported for women was later than that for men.



7. PROGRESS ON ENVIRONMENTAL ISSUES SINCE THE EARTH SUMMIT

Question 7: Since the Earth Summit was held in Rio de Janeiro in June 1992, to what extent has progress been achieved in the areas described 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*.



Notes: In cases where no answer has been indicated by a respondent, a response of "Cannot determine" has been recorded.

Responses by Region

(%)	C	Japan 1998 [279]	Japan 1995 [248]	United States & Canada 1998 [62]	United States & Canada 1995 [25]	Western Europe 1998 [60]	Western Europe 1995 [79]	Asia 1998 [54]	Asia 1995 [62]	Latin America 1998 [33]	Latin America 1995 [48]	Africa 1998 [51]	Africa 1995 [62]	Oceania 1998 [21]	Oceania 1995 [22]	Eastern Europe & the former Soviet Union 1998 [18]	Eastern Europe & the former Soviet Union 1995 [14]	Middle East 1998 [15]	Middle East 1995 [16]	Overseas total 1998 [316]	Overseas total 1995 [328]	C
Promotion of environmental education	+7	△ 56	49	76	72	△ 77	56	▲ 78	90	▲ 76	85	76	77	△ 90	77	△ 83	57	△ 87	81	78	75	+3
Activities by local governments and citizens' groups	+6	△ 60	54	68	68	△ 73	67	70	69	64	67	67	65	86	82	△ 72	57	▲ 53	81	69	68	+1
Environmental protection policies of the industrial sector	+6	△ 61	55	▲ 55	60	△ 63	51	△ 57	47	△ 36	31	△ 47	31	△ 57	36	▲ 44	64	▲ 47	81	△ 53	45	+8
Science and technology's contributions toward solving environmental problems	−9	▲ 48	57	△ 73	64	62	58	▲ 41	50	39	42	▲ 29	37	△ 71	50	▲ 44	57	53	50	52	50	+2
Formation of recycling systems	0	45	45	△ 81	68	▲ 65	71	▲ 35	40	▲ 18	31	△ 27	21	△ 76	59	▲ 22	29	▲ 33	50	48	46	+2
Policies to conserve forests	−9	▲ 10	19	▲ 37	52	△ 45	33	54	58	▲ 39	48	△ 73	63	△ 71	55	▲ 33	50	▲ 27	56	49	50	−1
Policies to counter global warming	+2	20	18	▲ 34	60	△ 48	33	31	29	27	25	△ 41	27	△ 43	36	33	29	20	19	△ 36	31	+5
Policies to conserve the Earth's biodiversity	−3	8	11	▲ 35	40	40	38	▲ 39	47	▲ 36	56	55	53	▲ 38	68	△ 56	50	▲ 20	44	▲ 41	48	−7
Efforts to solve basic problems, such as poverty and overpopulation	−7	▲ 8	15	▲ 10	20	▲ 8	17	54	52	△ 36	29	△ 59	45	▲ 14	41	▲ 17	21	△ 33	19	29	33	−4
Efforts to alter lifestyles and consumption patterns	−15	▲ 5	20	▲ 16	48	▲ 10	35	28	26	12	10	△ 22	15	▲ 10	36	11	7	20	19	▲ 17	25	−8

Notes: A white triangle indicates where results between 1995 and 1998 increased by five or more percentage points.
A black triangle indicates where results between 1995 and 1998 decreased by five or more percentage points.
C=Percentage–point difference between 1998 and 1995 results.

This year, respondents were asked to evaluate 10 items. For those items that respondents judged to have shown significant progress or some progress, we have compared data with three years ago.

- Items for which progress was more highly evaluated in 1998 were environmental education, activities by local governments and citizens' groups, and environmental protection policies of the industrial sector. Compared with three years ago, the evaluation of progress in environmental protection policies of the industrial sector was up eight percentage points.
- Items for which progress was evaluated particularly harshly were efforts to alter lifestyles, efforts to solve problems such as poverty and overpopulation, and policies to conserve the Earth's diversity. Compared with three years ago, the percentage of respondents citing "significant progress" or "some progress" for these items declined by six percentage points or more. In particular, progress in efforts to alter lifestyles was down 12 percentage points. Progress in policies to conserve forests also declined by six percentage points.
- Respondents for Japan reported less progress in 1998 than in 1995 in the areas of lifestyle changes, science and technology's contributions, policies to conserve forests, efforts to solve poverty and overpopulation, and policies to conserve biodiversity, among others.
- Respondents from Africa, Latin America and other developing regions tended to favorably evaluate progress in efforts to solve problems such as poverty and overpopulation. However, responses from Japan and other industrialized regions did not indicate progress. The reverse was true for formation of recycling systems and science and technology's contributions, which were highly evaluated by industrialized regions and not so by developing regions.

IV. Comments from Respondents

This section contains a selection of respondents' comments, as 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.

It seems that there has been too much talk about the state of the global environment, and too little concerted political will to effect changes to the current global economic system. Governments and international organizations have recognized the issues contributing to environmental degradation but are hesitant to implement urgently needed, permanent, real solutions. I think that the concerned officials are afraid to commit to solutions because the repercussions of such solutions may force them to alter their comfortable lifestyles.
Emmanuel C. Talag, Department of Energy, PHILIPPINES 004

There should be a study/survey relating to the financial crisis/economic permanence in Asia and the environment situations in those countries. In addition, the survey should gather information regarding the policies that Asian countries adopt during periods of economic downturn.
Anupit Supnithadanaporn, National Economic and Social Development Board, THAILAND, 037

The move to rid the world/environment of noxious pollutants, greenhouse gases, etc. is too slow. The Summit on Environment, etc., should put in place workable policies to save our globe and environment.
Prince Avortri, Council for Scientific and Industrial Research, GHANA 105

World leaders need to be sensitized to "see environmental problems. The comfort that surrounds them while in office blinds them to the problems. University graduates from forestry or environment facilities should be employed by central governments.
Yucabeth Origondo, Kogola Women Group, KENYA 113

I am glad that you have concentrated this year on the outcome of COP3. We now have a new Ministry of the Environment and a Minister (Mrs. Nadia Makram Ebeid), as well as a new law. The Minister is strict in applying the law and makes weekly visits to factories to inspect their performance and is serious about the implementation of the law.
Dr. Samir I. Ghabbour, Cairo University, EGYPT 220

Environmental problems like global warming are part of global development issues. Thus, bargaining among nations to redress equity concerns needs to take place at the same time that rapid population growth, political corruption and inefficient management and technology are addressed. It is imperative that developed countries provide resources—efficiently accomplished via a carbon tax—and technological transfers to less developed countries to encourage leapfrogging of technology (e.g. from coal to combined cycle gas power plants or internal combustion engines to fuel cell powered cars). The focus of post-Kyoto negotiations should be mechanisms rather than arbitrary and inconsistent targets and timetables.
Stephen H. Schneider, Stanford University, USA 260

Governments are taking a very long time to act effectively. There is very little time left. Better safe than sorry. Prevention is better than cure.
Malakai Sevlidredre, Department of Forestry, FIJI 321

1: We must establish an International Environment Court.
2: We must establish an International Ombudsman.
Josef Tamir, Umbrella Organization, ISRAEL 137

Significant progress has been achieved in environmental legislation and in the environmental protection policies of the water management and agriculture sectors, in protected areas management.
Evaldas Vebra, Ministry of Environment, LITHUANIA 080

For the betterment of humankind and the environment, the consumption pattern of the developed countries should be changed. Otherwise, in the near future they will destroy the remaining natural resources, particularly in Asian developing countries.
Sanowar Hossain, B.POUSH, BANGLADESH 035

It is my opinion that the greatest challenge we are facing as a global society is the gross overconsumption of goods and services in our lifestyles. This is more the case in developed countries. We have to learn to live within our means. This is especially the case now with the ever-increasing population. I also believe that any change in this direction is at least two generations away! But it is up to us, at present, to prepare the next generations to make, and live comfortably with, these changes.
Marc d'Entremont, Department of Indian and Northern Affairs, CANADA 182

I do not think that humans are in danger from environmental change, but civilization is in great danger.
J.E. Lovelock, U.K. 050

Environmental problems can be solved only if people all over the world are prepared to change their lifestyles from consumption-oriented, to use-oriented. High moral and ethical values are needed for this. Developed nations and "successful" individuals lack these values.
K.M. Unnikrishnan Nambeesan, Society for the Protection of Environment (KERALA),INDIA 204

While regulatory and economic instruments have, and will continue to, support improvements in environmental performance, these must be supported by efforts to raise environmental literacy and by tools that can harness the forces of the marketplace. The "push and pull" of the marketplace, when combined with environmental awareness and education, can be a powerful means of changing the environmental behavior of consumers and producers and can achieve significant reductions in the burden we all place on the environment. The key to such an approach is the availability of credible, comprehensive and easily understood information about the environmental performance of goods and services and the organizations that provide these.
Patrice LeBlanc, Terra Choice Environmental Services Inc., CANADA 249

Talking about environmental problems is still the fashion in Sri Lanka. No environmental considerations are actually being applied at all in the development process. EIA process is just another document and it wastes money and effects no improvement in the environmental situation.
Hemantha Withanage, Environmental Foundation Ltd., SRI LANKA 280

Indigenous people in the remotest areas speak of the changing climate and are afraid. We should be listening to their knowledge and sensing our own depth of fear. Then we may know it is time to change—after all the deserts of India and the streets of Sydney are party to the same atmosphere!
Carole Douglas, Greenline Group PTU LTD., NEW ZEALAND 313

It is getting nearly too late. If we don't start addressing the "environmental deficit" soon, we will go bankrupt. People must stop feeding like political animals at Nature's trough. Economic growth needs to be seen for what it really is: cancer! Economic expansion is not sustainable. Neither is population growth. We need to seek maturity, rather than a continued adolescence.
Dave Dougherty, Consulting and Audit Canada, CANADA 152

With Chinese economies developing at a high speed, the natural conditions are getting worse. Poverty and overpopulation are the basic reasons for natural conditions getting worse. For these, Chinese development has achieved some progress.
Zhang, XiaoCang, The Bureau of the 'Three North' Protection Forest System Construction Ministry, CHINA 282

In my opinion, the principal factor that must be controlled in the long-term future is NOT greenhouse gas emissions, but the growth of the world population. Without a strong birth-control program worldwide, all actions concerning emission control will become monumentally expensive, but utterly useless, exercises.
Juan G. Roederer, University of Alaska, U.S.A .013

For the developing countries, environmental issues cannot be divorced from those of poverty and population; for the industrialized countries, it is a matter of money and politics. In the final analysis, the solutions lie in advancing the course of science and technology.
Moses Mengu, World Association of Industrial and Technological Research Organizations, DENMARK 042

The root of all our environmental problems is the demographic crisis, causing all the other crises (chemical, economical, etc.). Master demography and do it very quickly—if not, NO solution will be efficient.
N. Petit Maire, CNRS, FRANCE 112

I feel very strongly that "overpopulation" in itself is NOT detrimental to the environment. After all, the human being is the most important natural resource in a developing country such as mine—Kenya.
Krispin G.O. Wafula, Kenya Energy and Environment Organizations, KENYA 118

Developed countries should set an example and show concrete results from the reduction of the greenhouse effect.
Prof. Flor Lacanilao, University of the Philippines, PHILIPPINES 067

It is poorly realized that the bulk of GHG from territories under national jurisdiction is produced by microbial decomposition. For Russia about 10% of CO_2 is produced by the industry and approximately 4.4GtC/yr by soil respiration. For CH_4 and N_2O balance is still more in favor of bacteria. For countries in warmer climates, decomposition sources should be much stronger. Attention should be paid to reservoirs with long carbon residence time.
Zavarzin Georgiy Alexandrovich, Russian Academy of Sciences, RUSSIA 211

Emissions trading should be discouraged. Assistance toward the development of sustainable, environmentally friendly technologies acceptable culturally to developing countries should be given in lieu of payment for emission transfer.
Mrs. Jastandrinig, Soroptimist International Great Britain & Ireland, U.K. 079

Developed countries must stop the dumping of technologies and equipment in developing countries (equipment and materials which are not carbon dioxide-free and refrigerator gases). Currently developing countries are dumping grounds for fridges/freezers and very old vehicles.
Mauambeta, D.D.C., Wildlife Society of Malawi, MALAWI 093

Recycling is a problem in developing countries, so garbage and waste are very polluting. Land-use changes (due to drought) and deforestation (for charcoal) are the major problems in many Sahelian developing countries.
Cheikh Toure, Direction de la Meteorologie Nationale, SENEGAL 190

The management of industrial and domestic waste should be taken more seriously by political authorities to avoid or minimize the destruction of the environment and reduce curative health costs.
Andrews Quashie, Institute of Industrial Research, GHANA 237

1. Domestic garbage should be disposed of properly because most of the developed countries are not adopting the hygienic regulations.
2. Sewage water should be disposed of in a proper way, keeping the sea and the oceans clean.
3. Shipping pollution should be strictly restricted.
Dr. Yahya A. Al-Nabulsi, King Faisal University, SAUDI ARABIA 163

Vietnam, our country, has many environmental problems. I am especially interested in water pollution. The polluted water affects our health, soil, agriculture—so our country is implementing a lot of work to solve these problems.
Nguyen Thien Phuong, National Environment Agency, VIETNAM 189

There has been quite some progress on environmental education/awareness and thus there is a promising future, though it is constrained by funding, especially in developing countries.
Dr. Violet Kajubiri Froelich, Wildlife Clubs of Uganda, UGANDA 146

Carbon tax is used in my country for all kinds of non-environment-related "purposes" and to a lesser extent for promoting environmental protection.
Christos Zerefos, Aristotle University of Thessaloniki, GREECE 222

The central problem is that we still have taxation and subsidy systems that provide insufficient incentives to act environmentally friendly. You still have to be an idealist. But most people need economic incentives.
Jurgen Maier, German NGO Forum Environment and Development, GERMANY 131

I feel a lack of opportunity to comment on problems other than global warming and energy. My own current concern is about chemicals (estrogen-mimics) in the environment affecting the reproductive processes of all animals (including humans) everywhere.
Sidney J. Holt, U.K. 121

The main environmental problem in my country is "desertification," which is a great scourge. Indeed, the origins of this scourge are natural (climate changing) and anthropic (agriculture, breeding, etc.). However, some efforts are being made by the government and several local groups to restore ecological stability.
Baulmbaye Ngaraud, Ministere du Plan et de l'Amenagement du Territoire, TCHAD 181

Desertification is progressing southward at an alarming rate in Nigeria. There is need for economically developed countries to assist Nigeria and other countries suffering from the same phenomenon by supporting the Convention to Combat Desertification.
Dr. S.A. Adejuwon, Federal Environmental Protection Agency (FEPA), NIGERIA 224

Nowadays, many people are aware that the protection of the forests is a good means to conserve our environment. Nevertheless, it's quite impossible to save the forests as they are the unique source of energy for populations.
Badjagou. O. Pascal, Association Orukutuku, BENIN 191

Deforestation is one of the greatest environmental hazards. In Bamako, Mali, over 90 people have died as of result of excessive heat and high temperatures (45°C). The same thing happened in Njamena, ChD Republic, where similar numbers died during the April of 1998.
So, we are calling out to governments and concerned institutions to look into helping with population transfer to better areas, and the planting of enough trees in affected areas. Also, help is needed with the development of new systems that will suit the natural lifestyles of the transferred population.
Diallo Abdoulaye Sadio, Volontaires Guineens Pour L'environment "Mission Verte," GUINEA 242

Economic factors are still given top consideration in the opinions of industrial, economical and political circles, as well as by bureaucrats, economists and sociologists. Although there is a need to deemphasize consumption through macroeconomic measures to implement environmentally sound policies, these people are still pushing for expanding domestic demand under the auspices of improving the economy. In other words, they are pushing for further consumption. What is necessary is a social and economic structure that can function normally under a reduced consumption scenario.
Hiroaki Tsutsumi, Associate Professor, Faculty of Human Life Sciences, Prefectural University of Kumamoto, JAPAN 010J

It is likely to take a lot of effort and a substantial period of time to change Japan's bureaucratic methods. This is an opportune time for local governments to join together to implement policies on a prefectural level. I think that if the prefectural governments join together to effect change on a regional level, this may in turn help shape new national policies.
M, Iwate Prefectural Office, JAPAN 052J

When politicians, corporate managers and the media talk about curing the recession, they chorus in unison about the old method of expanding manufacturing and consumption. The current situation calls for a thorough debate regarding the establishment of an environmentally sustainable social system. Otherwise, it just shows that Japan still regards environmental issues as minor side issues.
Masaharu Yagishita, Manager, Planning Department, Environmental Division, Environment Agency, JAPAN 072J

I think that the current situation calls for debates at the national level on how to harness the maximum potential of the democratic political system to help solve environmental issues. Although individual efforts such as changes in lifestyles are to be commended, it is faster and more effective to create a social and economic system that addresses these problems.
Soki Oda, President, Worldwatch Japan, JAPAN 135J

I would like to see the economy based on policies that take consideration of environmental conservation issues rather than policies promoting wasteful production and consumption that burden the global environment. It is necessary to create a social system in which people are able to live happily with low or negative growth rates of resources and energy.
Seiji Ippoi, Water Quality Bureau, Environment Agency, JAPAN 215J

The factors that determine the burden of the global environment are 1) amount of burden per person (determined by living standards and technological factors) multiplied by 2) population size. At present, various policies regarding 1 are being implemented. However I am afraid of what will happen if policies regarding 1 fail and therefore put pressure on factor 2. Improvement of factors in 1 should be promoted by people of all nations in order to avoid an Orwellian 1984-type scenario, with population control and management at its center.
Yasuhiro Shimizu, Environmental Information Systems Division, Environmental Agency, JAPAN 022J

In Japan, people tend to stereotype environmental issues within the area of natural science-oriented topics such as global warming, the ozone layer or tropical forests. I think that the media does not report enough on sociological issues such as the industrial framework and employment. I also think that Asian nations and other developing countries have a different stance towards global environmental problems than the United States and Europe, but not enough research has been conducted in this area.
Genichi Ando, Environmental Science Corporation, JAPAN 041J

Since the Earth Summit in 1992, I think that more individuals, organizations and corporations have become aware of environmental issues, and some individuals have made efforts to participate in developing new energy sources and ecologically sound products, as well as participate in environmentally friendly activities such as reforestation and waste recycling. However, at COP3, we also saw nations barter over emissions levels, using environmental issues for political and economical purposes rather than treating them as important issues in themselves. Air, water and other types of pollution already affect the human body, so it is no longer possible to go on just discussing greenhouse effects. Substances that disturb internal biological processes are not only an issue for other living creatures. Human beings may be destroying themselves.
Michiko Imai, Le Verseau Inc., JAPAN 197J

I think the worldwide spread of chemical substances that affect hormonal activities is a new threat. Although since the 19th century scientists have been warning about the consequences of polluting the oceans and calling for regulations to limit such environmental destruction, it was not until the latter half of this century that a treaty containing such regulations came to pass. At that point, pollutants and overfishing had already gone too far. To prevent similar environmental threats, I think that it is necessary to establish international regulations that make manufacturers of environmentally dangerous materials liable for their products even before the product is proven to be problematic.
Naoko Tojo, Planning and Research Department, Global Environmental Forum, JAPAN 165J

Recently, dioxins and environmental hormones have become the center of attention, and I feel that there has been a sudden rise in people's awareness of environmental problems. In a few years, around the millennium, Japan will probably shift to a social system that exists in harmony with the environment. Who will take the first step in that direction? I think that will be a time of competition for policy makers.
F, Toyota City Municipal Office, JAPAN 238J

If the People's Republic of China, with a population of 1.2 billion, should continue rapid economic growth under the auspices of a free economy, there will be a major impact on the global environment in terms of carbon dioxide emissions, acid rain, and other factors. Japan should offer as much technological support as possible in order to reduce this burden on the environment.
M, Osaka City Municipal Office, JAPAN 133J

Japan's recession has entered a deflation spiral stage. Although prices have come down, products aren't selling. Rethinking our lifestyle of overconsumption and mass disposal is necessary to solve global environmental problems, but if this leads to the obstruction of economic activity, the cure may be worse than the sickness. If it is human nature to strive for a wealthier and more efficient existence, then it will be difficult to expect too much from human beings. I think that a scientific and technological approach is very important. More emphasis should be put on advancing technology while also promoting changes in consumer lifestyles. I also think that it is useless to promote energy conservation by just shouting about it. We need to make people feel that energy conservation is fashionable and clearly shown them the benefits of such activities.
Takako Niwa, Lifestyle Information Department, Bunka Hoso, JAPAN 260J

Nowadays, most people young and old gain their information from the television. However, television promotes material consumption while hardly ever reporting on what happens to products after they are discarded. As a result, even though a small number of people may be striving for improvement of the environment and the resolution of global warming and other issues, this will hardly change the understanding of the majority of the people. Corporate sponsors should be more active in making attractive television commercials promoting environmental protection and product recycling. It is necessary to create an environment where people can have fun together gathering ideas for recycling products and other activities.
Minoru Yoneda, CEO, Global Environment Improvement Systems, JAPAN 025J

Although my job entails working for environmental protection, it is difficult to sacrifice convenience to change my daily lifestyle. I think that lifestyles can only change if one has the time to make it happen. I would like to start by using fewer disposable products. While it is important to take action on an individual level, I think that

corporations should also have training sessions for their employees to help raise awareness of environmental conservation issues.
Yoko Fujita, Conservation International, JAPAN 202J

Have you ever seen magazines for high school students? Many are catalogue magazines pushing for material consumption. I think middle and high school students need appropriate education in social issues for adequate knowledge and maturity. In addition, more people need to be involved in environmental education for adults to understand this issue properly. More professionals are needed in this area.
Satoshi Onodera, Snow Country Culture Research Institute, Sawauchi Town Hall, JAPAN 109J

Shouldn't it be possible to buy individual pencils and crayons as well as have textbooks and notebooks that are made out of recycled paper? This is also important from an educational standpoint. In addition, there are too many types of canned drinks. Isn't it possible to set several sizes of cans and have corporations participate in the system as soon as they are ready? The Japanese convoy system should be useful in a situation like this.
Yukimasa Kunimi, Sales Department, Learning Masters, JAPAN 245J

I feel that COP3 had some positive effects. Nevertheless, there were many points left unclear, such as the carbon dioxide absorption effects of forests. Current measurement methods for these effects are unclear. I think that it is necessary to clarify these effects as soon as possible. Also, regulations for trading carbon dioxide emissions permits should be determined on an international level, in the near future.
Yozo Takemura, The Energy Conservation Center, JAPAN 034J

The forest fires of Indonesia and the Amazon, which began in late 1997 and continue today, are a major tragedy. Because an international meeting was held in Japan, issues such as global warming were reported by the media as top priority problems. However, although issues involving forests (throughout the world, not just tropical forests) are a more urgent problem, the media has not reported on them enough. The effects of overconsumption by industrialized nations of plywood, building materials and paper are large. It is necessary to resolve north-south issues in the very near future by mustering strong political willpower.
Masashi Ogura, Tropical Rainforest Action Network, JAPAN 017J

One of the reasons why recycled and ecologically friendly products are not used more is because of the lack of financial incentives. Although there are many taxation issues that must be cleared, I think it is time for economic incentives to be implemented.
Chikako Mizutani, Environment Protection Division, Environmental Department, Aichi Prefecture, JAPAN 185J

In regards to question 4, I feel that it is better to have an environmental tax that covers all aspects of energy production, including nuclear energy, rather than just establishing a carbon tax. If an environmental tax is implemented, I hope the extent of tax revenues and amount used for environmental preservation is made clear.
M, Himeji Industrial University, JAPAN 030J

Although the introduction of a carbon tax would probably be difficult because of its relation to other taxes, the issue should at least be raised in the Diet. The same goes for the implementation of daylight saving time.
Sho Hirose, Environmental Health Division, Environment Agency, JAPAN 252J

Ecological problems are egotistical problems.
Nobuyoshi Fuguno, Science and Technology Research Center, Tokai University, JAPAN 138J

V. Questionnaire as Distributed to Respondents

1-1. At the December 1997 COP3 meeting, government representatives from 168 countries and regions gathered to discuss reducing emissions of global greenhouse gases. The outcome of COP3 was the adoption of binding targets for emissions reductions. Specifically, in the five years between 2008 and 2112, economically advanced countries are to reduce their total emissions of greenhouse gases to below 1990 levels by 5.2%.

A) How do you feel about the decision to set the commitment period between 2008 and 2112? Please tick one.

☐(1) Too soon ☐(2) Appropriate ☐(3) Too late ☐(4) Cannot comment

B) How do you feel about adopting the "basket approach" to reducing greenhouse gas emissions? This approach involves translating the global warming effect of carbon dioxide, methane, and nitrous oxide, in addition to three types of fluorocarbon gases, into the warming effect of carbon dioxide and setting targets for all six gases at once. Please tick the appropriate response.

☐(1) I agree with this method.
☐(2) I think the method should be used only for carbon dioxide, methane and nitrous oxide.
☐(3) Cannot comment

C) The following chart shows targets for emissions reductions or permissible increases in emissions for various countries and regions. For each area, please circle the item that best describes your opinion of the target.

Area	(Target)				
EU	**(–8%)**	Appropriate	Too lax	Too strict	Cannot comment
U.S.A.	**(–7%)**	Appropriate	Too lax	Too strict	Cannot comment
Canada	**(–6%)**	Appropriate	Too lax	Too strict	Cannot comment
Japan	**(–6%)**	Appropriate	Too lax	Too strict	Cannot comment
Russia	**(0%)**	Appropriate	Target should be a reduction.	Increase should be permitted.	Cannot comment
Australia	**(+8%)**	Appropriate	Too lax	Too strict	Cannot comment
Iceland	**(+10%)**	Appropriate	Too lax	Too strict	Cannot comment

D) Countries have been granted some flexibility in meeting their emissions targets via four methods. These are 1) emissions trading; 2) joint implementation; 3) a clean development mechanism; and 4) the net approach (sinks). In your opinion, up to what percent of a country's emissions target can be permissibly met through these methods? Please tick one of the following answers.

☐(1) 0% (Flexibility provisions should not be allowed.) ☐(2) Up to 10%
☐(3) Up to 20% ☐(4) Up to 40% ☐(5) Up to 70% ☐(6) Up to 100%

1-2. In the future, developing nations' carbon dioxide emissions are expected to surpass those of industrialized countries.

A) What do you think is the most important action that economically advanced countries should take to encourage the active participation of developing nations in reducing greenhouse-gas emissions? Please tick one of the following.

☐(1) The developed countries, which are responsible for the greenhouse effect in the first place, should first show concrete results in reducing emissions and thus set a good example.
☐(2) Economically advanced countries should help developing countries reduce their greenhouse-gas emissions by offering technology and funding free of charge.
☐(3) Economically advanced countries should support environmental initiatives in developing countries by sending personnel to conduct environmental education and providing monetary and other assistance to combat poverty, which is a major factor behind environmental destruction in developing countries.
☐(4) Industrialized countries should support the efforts of developing countries to fight global warming through the promotion of a funding mechanism.
☐(5) Economically advanced countries should accept the plan to reduce their emissions levels below 1990 levels by a uniform 35% by the year 2020, as proposed by the developing countries.

B) When should restrictions on emissions begin in developing countries? Please tick one of the following.

☐(1) 2010–2014 ☐(2) 2015–2019 ☐(3) 2020–2024 ☐(4) 2025–2029 ☐(5) After the year 2030
☐(6) Developing nations should not have to abide by carbon dioxide emissions standards.
☐(7) Cannot comment

1-3. In November 1998, COP4 will be held in Buenos Aires. What do you hope will be COP4's outcome? Please tick two.

☐(1) Stricter emissions targets
☐(2) Establishment of an international monitoring system and a system of sanctions to be enacted when emissions targets are not achieved
☐(3) The setting of a date for the start of emissions restrictions for developing countries
☐(4) The establishment of guidelines for the use of the four flexibility provisions—emissions trading, joint implementation, a clean development mechanism, and the net approach (sinks)
☐(5) More leadership and commitment from economically developed countries on combating global warming

2. What factors do you think are most important for reducing emissions of greenhouse gases in your country? Please choose three and rank them, in order of importance (with "1" being the most important), in the blanks provided below.

1. _____ 2. _____ 3. _____

(1) Changes in the overconsumption lifestyles of ordinary people
(2) Promotion of environmental education
(3) Increased coverage of the global warming problem in the mass media to help rally public support
(4) Changes in mass-production and overconsumption-throwaway–type systems and the promotion of recycling
(5) Shifts to environment-oriented corporations
(6) Protection of forests and establishment of institutions to promote replanting
(7) Development of technologies to help realize energy conservation and environmentally sound products
(8) Development of technology that promotes a switch to recyclable energy resources or those that do not emit carbon dioxide
(9) Strengthening of environmental conservation regulations, including those governing emissions standards
(10) Use of environmental taxes and levies to restrict environmental destruction

3. Before the Industrial Revolution, the concentration of carbon dioxide in the atmosphere was 280 parts per million (ppm). Today, this has risen to 360 ppm. Nuclear power–generated electricity results in far less carbon dioxide emissions than thermal power–generated electricity. How do you feel about the use of nuclear energy as a substitute for fossil fuels? Please tick one of the following.

☐(1) Nuclear power as we know it today is acceptable.
☐(2) Current nuclear technologies should be improved and adopted when they become more safe.
☐(3) Current nuclear technologies should be completely rethought, and research and development should be carried out with the aim of providing enhanced safety and economic feasibility.
☐(4) Improvements in the safety of nuclear power look extremely difficult to achieve, so nuclear power should not be adopted.

4. The carbon tax is a measure aimed at restricting consumption of fossil fuels by taxing electricity, natural gas, gasoline and other energy sources related to the emission of carbon dioxide. Currently, five countries—Denmark, Finland, the Netherlands, Norway and Sweden—have instituted a carbon tax. Do you feel that a carbon tax should be introduced as a means to counter global warming? If yes, then please go to A. If no, then please go to B. In either case, choose two reasons and rank them, in order of importance, in the blanks below.

A. Yes, I support the introduction of a carbon tax. 1. _____ 2. _____

(1) Higher-priced fossil fuels will reduce demand and encourage energy conservation at businesses and households.
(2) A carbon tax will enable us to promote strategies that combat global warming at the least cost.
(3) By instituting a carbon tax, we can raise funds for technological R&D related to global warming.
(4) To achieve the reductions in carbon dioxide emissions targeted at COP3, we must use all available means.
(5) A carbon tax has value as a way to educate the public about conserving energy.

B. No, I do not support the introduction of a carbon tax. 1. _____ 2. _____

(1) The benefits of a carbon tax are uncertain.
(2) The introduction of a carbon tax could cause companies to lose international competitiveness.
(3) A carbon tax will result in higher prices of goods and services and thus increase the burden on consumers.
(4) A carbon tax will increase reliance on nuclear energy, which does not produce carbon dioxide.
(5) If the prices of products made in economically advanced countries are raised by a carbon tax, then the economies of developing countries that import those products will be negatively affected.
(6) Companies will move production to developing nations, where emissions of carbon dioxide will increase.

5. Approximately 70 countries in Europe and around the world have adopted a daylight saving time system. Does your country have daylight saving time? Please tick the appropriate response.

☐(1) Yes ☐(2) No

One of the goals of a daylight saving time system is to save energy. Are you in favor of such a system? If Yes, please answer A below. If No, please answer B below. In either case, choose two reasons and rank them, in order of importance, in the blanks below.

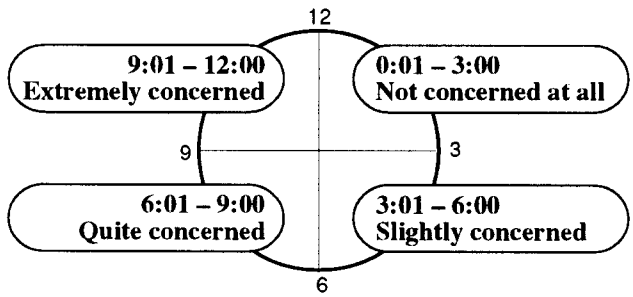
A. Why are you in favor of daylight saving time? 1. _____ 2. _____

(1) By maximizing the number of waking daylight hours, energy conservation can be achieved without infrastructure investment or technological progress.
(2) Daylight saving time helps people put their daily lives in tune with nature and turn away from excess use of electricity and resources.
(3) Daylight saving time helps increase available leisure time.
(4) Daylight saving time calls attention to energy conservation issues and helps increase people's awareness.
(5) Daylight saving time supports growth in the leisure industry and provides a boost to the economy.
(6) By helping increase opportunities for healthful, outdoor leisure activities, daylight saving time has a good influence on young people.

B. Why are you not in favor of daylight saving time? 1. _____ 2. _____

(1) The switch to daylight saving time in spring and to standard time in autumn causes too much confusion.
(2) Daylight saving time requires that train schedules and the time settings on computers and other machinery be changed twice a year, causing inconvenience.
(3) Daylight saving time upsets people's daily routines and is unnatural.
(4) For reasons related to climate and cultural factors, daylight saving time presents a number of problems.
(5) Extended daylight hours will result in longer working hours as employees feel pressure to work past sundown.

6. Indicate with a time your concern about the survival prospects of humankind in light of the deterioration of the environment, taking into consideration the times and associated concern levels shown on the clock below.



Please write your time here.

☐ : ☐

(*Example 10 : 35)

7. Since the Earth Summit was held in Rio de Janeiro in June 1992, to what extent has progress been achieved in the areas described 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) Science and technology's contributions toward solving environmental problems	(a)	(b)	(c)	(d)	(e)
(4) Formation of recycling systems	(a)	(b)	(c)	(d)	(e)
(5) Policies to conserve forests	(a)	(b)	(c)	(d)	(e)
(6) Policies to conserve the Earth's biodiversity	(a)	(b)	(c)	(d)	(e)
(7) Policies to counter global warming	(a)	(b)	(c)	(d)	(e)
(8) Efforts to solve basic problems, such as poverty and overpopulation	(a)	(b)	(c)	(d)	(e)
(9) Efforts to alter lifestyles and consumption patterns	(a)	(b)	(c)	(d)	(e)
(10) Environmental protection policies of the industrial sector	(a)	(b)	(c)	(d)	(e)

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

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