



**Results of the 20th Annual
“Questionnaire on Environmental Problems and the Survival of Humankind”**

REPORT

THE ASAHI GLASS FOUNDATION

September 2011

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Foreword

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

Despite the mounting problems of the global environment, the United Nations Climate Change Conference in recent years (COP15 in Copenhagen, Denmark, and COP16 in Cancún, Mexico) have concluded without an agreement on a "clear accord beyond the Kyoto Protocol" that countries around the world could unite behind. This result has disheartened many. An increasing number of people have begun to not only mistrust the capabilities of the Climate Change Conference (COP) itself but to doubt the possibility of a future global endeavor in which countries move forward in solidarity. Many are also concerned that such dismay and resignation from not seeing improvements and developments towards the future will lead to diminishing interest in environmental problems. Nonetheless, despite in such the opposing wind, the Asahi Glass Foundation hopes to contribute what it can towards the resolution of environmental problems through this questionnaire and other activities to maintain the thread of awareness for the environment.

The questionnaire has reached its 20th year this year. We believe that environmental experts around the world have gone through shifts in perspective and values compared to when the questionnaire first began in 1992. As such, we have renewed the question in the section we have conducted annually about Agenda 21 (environmental conditions of concern) in order to incorporate a clear and modern perspective in observing the global environment. We hope that this leads to an even more precise basis and expression of perspectives upon which respondents can opine about the Environmental Doomsday Clock®.

This year, the questionnaire probed environmental experts around the world about their first-hand understanding of the environment, as well as the causes of environmental changes and strategies to respond to those developments. Lastly, we have incorporated questions that probe experts about the environment from the standpoint of security.

We received 1,000 responses from experts this year, representing a much higher rate of response than in previous years. We extend our most heartfelt gratitude to those who have taken the time out of their busy schedules to complete the questionnaire. In addition, we would like to express our profound appreciation to Professor Akio Morishima, Special Research Advisor of the Institute for Global Environmental Strategies, for continuing to provide invaluable advice at all stages of the project.

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

Asahi Glass Foundation
September 2011

I. Facts about the 20th Annual “Questionnaire on Environmental Problems and the Survival of Humankind”

Response period: Questionnaires were sent out in April 2011 with a return deadline of June 2011.

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

Questionnaires mailed: 7164 (6,209 to overseas and 955 within Japan)

Questionnaires returned: 1,000

Response rate: 14%

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

Region	Number of responses	Percent of total
Developed Regions (Including Asian Four)* ¹	771	77.1
Japan	468	46.8
United States & Canada	129	12.9
Western Europe	80	8.0
Asian Four (South Korea, Hong Kong, Taiwan, and Singapore)	94	9.4
Developing Regions	179	17.9
Rest of Asia (Excluding Japan, Asia Four)	129	12.9
Latin America	26	2.6
Africa	24	2.4
Others* ²	49	4.9
Oceania	17	1.7
Eastern Europe & former Soviet Union	27	2.7
Middle East	5	0.5
(Overseas Total)	(532)	(53.2)
Total	1,000	100.0

Gender		
Male	770	77.0
Female	216	21.6
No response	14	1.4
Total	1,000	100.0

Occupational Affiliation		
National government	52	5.2
Local government	59	5.9
University or research institution	374	37.4
Nongovernmental organization	192	19.2
Corporation	119	11.9
Mass Media	67	6.7
Others	128	12.8
No response	9	0.9
Total	1,000	100.0

Notes: *1 In this report, “Asia” is all of Asia except Japan. Further, South Korea, Hong Kong, Taiwan, and Singapore are classified as the “Asian Four.” Other Asian countries are classified as the “Rest of Asia.”

*2 Japan, United States & Canada, Western Europe, and the Asian Four are classified as “Developed region,” while the remainder of the Rest of Asia, Latin America, and Africa are classified as “Developing region,” and Oceania, Eastern Europe & former Soviet Union, and Middle East are classified as “Others.”

*3 Unless otherwise noted, the questionnaire calculated as 100% the total number of responses received for questions where respondents were only asked to choose one item. For questions with multiple selections, the questionnaire calculated the percentages based on the number of times a valid response was given.

*4 Each question was calculated based on the number of responses to that question and not the number of questionnaires that were returned.

II. Summary of Questionnaire Results

A. Repeat Topics

1. Awareness of the Crisis Facing Human Survival (Question 1)

The Environmental Doomsday Clock

- The average time on the environmental doomsday clock for all respondents retreated by 18 minutes from last year, representing the largest reversal of the time. This is the third consecutive year in which the time retreated since 2008, when the doomsday clock had advanced the most since the inception of the survey.
- The average time for overseas respondents retreated 13 minutes from last year.
- Overall, respondents most frequently cited “climate change” as the main environmental condition of concern upon selecting the time on the doomsday clock. This was followed by “pollution/contamination” and “population” at the same rate. While all respondents indicated the highest level of concern for “climate change,” those in developed regions also cited “population” while their counterparts in developing regions cited “pollution/contamination.” Respondents in Western Europe, Latin America, Africa, Eastern Europe & the former Soviet Union also showed a comparatively high level of concern for “biodiversity.”

B. Main Focus of the Current Year’s Questionnaire

The questionnaire probed respondents about changes such as those in the climate, water resources, and food that they have observed and experienced first-hand, as well as their causes and strategies for addressing those changes. In addition, we focused the questions on the problems of environmental security as it affects society.

The Effects of Climate Change

Experiences with Climate Change

- There were regional differences in the occurrences and strength of phenomena related to climate change, with developed regions tending to be more shielded from the effects of the climate. In particular, in Western Europe only, respondents who indicated they had not experienced climate change-related phenomena comprised a majority for most questions.
- Regarding the “anomalies of torrential rains and flooding, severe storms” and “abnormally low or high temperatures, a majority of respondents in most regions stated they “had experienced” them. In other categories, results showed significant regional differences as to whether respondents had experienced the phenomena, as well as differences in scope.

Increases in Frequency or Scope of Climate-Related Anomalies

- An overwhelming majority of respondents in all regions stated that they were experiencing increased frequency in climate anomalies each year.

Measures to Respond to Climate Change

- Respondents stating that measures to respond to climate change were necessary comprised a majority in most regions. At the same time, a majority of respondents indicated that measures were necessary at an individual level.
- When probed whether it was individuals or governments who should be implementing measures and responses, responses were divided by region.

Reasons for Climate Change

- A large majority of responses pointed to man-made causes behind climate change. Respondents who stated that global warming was caused by natural emissions of CO₂, the effects of water vapors, or attributed the problem to periodic changes in nature comprised a minority in most regions.

The Diminution of Water (Fresh Water) Resources

Experiences with Diminution of Fresh Water Resources

- In most regions around the world, the majority of respondents indicated that they had “no experience” with the diminution of water resources. On the other hand, the majority of respondents in India and Africa provided responses that pointed to an urgent problem with all types of water resources.

Reasons Behind Diminishing Water Supplies

- Respondents who indicated that climate change was causing a diminution of the water supply comprised a majority. In particular, those in developed regions provided this response at a high rate.
- Respondents indicated an understanding of the decrease in water supply being caused by multiple reasons. In most regions, the majority of respondents stated that the decrease in water supply was caused by its increased allocation towards agricultural irrigation, industrial use, and domestic use, as well as deforestation leading to a decline in the geological capacity to retain water.

The Effects of Market Economy-Based Commerce on Water Resources

- Respondents who stated that reducing the consumption of imported agricultural and industrial products and transportation over long distances can alleviate water shortages comprised a majority in most regions. Further, an overwhelming majority of respondents in all regions stated that it was necessary to choose to consume products as locally as possible as a way to reduce the consumption of water abroad.
- The simple perspective that production and payment based on market mechanisms is sufficient is virtually nonexistent. Further, the majority of respondents stated that the correct price reflecting the use of scarce water resources has not been established. A comparable number of respondents stated that the responsibility for scarce water resources should be assigned to the producers of products in the marketplace as those who felt it was the consumers who were accountable.

Food Problems

Experiences with Food Shortages

- Respondents indicating they had “no experience” with shortages of meat, grains, vegetables, and dairy products formed a majority in Western Europe. Meanwhile, the majority of respondents in most other regions stated that they “had experienced” some type of shortages with food or nonessential groceries, revealing regional differences.

Reasons for Food Shortages and Price Increases

- Respondents who pointed to climate aberrations (flooding, droughts, abnormally low temperatures) as the reason behind food shortages formed a majority. At the same time, respondents also indicated a recognition that food shortages were caused by seasonal changes. The majority of respondents also pointed out that food shortages and price increases were an effect of the economic growth and the expansion of the middle class in certain regions, as well as the wasteful lifestyle of wealthy regions where food is discarded without being consumed.
- The opinion that the increase in consumption of grains as feed material for domestic animals had led to food shortages for humans also formed a majority, mainly in developed regions.
- Respondents who stated that the massive speculation in the market for primary products led to increases in the prices of food comprised a majority in all regions.

Measures to Alleviate Food Problems

- Many respondents agreed with expanding arable land and pastures through implementing sustainable land use like the greening of deserts and advancing irrigation technology.
- An overwhelming majority of respondents in all regions agreed with alleviating food problems by increasing marine resources through the protection of ocean organisms by moderating their capture at sustainable levels.
- Respondents indicated a high level of interest in protecting food resources by making modifications in food consumption patterns, particularly among respondents in developed regions.
- In most regions, a comparable number of respondents agreed with developing new food resources as those who disagreed with the measure.

- A majority of respondents in most regions agreed with suppressing population growth as a measure to alleviate food shortages.

Critical Issues of Environmental Security

- In all regions, the majority of respondents indicated that all of the categories of environmental security were “pressing”.
- More than 90% of respondents stated that the environmental security issues of “water shortage,” “food shortage,” and “environmental pollution and contamination” were “pressing,” comprising an overwhelming majority.
- Respondents who stated that the issues of “conflict over resources” and “population growth” were “pressing” reached more than 80%.
- Around 60 - 70% of respondents stated that the remaining issues of “destruction of ecosystems through the acidification of oceans,” “damage from extreme climates,” “rise in sea levels,” “harm to human health,” and “creation of environmental refugees,” were “pressing.”

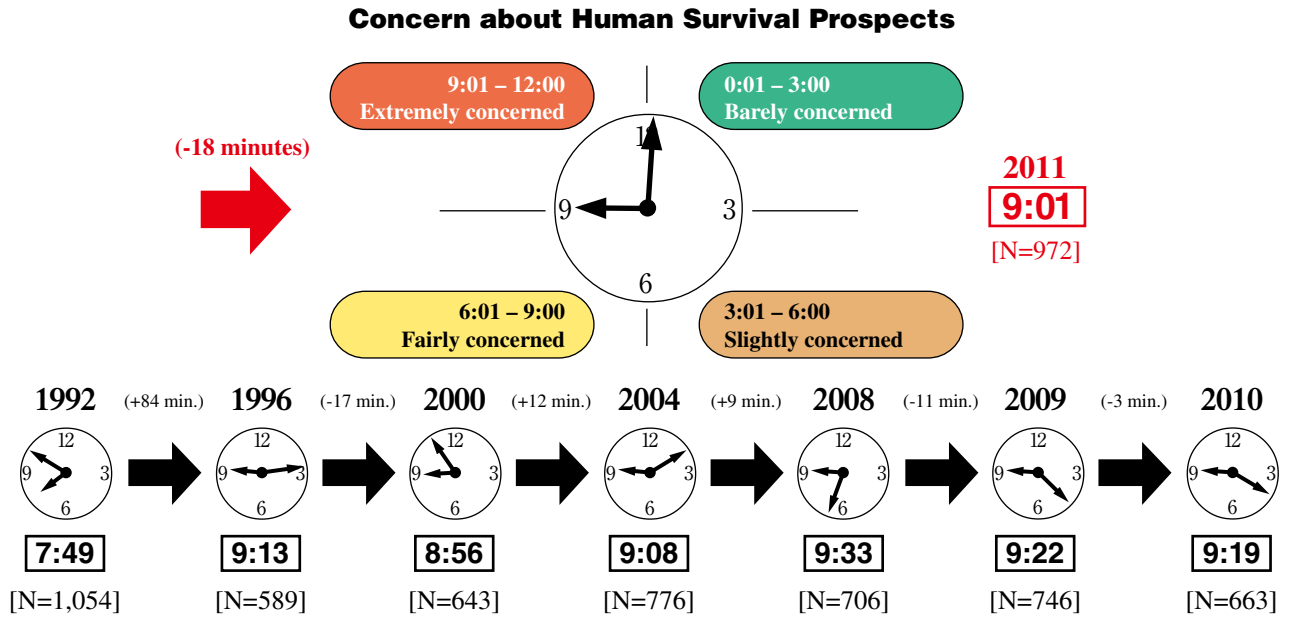
III. Questionnaire Results

A. REPEAT TOPICS

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

1.1 Environmental Doomsday Clock

To what extent do you feel that the current deterioration of the global environment has created a crisis that will affect the survival of the human race? Write a time within the range 0:01 to 12:00 corresponding to the extent of your concern in the boxes below.



Number of respondents (2011)	Changes in time from year to year			Changes in average time by region	
	'01	→	'10 → '11	'01 → '11	'10 → '11
Total [N=972]	9:08	→	9:19 → 9:01	-7	-18
Japan [N=458]	9:04	→	9:09 → 8:46	-18	-23
United States & Canada [N=126]	9:54	→	10:13 → 9:35	-19	-38
Western Europe [N= 79]	8:58	→	9:45 → 9:28	+30	-17
Asia [N=217]	9:04	→	9:01 → 8:51	-13	-10
Latin America [N= 24]	9:00	→	9:48 → 9:18	+18	-30
Africa [N= 21]	9:37	→	10:24 → 9:09	-28	-75
Oceania [N= 16]	8:58	→	10:29 → 10:06	+68	-23
Eastern Europe & former Soviet Union [N= 25]	8:17	→	9:47 → 9:13	+56	-34
Middle East [N= 5]	9:01	→	10:47 → 10:24	+83	-23
Overseas Total [N=514]	9:11	→	9:27 → 9:14	+3	-13
Developed Regions [N=756]	9:09	→	9:21 → 9:04	-5	-17
Developing Regions [N=169]	9:14	→	9:02 → 8:36	-38	-26
Others [N= 46]	*	→	10:10 → 9:39	*	-31
Asian Four [N= 93]	*	→	9:28 → 9:31	*	+3
Rest of Asia [N=124]	*	→	8:37 → 8:22	*	-15
Male [N=752]	9:05	→	9:18 → 8:59	-6	-19
Female [N=207]	9:21	→	9:21 → 9:06	-15	-15

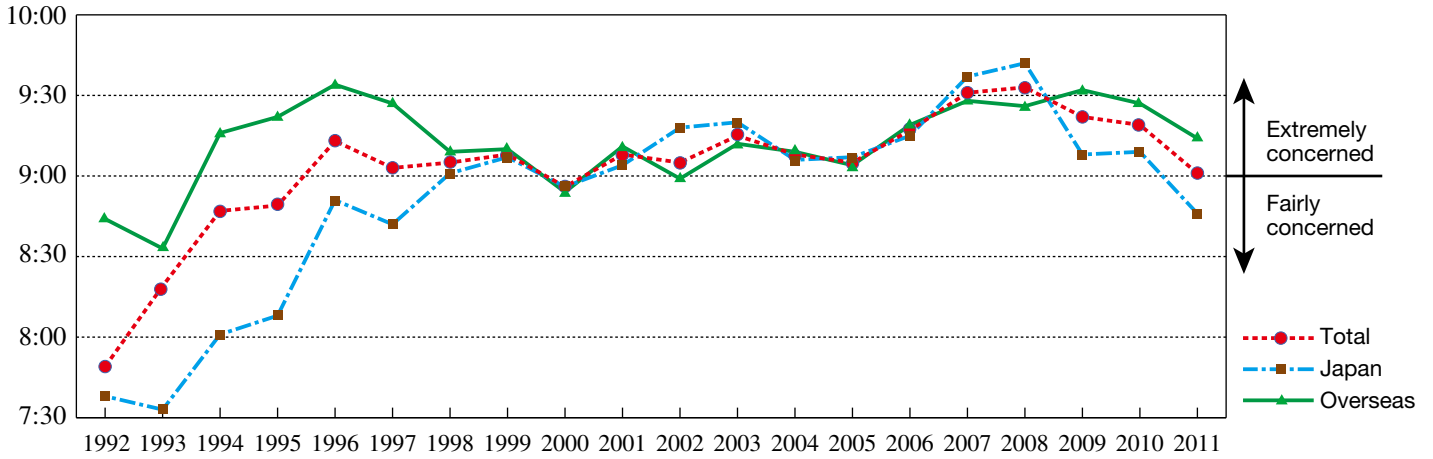
(Red indicates the advancement in time from last year; green indicates a reversal)

- The average time on the environmental doomsday clock for all respondents was 9:01, representing an 18-minute reversal of the needle from last year.
- The average time for overseas respondents retreated 13 minutes from last year, to 9:14.

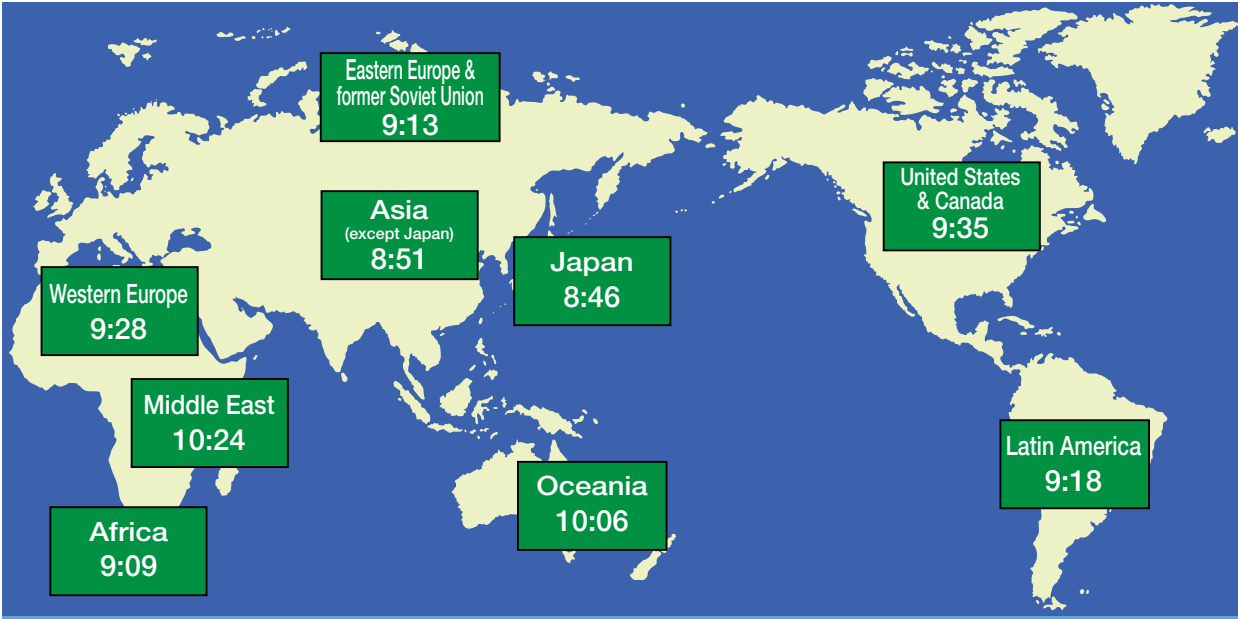
Changes in the Environmental Doomsday Clock

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	7:49	8:19	8:47	8:49	9:13	9:04	9:05	9:08	8:56	9:08	9:05	9:15	9:08	9:05	9:17	9:31	9:33	9:22	9:19	9:01
Japan	7:38	7:33	8:01	8:08	8:51	8:42	9:01	9:07	8:56	9:04	9:18	9:20	9:06	9:07	9:15	9:34	9:42	9:08	9:09	8:46
Overseas	8:44	8:33	9:16	9:22	9:34	9:27	9:09	9:10	8:56	9:11	8:51	9:12	9:09	9:04	9:19	9:28	9:26	9:32	9:27	9:14
Overseas - Japan (min.)	66	60	75	74	43	45	8	3	0	7	-27	-8	3	-3	4	-6	-16	24	18	28

(The time marked in blue represents the lowest sense of crisis since the inception of the survey in 1992; the red marks the highest.)



Regional Times



1.2 ENVIRONMENTAL CONDITIONS OF CONCERN

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

Environmental Conditions of Concern in Determining the Doomsday Clock Time for 2011

* In order to observe the changing global environment with the clearest possible perspective, we have reorganized and rebuilt the “environmental conditions of concern,” using a new basis described in the next page. This new basis, which includes additional societal considerations, was created by referencing the paper “Planetary Boundaries: Exploring the Safe Operating Space for Humanity” by Carl Folke, Johan Rockstrom, Jonathan Foley, James Hansen, and others: 2009 Ecology and Society, 14(2):32.

	Total [2812]	area									Overseas Tota [1505]	Developed Regions [2168]	Developing Regions [515]	Others [126]	Asian Four [279]	Rest of Asia [374]	China [258]	Korea [177]	India [41]
		Japan [1307]	United States & Canada [360]	Western Europe [222]	Asia [653]	Latin America [78]	Africa [63]	Oceania [44]	Eastern Europe & former Soviet Union [72]	Middle East [10]									
Climate Change	23	23	25	21	25	23	30	23	14	30	24	24	23	18	29	22	20	29	17
Biodiversity	10	8	13	15	9	14	14	14	14	0	11	10	10	13	9	9	8	10	15
Land Use	7	6	6	9	7	13	11	14	15	0	8	6	10	13	4	9	8	2	12
Pollution/ Contamination	12	11	8	9	19	5	2	5	13	20	13	11	18	10	14	23	27	12	15
Water Resources	9	7	12	11	10	10	14	7	11	10	11	8	13	10	5	13	13	2	10
Population	12	15	15	14	6	10	5	16	4	10	10	14	7	9	6	6	5	6	10
Food	7	9	4	6	5	3	10	2	1	10	5	8	4	2	7	3	3	7	0
Lifestyle	7	8	4	5	6	5	2	9	6	0	5	7	5	6	8	5	5	9	12
Global Warming Measures	3	3	1	2	6	1	2	2	6	10	4	3	2	5	10	3	2	15	2
Environment and Economy	4	4	6	4	4	8	3	9	8	0	5	4	5	8	4	4	5	2	0
Environment and Society	3	3	4	4	3	5	5	0	7	10	3	3	3	5	2	3	3	2	7
Other	2	3	2	1	1	3	3	0	1	0	1	3	1	1	2	0	0	3	0

■ : Answer with the highest number of replies ■ : Answer with the second highest number of replies

Notes: The % refers to the total number of valid responses while excluding any unknowns. The total is to be 100%.

- In determining the time on the environmental doomsday clock, “climate change” was most frequently cited as the main environmental condition of concern by respondents overall. “Climate change” was the most common selection among respondents from both developed and developing regions.
- This was followed by “pollution/contamination” and “population.” “Population” was the second most frequently cited condition of concern among respondents in developed regions, whereas respondents in developing regions cited “pollution/contamination.”
- “Biodiversity” was the third most frequently cited condition of concern.

New Basis for Environmental Conditions of Concern

Item	Main Elements
1. Climate Change	Atmospheric concentration of CO₂ ; global warming ; ocean acidification ; climatic aberrations (droughts, torrential rains and flooding, severe storms, heavy snow, abnormal temperatures, drying of rivers and lakes, desertification, etc.)
2. Biodiversity	Acceleration of species extinction ; effects of contamination, climate change, land use
3. Land Use	Expansion of cultivated land mass; destruction of forests due to erratic development; desertification caused by overgrazing; agriculture and land use without regard for the environment; urbanization
4. Pollution/Contamination	River and ocean pollution : eutrophication caused by excessive nitrogen and phosphorus and contamination by chemical substances; atmospheric pollution : particulates suspended in the atmosphere, soot and chemical substances
5. Water Resources	Diminution of usable fresh water resources (depletion, contamination)
6. Population	Population growth beyond what the Earth can support; aging of the population
7. Food	Diminution of food supply from land and oceans
8. Lifestyles	Transformation of lifestyles away from excessive consumption of resources like energy
9. Global Warming Measures	Progress of measures for mitigation and adaption
10. Environment and Economy	Progress towards implementing an economic system to reflect Environmental costs, the bearing of social costs : imposition of taxes for fossil fuels that emit CO ₂ , which cause global warming-related damages; TEEB (The Economics of Ecosystems and Biodiversity), etc. The operation of an environmentally conscious economy: the realization of green economy , sustainable economic development, etc.
11. Environment and Society	Environmental awareness at the individual and societal levels, progress of environmental education ; poverty ; the status of women
12. Other	()

B. MAIN FOCUS OF THE CURRENT YEAR'S QUESTIONNAIRE

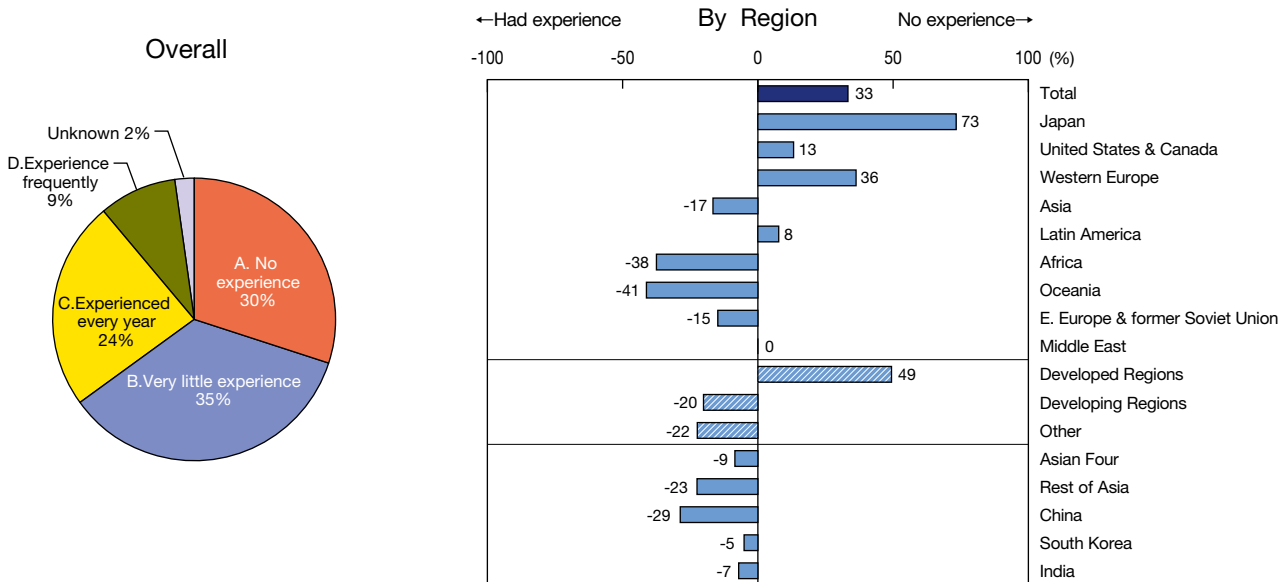
The questionnaire probed environmental experts around the world about the environmental changes they have observed and experienced first-hand. Further, it also aimed to encapsulate the state of the global environment, a critical issue directly related to the survival of humankind, from the standpoint of the security of peoples and societies.

2. THE EFFECTS OF CLIMATE CHANGE (QUESTION 2)

2-1 Have you experienced any climate aberrations in the last 2-3 years, including heavy rains and flooding, drought, extreme storms, or witnessed irregularities in plant and animal life? Please circle one item from A through D for each category below that best reflects your experience.

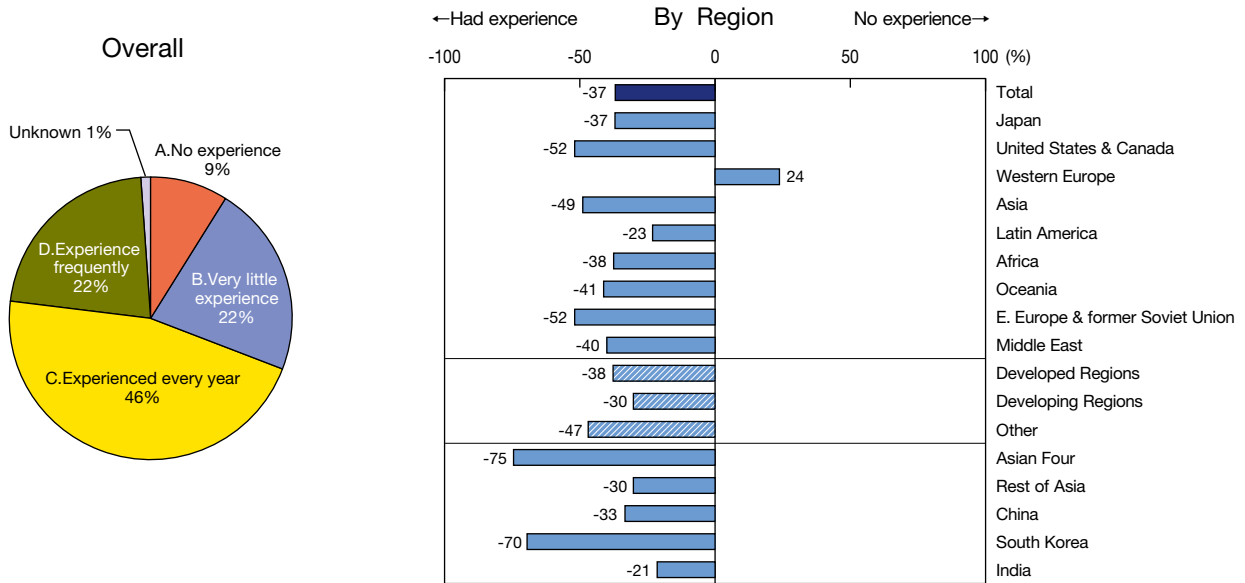
* In order to make the results of question 2-1 easily comprehensible, choices A and B were combined as “no experience” and choices C and D were combined as “had experience.” A margin between the two were calculated to arrive at the majority response for each region following the formula $(A+B) - (C+D)$, which is displayed in this bar graph.

1. Frequent Droughts and Wildfires



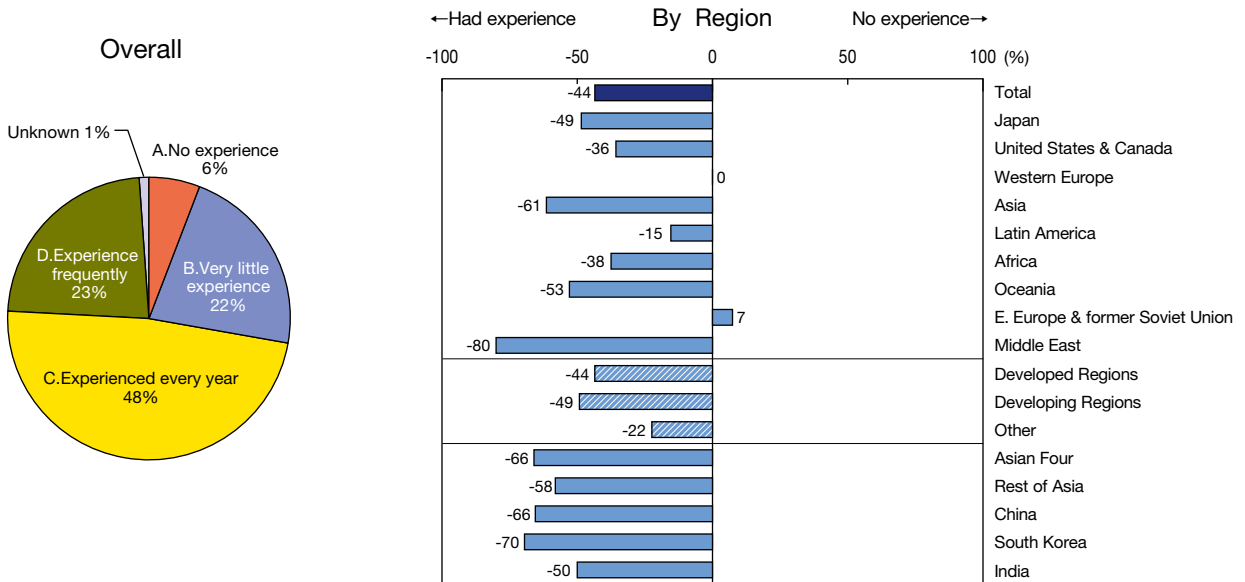
- Overall, 65% of respondents indicated that they had “no experience” with this phenomenon, comprising the majority of responses, with a 33% margin.
- Regionally, a large majority of respondents from developed regions indicated that they had “no experience,” whereas the majority of respondents in developing regions stated they “had experience” with frequent droughts and wildfires.

2. Torrential Rains, Flooding, Severe Storms, Heavy Snow



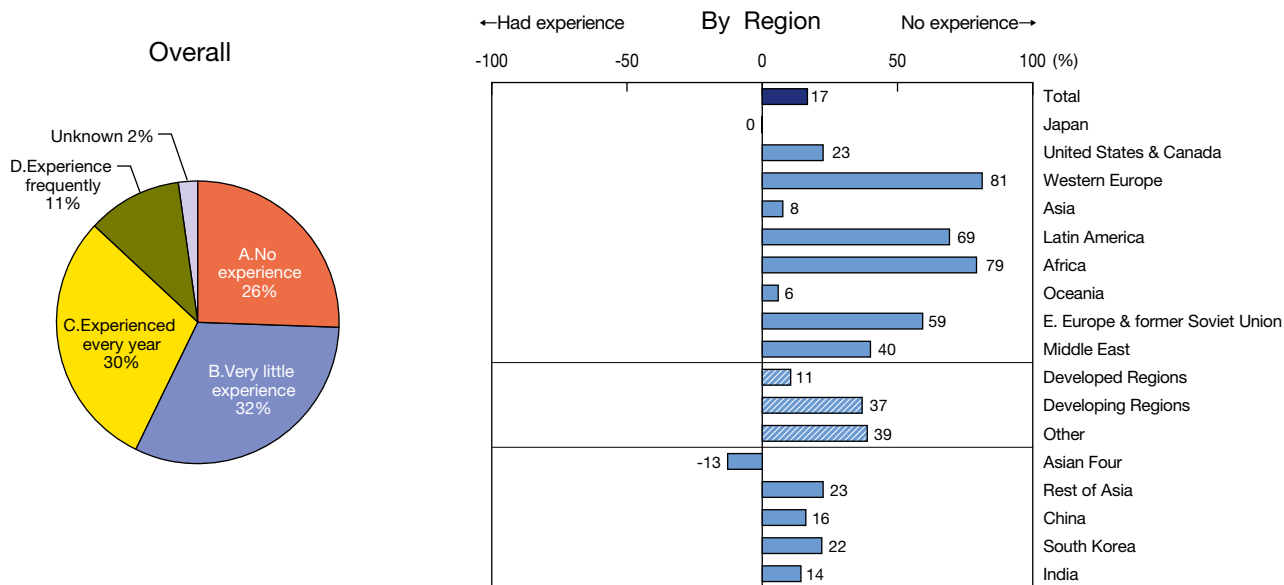
- Overall, 68% of respondents indicated that they “had experience” with this phenomenon, comprising the majority of responses with a 37% margin.
- Regionally, Western Europe was the only region where the majority of respondents indicated they had “no experience” with this phenomenon. In contrast, the majority of respondents from all other regions stated they “had experience.”

3. Abnormally Low or High Temperatures



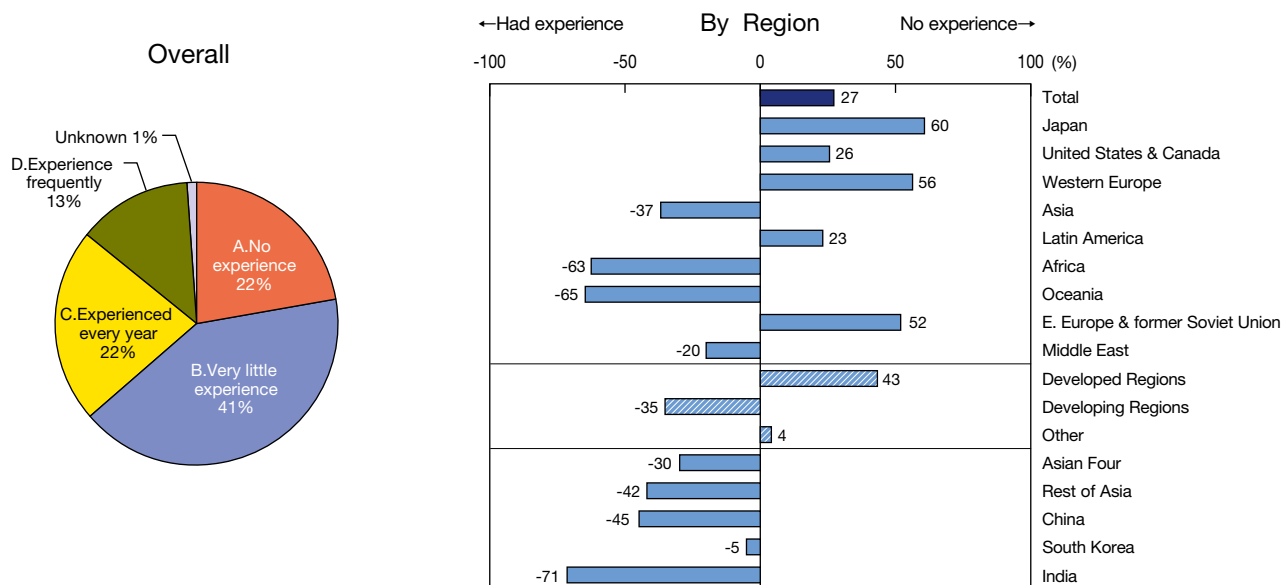
- Overall, 71% of respondents indicated that they “had experience” with abnormal temperatures, comprising an overwhelming majority with a large margin of 44%.
- Regionally, Eastern Europe & the former Soviet Union was the only region where slightly more respondents indicated they had “no experience,” whereas in Western Europe, the number of respondents who had “no experience” was comparable to those who “had experience.” In all other regions, the majority of respondents stated they “had experienced” abnormal temperatures.

4. Increases in Severity and Frequency of Tornadoes, Typhoons, Hurricanes and Cyclones



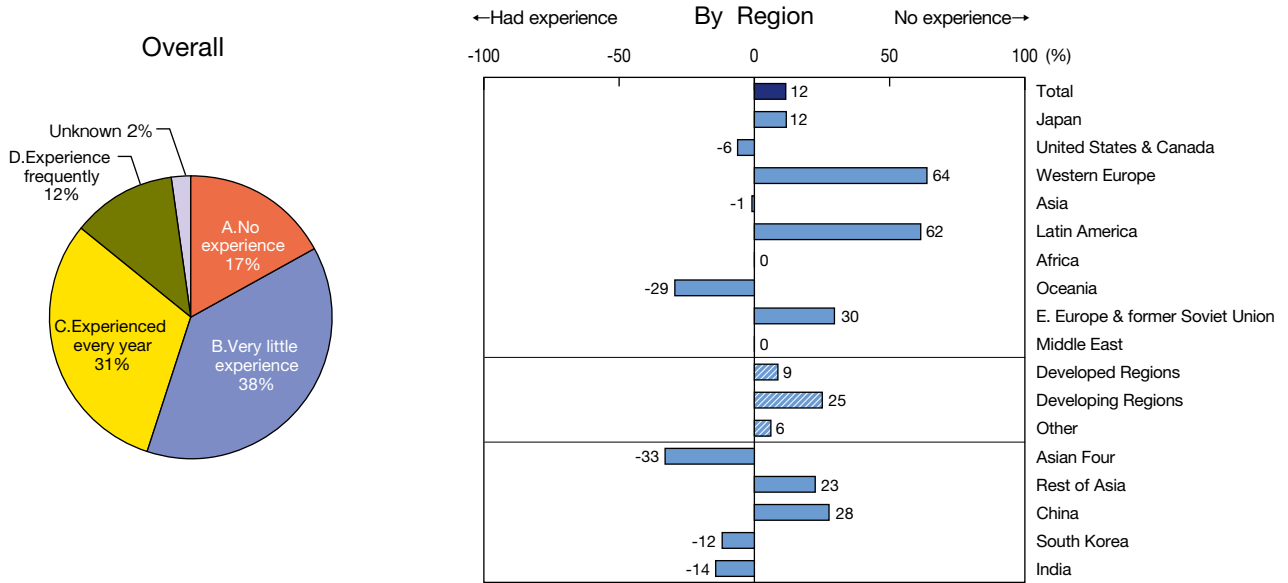
- Overall, 58% of respondents stated they had “no experience” with this phenomenon, with a relatively small margin of 17% but comprising the majority nonetheless.
- The Asian Four was the only region in which respondents indicated they “had experienced” these phenomena, comprising a small majority. In Japan, an equal number of respondents selected “had experience” as “no experience.” In contrast, the majority of respondents in all other regions indicated they had “no experience” with these phenomena. In particular, respondents in Western Europe, Latin America, and Africa selected “no experience” at extremely large margins, of 70 - 80%.

5. Significant Declines in Water Levels or Drying of Rivers and Lakes



- Overall, 63% of respondents stated they had “no experience” with this phenomenon, comprising the majority with a 27% margin.
- Regionally, while a large majority of respondents in developed regions indicated they had “no experience,” the reverse was seen in developing regions where a large majority stated they “had experience” with these phenomena.

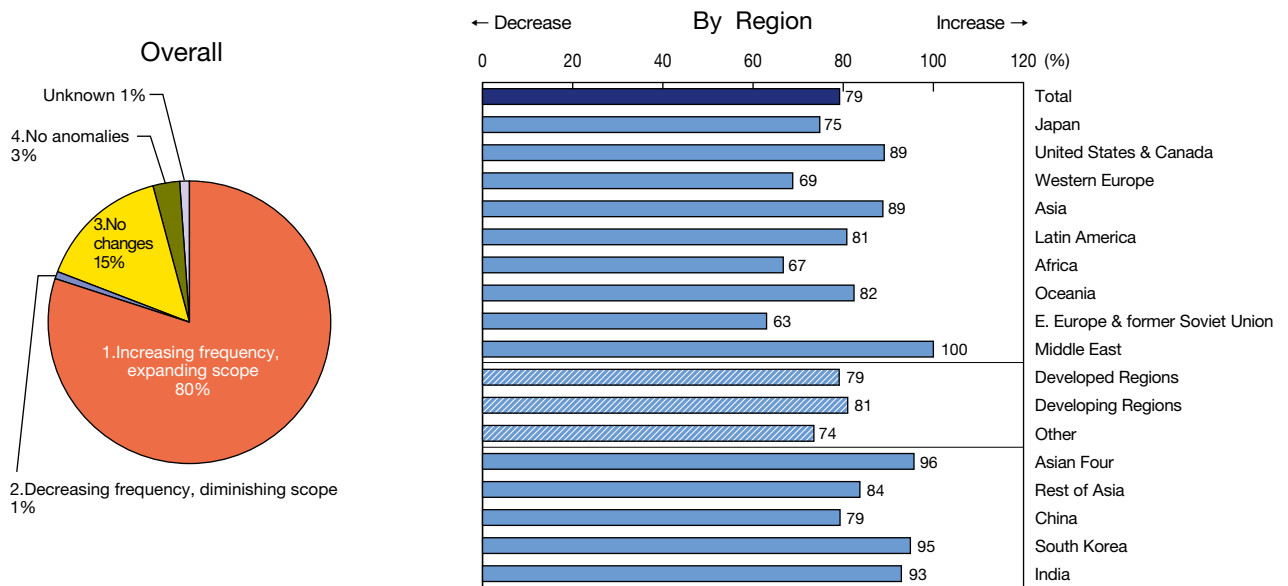
6. Anomalies in Plant and Animal Life (Abnormal Proliferation, Early or late Blooming , Significant Changes in Habitat, etc.)



- Overall, 55% of respondents stated they had “no experience,” comprising a relatively small majority with a 12% margin.
- Regionally, a large majority of respondents in Western Europe and Latin America stated they had “no experience” with this phenomenon. In contrast, the majority of respondents in Oceania and the Asian Four selected they “had experienced” them, whereas the number of respondents in Africa who stated they “had experienced” these phenomena were comparable to those who stated they had “no experience.”

2-2 How have the changes or anomalies that you have experienced changed in frequency or scope each year? Please circle one item that best describes your experience.

* In order to make the results of question 2-2 easily comprehensible, choice 1 was designated as “increasing frequency” and choice 2 as “decreasing frequency.” A margin between the two were calculated for each region to arrive at the majority response by following the formula (1)-(2), the results of which are displayed in this bar graph.

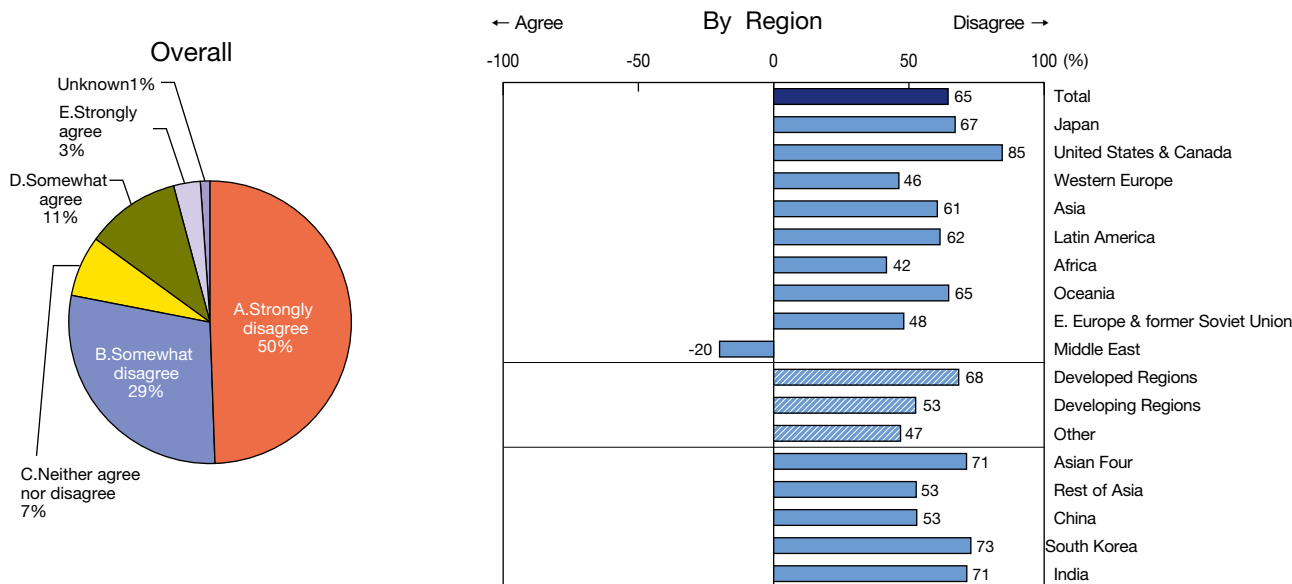


- Overall, an overwhelming majority of respondents indicated that they were experiencing increased changes, with 80% selecting “increasing frequency” whereas only 1% selected “decreasing frequency.” Regional exceptions were virtually nonexistent, with respondents across the globe indicating that they were experiencing increased anomalies from climate change.

2-3 There may be a need for people to put measures into place at an individual level to respond to damages and effects from the climate change that is anticipated in the future. Please circle one item from A through E for each category below that best reflects your opinion.

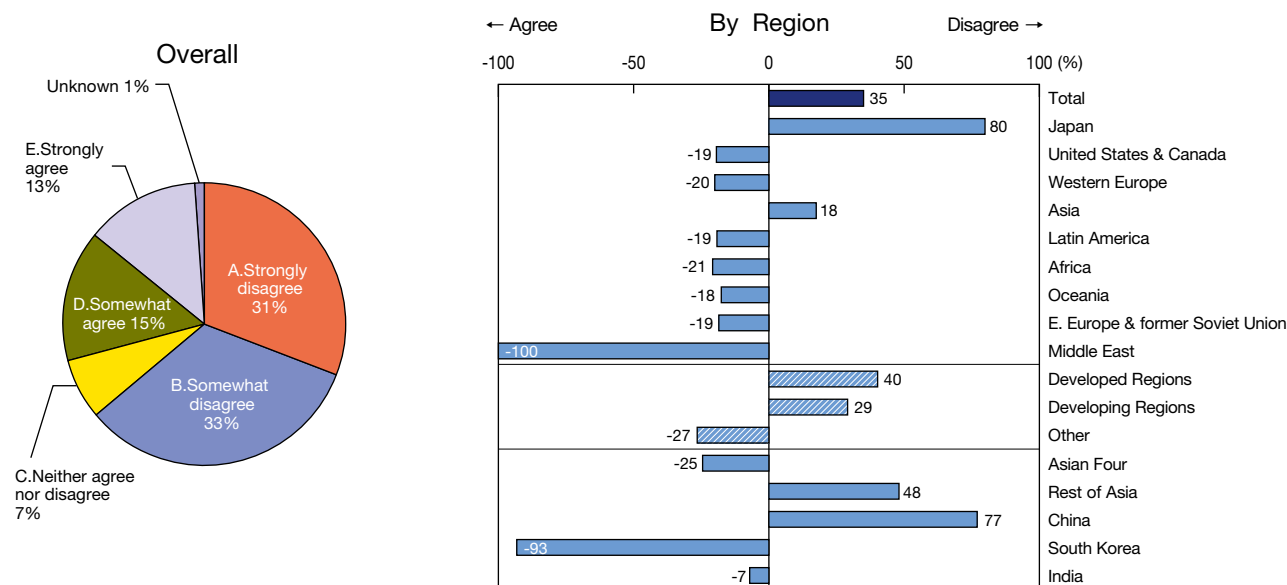
* In order to make the results of question 2-3 easily comprehensible, choices A and B were combined as “disagree” and choices C and D were combined as “agree.” A margin between the two were calculated to arrive at the majority response for each region following the formula (A+B) - (C+D), which is displayed in this bar graph.

1. Individual Responses are Unnecessary as Sudden Changes are Unlikely in the Immediate Future



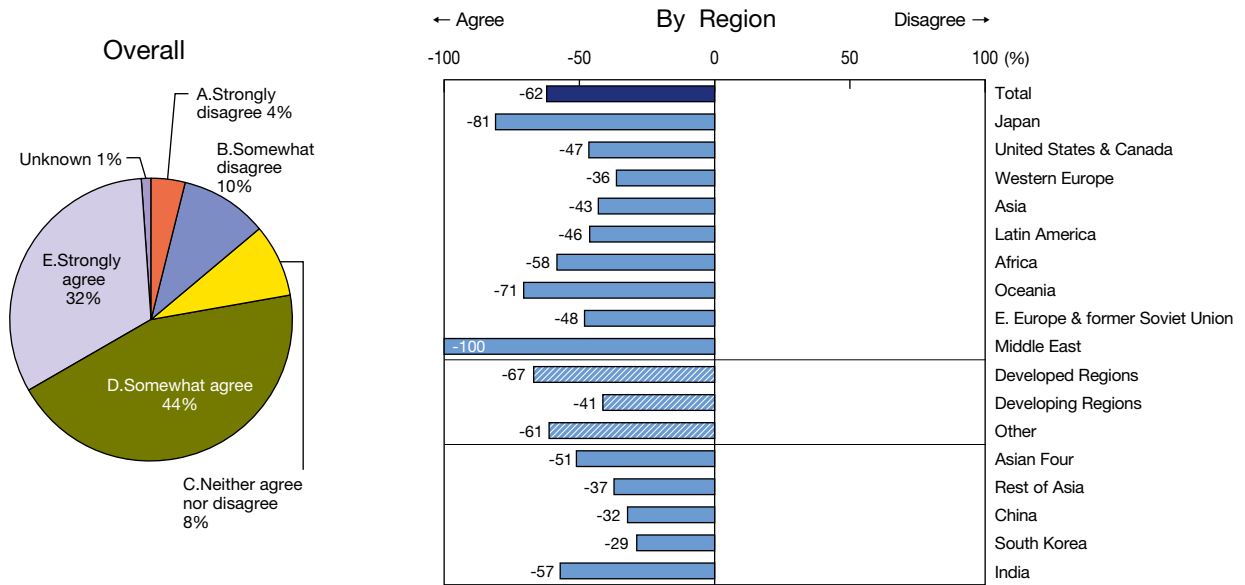
- Overall, 79% of respondents indicated they “disagreed” with this statement, comprising an overwhelming majority with a 65% margin.
- Regionally, the Middle East became the only region where the majority of respondents indicated they “agreed” with this statement, with a 20% margin. In all other regions, the majority of respondents “disagreed” with this statement with a margin greater than 40%.

2. Measures and Preparations should be Implemented by Governments, not Individuals



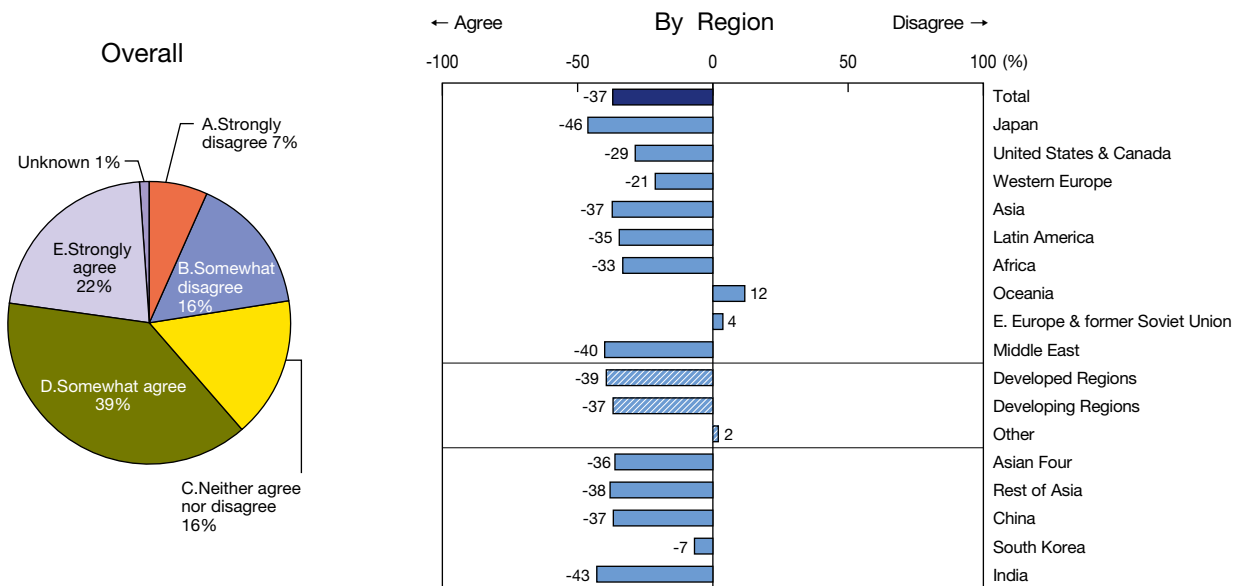
- Overall, 64% of respondents selected “disagree” to this statement, comprising the majority with a 35% margin.
- Regionally, the majority of respondents in Japan and China “disagreed” with this statement with a large margin of nearly 80%. However, the majority of respondents in most other regions selected “agree.” In particular, the majority of respondents in South Korea and the Middle East selected “agree” with a margin of more than 90%.

3. Individuals Need to Prepare at Some Minimal Level, though may not be Full-Scale (E.g., Emergency food and water supply, watercraft in case of flooding and submerging, etc.)



- Overall, an overwhelming majority of respondents indicated they “agreed” with this statement reached 76%, with a large margin of 62%.
- The majority of respondents “agreed” with this statement in all regions.

4. Individuals Need to Take Full-Scale Response Measures

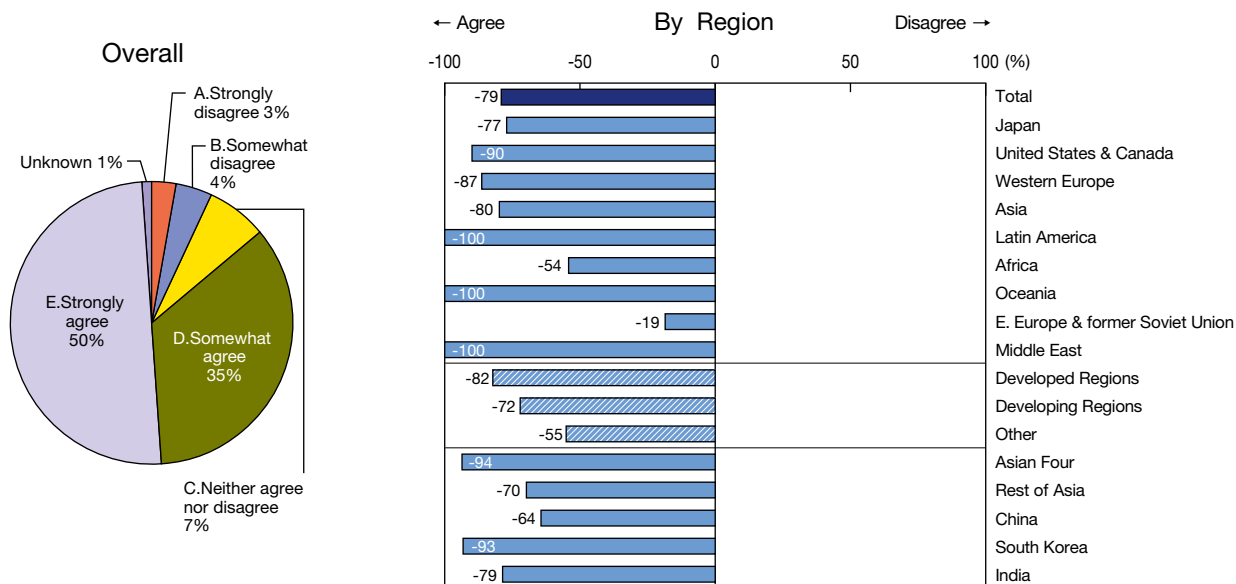


- Overall, respondents stating they “agreed” with this statement reached 61%, comprising the majority with a 37% margin.
- Respondents stating they “agreed” with this statement comprised the majority in all regions except in Oceania and Eastern Europe & the former Soviet Union.

2-4 The Earth's average temperature has gradually been rising since the Industrial Revolution, and it is said that we are experiencing global warming. Please circle one item from A through E for each category below that best reflects your opinion.

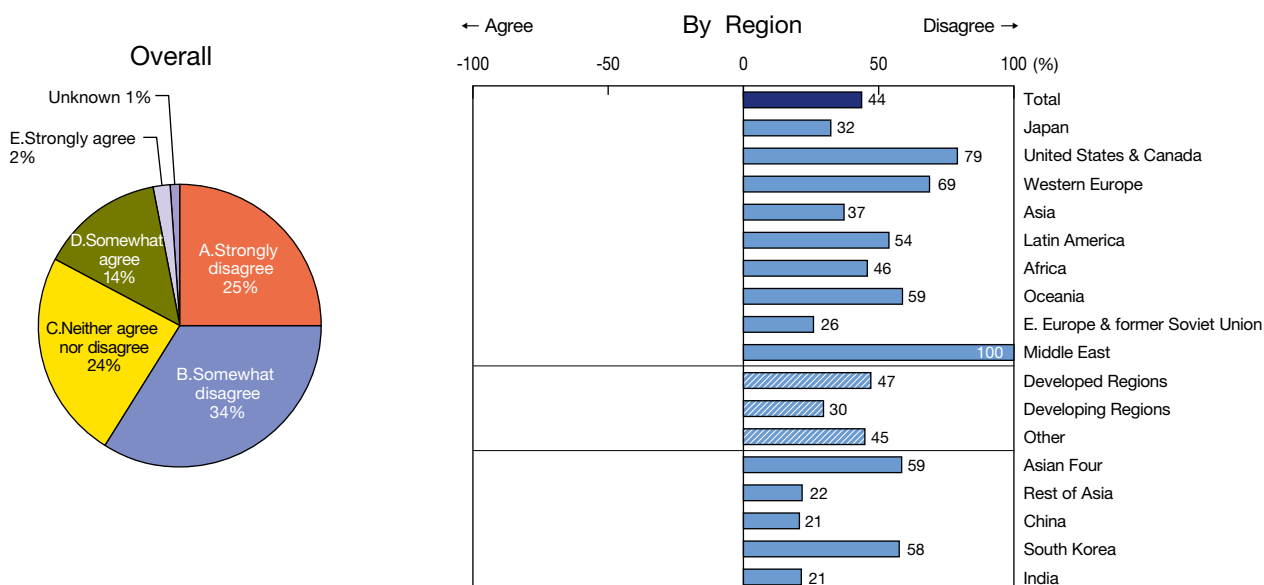
* In order to make the results of question 2-4 easily comprehensible, choices A and B were combined as "disagree" and choices D and E were combined as "agree." A margin between the two were calculated to arrive at the majority response for each region following the formula $(A+B) - (D+E)$, which is displayed in this bar graph.

1. Global Warming is Caused by the Increased Emissions of CO2, Attributed to Human Activity, Namely Industrialization after the Industrial Revolution



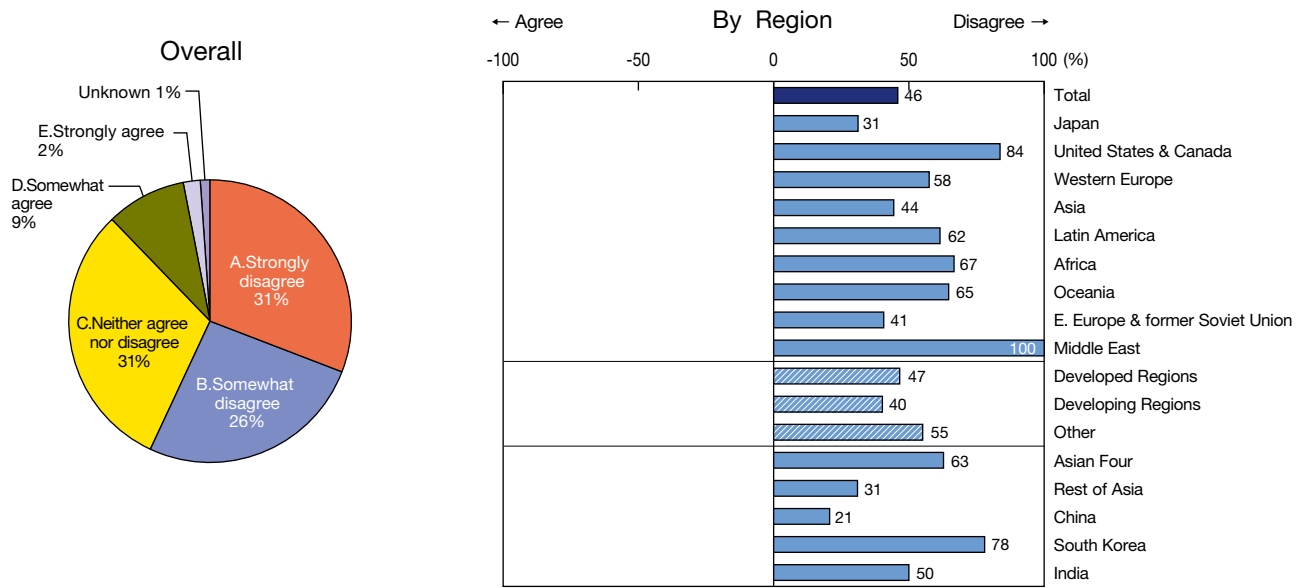
- Overall, respondents who "agreed" with this statement reached 85%, comprising the majority with a large margin of 79%.
- Respondents who "agreed" with this statement comprised a large majority with a margin greater than 70% in all regions except in Eastern Europe & the former Soviet Union.

2. Global Warming is Caused by Increased CO2 Emissions, Attributed Largely to Volcanic Activity or from the Oceans



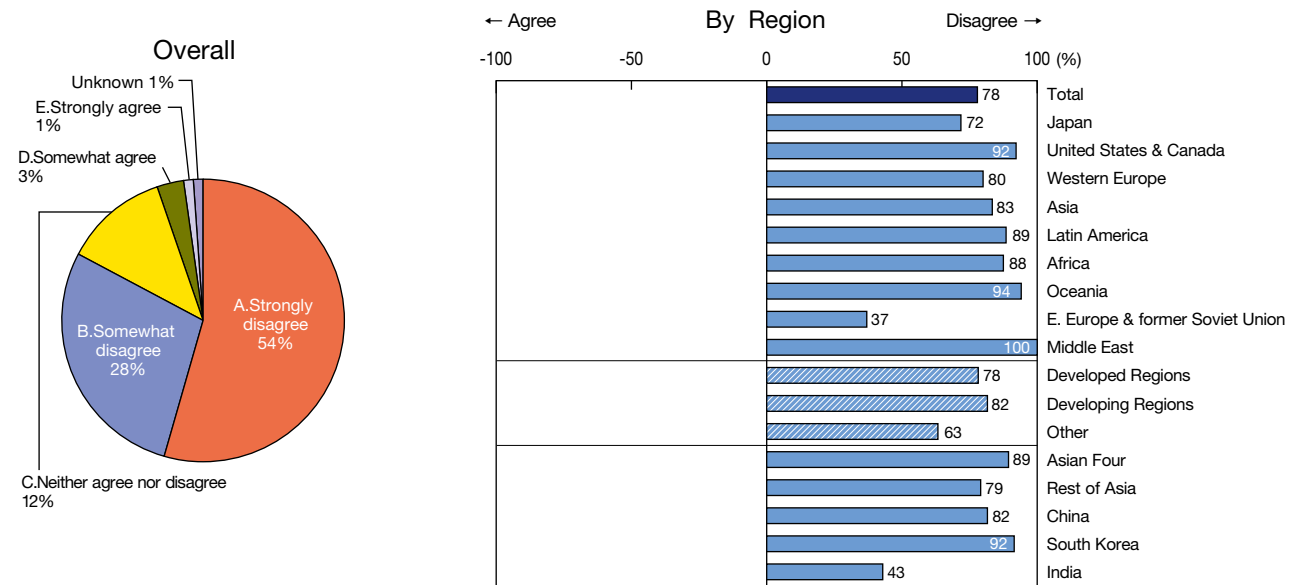
- Overall, respondents who selected "disagree" with this statement reached 59%, with a 44% margin. Additionally, respondents who selected "I don't know" reached 24%. In all regions, respondents who selected "disagree" comprised the majority.

3. Global Warming is Largely Attributed to the Effects of Water Vapors rather than Increased CO2 Emissions



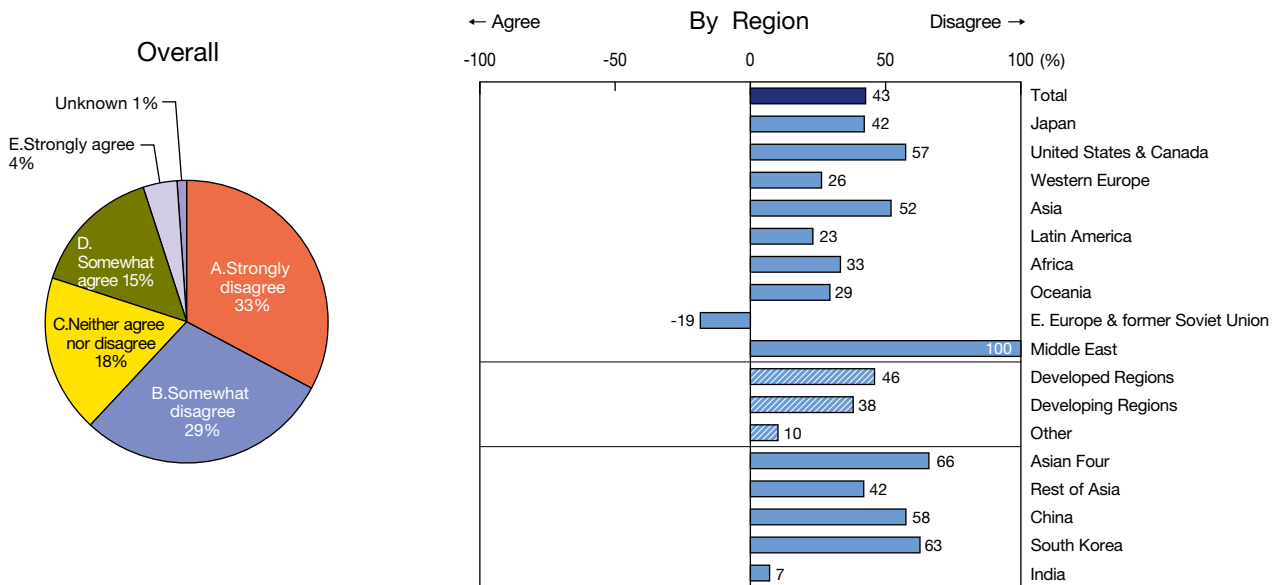
- Overall, respondents who selected “disagree” with this statement reached 57%, comprising the majority with a 46% margin. Additionally, respondents who selected “I don’t know” reached 31%. In all regions, respondents who selected “disagree” comprised the majority.

4. Increased CO2 is Rooted in Global Warming; It is Not an Effect of Human Activity



- Overall, respondents who selected “disagree” reached 82%, comprising a large majority with an overwhelming margin of 78%.
- In most regions, respondents who selected “disagree” comprised the majority with a large margin of more than 70%.

5. Global Warming is Due to Periodic Changes in Nature Including Solar Activity and the Mechanisms of the Earth's Interior



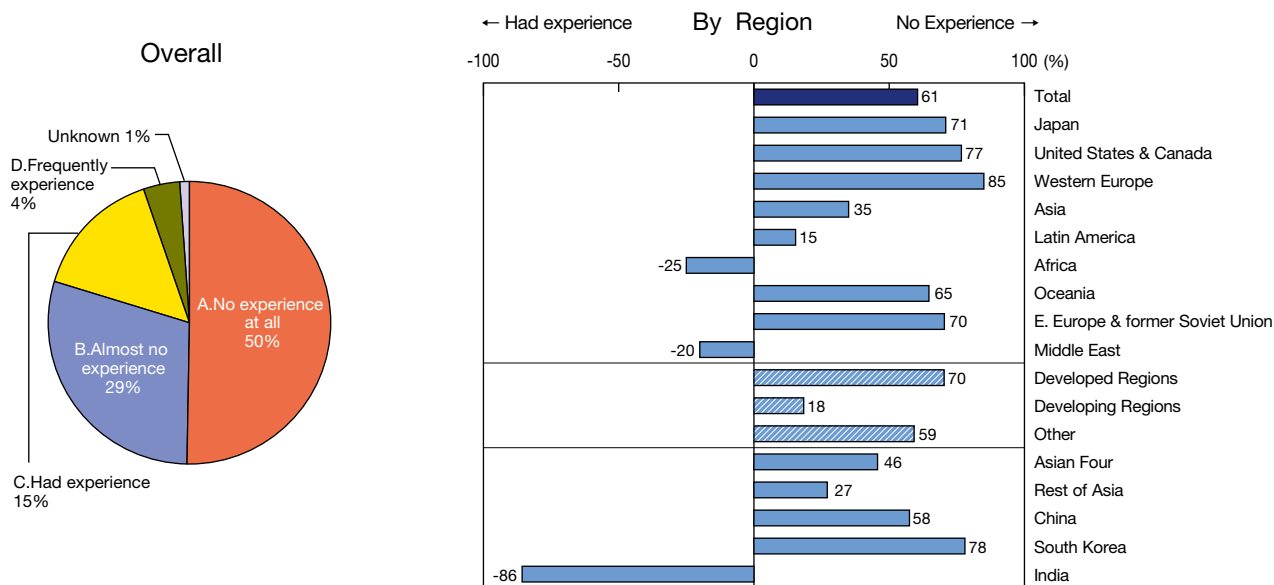
- Overall, respondents who selected “disagree” reached 62%, comprising the majority with a 43% margin. On the other hand, respondents stating “I don’t know” reached 18%.
- Regionally, respondents who selected “disagree” comprised the majority in all regions except in Eastern Europe & the former Soviet Union.

3. THE DIMINUTION OF WATER (FRESH WATER) RESOURCES (QUESTION 3)

3-1 It is said that there are increasing instances where the diminution of usable fresh water can be felt in everyday life. Please select one item from A through D for each category below that best reflects your personal experience.

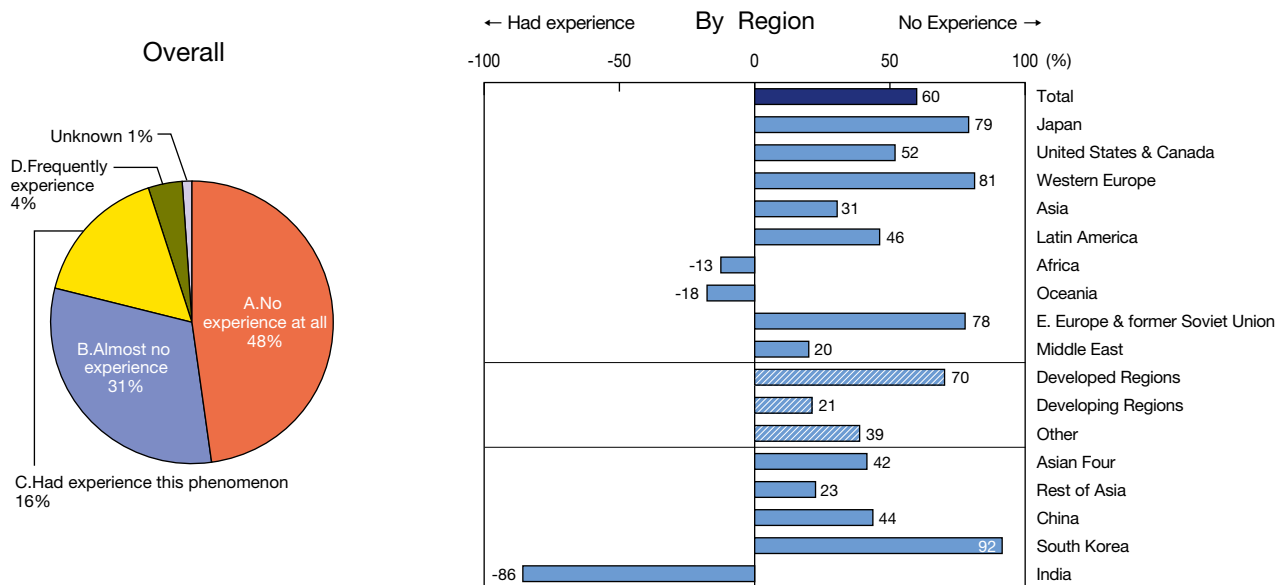
* In order to make the results of question 3-1 easily comprehensible, choices A and B were combined as “no experience” whereas choices C and D were combined as “had experience.” A margin between the two were calculated to arrive at the majority response for each region following the formula $(A+B) - (C+D)$, which is displayed in this bar graph.

1. Decreased Drinking Water Supply on Occasional or Daily Basis



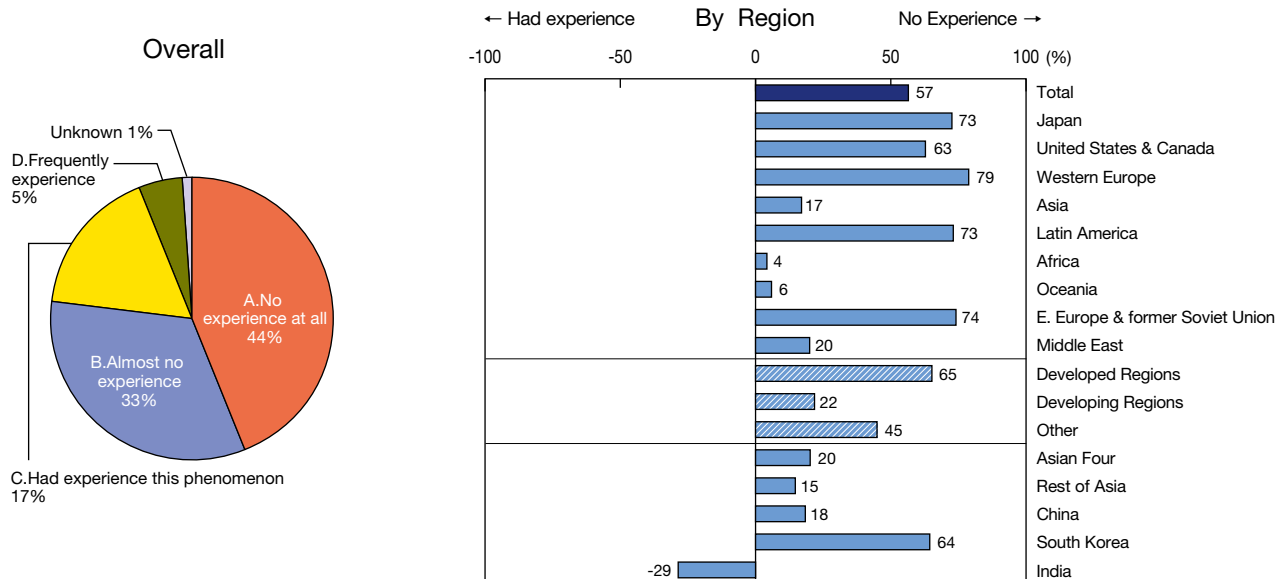
- Overall, 79% of respondents indicated they had “no experience” with decreased supplies of drinking water, comprising the majority with a large margin of 61%.
- Regionally, respondents selecting “no experience” comprised the majority in most regions. In contrast, the majority of respondents in India stated they “had experienced” this phenomenon with a margin of 86%. In addition, the majority of respondents in the Middle East and Africa also selected “had experience.”

2. Occasional or Daily Restrictions on Water for Domestic Use



- Overall, 79% of respondents selected “no experience” with restrictions on water for domestic use, comprising the majority with a large margin of 60%.
- Regionally, respondents selecting “no experience” comprised the majority in most regions. In contrast, the majority of respondents in India stated they “had experienced” this phenomenon with a margin of 86%. In addition, the majority of respondents in Oceania and Africa also selected “had experience.”

3. Decreased Supply of Water for Agricultural or Industrial Use on an Occasional or Daily Basis

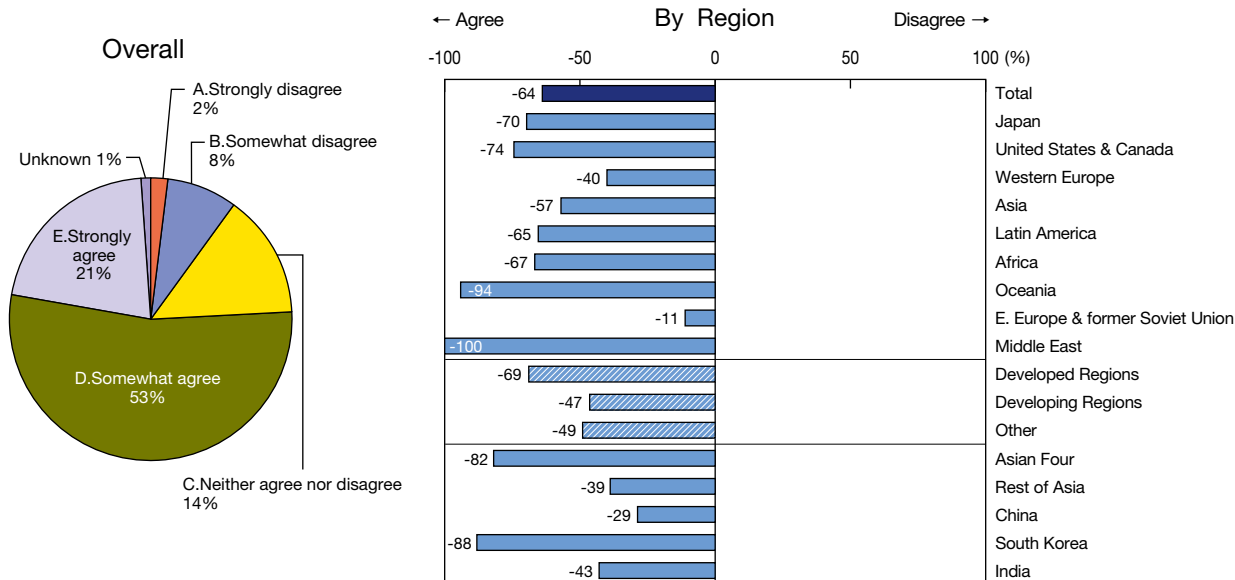


- Overall, 77% of respondents selected “no experience” with decreased water supply for agricultural or industrial use, comprising the majority with a large margin of 57%.
- India was the only region in which respondents who “had experience” with this phenomenon comprised the majority. In all other regions, the majority of respondents stated they had “no experience.”

3-2 What is your opinion about the reason behind the diminishing water supply, said to be occurring around the world? Please circle one item from A through E for each category below that best reflects your opinion.

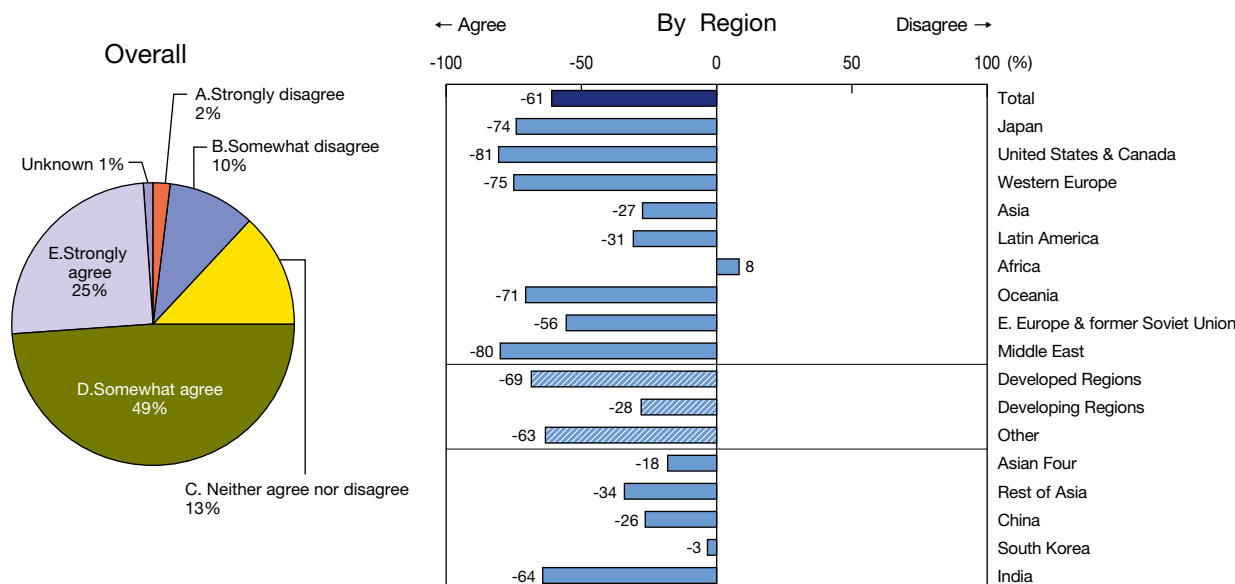
* In order to make the results of question 3-2 easily comprehensible, choices A and B were combined as “disagree” whereas choices D and E were combined as “agree.” A margin between the two were calculated to arrive at the majority response for each region following the formula (A+B) - (D+E), which is displayed in this bar graph.

1. Decrease in Water Supply Caused by Climate Change (E.g., Droughts and Desertification)



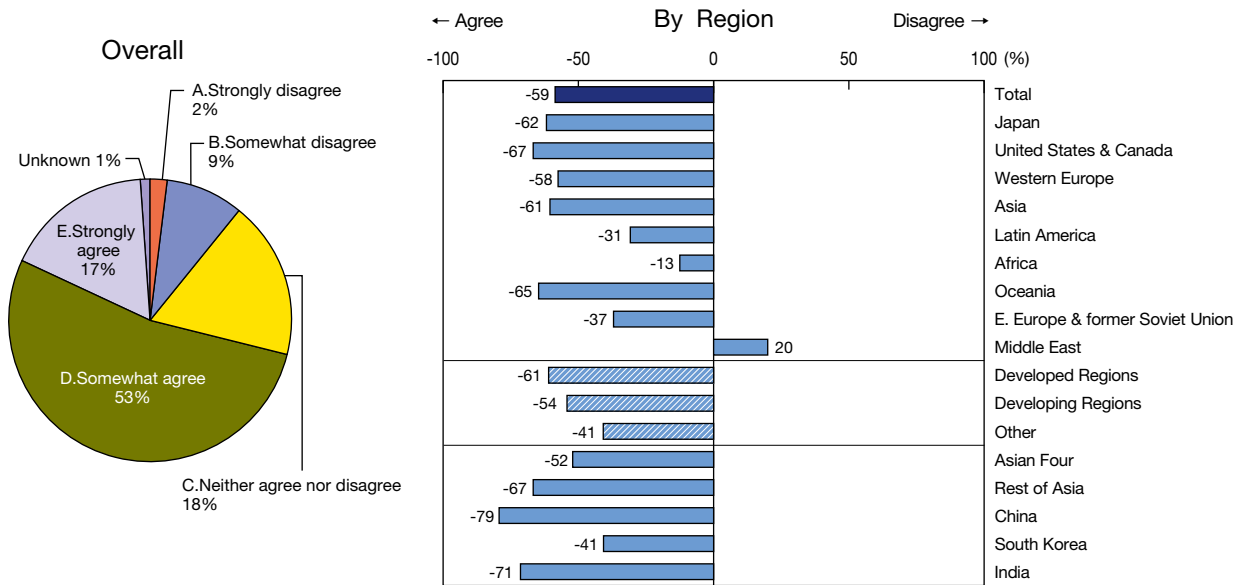
- Overall, respondents who “agreed” with this statement reached 74%, comprising the majority with a large margin of 64%.
- Respondents who “agreed” with this statement comprised the majority in all regions, but the margin in Eastern Europe & the former Soviet Union was small compared to other regions, at 11%.

2. Decrease in Water Supply Caused by Allocation of River and Groundwater Towards Massive Agricultural Irrigation



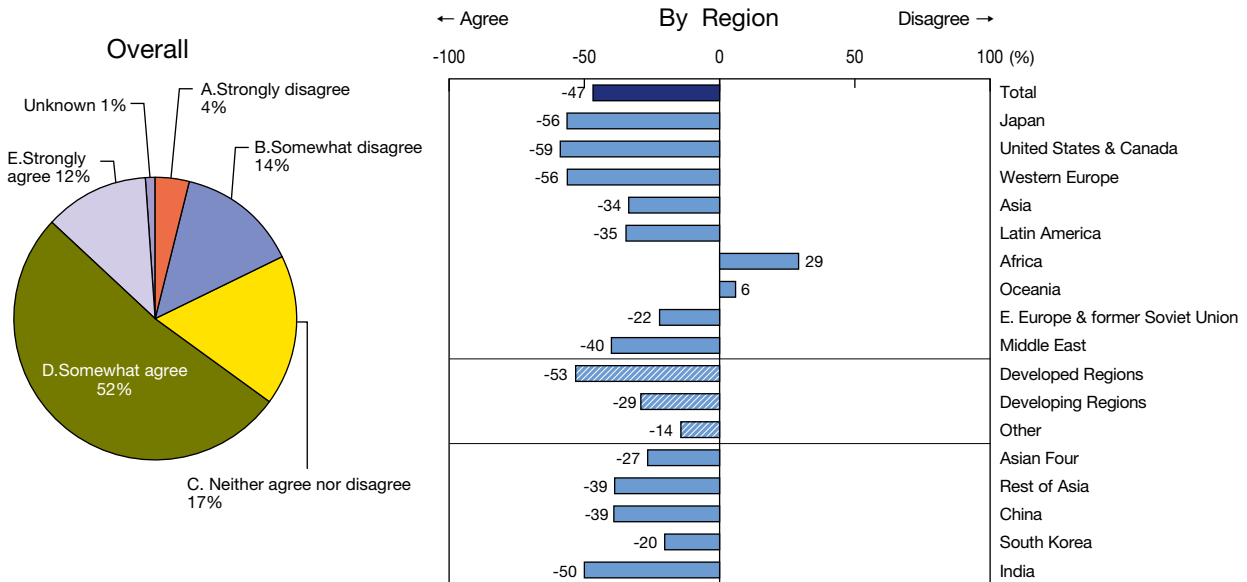
- Overall, respondents who “agreed” with this statement reached 74%, comprising the majority with a large margin of 61%.
- Respondents who selected “agree” comprised the majority in all regions except for Africa. In South Korea, a comparable number of respondents selected “agree” as those who selected “disagree.” The margin for “agree” in developed regions was large at 69%; in contrast, the margin was much lower for respondents in developing regions, at 28%.

3. Decreased Water Supply Caused by Increased Industrial Use



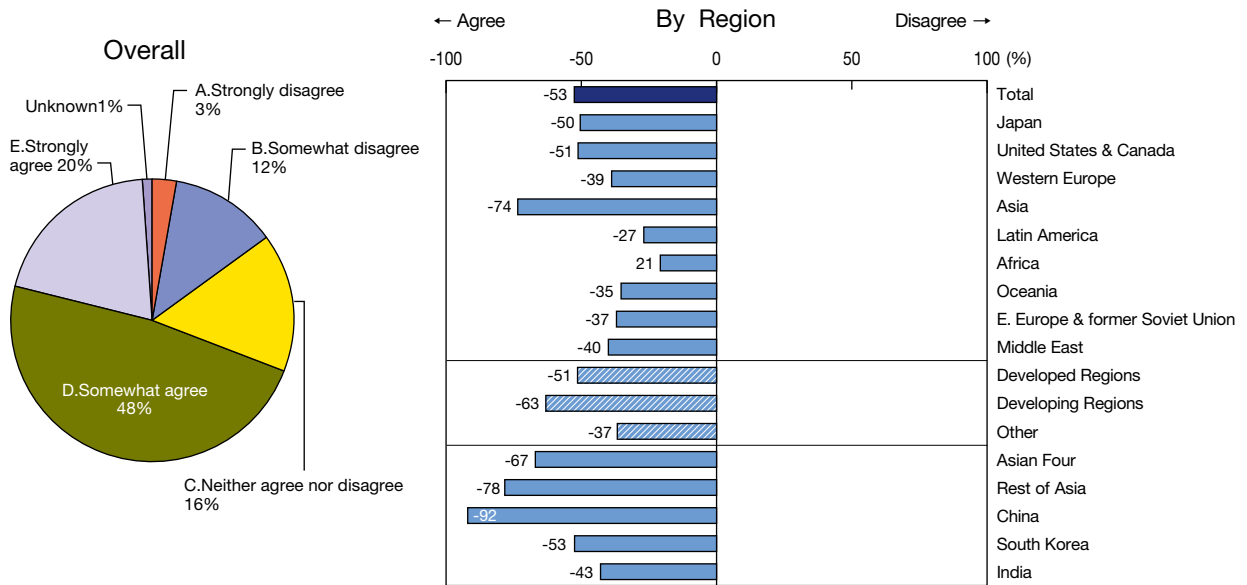
- Overall, respondents who selected “agree” with this statement reached 70%, comprising the majority with a large margin of 59%. In addition, those who selected “I don’t know” reached 18%.
- Respondents stating they “agreed” with this statement comprised the majority in all regions except for the Middle East. Although the majority of respondents in Africa also “agreed” with this statement, they did not have a substantial margin, at 13%.

4. Diminished Water Supply Caused by Increased Domestic Use



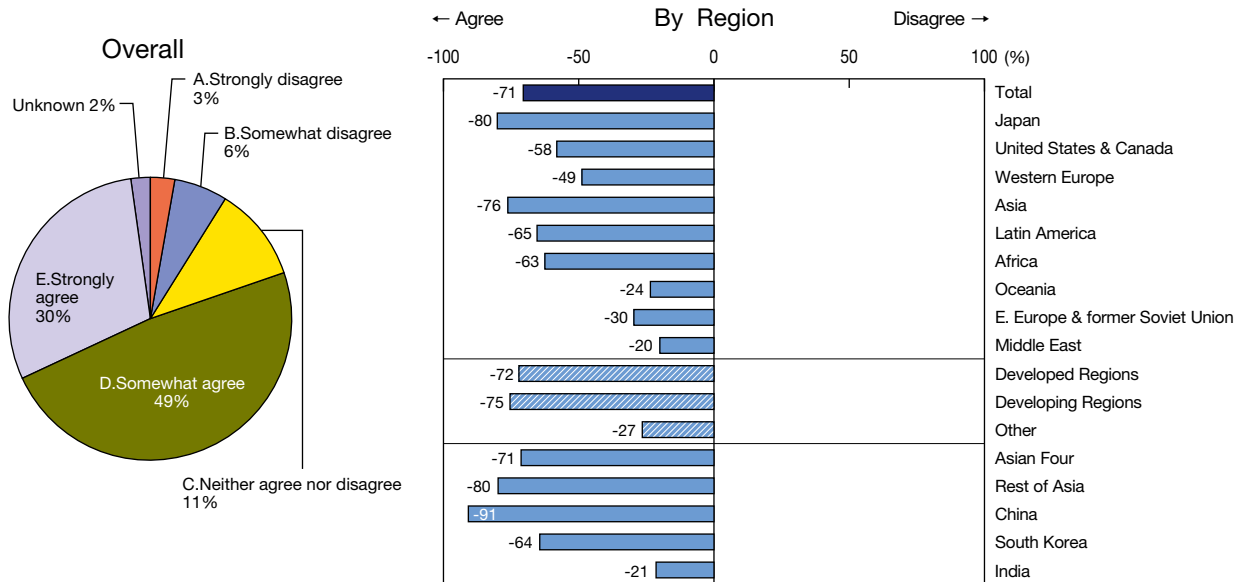
- Overall, respondents who selected “agree” with this statement reached 64%, comprising the majority with a margin of 47%. In addition, those who selected “I don’t know” reached 17%.
- Respondents stating they “agreed” with this statement comprised the majority in most regions. In contrast, the majority of respondents in Africa and Oceania indicated they “disagreed” with this statement, with margins of 29% and 6% respectively.

5. Decreased Water Supply Caused by Pollution and Contamination



- Overall, respondents who selected “agree” with this statement reached 68%, comprising the majority with a margin of 53%. In addition, those who selected “I don’t know” reached 16%.
- Respondents who “agreed” with this statement comprised the majority in all regions. In China in particular, those who selected “agree” had an extremely large margin of 92%, indicating a very high concern for environmental contamination.

6. Diminished Geological Capacity to Retain Water Due to Deforestation

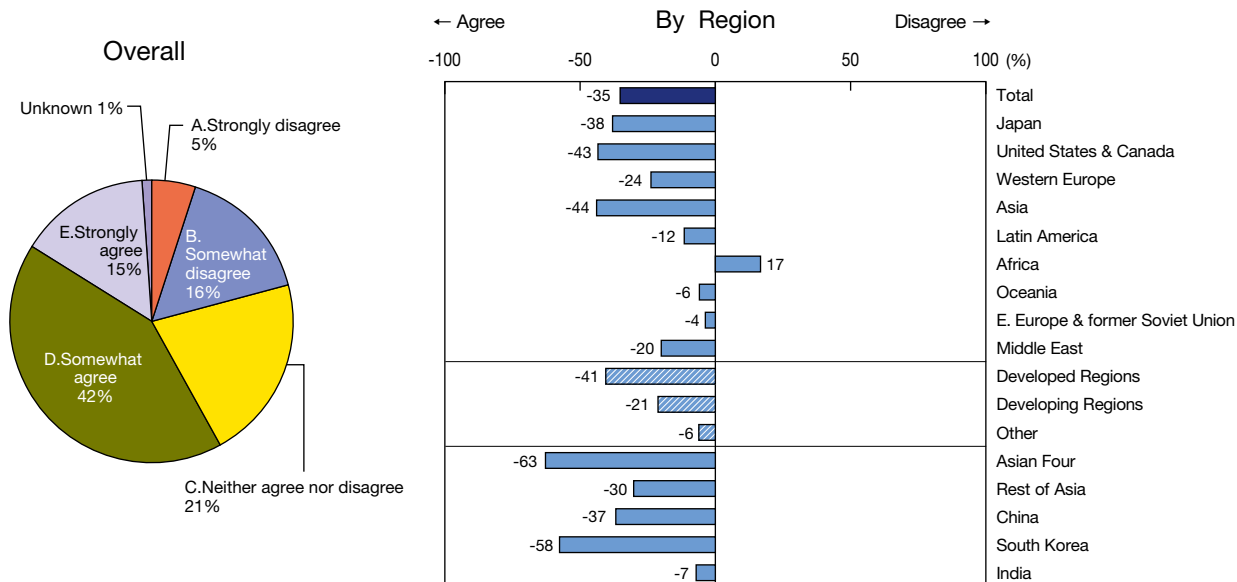


- Overall, respondents who selected “agree” with this statement reached 79%, comprising an overwhelming majority with a large margin of 71%.
- Respondents who “agreed” with this statement comprised the majority in all regions. Respondents in China and Japan selected “agree” at extremely large margins of 91% and 80% respectively. The margins were also large when analyzed by both developing and developed regions, at 75% and 72% respectively. On the other hand, the margin for Other Regions (Oceania, Eastern Europe & the former Soviet Union, the Middle East) was comparatively low, at 20%.

3-3 It is said that importing agricultural and industrial products from other countries consequently contribute to the water shortage in the producing country. Please circle one item from A through E for each category below that best reflects your opinion.

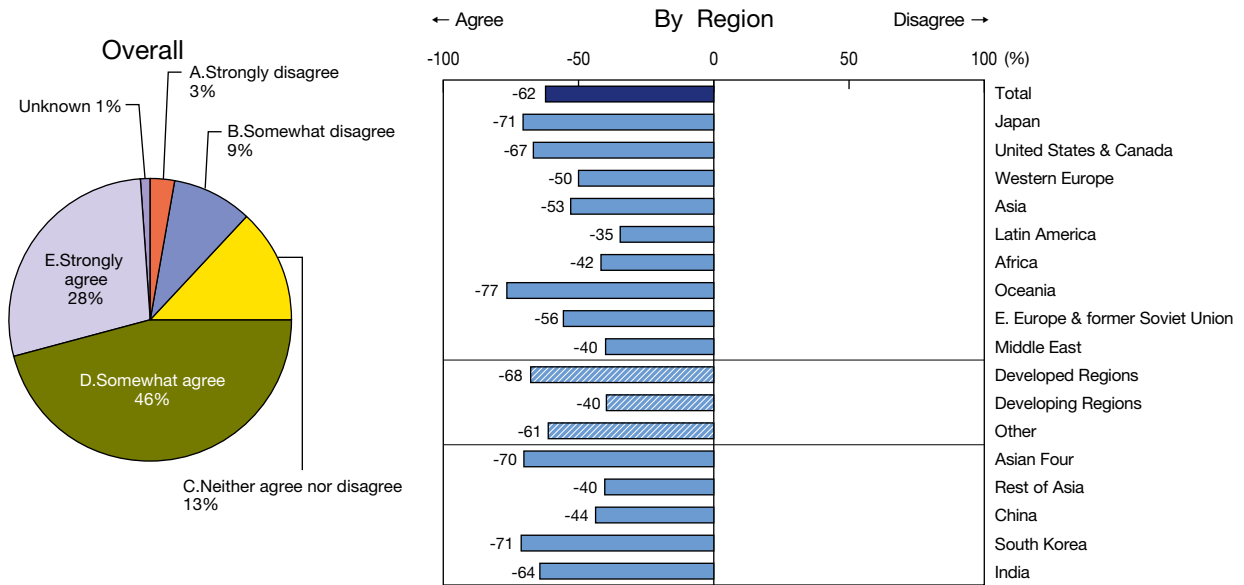
* In order to make the results of question 3-3 easily comprehensible, choices A and B were combined as “disagree” whereas choices D and E were combined as “agree.” A margin between the two were calculated to arrive at the majority response for each region following the formula $(A+B) - (D+E)$, which is displayed in this bar graph.

1. Consumption of Imported Agricultural and Industrial Products Requiring Intensive Water Use Must be Suppressed to Alleviate Water Shortages in Producing Regions



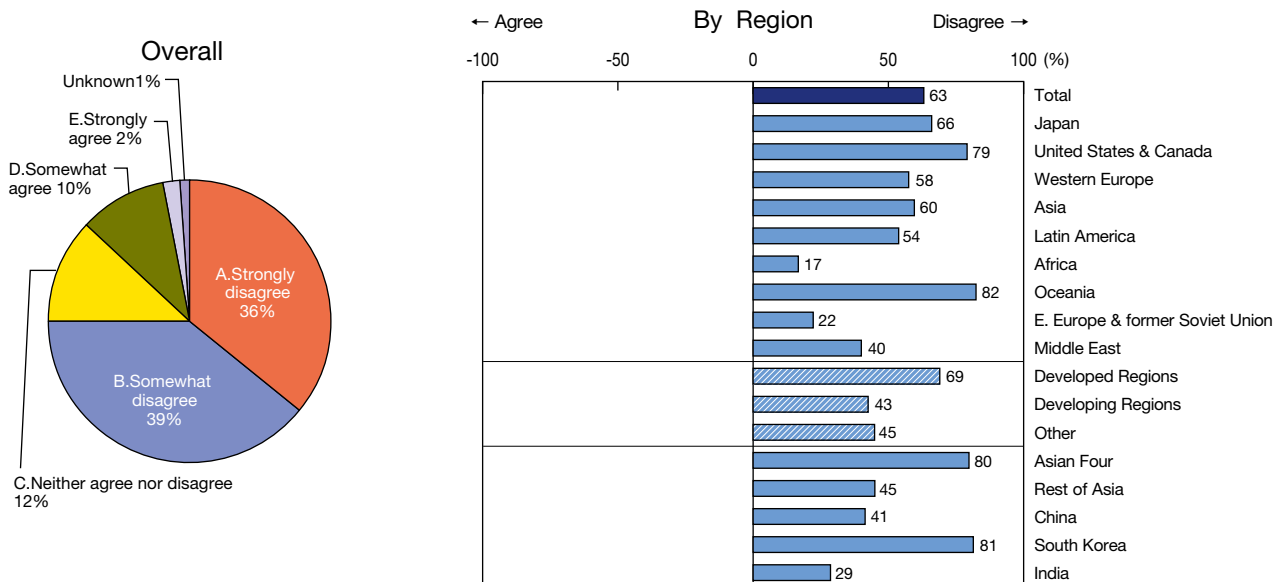
- While overall, the majority of respondents stated they “agreed” with this statement, at 57%, responses were divided with 21% selecting “disagree,” and another 21% selecting “I don’t know.”
- Respondents selecting “agree” comprised the majority in all regions except for Africa. Respondents who selected “agree” in Oceania, Eastern Europe & the former Soviet Union, and India had small margins of 6%, 4%, and 7% respectively, indicating that respondents selected “disagree” at nearly comparable levels.

2. Consume Products from One's Own Country to the Extent Possible (Consume Nearby Water Resources) to Alleviate Water Shortages in Other Countries



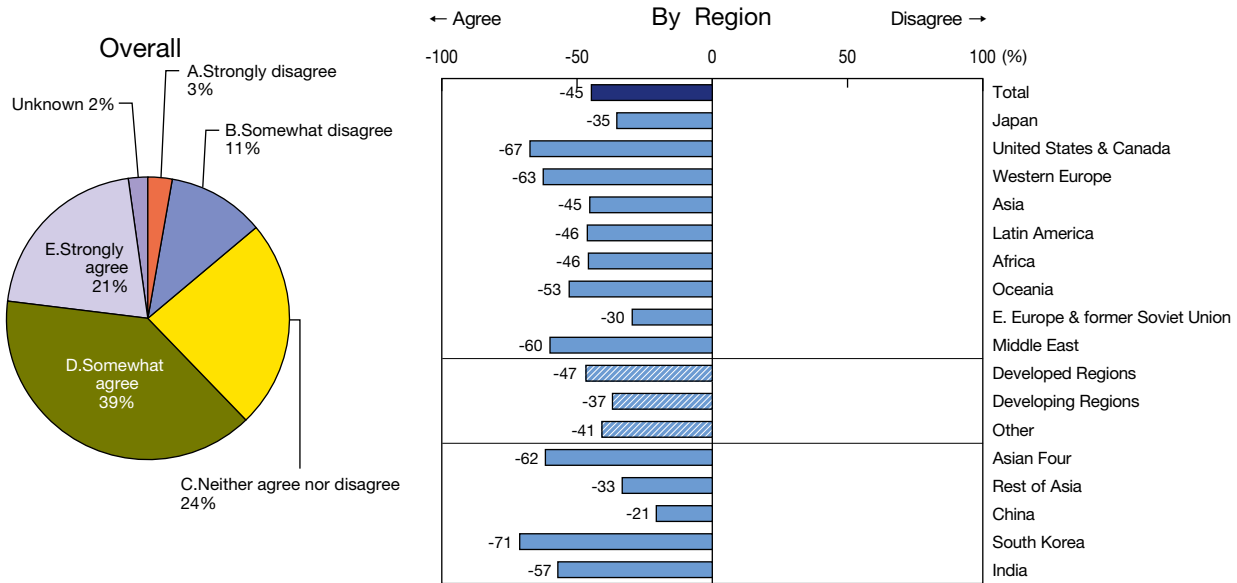
- Overall, respondents who selected “agree” with this statement reached 74%, comprising the majority with a large margin of 62%.
- Respondents who “agreed” with this statement comprised the majority in all regions. Their margins were comparatively large in developed regions and other regions at 68% and 61% respectively. In contrast, the margin was lower in developing regions at 40%.

3. Consumers and Consuming Countries do not have Responsibility as They Pay a Price Based on Market Mechanisms, Benefiting Producers



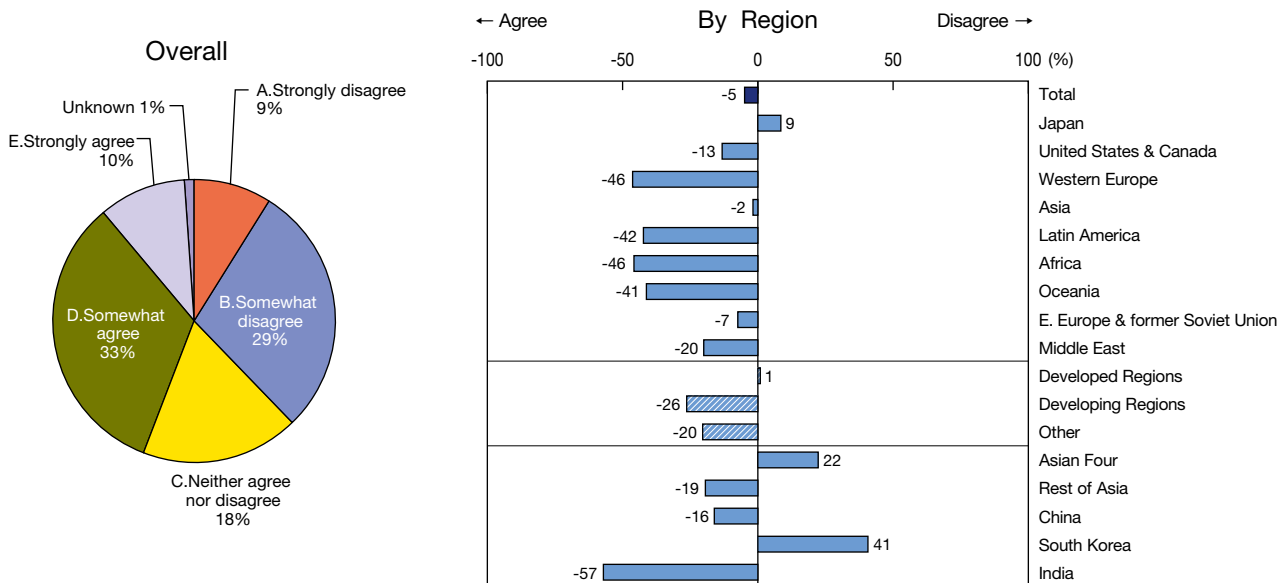
- Overall, 75% of respondents selected “disagree,” comprising the majority with a large margin of 63%.
- Respondents selecting “disagree” comprised the majority in all regions.
- Whereas respondents who chose “disagree” in developed regions comprised the majority with a 69% margin, the margin in developing regions was lower, at 43%.

4. Problem is that the Correct Price Reflecting Scarcity of Water is Not Paid



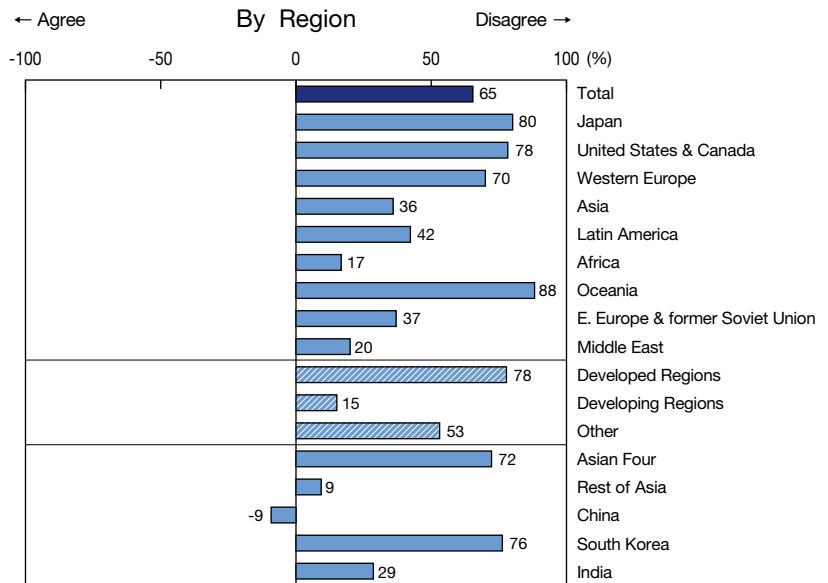
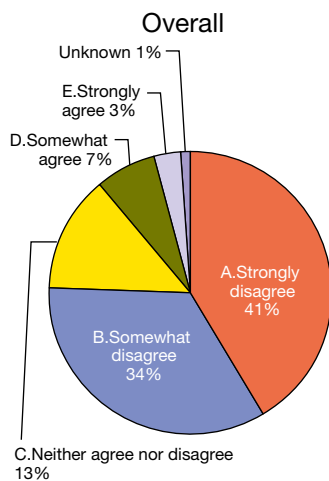
- Overall, 60% of respondents selected “agree,” comprising the majority with a margin of 45%. In addition, 24% of respondents selected “I don’t know.”
- Respondents selecting “agree” comprised the majority in all regions.

5. Securing Water is the Responsibility of Countries Producing Agricultural and Industrial Products that Use Water Resources



- Overall, 43% of respondents selected “agree,” a level comparable to those who selected “disagree,” at 38%. Further, another 18% of respondents selected “I don’t know.”
- Respondents selecting “agree” comprised the majority in all regions except South Korea and Japan.

6. It is Impossible that Consumption of Agricultural and Industrial Products Creates Water Shortages in Other Countries and Regions



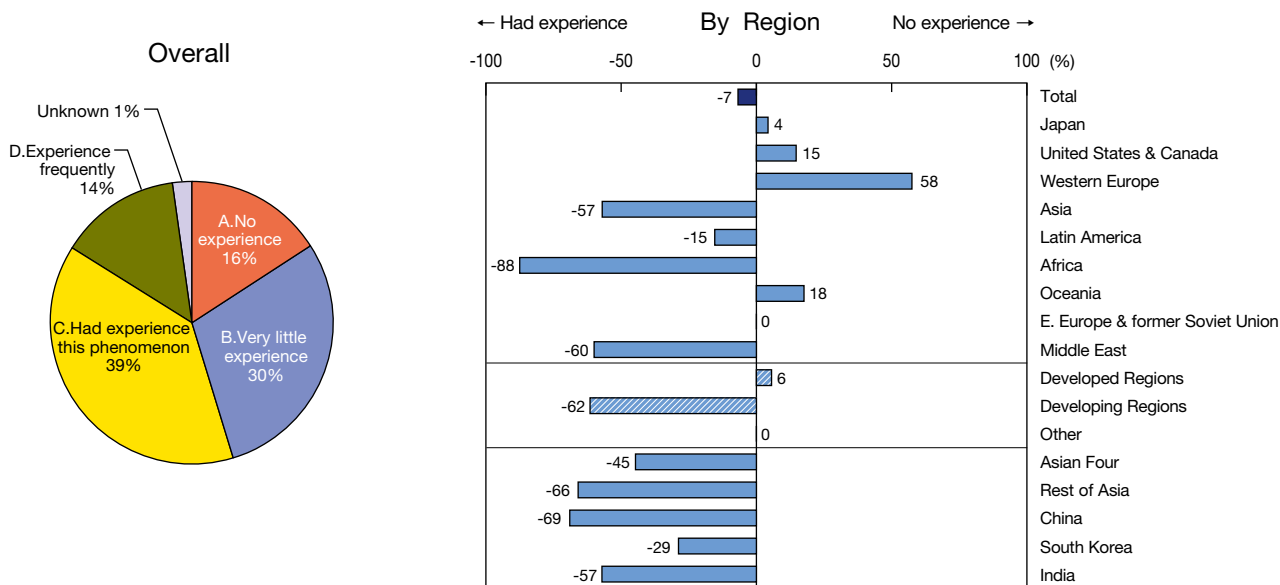
- Overall, respondents who selected “disagree” reached 75%, comprising the majority with a large margin of 65%.
- With the exception of China, where respondents who selected “agree” comprised the majority with a 9% margin, respondents who “disagreed” with this statement formed the majority in all other regions.
- Respondents in developed regions who selected “disagree” had a large margin of 78%; in contrast, the margin was much lower among respondents in developing regions, at 15%.

4. FOOD PROBLEMS (QUESTION 4)

4-1 Have you experienced abnormal food shortages or increases in food prices recently in the country or region where you reside. Please circle one item from A through D for each category below.

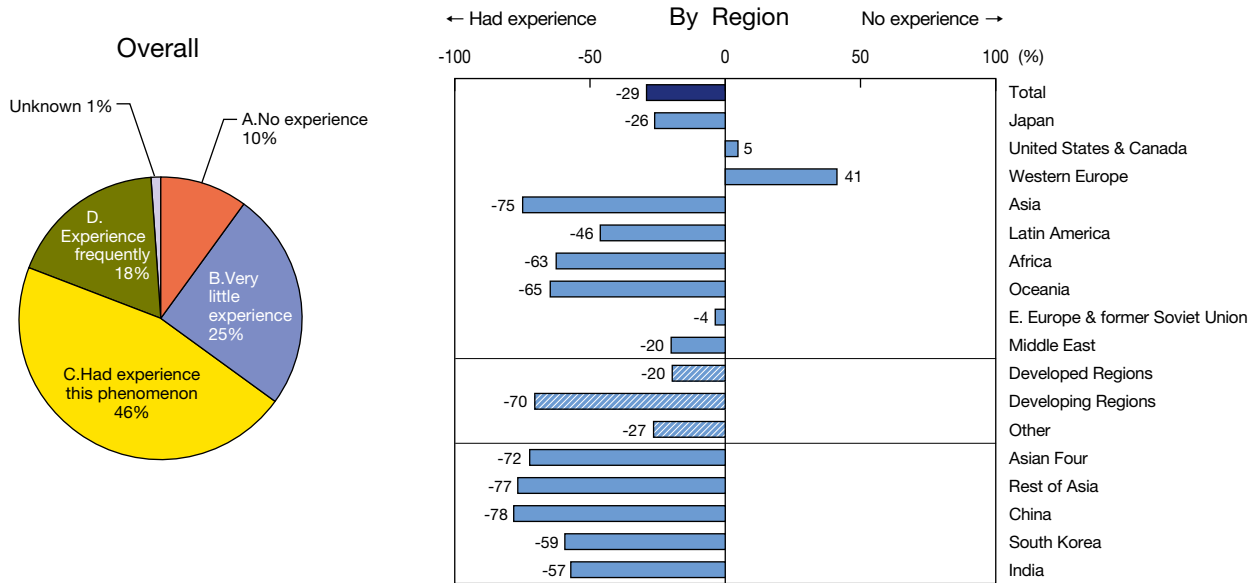
* In order to make the results of question 4 -leasily comprehensible, choices A and B were combined as “no experience” whereas choices C and D were combined as “had experience.” A margin between the two were calculated to arrive at the majority response for each region following the formula $(A+B) - (C+D)$, which is displayed in this bar graph.

1. Abnormal Shortages/Increases in Prices of Meats and Dairy Products



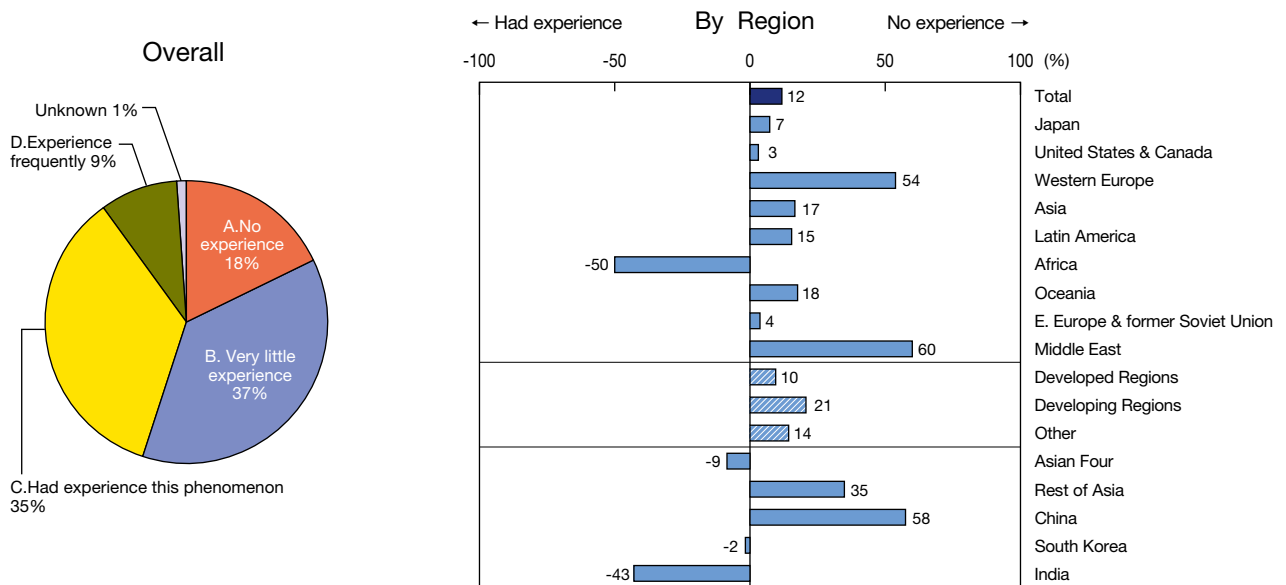
- Overall, the number of respondents who indicated that they “had experienced” this phenomenon was comparable to those who had “no experience” with it, at 53% and 46% respectively. Respondents who selected “had experience” comprised the majority in many regions; in contrast, in Western Europe, those who selected “no experience” comprised the majority with a large margin of 58%. Those who selected “no experience” also comprised the majority in Oceania and the United States & Canada with margins of 18% and 15% respectively. In Eastern Europe & the former Soviet Union and Japan, a comparable number of respondents selected “had experience” as those who selected “no experience.”
- Respondents in developed regions who selected “no experience” formed a small majority with a 6% margin. In contrast, those in developing regions who “had experience” with shortages in meats and dairies formed the majority with a large margin of 62%, highlighting a discrepancy in the circumstances between developed and developing regions.

2. Abnormal Shortages/Increases in Prices of Vegetables, Grains, and Fruits



- Overall, 64% of respondents stated that they “had experience” with this phenomenon, comprising the majority with a 29% margin.
- Again, there were regional differences in the responses to this question. Respondents who selected “had experience” comprised the majority in many regions; in contrast, Western Europe was the only region in which those who selected “no experience” comprised the majority with a large margin of 41%. A comparable number of respondents selected “had experience” as those who had “no experience” in the United States & Canada and in Eastern Europe & the former Soviet Union.
- Whereas respondents in developed countries “had experience” with this phenomenon with a 20% margin, the margin was much greater in developing regions at 70%, indicating a much larger population who had experienced shortages or price increases.

3. Abnormal Shortages/Increases in Prices of Nonessential Grocery Items like Coffee

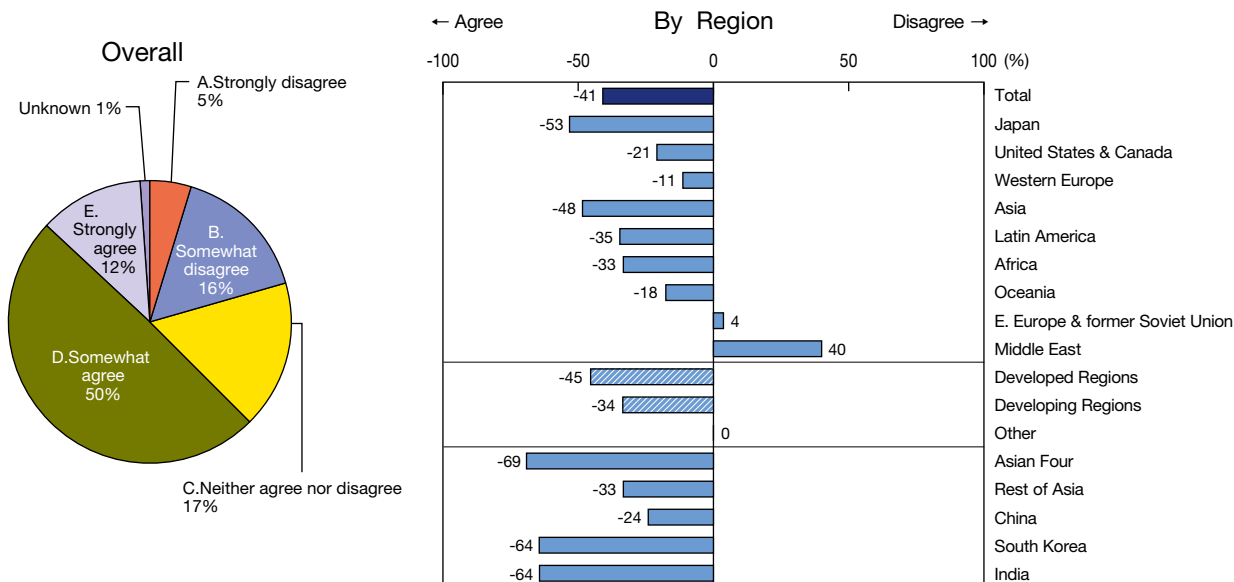


- Overall, those who selected “no experience” reached 55%, but with a relatively small margin of 12%.
- Regionally, respondents in Africa and India who selected “had experience” comprised the majority with margins of 50% and 43% respectively. In the United States & Canada, and in Eastern Europe & the former Soviet Union, the number of respondents who selected “had experience” was comparable to those who selected “no experience.” In all other regions, the majority of respondents selected “no experience.”

4-2 Reports about food shortages and increases in food prices have stirred the news in recent years. What do you think are the reasons behind this problem? Please circle one item from A through E for each category below that best reflects your opinion.

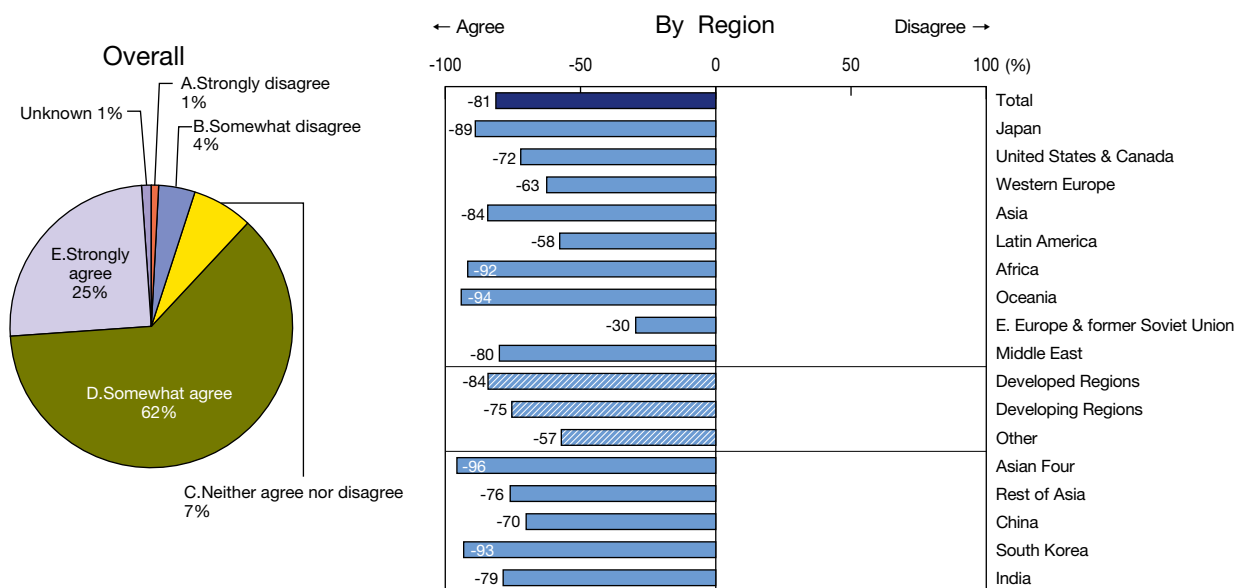
* In order to make the results of question 4-2 easily comprehensible, choices A and B were combined as “disagree” whereas choices D and E were combined as “agree.” A margin between the two were calculated to arrive at the majority response for each region following the formula (A+B) - (D+E), which is displayed in this bar graph.

1. Seasonal Variations in the Yield of Agricultural, Animal, and Fish Products



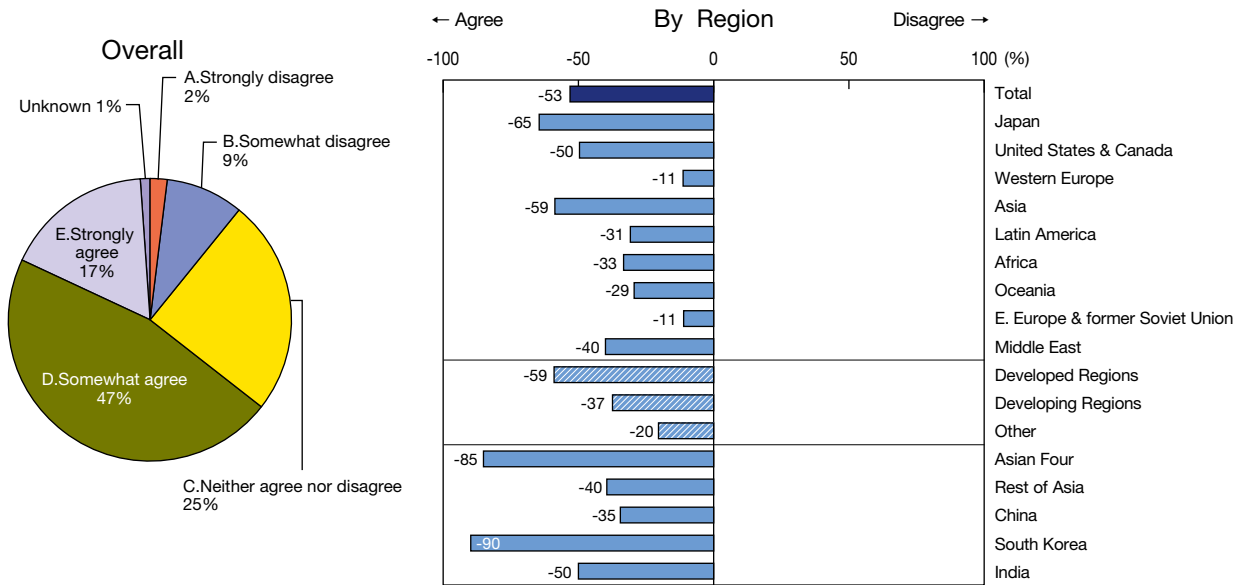
- Overall, 62% of respondents selected “agree,” comprising the majority with a 41% margin.
- In contrast, the Middle East was the only region where respondents selecting “disagree” formed the majority, with a 40% margin.
- The number of respondents selecting “agree” was comparable to those selecting “disagree” in Eastern Europe & the former Soviet Union.

2. Changes in the Yield of Agricultural and Animal Products Caused by Climatic Aberrations (Flooding, High/Low Temperatures, Low Rainfall)



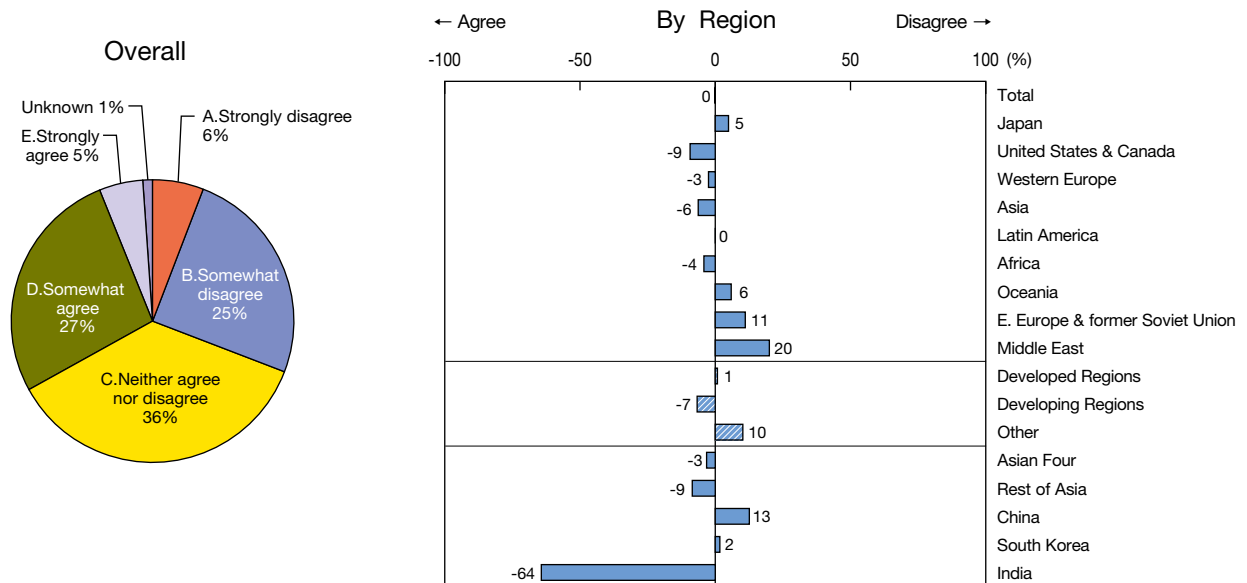
- Overall, respondents stating they “agreed” with this statement reached 87%, comprising an overwhelming majority with an 81% margin. Patterns of responses were similar in each of the regions.

3. Changes in Fish Yields Caused by Abnormalities in Sea Temperatures, Changes in Ocean Currents, and Ocean Acidification



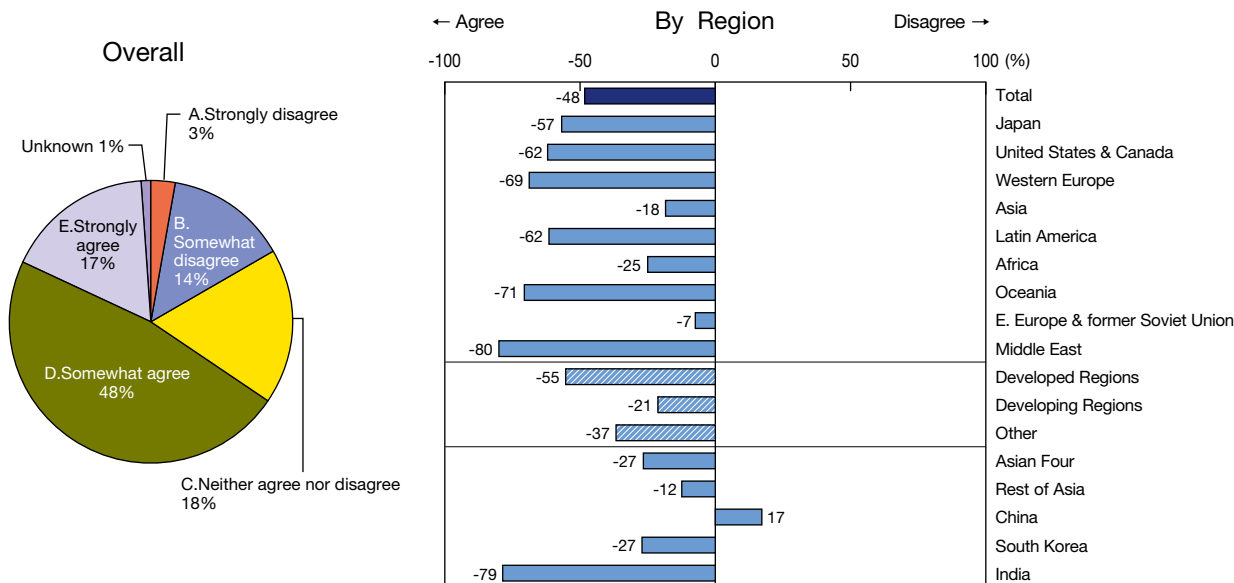
- Overall, 64% of respondents selected “agree,” comprising the majority with a 53% margin.
- Respondents who selected “agree” formed the majority in all regions. However, the margin varied greatly, from 90% in South Korea, to 11% in Eastern Europe & the former Soviet Union. Overall, respondents who selected “I don’t know” reached 25%, reflecting a high level of uncertainty in the situation.

4. Losses Incurred Upon Storing and Transporting Products, as Seen with Perishable Food



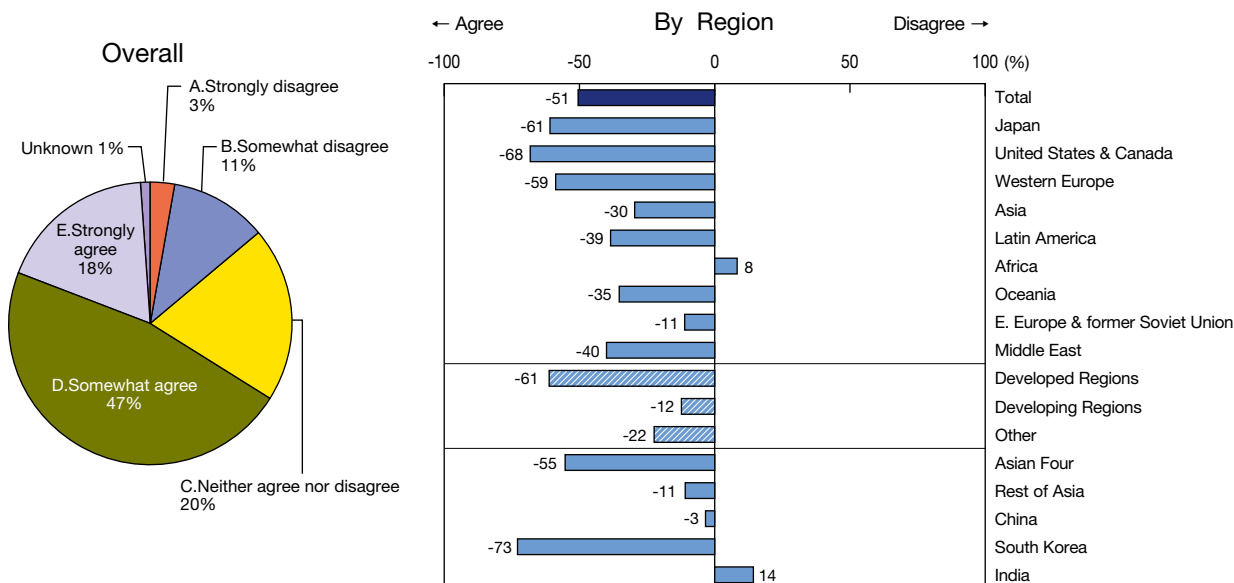
- Responses to this question were divided. Overall, 31% of respondents selected “agree” to this statement, matching the percentage who selected “disagree.” In addition, those who stated “I don’t know” reached 36% of the responses.
- Respondents in India selected “agree,” making it the only region with a large margin, at 64%.

5. Price Increases Caused by Increased Demand for Food as Result of Economic Growth and Expansion of Middle Class



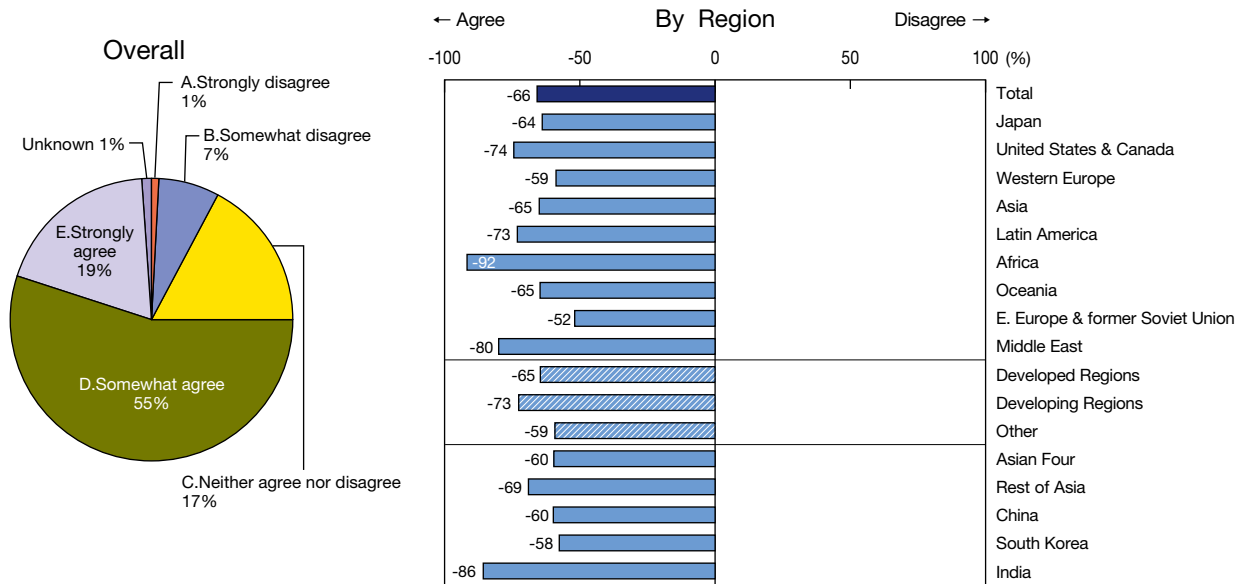
- Overall, 65% of respondents selected “agree,” forming the majority. On the other hand, 17% of respondents “disagreed” with this statement. Further, those who stated “I don’t know” reached 18%.
- China became the only region where respondents who selected “disagree” formed the majority with a 17% margin. In all other regions, the majority of respondents selected “agree.”

6. Increased Consumption of Grains as Feed Materials for Domestic Animals



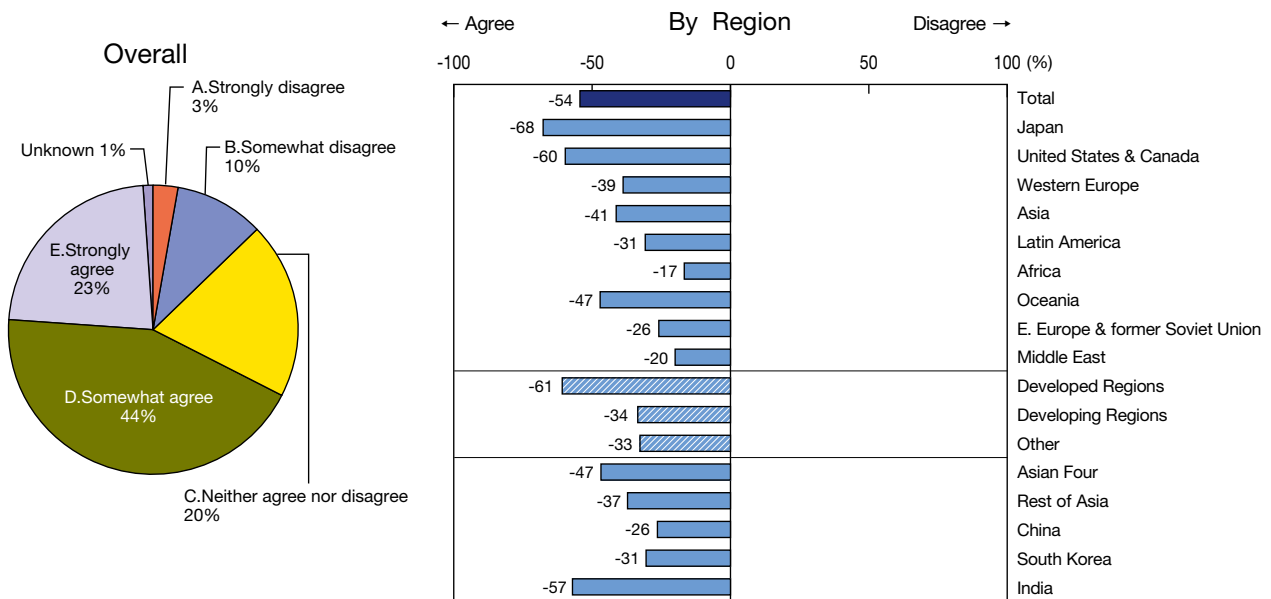
- Overall, 65% of respondents selected “agree,” comprising the majority with a 51% margin. In addition, those who selected “I don’t know” reached 20%.
- Respondents who stated they “agreed” with this statement comprised the majority with a 61% margin in developed regions. In contrast, the margin was limited to 12% among respondents in developing regions, revealing a more severe outlook towards this problem in developed regions.
- Africa and India became the only regions where respondents who selected “disagree” formed the majority, with an 8% and 14% margin respectively. In China, a comparable number of respondents selected “agree” as those who selected “disagree.”

7. Price Increases of Agricultural Products and Reduced Production Caused by Increased Fuel Prices



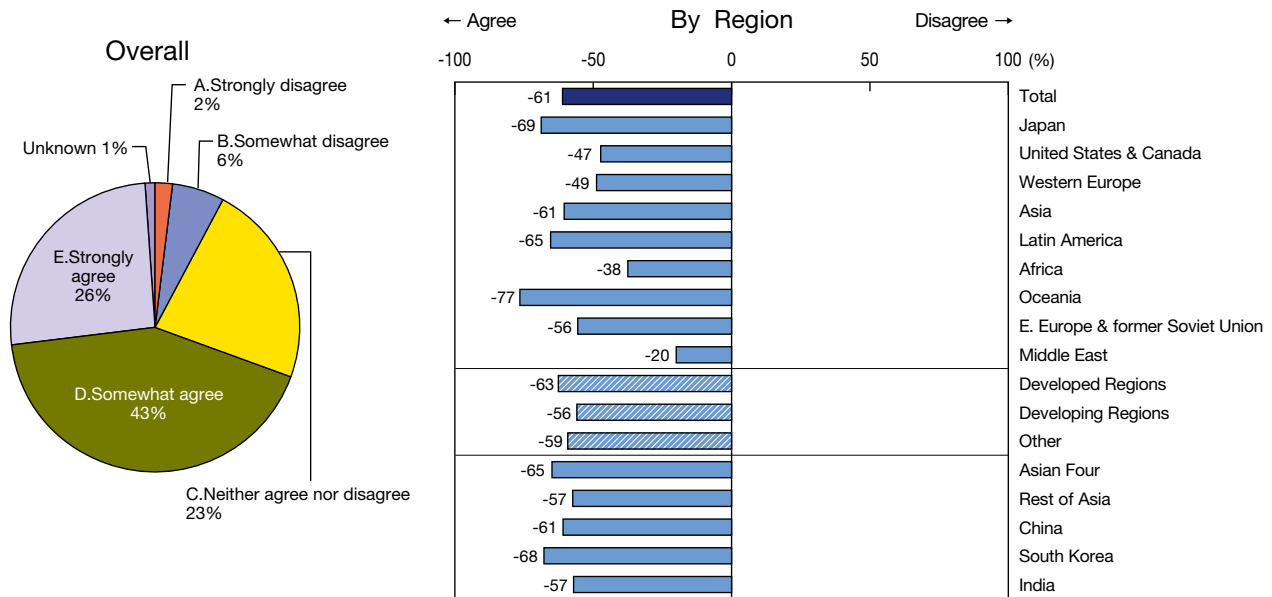
- Overall, 74% of respondents selected “agree,” comprising the majority with a 66% margin. Further, 17% of respondents selected “I don’t know.”
- While the majority showed similar margins across the board and did not reflect any extreme regional differences, they reached high levels in Africa and India at 92% and 86% respectively.

8. Wasteful Disposal of Foodstuffs in Wealthy Countries and Regions (E.g., Inefficiencies of Disposing of Uneaten Food)



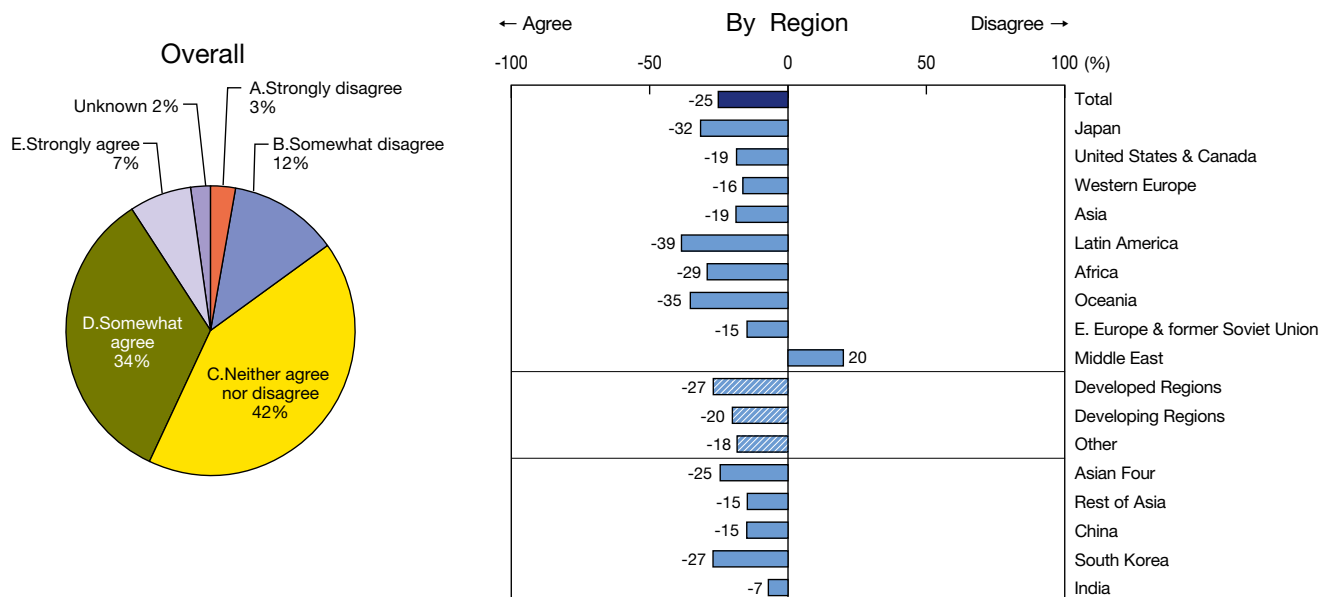
- Overall, 67% of respondents selected “agree,” comprising the majority with a 54% margin. Further, those who selected “I don’t know” reached 20%.
- Respondents who selected “agree” formed the majority in both developed and developing regions, with margins of 61% and 34% respectively.

9. Effects of Massive Speculation in the Market for Primary Products (Particularly Agricultural Products and Seafood)



- Overall, 69% of respondents selected “agree,” comprising the majority with a 61% margin. Further, those who selected “I don’t know” reached 23%.
- Respondents who selected “agree” formed the majority in all regions.

10. Effects of Foreign Exchange Movements

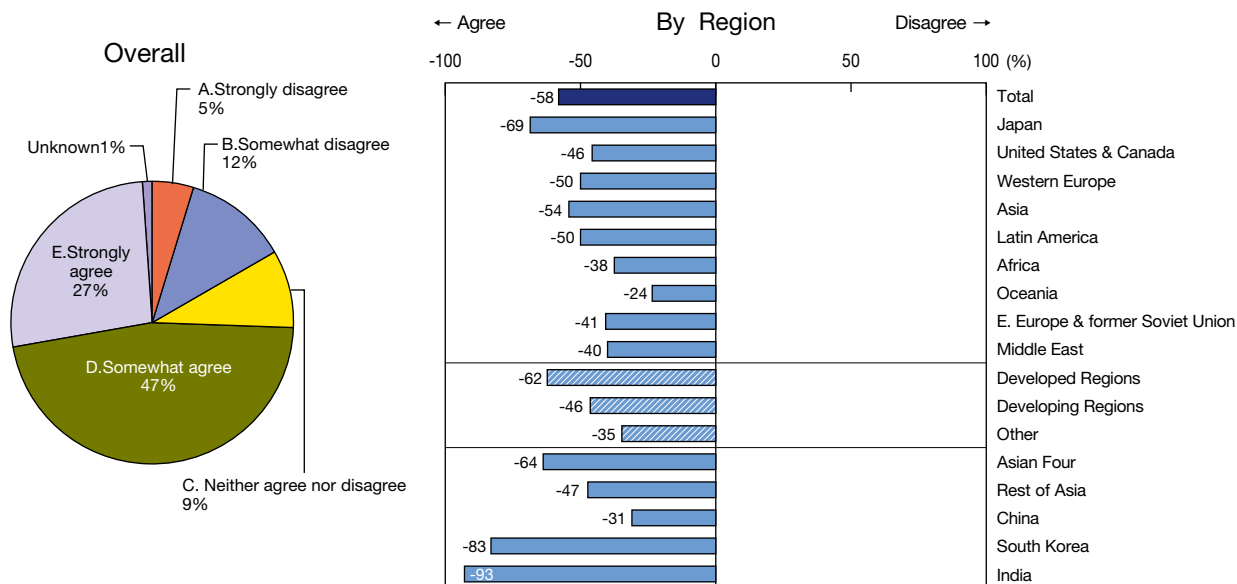


- Overall, 69% of respondents selected “agree,” comprising the majority with a 61% margin. Further, those who selected “I don’t know” reached 23%.
- Respondents who selected “agree” formed the majority in all regions.

4-3 A variety of measures are possible to alleviate food problems. Please circle one item from A through E for each category below that best reflects your opinion.

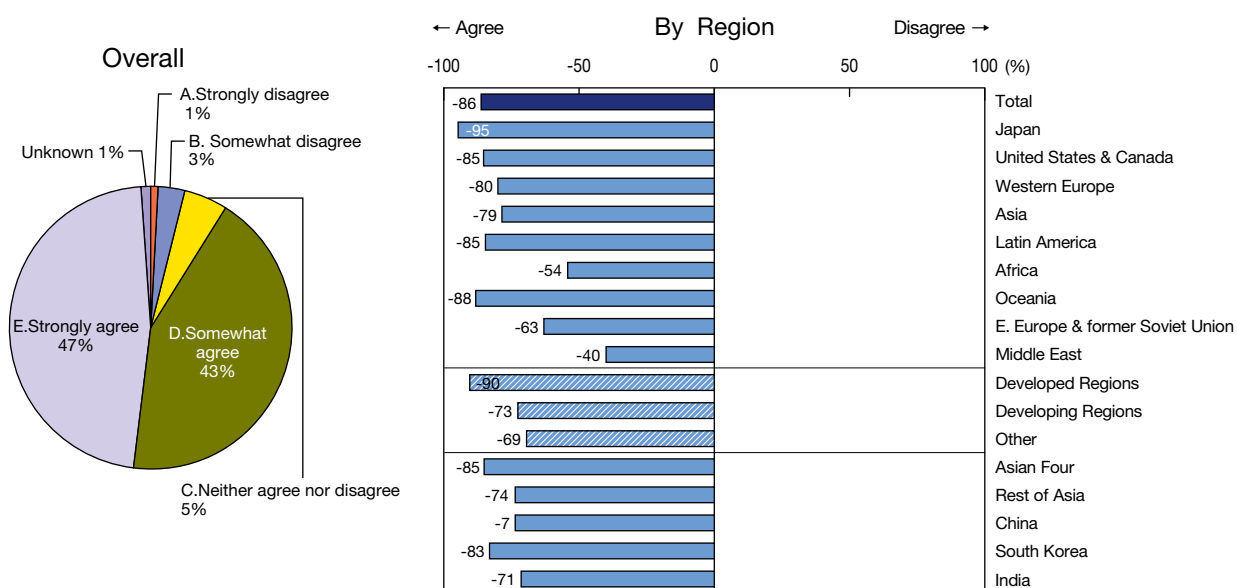
* In order to make the results of question 4-3 easily comprehensible, choices A and B were combined as “disagree” whereas choices D and E were combined as “agree.” A margin between the two were calculated to arrive at the majority response for each region following the formula $(A+B) - (D+E)$, which is displayed in this bar graph.

1. Expand Arable Land and Pastures through Implementing Sustainable Land Use Taking Into Consideration the Environment (E.g., Greening of Deserts)



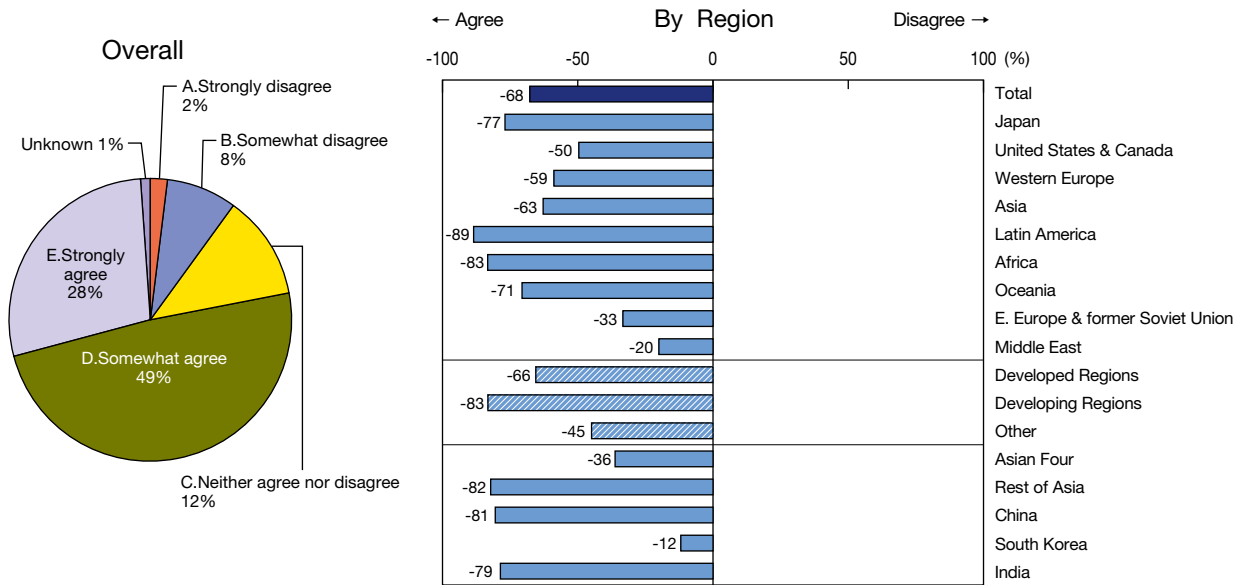
- Overall, 74% of respondents stated they “agreed” with this statement, comprising the majority with a 58% margin.
- Respondents who selected “agree” formed the majority in all regions, with particularly large margins in India and South Korea of 93% and 83% respectively. The margins varied from developed, developing, and other regions in descending order, at 62%, 46%, and 35% respectively.

2. Moderate Capture at Sustainable Levels and Implement Measures to Increase Marine Resources



- Overall, 90% of respondents selected “agree,” comprising the majority with an overwhelming margin of 86%.
- Respondents who selected “agree” comprised the majority with large margins in nearly all regions.
- In Japan, “agree” formed the majority with a large margin of 95%.

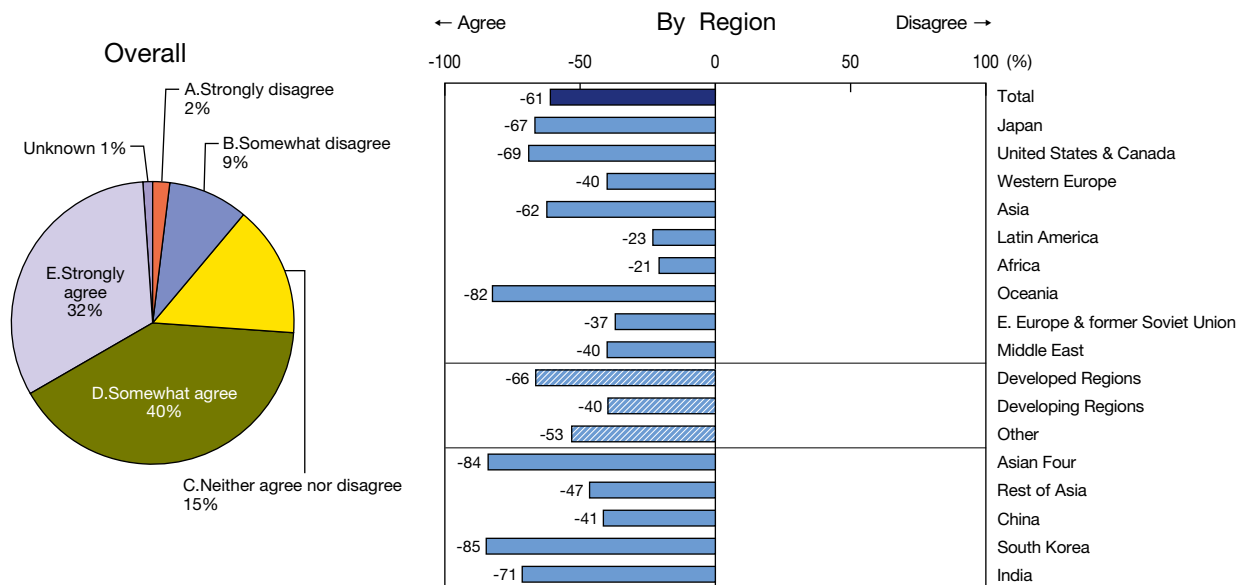
3. Improve the Productivity of Foodstuffs through Advancements in Breed Improvement and Irrigation Technology



- Overall, 77% of respondents indicated they “agreed” with this statement, comprising the majority with a large margin of 68%.
- In all regions except for South Korea, the Middle East, and Eastern Europe & the former Soviet Union, those who selected “agree” formed the majority with large margins.
- Respondents in developing regions who selected “agree” comprised the majority with a large margin of 83%.

4. Modifications in Food Consumption

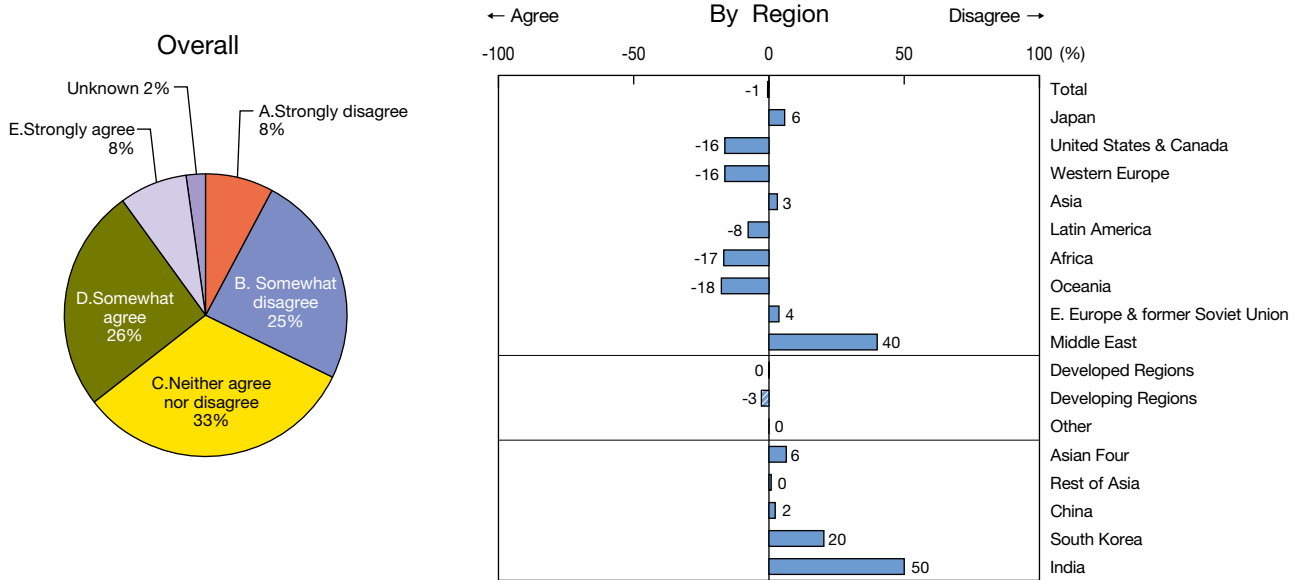
(E.g., Limiting caloric intake; decreasing the consumption of meat: 1 kg of beef requires 11 kg of grains, and it would be more efficient for people to consume grains directly*) *Sample calculation based on corn



- Overall, 73% of respondents selected “agree,” comprising the majority with a 61% margin. Further, respondents who selected “I don’t know” reached 15%.
- Respondents who selected “agree” formed the majority in all regions.
- Whereas the majority in developed regions had a margin of 66%, the margin in developing regions was not as high, at 40%.

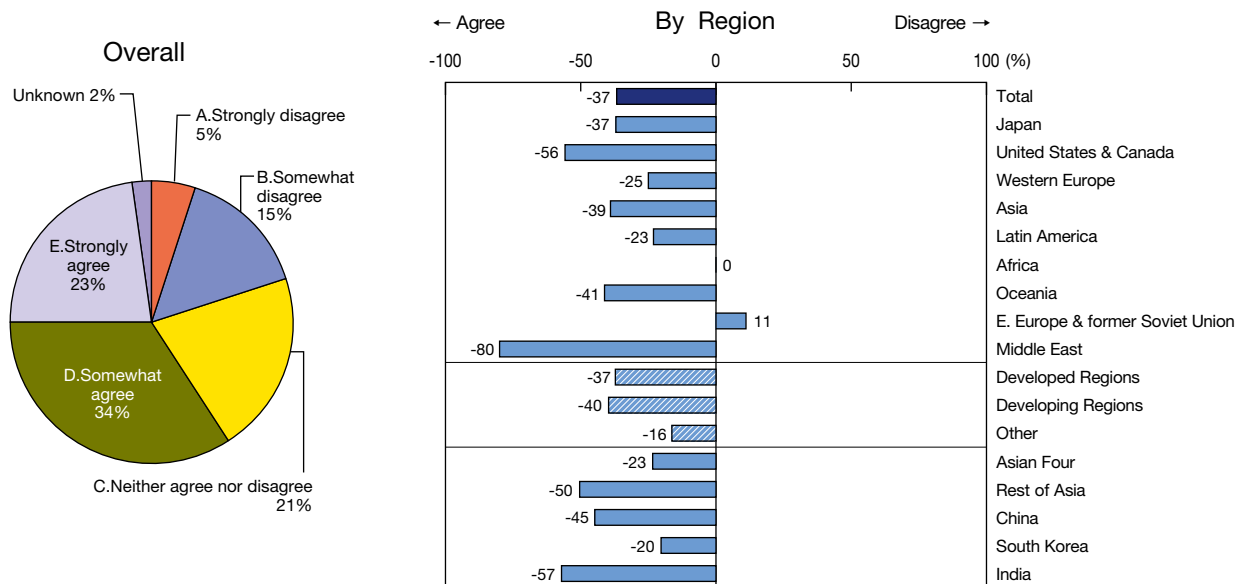
5. Develop New Food Resources

(E.g., Consume insects previously uneaten as a source of protein)



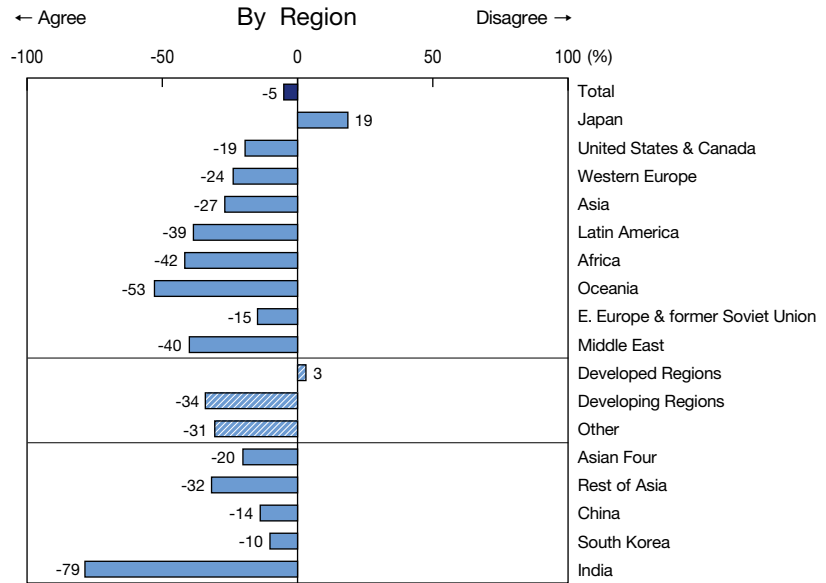
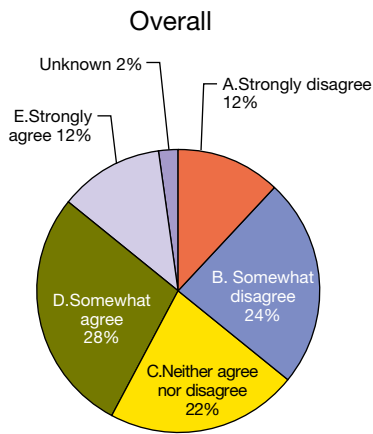
- Overall, number of respondents who selected “agree” was comparable to those who selected “disagree,” at 33% each. Further, those who selected “I don’t know” reached 33%.
- While regional differences were limited, respondents in India and the Middle East who selected “disagree” comprised the majority with large margins of 50% and 40% respectively.

6. Suppression of Population Growth



- Overall, 57% of respondents stated they “agreed” with this measure, comprising the majority with a 37% margin. Further, respondents who selected “I don’t know” reached 21%.
- Respondents who selected “agree” formed the majority in most regions. Meanwhile, Eastern Europe & the former Soviet Union was the only region in which respondents who selected “disagree” comprised the majority with a 11% margin. A comparable number of respondents in Africa chose “agree” as those who selected “disagree.”

7. There Should Be No Shortages Considering Absolute Global Food Output; Shortages Can Be Solved by Adequate Distribution



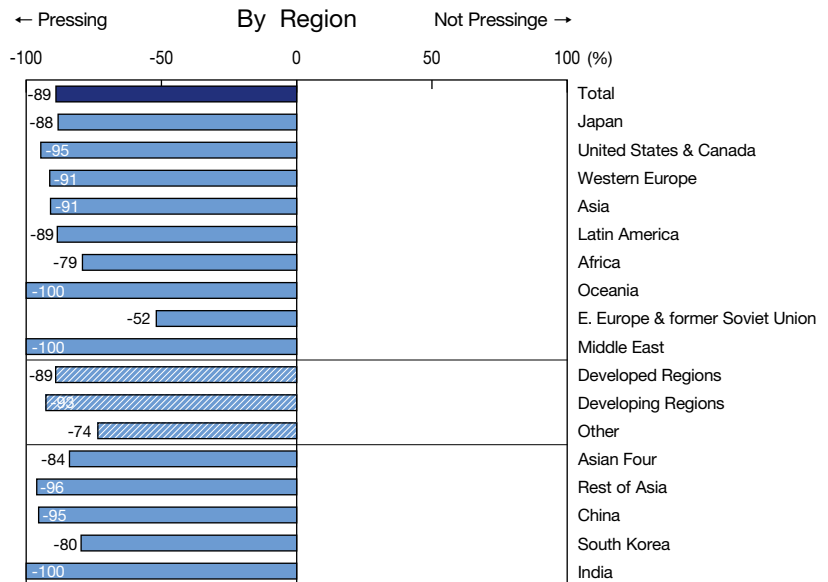
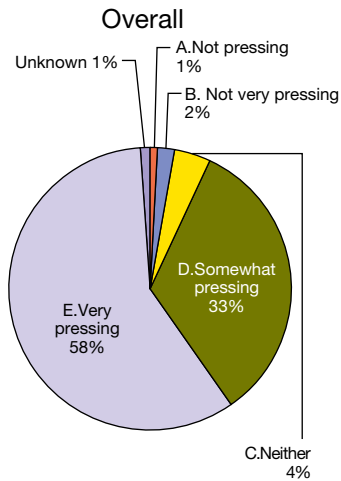
- Overall, 40% of respondents stated they “agreed” with this statement, forming a slight majority with just a 5% margin. Respondents who selected “I don’t know” reached 22%.
- Japan was the only region in which respondents who selected “disagree” formed the majority with a 19% margin. In all other regions, the majority of respondents selected “agree.” In India, “agree” formed the majority with a large margin of 79%.

5. ENVIRONMENTAL SECURITY (QUESTION 5)

5-1 Each of the categories below pertains to an element of environmental security, which supports human life and welfare. Please circle one item from A through E for each category to indicate whether or not you consider it to be a pressing issue.

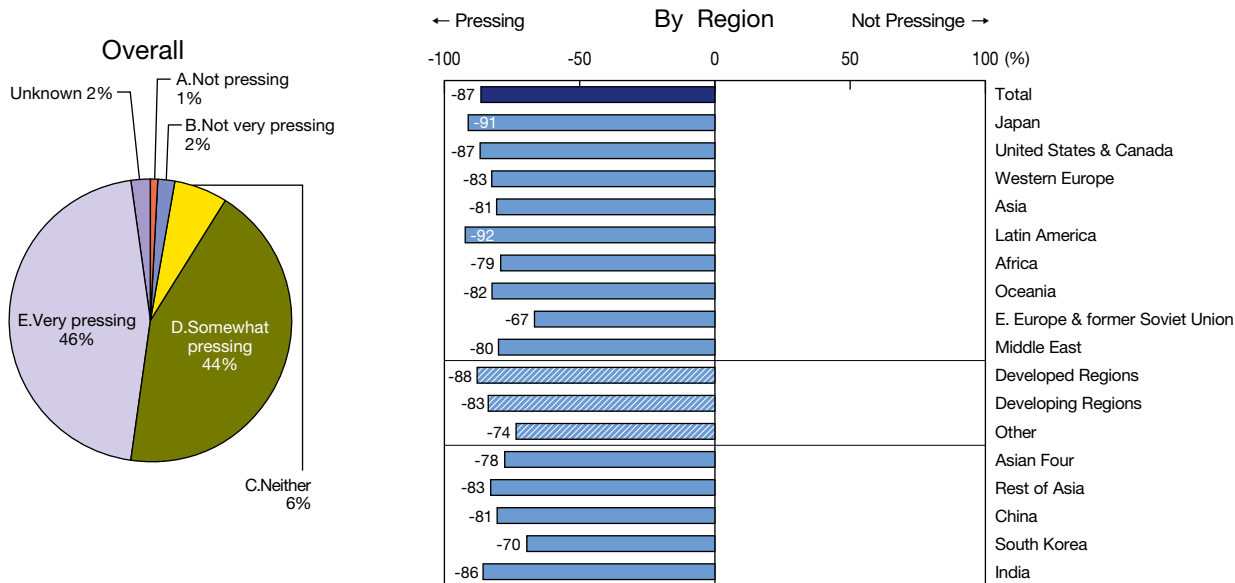
* In order to make the results of question 5-1 easily comprehensible, choices A and B were combined as “not pressing” and choices D and E were combined as “pressing.” A margin between the two were calculated to arrive at the majority response for each region following the formula $(A+B) - (D+E)$, which is displayed in this bar graph.

1. Water Shortage



- Overall, 91% of respondents stated that the issue of water shortage was “pressing,” comprising the majority with an overwhelming margin of 89%.
- In almost all regions, respondents who selected “pressing” comprised a large majority.
- In Oceania, the Middle East, and India, those who selected “pressing” had a 100% margin, revealing the urgency of the water shortage in those regions.
- Eastern Europe & the former Soviet Union was the only region where the margin was below 80%, at 52%.

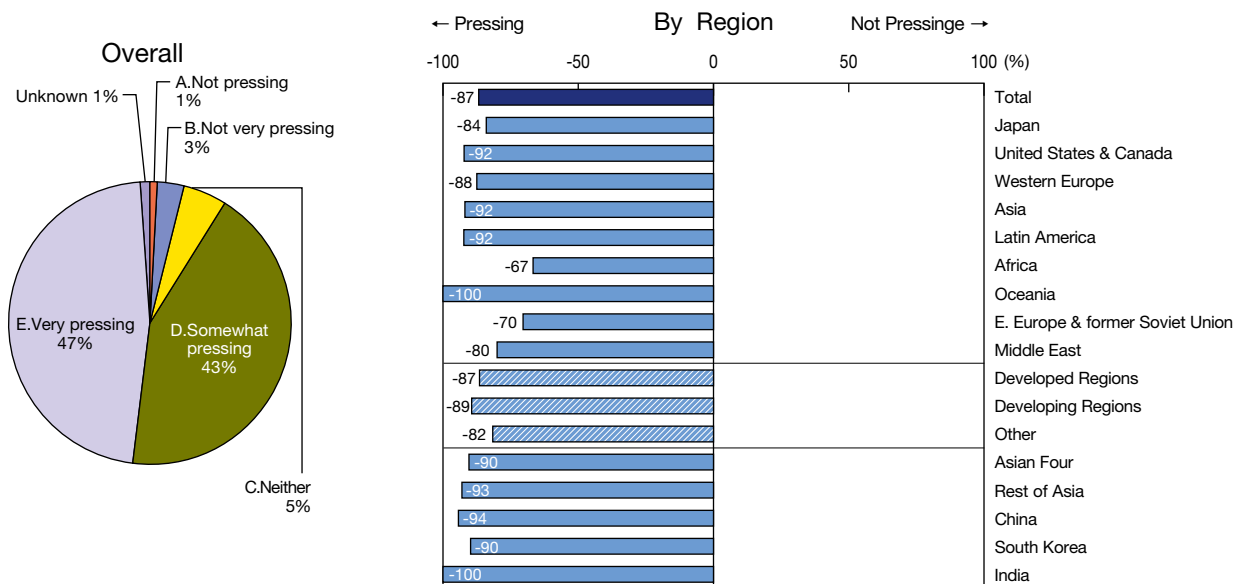
2. Food Shortage



- Overall, 90% of respondents stated that the issue of food shortage was “pressing,” comprising the majority with an overwhelming margin of 87%.
- In all regions, respondents who selected “pressing” comprised a large majority.

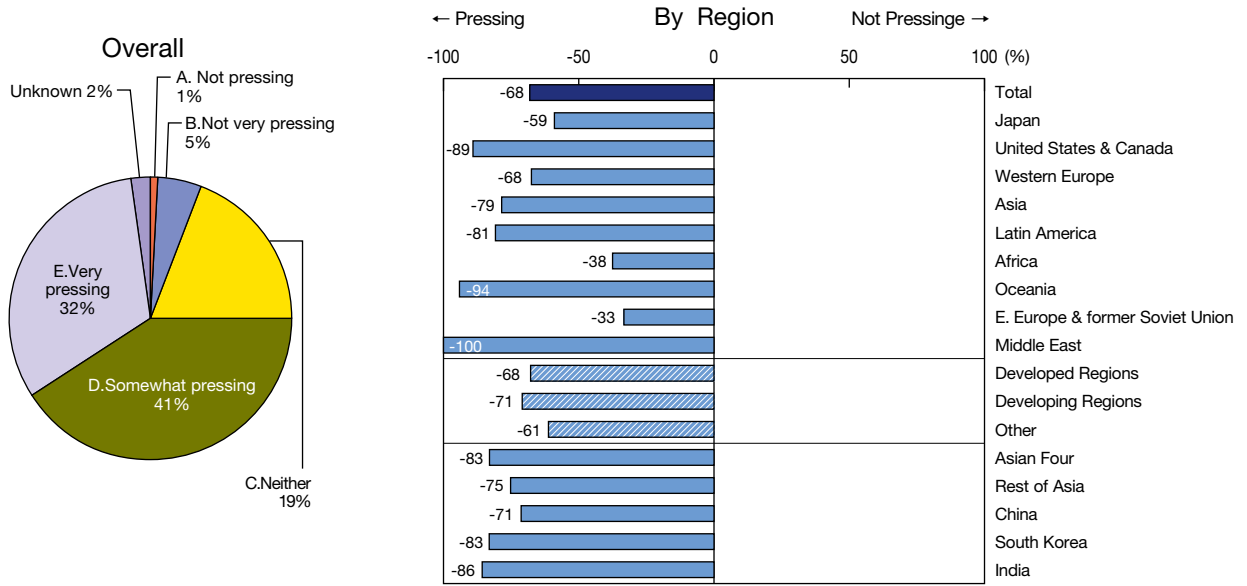
3. Pollution and Contamination of the Atmosphere, Rivers, and Oceans

(Contamination through chemical substances, excessive eutrophication through phosphorus and nitrogen particles)



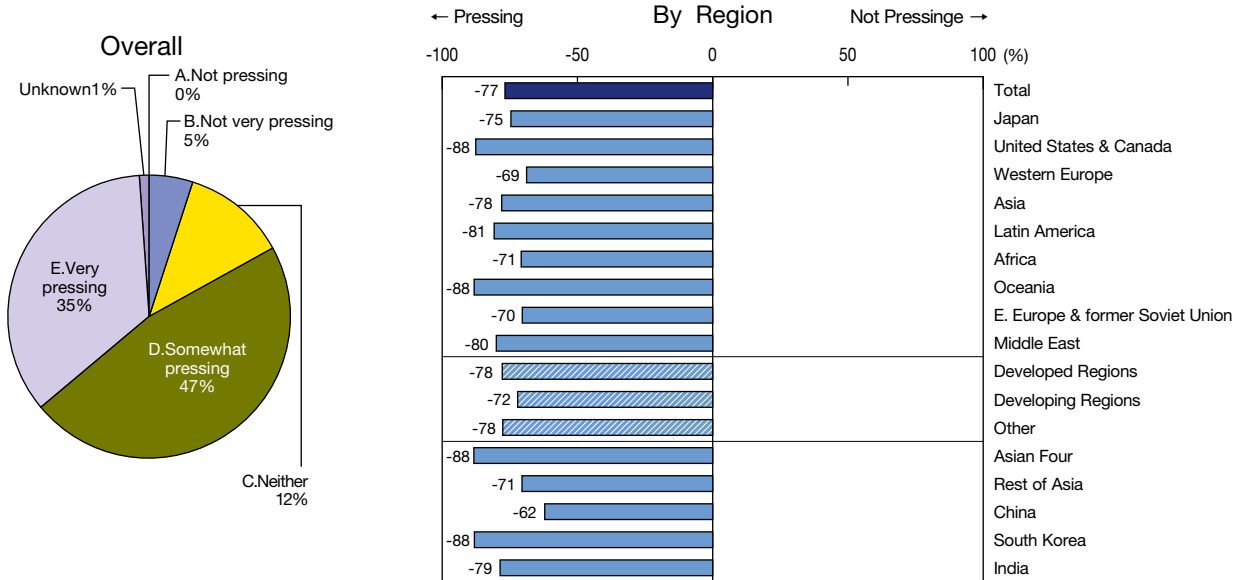
- Overall, 90% of respondents stated that the issue of pollution and contamination was “pressing,” comprising the majority with an overwhelming margin of 87%.
- In all regions, respondents who selected “pressing” comprised a large majority.

4. Destruction of Ecosystems through the Acidification of Oceans



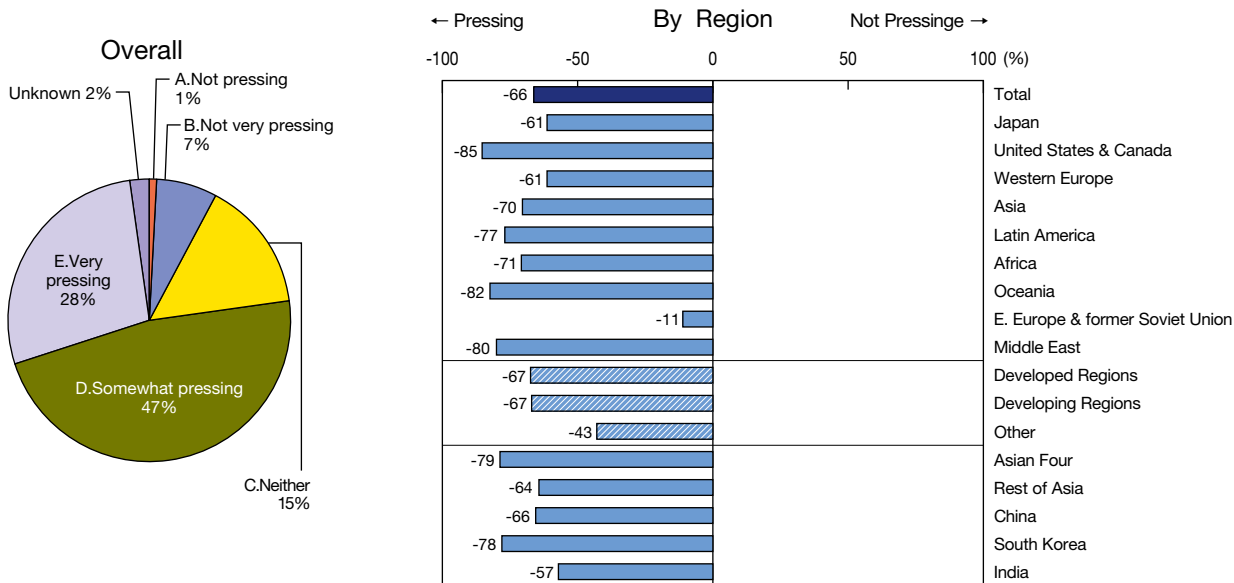
- Overall, 73% of respondents stated that the destruction of ecosystems through ocean acidification was “pressing,” comprising the majority with a large margin of 68%. Further, those selecting “I don’t know” reached 19%.
- In all regions, respondents who selected “pressing” comprised a large majority.
- On the other hand, the margins in Eastern Europe & the former Soviet Union and Africa was comparatively low, at 33% and 38% respectively.

5. Damage from Extreme Climates like Heavy Rains, Drought, Massive Typhoons, etc.



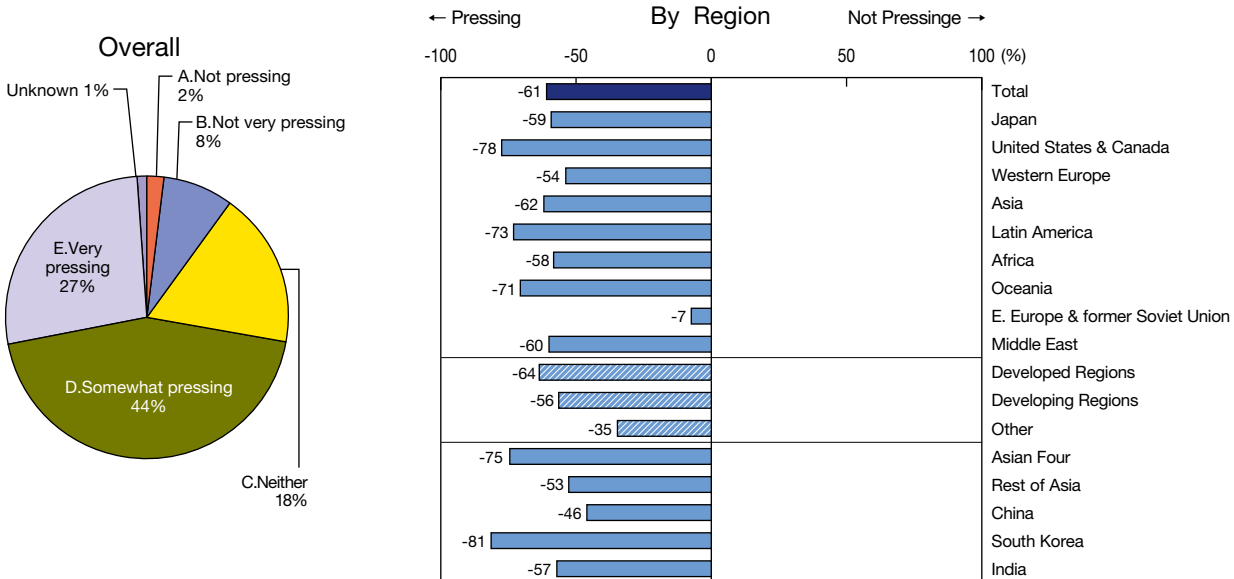
- Overall, 82% of respondents stated that damage from extreme climates was “pressing,” comprising the majority with a large margin of 77%. In all regions, respondents who selected “pressing” comprised a large majority.

6. Loss of Basis for Livelihood from Effects of Global Warming Like Sea Level Rises



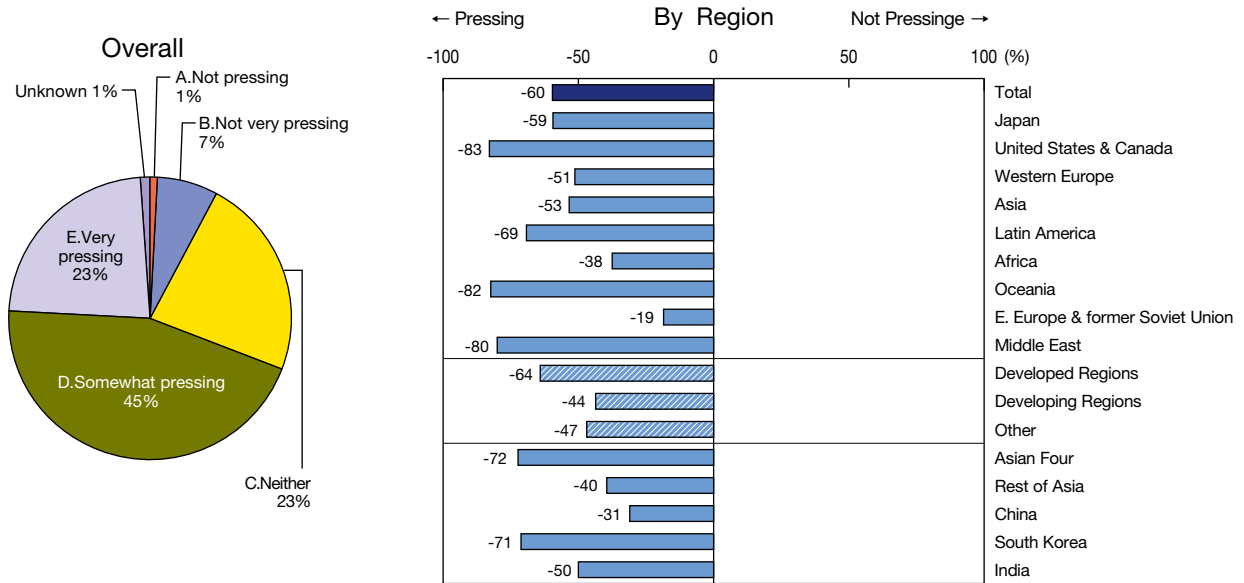
- Overall, 75% of respondents stated that the loss of a basis for livelihood was “pressing,” comprising the majority with a large margin of 66%. Further, those selecting “I don’t know” reached 15%.
- Respondents who selected “pressing” comprised a large majority in all regions except for Eastern Europe & the former Soviet Union, where the margin was 11%.

7. Harm to Human Health from Global Warming, Increased Incidence of Disease Outbreak and Mortality, Rise in Infectious Diseases



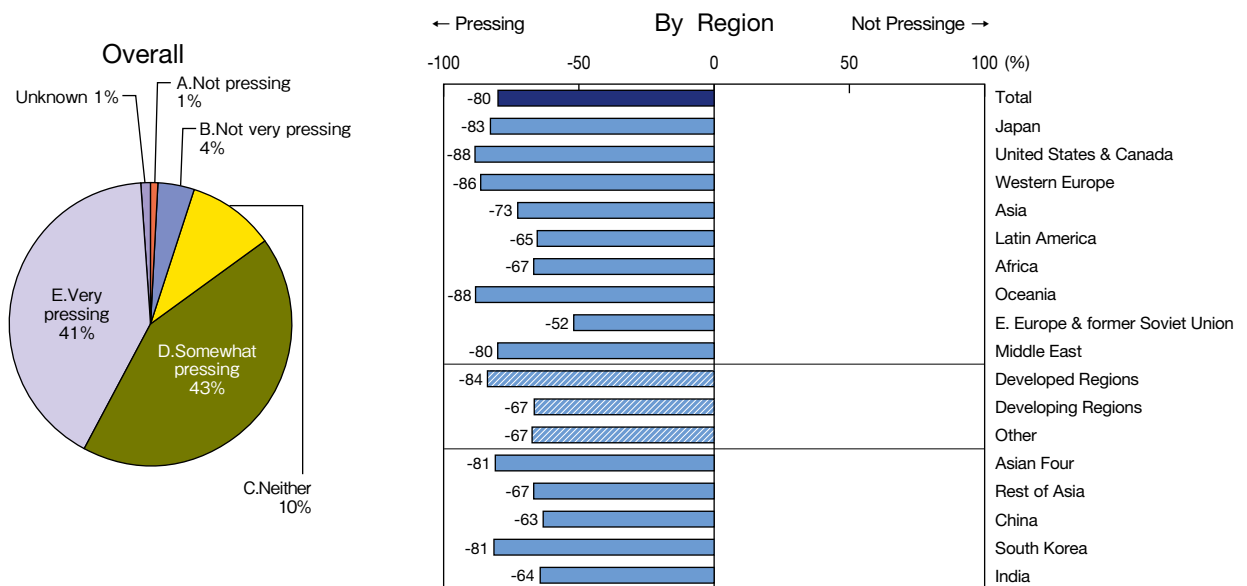
- Overall, 71% of respondents stated that the harm to human health was “pressing,” comprising the majority with a margin of 61%. Further, those selecting “I don’t know” reached 18%.
- Respondents who selected “pressing” comprised a large majority in all regions except for Eastern Europe & the former Soviet Union, where the margin was 7%.

8. Creation of Environmental Refugees



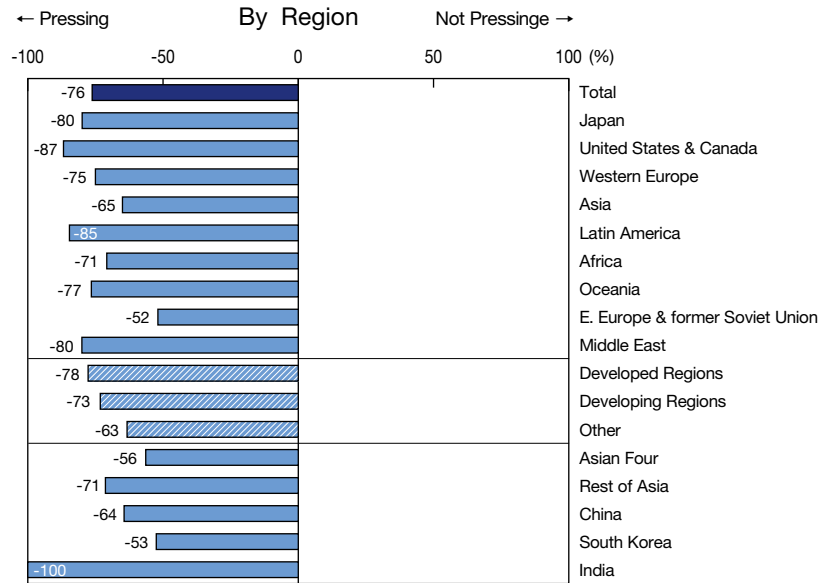
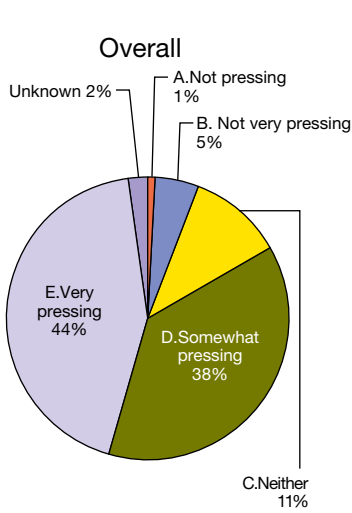
- Overall, 68% of respondents stated that the creation of environmental refugees was “pressing,” comprising the majority with a margin of 60%. Further, those selecting “I don’t know” reached 23%.
- Respondents who selected “pressing” comprised a large majority in many regions; however, the margin in Eastern Europe & the former Soviet Union was comparatively low, at 19%.

9. Conflict Over Resources



- Overall, 84% of respondents stated that conflict over resources was “pressing,” comprising an overwhelming majority with a margin of 80%.
- Respondents who selected “pressing” comprised a large majority with margins greater than 50% in all regions.

10. Population Growth



- Overall, 82% of respondents stated that population growth was “pressing,” comprising a large majority with a margin of 76%.
- In India, those who selected “pressing” comprised the majority with a margin of 100%; in all other regions, “pressing” also comprised a large majority with margins greater than 50%.

IV. Comments from Respondents

This year's questionnaire elicited a total of 331 comments, including 157 from 45 countries outside Japan and 172 from Japan, providing invaluable information and opinions about the realities of environmental problems across the world as well as measures and ideas to improve the global environment. While the comments spanned a wide spectrum of subjects, more than one-quarter of those from Japan pertained to the Great East Japan Earthquake that struck northeastern Japan on March 11, 2011, in which respondents offered their opinions about the future of energy policy in Japan and the lessons learned from this natural disaster.

This year, the additional comments section includes all comments from overseas respondents as well as the 46 comments from Japan specifically pertaining to the disaster. The suggestions about the questionnaire itself, which provide valuable input for the Foundation, have been excluded for this publication. We have included the name, organization, country, and our identification number along with the comment, unless the respondent requested anonymity, in which case we have identified only as M for male respondents and F for female respondents.

Comments from overseas

[Lifestyle]

Reduce the slaughter of animals and the supply of meat animals to reduce the consumption of cereals as feed. Changing lifestyles and diet structure (reduce meat and eggs and promote vegetarianism) is the fundamental method for solving environmental and resource problems. Everyone is responsible for the deterioration of the environment, so we should all take actions and adjust our diet so as to improve the environment.

M, China, C014

The Rio process revealed many years ago, for any sensitive/sensible observer, that the real environmental/social problems are the unsustainable lifestyles of rich countries. Very little progress, if any, has been done in this area in the last two decades. Refusing to accept an ever increasingly ugly, unfair corrupt unnatural occasionally genocidal state of affairs. Will it happen?

M, Spain 660

[Agriculture]

Another problem is the contamination of soil caused by pesticides, Persistent Organic Pollutants (POPS), with which agricultural production is also found to be contaminated.

*María Guadalupe Menendez de Flores, International Cooperation Department,
Ministry of Environment and Natural Resources, El Salvador, 056*

While the problems are hyper wicked and defy any approach other than a holistic return to fundamental redesign, some elements have strong points of leverage that can buy precious time for conversion. One such element is agriculture. We need to reverse the type that is creating deserts and substitute the style that created the terra preta soils of the Amazon — with carbon farming and agroforestry. This is an example of a solution that yields immediate returns (soil fertility, more and better food) while reversing climate change (by converting labile carbon into more recalcitrant forms that do not become airborne). Areas that are "win-win" should be getting the highest priority because that is the low-hanging fruit.

M, United States of America W697

1. I am the author of an award winning book on how we should feed ourselves as populations grow and resources decline: Uncertain Peril, genetic engineering and the future of seeds. A major topic that is neglected here is the ownership/patenting of life forms and the consolidation of ownership over germplasm. I have some expertise in rice and raise the question Asia will be soon asking: who owns rice? When new and important strains are needed to adapt to changing conditions, will public access be ensured? Will farmers be able to breed their own seed? In the U.S. now seed for major crops is almost entirely owned by 1 or 2 corporations and farmers are unable to obtain seeds.
2. The major international scientific report on which technology is best for the future of agriculture should be given much more attention. (IAASTD) Instead, foundations such as Gates and Rockefeller are promoting patented privately controlled top down technologies but this prestigious report validates sustainable agriculture and is especially important in planning for water use.
3. In both of my points above, the impacts of private technology, like the privatization of water supplies, and the privatization of seeds, will result in shortages and human suffering.

F, United States of America W707

[Economic Incentives]

It is important to establish price and economic incentives that affect activities that increase or reduce environmental damage.

M, 077

Use of green taxation to shift behavior and technology toward sustainability can be accomplished in ways that are socially equitable, but also move us away from global collapse of the ecosystems that support all life. Incentives to alter behavior and technologies are probably more palatable than disincentives or regulatory approaches (e.g., outright bans or quota systems). Nevertheless, carefully structured green taxation could be phased so as to 1) allow societies to adjust to needed economic, social and technological change and 2) provide revenues to support the needed changes and ensure social equity. Green tax reform may also be politically feasible if introduced in graduated steps.

M, United States of America W517

Market economics leading to competition among the nations under globalization should be abandoned. Trade under globalization is FREE but UNFAIR. This creates inequities which lead to environmental degradation. We need ECOLOGICAL ECONOMICS, not accelerated economic growth.

M, Distinguished Fellow, M.S. Swaminathan Research Foundation, India W556

Economical and market measures to environmental problem

M, People's Republic of China W693

Climate change is real and we need to do something about it. The longer we delay, the greater the cost. The most efficient way is through a price on carbon. This will generate revenue to drive a new wave in our economies, creating new jobs and replacing old energy sources with clean energy. There will be no more sustained growth in the economy until we transition from coal and oil, to gas and renewable energy. Certainty is needed for energy companies to transition to cleaner generation and a price on carbon is needed to drive the take-up of renewable energy. That is where the growth is, in energy, water and food technologies that give us a secure future.

M, Commonwealth of Australia W706

[Ecosystem]

We need to achieve a balance between our own needs and the survival of the bio-diverse ecosystems on which we ultimately depend.

M, United Kingdom, 006

Although the impact of loss of biodiversity resources in all countries or regions and loss of genetic resources cannot be seen in the short term, it is actually a deadly threat in the long term.

F, Taiwan, T020

With climatic change, biodiversity changes. However, I feel that there is not enough research going on in these areas.

M, Research Division/ Senior researcher, Climate Change Centre, South Korea W021

Agriculture pesticides are very important polluters of the environment and food. Ecological strategy of plant protection should be developed. This strategy will be based on creating favorable conditions for predators and parasites. As a result, self-sustaining agro ecosystems will be built out and pesticides will be not necessary.

M, Russia W536

Efforts for obtaining food from forest should be accessed. Conservation of soil, air and water is the need of the hour for our own survival. We must understand that the rules are made for people and environment and not vice versa. We must learn living vis-a-vis nature with PEACE and not in PIECES, and that is possible through knowledge of ecosystem services which becomes the basic moral and ethical understanding of life with balanced environment.

M, India W704

[Food and Water]

Unreasonable allocation and distribution of global resources and the after-effects of colonialism have led to the shortage of living water and consumption goods in some countries, so the people there wantonly produce resources for water development, resulting in permanent damage to many non-renewable resources.

F, China, C009

Before I comment about environmental problems, I wish to state clearly my place of residence. I am a Kenyan living in Homa Bay, one of the 47 counties in my country. My county borders a large mass of water known as Lake Victoria. One of the major environmental problems here is lack of food security caused by low or less rainfall and non-availability of proper farm tools or equipment and extension or field workers. I wish to suggest that our government should tap the water from the lake for irrigation and animal use so that farmers can produce enough food. Many field workers should be trained and deployed to offer technical advice to the farmers at the village level. My experience in the recent years about rainfall tells me that farming

depending on rainfall often embarrass farmers by getting very minimal returns. I'm not accusing my government, it's just a suggestion.

Yucabeth Ongondo, Chairperson, Kogola Women Group, Kenya, 072

Few people with access to surveys such as this will have personally experienced food and water shortages. That certainly doesn't mean no one suffers those. The powerless will bear the brunt, which means we must act before the affluent feel it. By then, it will be too late if it's not already too late.

Dan Rademacher, Editorial Director, Bay Nature Institute, U.S.A., 087

Most food problems involve government corruption, disparities in distribution and human rights abuses. Most potential solutions do not (yet) address the question of how more food actually will reach the poorest people. The world's poorest farmers continue to struggle – often leaving the farm for urban slums – while more prosperous societies eat more (especially meat) and better.

F, U.S.A., 088

We do need to cut down eating beef. Too much is not healthy for us; cattle take up a huge land mass and contribute to pollution. Need to rethink what is good for us in the way of food and that means NO GMO's in the food chain.

F, United States of America W701

I am also concerned about the long-term effects of genetically modified organisms in the food chain.

Jerry Redfern, Photo Editor, Redcoates Studios, U.S.A., 095

Governments should ensure that environmental natural resources are put to sustainable use. Monitoring and policy regulation measures can minimize destruction of forests and pollution of water bodies. Water conservation measures will support increased food production, poverty alleviation, and improved livelihood.

*Emmanuel Salu, Director, Environmental Education Department,
Environmental Protection Agency, Ghana, 110*

Water problems have been increasing. Especially the contamination in river systems and ground water.

F, India W721

Water shortages and speculation on foodstuff and energy resources will increasingly lead to battles over food and water and will cause a mass of refugees, some political, some economical and environmental. Happenings in North Africa are the point of the iceberg.

Hansruedi Schenk, Independent Consultant, Republic of Italy W722

[Energy–Renewable, nuclear, etc.]

Reduce the use of nuclear energy

F, South Korea W001

Along with the weather changes, there have been problems with the nuclear power plants. However, there were only few actions taken to solve the problems. There should be campaigns to reduce the use of nuclear energy and promote the use of alternative energy such as solar energy

Jae Sook Choi, Director, Korean Federation for Environmental Movement, South Korea W017

Shut down nuclear power plants

Chang Ho Seo, Secretary-general, Daegu Human Rights, South Korea W033

Instead of creating more and more power plants, find ways to reduce the amount of energy being used so that there would be enough energy for everyone

M, South Korea W034

Substituting the source of energy from non-renewable to renewable energy. For example, solar or wind energy.

M, South Korea W035

We need a Great Transformation towards a low-carbon and nuclear-free global energy system based on renewables.

*Benno Pilardeaux, Secretariat, German Advisory Council on Global Change (WBGU),
Federal Republic of Germany W502*

Moving into 100 % renewable energy systems is essential in alleviating environmental security concerns.

M, Republic of Finland W543

The industrial affects dangerously all the human life and essentially the nuclear army and nuclear industries.

Gharbi, capacity building, Tunis International centre for environmental technologies,

Republic of Tunisia W512

We must find a way to produce clean energy and decentralize production.

M, United States of America W723

Stop drilling for oil in the ocean. Stop nuclear power.

F, U.S.A., 042

[Global Warming]

We need to reduce greenhouse gasses and bring our environment back to 350ppm needed for life. We need to go renewable and solve global warming.

Antonio M. Clapakols, Ecological Society of the Philippines, Philippines, 002

Global warming is mainly due to the increase in the population. Therefore, by controlling the birth rate and reducing the growth rate, it can greatly help in reducing the impact of the global warming

Kim Ji Hye, Keumjo, South Korea W023

It is disheartening that the limits on carbon emissions as recommended in the original Kyoto Protocol have not been accepted by some nations. Climate change with its stronger typhoons, incessant rains causing floods is here with us.

F, Philippines, 055

We have to care for the global environment and its human activity. Unsubstantiated fears about anthropogenic global warming have been a stupid distraction from the real problems.

M, United Kingdom, W584

The global community needs to agree on joint measures to mitigate global warming and each country shall agree on CO2 mitigation targets irrespective on their economic development levels.

Enkhbayar, Senior Research Fellow, Research Division, ERINA, Mongolia W635

The almost total control of a free market system over our basic commodities and the resultant environmental insecurity is a fundamental problem, not only in climate change and the suggested market solutions that do nothing to reduce co2 emissions but all EU results on carbon trading and an actual increase of EU emissions since carbon trading was adopted.

M, United States of America W665

I have been taking the Asahi Survey over the past 20 years, and am amazed at the continuity of issues and problems that we face globally from an environmental perspective. Global warming and climate change have impacts that are for the most part 20 years in the future. It is extremely difficult to convince younger people of what they face in the future. But we must continue to try to do so.

M, United States of America W673

As a basis of responding collectively to these problems, the apex of which is climate change, I have spent the last twenty years explaining and advocating the framework of "Contraction and Convergence" [C&C] at the UNFCCC. C&C now has some support: - <http://www.gci.org.uk/endorsements.html>

Aubrey Meyer, Director, Climate, GCI, United Kingdom W680

[Climate Change]

This past year, we have experienced severe cold, excessive snow storms, record snow and rainfall, now major flooding and excessive heat in some areas and lightning strikes and more wildfires, burning trees, houses, towns, all in my country. Not to mention severe storms, tornadoes, and major destruction unheard of in the past in North America.

Cecile P. Helton, Volunteer, Society Promoting Environmental Conservation, Canada, 044

There should be solutions to the climatic conditions. It must be effective as well as efficient.

M, local staff, British Ambassador in Korea, South Korea W052

There is a problem in the world today because of the depletion of the ozone layer and climate change. Africa is heavily affected by climate change and releases little quantities of CO₂ to the atmosphere so the West should help Africa to reverse the trend.

M, Kenya, 115

To solve promptly and drastically African environmental problems/challenges, Africa should create its own Africa Green Fund to have a meaningful share of the Green Climate Fund money to flow to Africa given that, as Africa needs a greater control over climate change resources because Africa generates less than four percent of pollutants causing climate change.

M, Kenya, 117

Natural disasters are cause for concern: windstorm, tsunami, flooding, hailstorm, cloud falling from sky destroying human life and properties, increased disasters.

*Olimpio Nhuleipo, Economist, Department of Environmental Affairs,
Ministry of Environment and Tourism, Namibia, 106*

Environmental problems together with man-made climate change are serious threats for humanity as well as for lives of creatures. Perception of these problems may vary but scientific observations are proving the evidence.

Onder Algedik, Senior Consultant, Regional Environmental Center, Republic of Turkey W511

I think we need to consider a longer time-frame than “2-3 years” for evaluating “abnormal” climatic events.

David Huberman, IUCN, Swiss Confederation W565

I think developing novel concepts for sustainable development may be holding the key-of-cure for all climate related miseries humankind is facing.

M, India W605

Here in Russia we are concerned on the climate change causes a rise in tick-borne diseases. It is an actual problem for western-northern part of the country.

Maria Kokhanovskaya, associate professor, Geoecology department, I. Kant Baltic Federal University, Russia W710

[Environmental Education/Public Relations]

The government should promote the people to participate in the campaign. This can be done in various ways. For example, through TV advertisements. Furthermore, there should be stronger and stricter rules and laws in order to save the environment.

M, South Korea W015

There should be educations that enhances the awareness of the importance of the natural environment

Eun Jin Lee, Korea Green Foundation, South Korea W031

Strongly feel that public relations, i.e., explaining big picture of environmental issue, is very poor among environmental organizations. In other words, they “preach to the choir.”

Bill Hurley, Writer, U.S.A., 040

The general public’s understanding of environmental problems is very rough. They know concepts, but no specific details to support them. Therefore, faced with actual problems, it is hard for them to have their own opinions. Instead, they tend to say what everyone else says. Educational publicity and advertising in this regard should be enhanced.

Wang Shiqi, Student, College of Life Science, Tsinghua University in Beijing, China, C053

Public welfare publicity and advertising should be increased so as to deeply internalize concepts among the public. Otherwise, environmental protection will always be the behavior of a minority group within the public welfare environmental protection structure. Only cooperation with the government can bring about more resources and better results.

Fu Wenhun, Student, Automation Department, Tsinghua University, China, C071

There is a real necessity to educate people and to empower them in a way that they can take positive actions in the fact of the looming environmental crisis. Education and empowerment are key to our success as a civilization.

F, U.S.A., 112

The base of change must take place in the home and schools, with permanent campaigns, so that new generations develop awareness at a young age that they must take care of the land that they live on, before it is too late.

María Mónica de Rivas, Argentina, 048

The lack of education is a very important factor at the time of applying good environmental practices and electing responsible governments.

Horacio de Belaustegui, President, Fundación Biosfera, Argentina, 047

Science is so horrifically lacking from the k-12 education system that by the time students are in high school, they have no foundation upon which to build.

F, United States of America W572

We believe that school and community-based environmental interventions combined with life skills based education can address behavior change and restoration of local environments in a very effective way.

Donna Goodman, Executive Director, "Children and environment (climate change, water, forests), ESD", Earth Child Institute, U.S.A. W684

[Population]

Overpopulation all over the world should be controlled and managed. As carrying capacity and ecological footprint rises annually, it will eventually lead to total destruction of the natural environment.

M, South Korea W013

Human population and consumption drive all of our environmental problems. We must work to decrease our global population by empowering women and making easy access to birth control available.

F, 029

Current human population is sustained by the availability of "cheap" fossil fuels. This situation is completely unsustainable. Without "borrowed" energy from fossil fuels the population simply cannot be sustained. Alternative energy sources cannot seamlessly fill the breach. A major crisis is looming, and it seems humans are powerless to intercept it.

Louise Savage, New Zealand, 009

During my lifetime human populations have increased at least threefold. This is the basic cause of most of the problems listed in this questionnaire. Attempts at control – family planning, et cetera – have been made at a national level in India and China. But they have failed. The subject is regarded with apathy almost universally.

J.L. Coudsley-Thompson, Professor of Zoology, University of London, United Kingdom, 020

The major problem of being overpopulated is the consumption rate of resources. It is very important to think once more whether to apply the pro-natalistic policy or to apply anti-natalistic policy.

F, South Korea W044

As the world is heavily populated, we are currently facing the problem of lack of facilities and basic necessities. Therefore, it is urgent and all of us should start participating in saving the Earth.

M, South Korea W047

The foremost problem, in my opinion, is the uncontrolled growth of the human population. Standing now at between six and seven billion people, the Earth's population is unsustainable as it is. The projected natural increase to 10 billion is suicidal for the civilization and for the biosphere of which we are part. Religious groups which espouse unlimited numbers of children per family are irresponsible and blind to the scientific understanding of what resources are required for each life. Moreover, the unequal distribution of what resources are available is a scandal to anyone committed to a just global society. Religious and cultural groups, which deny freedom and dignity to women are a significant part of the problem. Persons who live in luxury and waste resources are also a significant part of the problem. Like it or not, technology has bound us all into one, worldwide community. No longer is any person, or group of persons, permitted by our circumstances to act independently – together we will live or together we will (all) die. The choice is before us.

Reverend Albert G. Cohen, Southern California Ecumenical Council, U.S.A., 057

The survival of human communities on this planet depends on so many factors which are interwoven among others. Population growth should be dealt seriously if we don't want to see the doomsday of humankind.

Setijati D. Sastrapradya, Chairperson, Naturae Indodesiana, Indonesia, 078

Population and consumption are beyond sustainable levels - people do not understand the relationship between these and ability of the planet to provide energy and resources to feed this consumption. See ecological footprint (Global Footprint Network) for better description.

L.J. Onisto, Senior Scientist, Environment Ontario Power Generation, Canada W530

In summary, overpopulation is resulting in increased demand for resources, including fossil fuels, resulting in global warming and extreme weather impacts, which in turn affect food production and availability of clean water for drinking and irrigation.

M, Canada W542

Simply put, there are too many people using too much of the world's resources. These resources are not equitably distributed but focus more on where they can bring in the most revenue, not where they are most needed. People need to be made aware of the implications of continued population growth.

M, Canada W554

The Erlich-Holden (1971 Science) impact equation has been forgotten. The equation states that the root causes of damaging environmental impacts are human population and consumption. In a capitalist society, either population or consumption MUST increase for the economy to be considered healthy. When either diminishes, the government panics, because no alternatives to the capitalist system are recognized. If we, as a global society, are unable to think of another system that does not degrade the environment and human dignity, then we certainly do not deserve our scientific name: sapiens.

M, Federative Republic of Brazil W574

There are two urgent needs that over-ride all others: - curtail human population growth - humans must learn to live more modestly, with smaller eco-footprint.

Hans Tammemagi, self, Canada W609

Human population growth is THE problem. Water and food shortages and all other environmental problems are a function of human population. If we limit the human population to any number, say 10 billion, then we can work towards providing food etc to all. Right now we do not have a common target so no focused efforts are being made.

M, Islamic Republic of Pakistan W 619

[Miscellaneous]

Perform environmental protection with small deeds; classify garbage, do not produce too much garbage, try to recycle/reuse wasted goods, and do not waste food.

Li Wenqi, Logistics Department, Archi PSM (Asia) Co., Ltd., Taiwan, T010

It is very important to approach from the very basic.

M, South Korea W010

So long as one keeps calm, one doesn't feel the heat too much! Aspirations and delusions are always close, while opinions and comments are always the rights of people who have power. Therefore, problems always exist. Gossip should be avoided. We can only expect that the real wise men quietly contribute their own part.

Lin Jinxiu, Director, Liberty News, Taiwan, T011

There are many aspects that contribute to the contamination of the environment and leads to national/global problems. There must be measures to preserve and conserve the environment. However, you cannot expect to see improvement in a short term. A lot of efforts are required not only from companies but also from citizens.

F, South Korea W011

Hopefully, the government will help the society to be more aware of weather changes.

Hye Mi Kwak, Researcher, LERI, South Korea W012

As I have mentioned before that the major causes of the contamination of the environment is mainly due to industrialization and deforestation. Therefore, it is necessary to set laws in order to reduce the impact. Also it is very important to encourage citizens to participate in saving the environment

M, South Korea W016

Everyone should really start attaching importance to the environmental protection of our earth. The global climate, etc... dramatic changes are already reminding man of the risks.

Taiwan, T015

Excessive blind development and unplanned firewood and animal husbandry have resulted in unsustainable forest and pasture development, while the irrational development of water resources has led to uneven regional development.

Thank you for your cooperation.

Song Dingshan, China, C013

Miscellaneous Wetlands and swamplands should be better protected, instead of allowing free development as “undeveloped land”. More conservation areas for wetlands and swamplands should be established. There needs to be long-term planning for urban greening. Greenery should not be planted, cut off or dug out when urban leaders shift their terms or according to their personal preferences. Otherwise, this will lead to huge waste and is likely to breed corruption.

We can solve many of these problems if we are all willing to make sacrifices. Humans hate pain, however, so we avoid problems for as long as possible.

F, 014

The main conflict in modern society is the conflict between the resources occupied by developed countries and resources occupied by developing countries, which is a high level gamble between the development of industrial civilization and nature. We can understand environmental problems as the self restoration and clearing-up of nature, which requires man to self-reflect and co-exist harmoniously with other countries and nature itself. Confucianism advocates self-restraint (restrain of people’s own desires) and return to ritual (to restore order in society). Of course, this is a highly ideal state. The developed countries should shoulder their responsibilities for the long-term and for the development of the global village.

Han Jierong, Director general, Saving Minqin Volunteers Association, China, C032

Problem of electro smog pollution caused by EMF microwave radiation from cell towers, cell phones, and “smart meters,” have an impact on the health of all animals (including humans), particularly birds, bees, and bats. The threat posed by EMF pollution poses a risk for bee colony collapse and may be considered a major food security risk. Animal agriculture also is a major environmental problem. People need to be educated about the harmful impact of animal products on health, the environment, and animals.

F, United States, 025

Conservation of the natural environment should be considered on the world scale, not only from the local scale. Gathering of ideas from all around the world would greatly help in reducing the problems.

F, South Korea W027

Amount of water being wasted should be monitored and controlled. Furthermore, there should be measures to reduce the rate of energy consumption.

M, South Korea W029

The main measure required is for each community/region to move towards living within the means locally available. This will require a global assistance program.

John Geoffrey Mosley, Australian Director, Center for the Advancement of the Steady State Economy, Australia, 035

Impact = Population x Personal consumption modified by technology. Pursuing perpetual on a limited planet must lead to disaster.

Peter Seidel, U.S.A., 039

The main conflict in modern society is the conflict between the resources occupied by developed countries and resources occupied by developing countries, which is a high level gamble between the development of industrial civilization and nature. We can understand environmental problems as the self restoration and clearing-up of nature, which requires man to self-reflect and co-exist harmoniously with other countries and nature itself. Confucianism advocates self-restraint (restrain of people’s own desires) and return to ritual (to restore order in society). Of course, this is a highly ideal state. The developed countries should shoulder their responsibilities for the long-term and for the development of the global village.

Han Jierong, Director general, Saving Minqin Volunteers Association, China, C032

It is the time to give out solutions to reduce the impact of the global warming. Also it is equally important to find solutions to diseases like malaria and AIDS

M, South Korea W030

It is essential to reduce the consumption rate of the natural resources. It must be controlled as soon as possible

M, South Korea W032

The project of connecting four rivers has caused many environmental damages

Kyoung Ho Lee, Director, Korean Federation for Environmental Movement, South Korea W037

The relationship between the environment and diseases are very closely linked. Therefore, close attention and cares would be necessary

M, South Korea W038

The number of population suffering from diseases such as bird flu and others that originates from foods. Therefore, the governments are required to put in more efforts into solving these problems

F, South Korea W039

One item seems to be insufficient; MANY OF THEM depend on each other.

M, 049

Other pressing problems, not necessarily in order of priority:

Corporate stranglehold, being established by large corporations such as Monsanto on seed supplies;

Factory-style fishing fleets and destructive fishing practices (drift nets, bottom trawling) with enormous by-catch;

Harvesting top predators in the oceans (tuna, dolphin, etc.);

Plastics in the ocean;

Deep sea oil drilling;

Overdependence on a few commodities (corn, soybeans, beef, pork, chicken);

Overreliance on processed foods and global food distribution systems;

Global distribution of pests (bee mites, for instance).

Alan D. McNarie, Writer, U.S.A., 081

Since the dawn of human civilization, the incessant question of Homo sapiens to earn their living in different geographical realms on the planet, and particularly during the last two centuries, have occurred at an unprecedented economic growth, particularly industrialization propelled by technological innovations and accelerating increase in population and urbanization. This has exerted mounting pressure on the environmental ensemble in terms of deforestation, desertification, CO2 emissions and ozone layer depletion, melting of glaciers and climate change, reduction of soil fertility and overall pollution and degradation of ecosystems. Such ever-increasing environmental crises of the day, and most have only begun to reflect on the symptoms of unsustainable capacity of the Earth to nourish life and even posing risk to provide adequate food to mankind but also disrupt the very fabric of social, cultural, and political ethos of mankind. Therefore it is an urgent need to gain the cooperation of all people to adopt such comprehensive strategies to improve upon the present crisis so as to reach the goal of sustainable development built on the symbiosis of socio-economic and cultural progress and ecosystems, at local, national, and international levels.

Dr. R.V. Verma, Director, Institute for Regional Development Studies, India, 083

Mankind, as a whole, is suffering from the lack of sensitivity for blame and evil. That is why it also loses the sense of responsibility for environment-related problems. In such a way, the primary cause of these problems is to account the human morality.

M, Slovakia, 093

It seems there is no action taken, there is only a lot of talk taking place but financial resources aren't there.

Selogilwe Mokubukubu Mosinyi, Famer, Botswana, 105

I believe that the situation is extremely amplified, particularly, I believe that human beings have destroyed the environment in short time.

Jaume Giro, 071

Another world is possible, relax, good and bad matter - and small is beautiful! Thank you for the survey and all the best for the future!

Margarete Kerschbaumer, lower grade official, BMLFUW, Republic of Austria W509

It can feel hopeless.

Jim Harper, United States of America W600

More investments in the environmental research and development.

Dino Deleut, Founder/manager "Environmental education, management, consultant, monitoring, inspections", CSO de leut"s environment, Republic of Croatia W621

The earthquake and tsunami in Japan showed that technology cannot fix everything. One of the most important categories that affect the environment is war. We should try to expand democracy and stop heavy wars and military production, otherwise no problem will be solved.

Hamid Taravati, Managing director, Management Taravat Bahar Environmental Institute Islamic, Republic of Iran W624

Foster institutional capabilities for sustainable development. Implementation should be considered as a way to change behaviors, both, at the institutional and individual levels.

M, Portuguese Republic W643

Human beings must reduce their demands and impact on the living Earth. The focus should be on economic shrinkage, not economic growth.

M, Canada W649

It is high time that we all work to solve ecological problems!

M, Serbia and Montenegro W691

Land degradation.

M, Federal Democratic Republic of Nepal W725

Environmental problems consequent on military and religious problems.

M, Slovak Republic W532

Climate change is a fact, its consequences are no longer in doubt. To argue about cause and effect is of no value, we need to assume our collective and individual responsibilities in order to avert impending environmental disaster. The problem we have to solve is how to free ourselves from an economic system that reinforces, rather than corrects, existing social and environmental imbalances: the illusory quest for profit and economic growth. Recent patterns of production and consumption, in the light of contemporary population densities, are not merely unsustainable, they are suicidal.

David Black, Trustee, Oxleas Wood Challenge Fund Trust, United Kingdom, 066

Environmental problems are required to be solved by the government, companies and the society. Even the simplest thing such as walking to near distances can greatly help in improving the environment

Yeo Gyeong Min, Director, Seon Culture Promotoion & Education Center, South Korea W048

I feel that there should be equal amount of solutions for both the environment as well as the poverty. Being able to improve and solve these two areas, the area can greatly be benefited.

F, South Korea W050

Some environmental problems are specific to islands as New Caledonia because of the small size of the country and of the lack of environmental awareness: forest fires, over-hunting, over-fishing, mining, pollution of the lagoon...

*Jean-Louis D'Auzon, Association Pour la Sauvegarde de la Nature Néo-Calédonienne,
New Caledonia, 053*

All human activities are related to climatic changes and the environment. Therefore, instead of conserving nature after being contaminated, preserve nature before it is too late.

M, South Korea W051

Everyone should be aware of the danger and importance of nature.

Tae Yong Jung, Director, Korea Green Foundation, South Korea W057

Climate change is key, with population. Energy is key. Public awareness, understanding needed to increase pressures on policymakers.

Bud Ward, Editor, Yale Forum on Climate Change and the Media, U.S.A., 065

Besides working on international, national, and state level institutions, there is a need to have environmental related disaster management plans at lower levels than those such as community level, institutions (industries, offices, educational institutions, et cetera), also the creation of public education and awareness generation among the masses about the existing risk and vulnerability of the area.

M, India, 069

Save energy, reduce the emission of carbon dioxide, protect the earth, encourage the general public to take care of our environment and improve their understanding and awareness of environmental protection.

Liu Ganbin, Operator, Operation and Maintenance, China Wind Power, China, C074

There should be a *Basic Behavior Manual for Citizens* for each citizen on this planet, regardless of nationality, no matter if they are rich or poor. Environmental behavior norms for minors and adults can be formulated respectively. Such norms can be tested in one country or city and then considered for promotion.

F, China, C077

Reduce the greed of man.

F, China, 086

One should not overlook the influence of political stability and equitable socio-economic development as key elements to ensure environmental security. This has notable reference to developing countries. It is known that in many developing countries, particularly in Africa, people still experience subsistence livelihood, which has its effects, when considered in terms of sustainable environment. Political instability has, to a large extent, resulted in refugee camps or people being on the move and these have in turn contributed to environmental damage or complete (environmental) destruction in some case.

Michael E. Sizomu-Kagolo, Private Forest Consultant, Uganda, 100

Brazil has 322 million hectares of farmland. Of these, 231 million are occupied by livestock (beef cattle and dairy) and continues to increase, since the formation of pastures is always progressive and will advance on forests to raise cattle. According to reliable information of organs specialized in environmental issues, it is known over 61 million hectares of land have been degraded by livestock and monoculture in the country. New Brazilian Forest Code provides for an increase of 22 million hectares of the possibility of deforestation, but it is still early to assess scientifically whether the code is "unsustainable." Fortunately, it is noted the concern and effort from the Brazilian government to reach an agreement on the differences between environmentalists and productive economic sector for project approval. I'm getting very worried, because all the economic and population growth, coupled with the rampant consumerism of goods and services in one form or another, tend to exacerbate the destruction of ecosystems. We do not forget that the planet's natural resources are finite! We live in a dangerous scenario and insidiously endanger the survival of humanity. Only with a lot of ecological awareness in all sectors of human activity we can save the planet from catastrophe.

*Ricardo Rocha, President Advisor,
Headwaters Association Beautiful View (ANBV), Brazil, 101*

How intertwined are social and environmental problems and how important it is to behave, personally and at the government level, as though they are (and how difficult when so many different narrower interests are at work).

M, United States of America W526

All of the above issues are interrelated and our global systems of governance have been inadequate to address them in any systematic way. As limits and thresholds are reached in supply of some resources, the stresses are transferred to others and to other locations. The inability of the developed world to reduce the footprint of each citizen brings pressures on all regions, and many of the issues listed above are simply symptoms of a much larger global system reaching critical limits.

M, Canada W528

Time scarcity and population uncontrolled growth: the two main problems. Humanity is running out of time. There is an urgent need for the international community to agree and put into implementation well documented scenarios of SHORT term, mid-term and long term sustainable development. Voluntary simplicity is citizen's main right and obligation. Denials / skepticals action WITH NO RELEVANT STRONG DOCUMENTATION should be severely punished by any level authorities. Civil society has to turn from protest force to research and proposal force demanding implementation of well documented local / regional / global level projects. Mass media have to stop pretending to be neutral because more that 80% of advertising revenues originates directly or indirectly by traditional industry. Governments and global financial entities have to develop investment programs enhanced by strong incentives to support coal, oil and nuclear industries to turn to various renewable energy sources. Otherwise fossil energy production monopolies will steadily oppose shift to sustainability with the only obvious result of total collapse of non sustainable production & consumption model in no more than 20-40 years. Widening public awareness and participation goal is going to succeed if all above parameters are taken into consideration and made known to a big audience. Informed consent is the least sine-qua-non prerequisite all parts need to contribute to positive direction and final solution.

M, Hellenic Republic W533

We are seeing an acceleration of these inter-related problems. It varies from country to country but is accelerating in intensity in Africa. Climate refugees are not currently seen as a major problem but this is clearly getting worse at national levels and will spill over soon.

Nigel Crawhall, Director, Secretariat, IPACC, Republic of South Africa W548

Population growth and improving standards of living both are long term vectors to increase environmental degradation. The carbon & water footprints for food products should be used to educate consumers on the current wasteful impacts of global transportation of non-essential food products.

M, Canada W563

Environmental problems often are the long term, cumulative and/or systemic effects of our decisions. Sustainable development and its associated principles (such as the precautionary principle) have fallen out of favor, however if implemented, would have assisted with resilience at local levels so that many of our current issues would be minor. A holistic approach is required, and breaking issues into individual items and dealing piecemeal with the “most serious” can potentially work against this.

Larissa, IUCN, Republic of the Fiji Islands W577

A sustainable environment depends not only on the proper management of natural resources but also on the social condition of the human population (health, education, culture, security, employment), the institutional and political organization of individual countries (human rights, competent and ethical leadership and representative government, efficient access to basic services and infrastructure), and effective international cooperation at the regional and global levels.

Henrique Brand, Cavlcantil, Professor/Researcher, Center for Advanced Studies on Government, University of Brasilia, Federative Republic of Brazil W585

In this globalised world even local environmental problems have global footprints and implications. No environmental problems of the present world can be addressed without global cooperation and collaboration. We are so interconnected, if failed to cooperate, there will be a global collapse

M, Federal Democratic Republic of Nepal W590

Probably the most significant problem facing the world is over-consumption of resources by the richest nations, followed by depletion of resources by poorer nations trying to boost their economies by selling stuff to the people with money. The entire world takes an anthropocentric view of the world's resources at our peril. We have no right to use all the resources and we must not only increase the standard of living for poor nations but insure that other creatures on this planet also have enough resources. Every one of the issues on the list in 1-2 is paramount to the survival of our species and of other species on this planet. I have no doubt, however that if we fail to turn around global environmental decline that it will not be the billions-year-old Earth that fails—but rather it will be the human species that succumbs to extinction.

F, United States of America W598

Key issue is reducing individual environmental footprint (supported by government & commercial incentives) so individuals consume less (energy, food, water), only consume environmentally “efficient” products (low energy usage, recyclable, biodegradable, renewable, produced in a sustainable manner) and re-use/recycle used materials. Macro level impacts, such as CO2/energy reduction, better & more efficient land usage etc, will then follow.

James Butler, Lend Lease, Commonwealth of Australia W610

Creating more sustainable responses to our economy will address many of the related issues of population growth, poverty, resource depletion, habitat destruction and the degradation of agricultural lands and production.

Prof. Ray Wills, Chief Executive, Sustainable Energy Association of Australia, Commonwealth of Australia W641

Most governments, NOT limited to developing countries, are insufficiently aware of their fundamental responsibility to be aware of and to counteract Tragedies of the Commons. As I have concluded in a paper some 15 years ago: Governments and TOCs - Since resource-related TOCs are caused by the actions of a group on what to them is ‘common’ property they can only be solved by group action. In a democracy this can only mean government action. BUT, just because government must be there doesn't mean that they will do the right thing when they (finally) arrive at the scene of the ‘tragedy’ nor, and perhaps of more importance, that they will exit the scene on cue, i.e. immediately after the TOC has been fixed. [Most often, as in the offshore fishery, they arrive too late and then hang around meddling with this'n'that until their contribution is ‘net negative’ No pun intended.] The problems posed by pollution can also be fruitfully viewed as TOCs. Although human activity impacts the environment most obviously at the two ends of the chain of production, i.e. resource extraction and waste disposal, it is the latter which most often carries no price tag and thus generates the most TOCs. Now the particular atoms, in various combinations, which we call ‘pollution’ in our air, waters and lands got there by a very complex route. It is only by detailed study of that route that the most efficient means of dealing with that pollution can be found. Therefore, as we move into the new millennium, the correct government action with respect to the environment, whether resource depletion or pollution, can be

summed up as the ticking of a clock: TLC, TOC, TLC ? Tender Loving Care of this planet requires correcting Tragedies Of the Commons by means of Total Life Cycle analysis ... and then exiting on cue!

M, Canada W650

Without international action, there will be a growing disparity between Haves/Have-Not, which will increase potential for conflict.

M, United States of America W670

Environmental security right now depends on further globalization in political and economic development of the different countries of the world based on the humanistic criteria. It is not possible to implement this idea in the frames of the capitalistic system. It is necessary to create right now absolutely new mechanisms for international cooperation—in the world oriented to just social and human contacts.

M, Russia W672

Consumption and production patterns are also increasing at an alarming rate whilst the industrial production systems continue to generate waste loads that far outweigh the assimilative capacity of natural systems. It is further exacerbated by lack of technological response solutions to minimize the current and residual effects of current environmental crises. Fostering sustainable production systems and building innovative capacity amongst stakeholders can be a key enabler of gradual transformation towards responding to problems at multiple levels.

M, Kingdom of the Netherlands W700

I believe that what Japan is experiencing after the Tohoku earthquake/tsunami/nuclear disaster is a learning experience for not only Japan but for all of humanity. People are now considering the tradeoffs and choices, for example what is the real cost of energy if you count all the risks. The choices made by Japan will help the world think these things out too. Good luck!

Randy Helten, Friends of the Earth Japan, Canada W708

There is an increase in the interest of recycling materials, reducing pressure on natural resources.

Agustin Abarca, Executive director, Accion Ambiental Ltda., Republic of Chile W715

The best way to reverse the adverse Greenhouse effect i.e. carbon increase, oxygen reduction, ocean acidification, etc. is a global reforestation program focusing on planting long-life species that sequester carbon and store it for the next 1000 years while we work on the present global carbon proliferation from coal, autos, power plants, etc., and oxygen depletion from tree depletion. The Cap and Trade proposals are shams at best and destructive at worst.

M, United States of America W730

I am very worried about most of the people in world living in cities. And people in cities don't see nature. They don't even see the sky. Don't know nature. Love nature is not an issue for most of the people in cities. Is very important to increase awareness about this. We need to learn to love nature because if we don't know, we don't love and after all we depend deeply on nature. We need strongly work in these issues right now. I am very thankful for your priceless work and I hope it can be seen by as many people iso that they can think much about it. Thank you again.

M, United Mexican States W731

Comments from Japan

The Great East Japan Earthquake

1. The Nuclear Crisis at the Fukushima Dai-ichi Nuclear Power Plant

I think that the Great East Japan Earthquake has highlighted the importance of disaster prevention. In addition, I think the winds of opposition against the construction of new nuclear power plants will grow due to the accident at the Fukushima Dai-ichi Nuclear Power Plant. However, when thinking about the long-term development of humankind from the standpoint of restricting the use of resources such as fossil fuels as well as suppressing greenhouse gas emissions, I think nuclear power is indispensable. Particularly in our country, where we lack in reserves of resources, I believe nuclear power is important for our energy strategy. However, at the same time, as Japan is an island country with frequent earthquakes, we must never forget that the coastal regions can be struck by tsunami damage. Thus, it is crucial to design and operate plants taking into account every possible scenario. I believe that we must now think carefully about the future of power generation in Japan, bring together ideas and wisdom, and dedicate our energies to lessen as much as possible the burden on future generations.

*Hidemichi Fujii, Special Researcher, Japan Society for the Promotion of Science
Graduate School of Environmental Studies, Tohoku University, W010*

When considering the damage at the nuclear power plant and the leaking of radioactive substances caused by the Great East Japan Earthquake and tsunami, there is a need to fundamentally change the thinking to date about environmental problems. Rather than problems like global warming or biodiversity, the safe supply of resources to people who are living today, like the supply of electricity, food, and water has become much more important issues.

*Ichio Asanuma, Professor, Department of Environmental Information,
Tokyo University of Information Sciences, W015*

In this moment in Japan, I don't think there are any problems other than natural disasters that can affect the global environment more than the disaster at the nuclear power plant.

M, W028

I believe that with the March 11th earthquake in Tohoku, our circumstances have changed drastically. In particular, the meltdown at the Fukushima Dai-ichi Nuclear Power Plant and the proliferation of radioactive substances should be made an occasion to rethink our dependence on nuclear power, which had been given tacit approval as the trump card against global warming. What is needed is consensus building on the medium- and long-term post-nuclear power strategies based on layers of discussion that go beyond an either/or position on nuclear power.

*Yukihiko Asaoka, Professor, Faculty of Agriculture,
Tokyo University of Agriculture and Technology, 035*

The crucial problem is the expansion of radioactive contamination from the nuclear accident.

M, W045

The recent nuclear accident has made clear that the effects of radiation and the problems of electromagnetic waves are more significant than problems associated with CO2.

M, W050

In recent years, there have been many countries with many other problems and this has left environmental problems to the side. But I believe that the nuclear issue at Fukushima has had an effect on this year's perspectives.

Kazuo Tomisaka, Consultant, Toray Industries Inc., 083

An earthquake-related nuclear disaster took place in Fukushima. This is but a practice run for what will happen at the Hamaoka Nuclear Plant with the Tokai Earthquake. The nuclear plant at Hamaoka should be dismantled and the spent nuclear fuel should be transported outside of the region. The landscapes at the Atomic Bomb Dome in Hiroshima and the reactor buildings at the Fukushima Dai-ichi Nuclear Power Plant are the same. We must stop the development of nuclear power, which spreads radiation, making Japan an uninhabitable place. Germany and Belgium have presented us with another way forward.

*Toshio Nagatani, Professor, Department of International Relations,
Tokyo International University, 087*

Nuclear power generation is an important technology for the supply of energy in the process of lowering our dependence on fossil fuels and transitioning to renewable forms of energy. For that reason, it is essential to exhaustively investigate the causes for the nuclear accident at Fukushima that was triggered by the Great East Japan Earthquake and to dedicate our efforts to the development of safety measures and technologies to prepare for the future.

Kimihiko Sato, 101

The basic problem that global warming and the nuclear crisis in Fukushima have in common is the prioritization of cost and society's greed-based value system, or the world's value system, which requires such a prioritization.

Yoshinari Teramoto, Department of Global Warming Strategies,

Hyogo Environmental Advancement Association, 111

I consider the destructive effects of the Tokyo Electric Power Company's nuclear power plant associated with the Great East Japan Earthquake a significant environmental problem. A speedy resolution and efforts for environmental improvement is strongly desired. In addition, we should evaluate future risks based on an internationally sound scientific foundation.

Takashi Nitta, 123

The nuclear accident accompanying the earthquake has dramatically changed the thinking on energy supply structures and climate change strategies. I would like to continue scrutinizing future movements as one person living in this era.

M, W123

Tokyo Electric Power Company's nuclear accident makes us rethink what it was that our affluent lifestyle brought us. Anti-nuclear sentiments will heighten as a result, but what we need are thoughtful discussions, including those about the ways of our society that have created the developments to this day. At the same time, I am concerned about the level of interest in various environmental problems becoming diminished.

M, 130

The nuclear accident at the Fukushima Dai-ichi Nuclear Power Plant, which was triggered by the Great East Japan Earthquake that struck on March 11th, has produced a massive problem of environmental pollution through radioactive contamination throughout a wide area from the Tohoku region to Kanto and the Chubu region. From the standpoint of environmental security, this is a problem that we cannot afford to have. The rights and wrongs, and the evaluation of nuclear power, which was anticipated as a global warming strategy, are being questioned. At this point, opposition to nuclear power is likely to be important. This may be an opportunity to use the questionnaire to probe how the thinking changes over time.

M, 131

In modern society, in which the flow of people and goods has become globalized, the nuclear accident that accompanied the Great East Japan Earthquake served as a painful reminder that one accident can pose the danger of extending its effects on a global scale both environmentally and economically. In order to prevent accidents from happening and to minimize the effects of such accidents after they have occurred, I believe we must construct a system of international information sharing and cooperation on a day-to-day basis instead of adhering only to the interests of one's own country. In addition, I also believe that it is essential to raise people's awareness so that one accident can indeed serve as a lesson from which we can learn definitively for the next time.

M, W141

Shouldn't Japan, as well as all countries that have implemented nuclear power generation, interpret the nuclear accident at Fukushima as an incident that has communicated an extremely serious message, that it can completely deny the continued survival of humankind? The recent disaster has made clear that sustainability is ruined not only by environmental destruction like global warming, but also by the failed blossom of scientific technology called nuclear power, which is impossible to tame once it begins spiraling out of control. Japan, and mankind, should transition beyond nuclear power and in its place build a society based on renewable energies by 2030 - 2050. That is the responsibility of those of us living today to the future.

M, 145

The nuclear accident caused by the Great East Japan Earthquake demands a fundamental rethinking of energy policy. The accident has made clear the extremely significant effects nuclear power has on the environment. Moreover, electricity generation by coal and hydropower also has large effects on the environment. In addition to aggressively engaging in resource and energy conservation, we must contain our lifestyles well within the limits of wind power, solar energy, and biomass usage. Environmental strategies must be forcefully pursued in the near future. We must use the recent disaster as an opportunity to form consensus on these issues at each level in each sector.

Hajime Oshitani, Professor, Rakuno Gakuen University, W147

With the disaster at Tokyo Electric Power Company's Fukushima nuclear plant, the question of whether to continue or phase out nuclear power has become an important social issue. But rather than favoring the phasing out of nuclear power for emotional reasons, what I believe is necessary is to recognize that it is an extremely important source of energy from the standpoint of environmental resources and think through how we position nuclear power and how we utilize it well, after investigating the reasons for this accident and considering the technological possibilities for financial strategies.

Tsutomu Mizutani, 152

For example, can the bullet train run on solar energy? Can we maintain our country's production and civic life on wind power? Even when taking into account large-scale earthquakes, tsunamis, and nuclear accidents, we have no tactic available under the current circumstances other than the continuation of nuclear power generation with proper safety measures. The world of journalism, terrified after 3.11, remained silent for two months. But on May 24th, I read an opinion piece by a leader of the business world who said that there was "no path other than the continuation of nuclear power." I also heard a similar comment on television by a politician of the former ruling party. Ordinary citizens should lend a humble ear to these opinions.

*Akira Harada, Former Director, Meteorological Research Institute,
Japan Meteorological Agency, 156*

Environmental problems can be traced to various causes that disturb nature. At that moment, Japan was engulfed by a massive earthquake. The effects of radioactivity from the destruction of the nuclear power plant are greatly feared not only by the residents of the region and of Japan, but also by people around the world. The nuclear accident presents an occasion in which a deliberation about the usage of nuclear power as it relates to the supply of electricity and energy problems should take place

as an urgent issue for the resolution of environmental problems. In watching the realities of icebergs melting in places like Switzerland and Canada each year, I believe that various urgent strategies and regulatory measures at the country and business levels, as well as a strong level of interest and sense of crisis towards environmental problems within each citizen will become an important key.

Ryuichi Nakajima, Professor, Graduate School of Economics, Meikai University, W157

With the nuclear disaster triggered by the earthquake in the Tohoku region, the safety myth has collapsed along with a great focus on the effects of fissile material on the environment. Moving forward, energy problems will also become crucial, along with the environment. We hope for a solution that brings together the wisdom of humankind.

*Daizo Takaoka, Professor, Department of Environmental Science,
Osaka Electro-Communication University, W166*

The earthquake and ensuing disaster in Japan forced a re-acknowledgement of the dangers of nuclear power plants. The need for nuclear power plants lacks substantive persuasiveness. Many have pointed out that the development of alternative energies have been obstructed and the true costs of waste removal and securing safety has been disregarded to mislead in favor of nuclear power so that the monopolistic power of enormous corporations are protected. The effects of the recent radioactive leaks can only be evaluated over time. But at the very least, a large number of people in a large region in the confines of a small country will continue to bear the burden. Even if there is the demand for a great deal of electricity from a large number of Japanese citizens and the Japanese economy, I don't believe that the benefits make up for this much of a loss. In addition, energy conservation and movements towards the development of alternative energies will serve as a catalyst to encourage new technological innovation, which is something that could give birth to new industries and markets. Even if the phasing out of nuclear power plants leads to however much shortage in electricity, evaluating that only from the standpoint of economic losses seem much too one-dimensional.

Hidehiko Kishi, Motojima Accounting Office, W168

The Fukushima nuclear accident caused by the tsunami triggered by the Great East Japan Earthquake demands the reconsideration of the country's energy policy and a rethinking of lifestyles. Nuclear power had been touted as a cheap source of power generation, but the disaster should have shown that it was an unfair tactic to only compare costs at electricity generation. Many people have finally realized that nuclear waste disposal, decommissioning a reactor, crisis response, and safety measures have costs that are far too large, and that they had been shouldering enormous risks. With electricity shortages, citizens have finally begun to seriously engage in energy conservation. The response to calls for "low carbon" and "electricity conservation" to counter global warming had not been so effective. It is proof that people can achieve these aims, but hadn't taken these goals seriously. At the same time as fundamentally rethinking energy policy, we must go beyond simply criticizing politics and instead have each of us seriously engage in this urgent situation.

Yumi Nakayama, Reporter, Asahi Shimbun, W172

The effects of the nuclear disaster on the global environment are immeasurable. At the same time, the seriousness of the relationships between food and water to environmental problems is growing. It seems like a time for a great transition in the history of civilization.

*Kentaro Kanazawa, Associate Professor, School of General Education,
Shinshu University, 173*

While nuclear power generation has played an important role in Japan, the disaster at the Fukushima Dai-ichi Nuclear Power Plant caused by the Great East Japan Earthquake is greatly changing the response to and awareness of nuclear power. If these circumstances lead to an increase in coal power generation or home generation of electricity, it will result in an increase in CO2 emissions. I strongly believe that now is the time for us to rethink the total emissions of CO2.

M, 183

The nuclear disaster is the result of strain under the years of policies of the Liberal Democratic Party. The power companies have been dragged along by those policies or piggybacked onto them, and the relationship is similar to that between the producers of contaminated raw beef and the restaurants that sold customers the beef tartare. The press has only been critical of the party that came afterwards. The current administration can also be said to be a victim of the same strain. The crime of the Liberal Democratic Party and the Federation of Electric Power Companies of Japan, who have advertised lies, in which they said that the cost of nuclear power is the lowest while wind power and solar energy cost several times to more than 10 times more, is to have thoroughly obstructed the research and development of natural energies. (This is something I had been saying for 10 years before March 11th.) I believe that as a result, the problem of radioactivity has become the biggest priority of all the environmental problems for Japanese people for the foreseeable future.

Tadakatsu Okubo, Professor, Utsunomiya Kyowa University, 195

Although nuclear power had been favorably reevaluated as a global warming strategy, it needs to once again be evaluated through the lessons of the accident at Fukushima. We should once again return to a blank slate and have an honest and direct look at the fury of environmental destruction of radioactive contamination.

M, W203

Radioactive contamination is one of the most troublesome forms of environmental contamination. The emissions of radiation and radioactive elements from the Fukushima Dai-ichi Nuclear Power Plant have contaminated a wide area of the ocean and the air. There is concern over the radioactive contamination of fish and seafood in a wide area of the ocean due in particular to biological concentration. Japan had been a victim of atomic bombing through Hiroshima, Nagasaki, and the Bikini Islands, but with the Fukushima accident, it has also become a perpetrator against the world. I don't completely reject nuclear power as a source of energy. But it contaminates both the workers and the environment, and waste processing also presents difficulties. In addition, it is a technology that has yet to be established, and one that imposes a large burden on both the Earth and its organisms. As such, implementation of nuclear power requires the utmost care. As for the consumption of energy, including electricity, I believe we are past the point where we should be encouraging conservation, but rather what is needed is a much more fundamental transformation and reduction in usage. What is likely necessary is for bold policy changes and enactment of laws to lead the way towards the use of natural energies.

Hisako Nakamura, Lecturer, Hannan University, W221

What was painfully apparent in watching the process of managing the Fukushima nuclear disaster and the ensuing contamination was that what is needed is to both respond to the immediate disaster and at the same time to anticipate the medium- and long-term and to set a guiding principle towards the future of our society. I believe that in a time like the present, the broad array of environmental security problems also requires having both a local and a global perspective simultaneously to develop (the ideas and practices of) sustainability through a partnership between businesses and academia.

Satoru Kitajima, Director and Consultant, Japan National Trust, W250

With the nuclear accident, significant problems in health, food supply, and water will materialize in Japan. Although the questionnaire this year hasn't touched upon these problems, the effects of radiation have been seen over a wide area of the Northern Kanto region, making it the most pressing issue closely intertwined with environmental problems. These problems raise questions that are difficult to answer. I believe that the greatest problem we face is how we move away from the current circumstances, in which the national government has significantly raised the regulatory limits (of radiation exposure) to suit its own needs and has not seriously responded to the problems.

Yoshihiro Matsumoto, W252

2. Lessons Learned from the Earthquake and the Tsunami

With the Great East Japan Earthquake, Fukushima Prefecture is experiencing a triple disaster of the earthquake, tsunami, and radiation. But we will approach this crisis with the spirit of the proverb that teaches us to turn misfortune to one's advantage, as a chance in a million, and firmly proceed with environmental activities. Let's acknowledge unwaveringly that the Earth does not only belong to people of our generation, but that we have the responsibility for the survival of all future generations including those of our children and grandchildren. We are reconstructing our school buildings with the goal of reopening our doors before the end of April. Saturday, April 9th, from our offices, where we are working weekends.

*Yoichi Midorikawa, Finance Director,
The Offices of the Koriyama Women's University and College, 019*

The reconstruction from the Great East Japan Earthquake that struck in March is the most pressing issue in Japan, and the problem of energy security is important. Nonetheless, what I hope for is that the country engages in these problems with a long-term and global perspective, towards a sustainable society.

Eiichi Hamatani, Deputy Director for the Kanto Region, Mitsubishi Estate Co., Ltd., W025

With the Great East Japan Earthquake that struck on March 11th as well as the nuclear accident in Fukushima, I keenly felt the inadequacy of crisis management and risk communication. I hope that we can improve on these problems and turn a crisis into an opportunity. The cause of global environmental problems lies in people. So what is needed first and foremost is trust, dialogue, and cooperation between those people. I can't help but think that if we are able to look one another in the eyes and each talk about our dreams, it might be possible to achieve the goals of environmental conservation, the establishment of a code of conduct, and mutual cooperation. In a world where SWS is more and more developed, I believe that international cooperation has become much easier than 10 years ago, especially the formation of alliances between private citizens.

Hidetsuru Matsushita, 27

I believe that no matter how innovative a strategy one region might put into place, it cannot put a dent in the global environmental problems of billions of people that make up mankind. Although it is essential for mankind to have some strategies

and dedicate some efforts at all times, it is extremely difficult to accurately educate and implement appropriate knowledge, methods, and technologies that are standardized on a global scale in order to execute those strategies. Therefore, we must first begin by thinking through how we might solve this problem. But the power of nature is immeasurably large, and the recent Great East Japan Earthquake made me realize that these types of consciousness and strategies are limited to the feeling of containing the effects of man as much as possible. Nonetheless, “protecting the environment” is a mission for us mankind who are the beneficiaries of this globe.

M, W042

There is no energy resource that is completely safe, cheap, with a low environmental burden, and yet can provide a stable supply into the future. The same can be said for water and food resources. The fact that the Great East Japan Earthquake has made clear is that we must awaken to the fact that ever-increasing economic growth is a pipe dream, and that it is time for us to explore a path upon which humankind can continue to stably survive within the global environment.

Kozo Ninomiya, Research Institute for Global Change, Japan Agency for Marine-Earth Science and Technology, 084

Any modification of the environment must be made with great care. The current realities, in which a project can be called an “assessment” but entering an “assessment” phase actually signifies construction, is extremely dangerous. Rather than making decisions based on engineering theories of “constructing for how much,” we should research nature as much as possible and base decisions after confirming the safety and the effects of a project through rational methods. The tsunami and the nuclear crisis of Fukushima is one such example, in which the stance of seeking profits is destroying Japan and threatening its safety. If we continue such insane actions, which are akin to jumping off a dark cliff without determining whether it is the ocean or rock that lies beneath, the future direction of our country is pitch black.

M, 098

The wonderful characteristics of compassion and thoughtfulness that Japanese people have shown in their support towards the victims of the Great East Japan Earthquake and the reconstruction should not be limited to times of disaster. Rather, they should be extended in peaceful times, and in addition, not only for our friends and relatives but also for the people and regions of the world who are suffering from environmental problems.

M, 102

Although the Great East Japan Earthquake was a natural disaster, it has provided us with an opportunity to once again think about environmental problems and our lifestyles. One consideration is not only limited to prevention measures and strategies to ameliorate problems, but the importance of responses and appropriate strategies when disaster strikes. Further, I have always thought it was necessary to conduct training so that we are able to act upon situations with quick decisions despite having incomplete information, while avoiding underestimating the scope of the problem. On the other hand, I think that problems that we hadn’t even anticipated have surfaced. For example, the disposal of electric and hybrid vehicles that were damaged in the tsunami have presented difficulties in the handling of high-voltage parts. Even the evaluation of effects on the environment that includes technical evaluation would not be able to handle problems that had not been anticipated. So how to respond to those situations presents a difficult problem.

Further, in issuing the mandates for evacuation related to the nuclear accident in Fukushima, available scientific information like the disaster anticipation model SPEEDI have not been taken advantage of. The data had made absolutely evident that radiation exposure levels would be high in regions Northwest of the plant like Litate Village. In contrast, a simple designation of evacuation areas based on concentric circles may have led to evacuation mandates for residents in areas that didn’t require such actions. It is not only the disclosure of information that is important, but also guidance in interpreting and understanding the information. I believe this exact thing can be said for environmental problems.

Keiichi Yokobori, Attorney, Yabuki Law Office, W107

The government’s policy towards environmental problems after the earthquake and the tsunami represents a significant change in direction. The wealth in Japan had spread awareness and activities for the environment, but from now on, I hope that the reconstruction becomes a catalyst towards ecological challenges.

M, 122

What we need are specific prevention measures related to environmental contamination. The massive earthquake that recently struck eastern Japan has triggered profound environmental contamination problems. Although the earthquake was a natural disaster, the environmental contamination that it triggered was clearly a man-made disaster. Environmental contamination is a force that usurps the rights of living organisms, and mankind has the responsibility to engage in contamination prevention and purification. As mankind continues life’s activities, the development of environmental technologies to maintain the health of the environment is an urgent issue.

*Atsuo Nozaki, Professor, Graduate School of Health and Environment Sciences,
Tohoku Bunka Gakuen University, W128*

It has been made mostly apparent that carbon dioxide is a large cause behind the problem of global warming, which has manifested in phenomena like the appearance of extreme climates and the increase in their fluctuations. While it is important to properly acknowledge those facts and establish prevention measures, I believe we have also entered a phase in which response measures have become necessary. Although it is unrelated to global warming, disasters like the recent Great East Japan Earthquake have led to the sinking of land, showing that the landmass that sinks undersea is significant. We should assume that this can occur anywhere due to the rise in sea levels, and continuously think about response measures. In particular, as Japan cannot separate itself from its relationship with the oceans, it must turn its attention to changes there. In addition, Japan should lead the research on the absorption of carbon dioxide by the oceans, the effects that such absorption would have on organisms, and on absorption methods that don't have an effect on life.

Junichiro Tsutsumi, Professor, Faculty of Engineering, University of the Ryukyus, W132

When thinking about how the fear of resource depletion and the attraction to large-scale businesses were one of the reasons that made developed countries run towards nuclear power, I find that we need to rethink from various angles the question of what is the best strategy to pursue for each environmental problem for mankind and other living organisms. I believe that this is the question that the Great East Japan Earthquake is posing.

Minoru Yoneda, Chairman of the Board, Earthor Co., Ltd., W134

In addition to more violent climate change imposing a crisis upon the continued survival of life on Earth including human beings, we now have the Pacific plate activating, causing earthquakes and tsunamis that have struck in three locations and is anticipated to strike a fourth. We must learn from the negative examples set by Japan where the man-made disaster compounded the natural disaster, making it more prominent. It will likely be necessary to study how we can adopt on a global level these products of modern civilization that we cannot manage in times of accidents, starting in North America in particular. In addition, we must accelerate the pace in which we advance scientific technology, medicine, and biology as a condition of the survival of living organisms including mankind. Nonetheless, the recent Great East Japan Earthquake unfortunately caused changes to the global environment, both from the natural disaster itself and the ensuing leaks of radiation and radioactive substances. I believe that such circumstances require that a questionnaire originating in Japan now turns its attention to radioactive contamination as it has to toxic chemical compounds

Michiko Imai, Director, Le Verseau Inc.

With the recent earthquake disaster, the electricity crunch has become a pressing issue, with the transition to new forms of energy like solar power becoming an urgent task. So rather than simply marrying energy policy together with environmental policy, I would like to amass the power of the residents of the region and incorporate them into an industrial policy that leads to economic revitalization, creating a Kanagawa model and begin an energy revolution from Kanagawa prefecture.

Yuji Kuroiwa, Governor, Kanagawa Prefecture, 169

Through experiencing the Great East Japan Earthquake, I was made painfully aware how powerless man's knowledge, technology, and experience are against nature. I believe we must discard any thinking that has to do with conquering nature, and instead strive to harmonize and coexist with the environment.

Harutoshi Yamamoto, 174

The next ten years will determine our fate. March 11th was an unexpected disaster, which we must now take to advance towards building a recycling-oriented society.

Toshihiko Goto, Chairman, Environmental Auditing Research Group, W190

V. Data

2. THE EFFECTS OF CLIMATE CHANGE

2-1 Have you experienced any climate aberrations in the last 2-3 years, including heavy rains and flooding, drought, extreme storms, or witnessed irregularities in plant and animal life? Please circle one item from A through D for each category below that best reflects your experience.

A: No experience B: Very little experience C: Experience several times D: Experience Frequently

Unit:%

	Overall	Japan	U.S.A. & Canada	Western Europe	Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total	Developed Regions	Developing Regions	Other	Asian Four	Rest of Asia	China	South Korea	India	
	[1000]	[468]	[129]	[80]	[223]	[26]	[24]	[17]	[27]	[5]	[532]	[771]	[179]	[49]	[94]	[129]	[87]	[59]	[14]	
Frequent droughts and wildfires	A	30	38	37	40	12	38	17	6	15	20	24	35	15	12	14	10	10	19	7
	B	35	48	17	28	30	15	13	24	26	20	24	39	24	24	32	28	25	29	36
	C	24	9	30	28	42	31	42	59	41	20	37	19	39	45	45	40	38	42	36
	D	9	4	11	4	16	15	25	12	15	20	13	6	21	14	10	21	26	10	14
	Unknown	2	1	5	1	1	0	4	0	4	20	2	2	2	4	0	2	0	0	7
Climatic anomalies of torrential rains and flooding, severe storms, heavy snow	A	9	8	11	24	3	27	13	6	11	20	10	9	9	10	0	5	6	0	0
	B	22	23	12	38	22	12	17	24	11	0	20	22	25	14	13	29	28	15	36
	C	46	43	57	34	49	38	42	59	56	40	49	46	44	55	54	46	48	49	43
	D	22	25	18	4	25	23	25	12	19	20	19	22	20	16	33	19	18	36	14
	Unknown	1	1	2	1	1	0	4	0	4	20	2	1	2	4	0	2	0	0	7
Abnormally low or high temperature	A	6	4	9	18	0	19	13	0	7	0	7	6	5	4	0	1	0	0	0
	B	22	21	22	33	18	23	17	24	44	0	23	22	20	33	17	19	17	15	21
	C	48	50	50	44	46	50	42	53	41	40	47	48	49	45	40	50	54	37	57
	D	23	24	16	6	34	8	25	24	4	40	22	23	25	14	43	28	29	47	14
	Unknown	1	1	2	0	1	0	4	0	4	20	2	1	2	4	0	2	0	0	7
Increases in severity and frequency of tornadoes, typhoons, hurricanes, cyclones	A	26	14	37	68	16	69	63	12	56	40	36	23	30	39	16	16	14	25	29
	B	32	36	22	23	37	15	25	41	22	20	29	31	37	29	28	43	44	36	21
	C	30	37	27	6	31	12	4	47	19	20	24	33	18	29	44	22	22	29	29
	D	11	13	9	3	14	4	4	0	0	0	9	11	12	0	13	16	20	10	7
	Unknown	2	1	5	1	2	0	4	0	4	20	3	2	3	4	0	3	1	0	14
Significant declines in water levels or drying of rivers and lakes	A	22	26	31	40	6	19	0	12	37	20	20	26	8	27	5	7	6	8	7
	B	41	54	29	38	25	42	17	6	37	20	28	45	24	24	30	22	22	39	7
	C	22	12	22	16	41	19	46	59	22	40	32	18	35	37	47	36	36	37	50
	D	13	7	12	5	27	19	33	24	0	20	19	9	32	10	18	34	37	15	36
	Unknown	1	1	5	1	0	0	4	0	4	0	2	1	1	2	0	1	0	0	0
Anomalies in plant and animal life (e.g., abnormal proliferation, modifications in blooming timing, significant changes in habitat, etc.)	A	17	13	21	38	9	35	17	12	41	20	20	16	16	29	4	12	9	7	7
	B	38	42	24	44	39	46	29	24	22	20	35	37	45	22	28	47	54	37	29
	C	31	29	40	14	35	15	25	59	30	40	32	32	22	41	52	23	21	46	36
	D	12	14	12	4	13	4	21	6	4	0	11	13	13	4	13	14	15	10	14
	Unknown	2	1	4	1	3	0	8	0	4	20	3	2	3	4	3	3	1	0	14

2-2. How have the changes or anomalies that you have experienced changed in frequency or scope each year? Please circle one item that best describes your experience.

Unit:%

	Overall	Japan	U.S.A. & Canada	Western Europe	Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total	Developed Regions	Developing Regions	Other	Asian Four	Rest of Asia	China	South Korea	India
	[1000]	[468]	[129]	[80]	[223]	[26]	[24]	[17]	[27]	[5]	[532]	[771]	[179]	[49]	[94]	[129]	[87]	[59]	[14]
Frequency is increasing/scope is expanding	80	75	89	69	90	81	79	82	70	100	85	80	84	78	97	85	82	97	93
Frequency is decreasing/scope is diminishing	1	0	0	0	1	0	13	0	7	0	2	0	3	4	1	2	2	2	0
No changes to frequency or scope	15	21	7	21	7	12	4	18	15	0	10	16	11	14	1	12	15	2	7
No changes or anomalies	3	3	2	10	1	8	0	0	4	0	3	3	2	2	1	1	1	0	0
Unknown	1	1	2	0	0	0	4	0	4	0	1	1	1	2	0	1	0	0	0

2-3. There may be a need for people to put measures into place at an individual level to respond to damages and effects from the climate change that is anticipated in the future. Please circle one item from A through E for each category below that best reflects your opinion.

A: Strongly disagree B: Somewhat disagree C: Neither agree nor disagree (I don't know) D: Somewhat agree E: Strongly agree Unit: %

		Overall	Japan	U.S.A. & Canada	Western Europe	Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total	Developed Regions	Developing Regions	Other	Asian Four	Rest of Asia	China	South Korea	India
		[1000]	[468]	[129]	[80]	[223]	[26]	[24]	[17]	[27]	[5]	[532]	[771]	[179]	[49]	[94]	[129]	[87]	[59]	[14]
Individual responses are unnecessary as I do not expect sudden changes in the immediate future.	A	50	44	75	51	45	62	50	53	41	20	54	52	39	43	63	33	24	64	50
	B	29	35	14	20	32	15	13	24	26	0	23	28	32	22	21	40	48	20	29
	C	7	8	5	3	5	8	8	6	7	40	5	6	8	10	2	8	8	3	14
	D	11	12	2	15	13	4	8	12	15	40	11	10	13	16	11	16	17	8	7
	E	3	1	2	10	3	12	13	0	4	0	5	2	6	2	2	4	2	3	0
	Unknown	1	0	2	1	1	0	8	6	7	0	2	1	2	6	1	1	0	0	0
Measures and preparations should be put into place by the national/local government and not by individuals	A	31	41	16	8	32	12	13	18	11	0	21	32	30	12	26	37	45	0	21
	B	33	45	16	28	23	27	21	24	22	0	22	34	30	20	11	33	41	2	21
	C	7	6	12	9	5	4	8	0	11	0	8	7	7	6	2	8	5	3	7
	D	15	6	26	35	13	31	25	47	30	40	23	13	17	37	13	12	8	19	29
	E	13	1	26	20	26	27	29	12	22	60	25	13	15	22	48	9	1	76	21
	Unknown	1	0	4	1	1	0	4	0	4	0	2	1	1	2	1	1	0	0	0
Individuals need to prepare at some level, though it may not be full scale (e.g., emergency food and water supply, watercraft for flooding or submerging)	A	4	2	7	4	6	12	8	6	11	0	6	4	7	8	6	5	6	8	0
	B	10	5	13	19	17	12	8	0	4	0	14	9	17	2	12	20	23	17	14
	C	8	5	9	18	11	8	0	18	15	0	11	8	8	14	13	10	10	20	7
	D	44	51	44	35	35	31	42	41	52	80	39	46	35	51	34	35	37	37	36
	E	32	37	22	24	31	38	33	35	11	20	27	33	30	20	35	28	24	17	36
	Unknown	1	0	4	1	1	0	8	0	7	0	2	1	2	4	0	2	0	0	7
Individuals need to take full-scale response measures	A	7	6	8	9	5	15	21	6	19	0	8	6	9	12	5	5	5	7	7
	B	16	15	17	21	16	12	8	41	22	20	18	16	15	29	15	17	17	22	21
	C	16	13	19	19	18	12	4	18	15	20	17	16	14	16	21	16	20	34	0
	D	39	46	36	33	30	31	33	18	22	40	32	41	34	22	26	34	32	25	29
	E	22	20	17	19	28	31	29	18	15	20	23	21	27	16	31	26	26	10	43
	Unknown	1	0	3	0	1	0	4	0	7	0	2	1	1	4	2	1	0	2	0

2-4. The Earth's average temperature has gradually been rising since the Industrial Revolution, and it is said that we are experiencing global warming. Please circle one item from A through E for each category below that best reflects your opinion.

A: Strongly disagree B: Somewhat disagree C: Neither agree nor disagree (I don't know) D: Somewhat agree E: Strongly agree Unit: %

		Overall	Japan	U.S.A. & Canada	Western Europe	Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total	Developed Regions	Developing Regions	Other	Asian Four	Rest of Asia	China	South Korea	India
		[1000]	[468]	[129]	[80]	[223]	[26]	[24]	[17]	[27]	[5]	[532]	[771]	[179]	[49]	[94]	[129]	[87]	[59]	[14]
Global warming is caused by increased CO2 emissions, attributed to human activity and namely the industrialization after Industrial Revolution	A	3	2	2	4	3	0	8	0	19	0	4	2	4	10	1	4	5	0	7
	B	4	4	1	0	5	0	13	0	11	0	4	3	7	6	2	8	9	3	0
	C	7	10	2	6	3	0	0	0	19	0	4	7	4	10	0	5	6	0	7
	D	35	44	11	28	39	27	13	35	30	20	28	36	33	31	40	38	46	37	21
	E	50	40	82	63	49	73	63	65	19	80	60	51	50	41	56	43	32	59	64
	Unknown	1	0	2	0	1	0	4	0	4	0	1	1	2	2	0	2	2	0	0
Global warming is caused by increased CO2 emissions largely from volcanic activity or from the oceans	A	25	11	65	49	18	38	38	53	19	80	38	26	21	37	23	14	7	25	29
	B	34	39	21	29	35	31	25	24	33	20	30	36	28	29	46	28	31	41	21
	C	24	32	6	11	30	15	13	6	15	0	18	24	30	10	20	36	43	25	21
	D	14	17	5	6	15	12	8	18	19	0	11	13	16	16	11	18	16	8	21
	E	2	1	2	3	1	4	8	0	7	0	2	1	3	4	0	2	1	0	7
	Unknown	1	0	1	3	1	0	8	0	7	0	2	1	2	4	0	2	2	0	0
Global warming is largely attributed to the effects of water vapors rather than increased CO2 emissions	A	31	15	71	46	27	62	63	47	33	80	45	30	34	43	34	22	13	37	29
	B	26	29	17	21	29	12	8	29	15	20	23	28	19	20	38	22	24	44	29
	C	31	42	8	19	30	15	17	12	37	0	21	31	33	24	18	40	45	15	36
	D	9	11	3	8	9	8	4	12	4	0	7	9	9	6	9	10	10	2	7
	E	2	3	1	3	3	4	0	0	4	0	2	2	3	2	1	4	6	2	0
	Unknown	1	0	1	4	1	0	8	0	7	0	2	1	2	4	0	2	2	0	0
Increase in CO2 is rooted in global warming, not an effect of human activity	A	54	38	84	71	62	77	54	76	30	80	68	53	60	51	67	58	54	63	43
	B	28	38	10	14	26	15	33	18	26	20	20	29	25	22	26	26	30	31	21
	C	12	18	2	8	8	4	4	6	19	0	6	13	8	12	4	10	11	5	14
	D	3	4	1	5	2	4	0	0	15	0	3	3	2	8	2	2	0	2	7
	E	1	1	2	0	2	0	0	0	4	0	2	1	2	2	1	3	2	0	14
	Unknown	1	1	1	3	1	0	8	0	7	0	2	1	2	4	0	2	2	0	0
Global warming is due to periodic changes in nature, including solar activity and the mechanisms of the Earth's interior	A	33	26	50	33	38	38	25	47	7	60	38	33	34	27	41	35	40	31	14
	B	29	32	23	23	32	15	25	12	22	40	26	30	26	20	37	28	31	46	29
	C	18	24	11	14	11	15	25	12	15	0	12	19	16	12	7	14	11	10	21
	D	15	15	12	21	14	31	8	24	22	0	16	15	17	20	11	16	9	10	29
	E	4	1	4	8	4	0	8	6	26	0	5	3	4	16	2	5	5	3	7
	Unknown	1	1	1	3	2	0	8	0	7	0	2	1	3	4	1	2	3	0	0

3. THE DIMINUTION OF WATER (FRESH WATER) RESOURCES

3-1. It is said that there are increasing instances where the diminution of usable fresh water can be felt in everyday life. Please select one item from A through D for each category below that best reflects your personal experience.

A: No experience at all B: Almost no experience C: I have experienced this phenomenon D: I experience this phenomenon often

Unit:%

		Overall	Japan	U.S.A. & Canada	Western Europe	Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total	Developed Regions	Developing Regions	Other	Asian Four	Rest of Asia	China	South Korea	India
		[1000]	[468]	[129]	[80]	[223]	[26]	[24]	[17]	[27]	[5]	[532]	[771]	[179]	[49]	[94]	[129]	[87]	[59]	[14]
Decreased supply of drinking water on an occasional or daily basis	A	50	48	71	79	34	42	25	65	59	40	52	55	28	59	45	26	29	68	0
	B	29	37	16	13	33	15	8	18	22	0	23	30	30	18	28	37	49	20	7
	C	15	13	9	6	24	27	33	18	11	20	17	12	27	14	20	26	18	8	64
	D	4	2	2	0	8	15	25	0	0	40	6	2	12	4	6	9	2	2	29
	Unknown	1	0	2	3	1	0	8	0	7	0	2	1	2	4	1	2	1	2	0
There are occasional or daily restrictions on water for domestic use	A	48	48	55	75	35	50	29	41	67	20	48	52	28	53	52	23	24	80	0
	B	31	41	20	15	29	23	13	0	19	40	22	32	32	14	18	37	47	15	7
	C	16	8	22	8	28	19	38	41	7	0	22	12	28	18	27	29	23	2	64
	D	4	3	2	1	6	8	17	18	0	40	5	2	10	10	2	9	5	2	29
	Unknown	1	0	2	1	1	0	4	0	7	0	2	1	2	4	1	2	1	2	0
Decreased supply of water for agricultural or industrial use on an occasional or daily basis	A	44	43	58	66	30	58	25	35	56	60	45	47	31	49	34	27	24	51	14
	B	33	43	22	23	28	27	25	18	30	0	25	35	28	22	26	29	34	31	21
	C	17	12	12	9	28	12	33	47	11	0	20	14	25	22	32	26	29	15	29
	D	5	1	5	1	13	0	13	0	0	40	8	3	13	4	7	16	11	2	36
	Unknown	1	0	3	1	1	4	4	0	4	0	2	1	2	2	1	2	1	2	0

3-2. What are your opinions about the reasons behind the diminishing water supply, said to be occurring around the world? Please circle one item from A through E for each category below that best reflects your opinion.

A: Strongly disagree B: Somewhat disagree C: Neither agree nor disagree (I don't know) D: Somewhat agree E: Strongly agree

Unit:%

		Overall	Japan	U.S.A. & Canada	Western Europe	Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total	Developed Regions	Developing Regions	Other	Asian Four	Rest of Asia	China	South Korea	India
		[1000]	[468]	[129]	[80]	[223]	[26]	[24]	[17]	[27]	[5]	[532]	[771]	[179]	[49]	[94]	[129]	[87]	[59]	[14]
Decrease in water supply was caused by climate change (like droughts and desertification)	A	2	1	2	9	1	0	8	0	11	0	3	2	2	6	1	1	0	0	0
	B	8	6	4	11	13	15	4	0	19	0	10	6	17	10	4	20	23	2	21
	C	14	15	13	18	13	4	4	6	22	0	13	14	15	14	6	19	25	7	7
	D	53	57	52	46	50	58	33	76	37	40	50	56	42	51	62	41	39	59	50
	E	21	20	28	14	22	23	46	18	4	60	22	21	23	14	26	19	13	31	14
	Unknown	1	1	2	3	1	0	4	0	7	0	2	1	1	4	1	1	0	2	7
Decrease in water supply was caused by allocating water from rivers and groundwater towards massive agricultural irrigation	A	2	1	2	3	4	4	13	0	4	0	3	2	3	2	6	2	1	8	7
	B	10	6	3	6	23	27	33	12	4	0	15	8	23	6	26	21	24	27	7
	C	13	13	8	6	19	8	8	6	22	0	13	12	17	14	17	21	23	24	7
	D	49	55	47	48	39	42	25	47	44	60	42	51	36	47	41	36	36	32	43
	E	25	25	39	36	15	19	13	35	19	20	25	26	19	24	9	20	16	7	36
	Unknown	1	1	1	1	0	0	8	0	7	20	2	1	1	6	1	0	0	2	0
Decrease in water supply was caused by increased industrial use	A	2	1	3	3	2	8	17	6	7	20	4	2	4	8	3	1	0	5	0
	B	9	7	5	10	11	23	17	6	11	40	11	8	13	12	12	10	5	15	14
	C	18	21	15	16	14	8	8	12	22	0	14	19	11	16	17	12	11	17	0
	D	53	57	53	58	48	42	38	65	52	40	50	56	44	55	50	46	47	56	64
	E	17	13	22	13	26	19	8	12	4	0	20	15	27	6	17	32	37	5	21
	Unknown	1	1	2	1	0	0	13	0	4	0	2	1	2	2	1	0	0	2	0
Decrease in water supply was caused by increased domestic use	A	4	1	5	3	4	12	29	18	11	0	7	2	7	12	6	2	1	7	7
	B	14	11	6	11	22	15	25	29	19	20	17	12	22	22	22	22	24	24	14
	C	17	20	16	15	13	12	8	12	11	20	14	18	11	12	15	12	10	17	7
	D	52	57	53	63	45	46	21	29	44	40	48	56	42	39	46	45	44	47	57
	E	12	11	17	8	15	15	4	12	7	20	13	11	16	10	10	19	21	3	14
	Unknown	1	1	2	1	0	0	13	0	7	0	2	1	2	4	1	0	0	2	0
Decrease in water supply was caused by pollution and contamination	A	3	1	4	4	3	4	13	6	15	20	5	2	6	12	1	5	3	2	14
	B	12	13	12	16	7	27	17	24	7	0	11	13	9	12	11	4	0	17	7
	C	16	21	16	20	6	12	4	6	11	0	11	18	6	8	9	5	1	8	14
	D	48	52	49	54	40	38	38	59	37	40	44	52	32	45	53	30	26	54	43
	E	20	13	18	5	43	19	13	6	22	20	26	14	45	16	26	57	69	17	21
	Unknown	1	1	2	1	0	0	17	0	7	20	2	1	2	6	1	0	0	2	0
Decline in the geological capacity to retain water due to deforestation	A	3	0	5	4	4	12	13	6	7	0	5	2	7	6	3	5	5	5	14
	B	6	5	5	10	4	0	0	29	11	20	6	6	2	18	6	2	0	5	14
	C	11	9	21	23	6	12	4	6	26	20	13	12	5	18	9	4	0	14	14
	D	49	56	46	41	42	38	42	47	22	20	42	53	35	31	54	33	34	63	21
	E	30	29	22	21	43	38	33	12	26	20	32	27	50	20	27	55	61	12	29
	Unknown	2	1	1	1	1	0	8	0	7	20	2	1	2	6	1	1	0	2	7

3-3. It is said that importing agricultural and industrial products from other countries consequently contribute to the water shortage in the producing country. Please circle one item from A through E for each category below that best reflects your opinion.

A: Strongly disagree B: Somewhat disagree C: Neither agree nor disagree (I don't know) D: Somewhat agree E: Strongly agree

Unit:%

		Overall	Japan	U.S.A. & Canada	Western Europe	Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total	Developed Regions	Developing Regions	Other	Asian Four	Rest of Asia	China	South Korea	India
		[1000]	[468]	[129]	[80]	[223]	[26]	[24]	[17]	[27]	[5]	[532]	[771]	[179]	[49]	[94]	[129]	[87]	[59]	[14]
Should suppress consumption of imports which require intensive water use in producing regions so that water shortages there can be alleviated	A	5	3	9	6	2	15	33	0	11	0	7	4	9	6	0	4	3	0	7
	B	16	18	7	21	15	19	13	41	15	20	15	15	20	24	7	21	17	8	21
	C	21	20	21	20	21	19	21	12	41	40	21	20	20	31	21	20	22	24	36
	D	42	46	40	29	45	46	13	24	22	40	38	44	36	24	54	39	44	49	14
	E	15	13	20	23	16	0	17	24	7	0	17	16	14	12	16	16	14	17	21
	Unknown	1	0	3	1	0	0	4	0	4	0	2	1	1	2	1	0	0	2	0
Should consume products from own country as much as possible, and alleviate water shortages in other countries by consuming nearby water resources	A	3	1	4	6	4	15	4	0	0	0	5	2	7	0	2	6	2	0	14
	B	9	9	4	14	12	12	13	6	7	20	10	8	14	8	7	15	17	7	0
	C	13	11	16	10	14	12	17	12	22	20	14	11	17	18	10	18	17	14	7
	D	46	54	36	35	47	38	29	29	30	40	39	49	39	31	55	40	47	59	43
	E	28	26	39	35	22	23	29	53	33	20	30	29	22	39	24	21	16	19	36
	Unknown	1	0	2	0	0	0	8	0	7	0	2	1	1	4	1	0	0	2	0
Consumers and consuming countries don't have responsibility as they pay a market price, which benefit producers and producing countries	A	36	29	60	44	33	42	21	53	22	60	41	38	27	37	44	26	21	41	21
	B	39	46	26	30	42	27	17	35	26	0	33	41	36	27	43	41	45	46	36
	C	12	14	6	9	9	15	25	6	19	20	10	11	14	14	6	12	10	7	14
	D	10	9	5	11	11	15	17	6	19	20	11	9	15	14	6	15	15	5	21
	E	2	0	1	5	4	0	4	0	7	0	3	1	6	4	0	7	9	0	7
	Unknown	1	0	2	1	0	0	17	0	7	0	2	1	2	4	1	0	0	2	0
Problem is that the correct price reflecting the use of scarce water resources is not being established	A	3	2	5	4	4	12	8	12	7	0	5	3	5	8	4	3	3	2	0
	B	11	13	5	10	13	12	8	6	7	0	9	11	15	6	7	16	21	5	7
	C	24	34	11	9	22	8	8	12	33	40	16	25	22	27	13	28	31	14	29
	D	39	41	34	34	42	35	42	41	15	40	37	40	35	27	52	34	37	63	21
	E	21	9	43	43	20	35	21	29	30	20	30	20	21	29	21	19	8	15	43
	Unknown	2	1	3	1	1	0	13	0	7	0	2	1	2	4	2	0	0	2	0
Securing water is responsibility of the countries that produce agricultural and industrial products, who actually use the water resources	A	9	8	9	5	12	8	8	6	15	20	10	8	9	12	15	9	7	17	0
	B	29	35	25	14	31	15	13	18	19	0	24	32	22	16	39	26	29	44	21
	C	18	22	17	15	12	12	4	12	19	40	14	19	10	18	13	11	13	17	0
	D	33	30	39	50	28	46	42	47	30	40	36	33	35	37	23	31	31	19	50
	E	10	4	8	15	17	19	25	18	11	0	14	6	23	12	9	23	21	2	29
	Unknown	1	1	3	1	0	0	8	0	7	0	2	1	1	4	1	0	0	2	0
It is not possible that the consumption of agricultural and industrial products creates water shortages in other countries and regions	A	41	39	64	59	27	31	25	82	37	20	43	46	19	51	44	16	8	46	14
	B	34	44	20	20	31	31	17	12	22	20	25	37	26	18	36	27	23	36	43
	C	13	13	7	11	19	19	17	0	11	40	14	11	22	10	12	24	29	12	14
	D	7	3	5	4	16	12	13	6	22	0	11	4	20	14	6	23	30	5	14
	E	3	0	2	5	6	8	13	0	0	20	5	1	10	2	1	10	10	0	14
	Unknown	1	0	2	1	0	0	17	0	7	0	2	1	2	4	1	0	0	2	0

4. FOOD PROBLEMS

4-1. Have you experienced abnormal food shortages or increases in food prices recently in the country or region where you reside? Please circle one item from A through D for each category below.

A: No experience at all B: Almost no experience C: I have experienced this phenomenon D: I experience this phenomenon often

Unit:%

		Overall	Japan	U.S.A. & Canada	Western Europe	Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total	Developed Regions	Developing Regions	Other	Asian Four	Rest of Asia	China	South Korea	India
		[1000]	[468]	[129]	[80]	[223]	[26]	[24]	[17]	[27]	[5]	[532]	[771]	[179]	[49]	[94]	[129]	[87]	[59]	[14]
Abnormal shortages of / increases in prices of meats and dairy products	A	16	11	32	49	5	12	0	24	30	0	20	18	5	24	6	5	2	10	21
	B	30	41	24	30	16	31	4	35	19	20	21	35	13	24	21	12	13	25	0
	C	39	42	38	18	42	42	38	29	26	40	36	39	40	29	46	40	41	36	29
	D	14	6	3	4	36	15	54	12	22	40	21	8	40	20	27	43	43	29	50
	Unknown	1	0	3	0	1	0	4	0	4	0	2	1	2	2	0	2	1	0	0
Abnormal shortages of / increases in prices of vegetables, grains, and fruits	A	10	7	22	39	2	4	4	0	22	0	13	12	2	12	2	2	0	3	7
	B	25	30	29	31	10	23	13	18	22	40	20	28	12	22	12	9	10	17	14
	C	46	53	39	23	45	54	25	71	33	40	40	47	40	47	52	40	44	47	7
	D	18	10	8	6	42	19	54	12	15	20	25	12	44	14	34	47	45	32	71
	Unknown	1	0	2	1	1	0	4	0	7	0	2	1	2	4	0	2	1	0	0
Abnormal shortages of / increases in prices of nonessential grocery items like coffee	A	18	13	28	49	11	23	13	24	26	0	22	19	12	22	12	10	11	17	0
	B	37	41	22	28	47	35	8	35	22	80	35	35	47	33	34	57	67	32	29
	C	35	40	43	16	27	31	29	35	22	20	29	38	22	27	37	19	16	31	29
	D	9	6	5	6	14	12	42	6	22	0	12	7	16	14	17	12	5	20	43
	Unknown	1	0	2	1	1	0	8	0	7	0	2	1	2	4	0	2	1	0	0

4-2. Reports about food shortages and increases in food prices have stirred the news in recent years. What do you think are the reasons behind this problem? Please circle one item from A through E for each category below that best reflects your opinion.

A: Strongly disagree B: Somewhat disagree C: Neither agree nor disagree (I don't know) D: Somewhat agree E: Strongly agree

Unit: %

	Overall	Japan	U.S.A. & Canada	Western Europe	Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total	Developed Region	Developing Regions	Other	Asian Four	Rest of Asia	China	South Korea	India	
	[1000]	[468]	[129]	[80]	[223]	[26]	[24]	[17]	[27]	[5]	[532]	[771]	[179]	[49]	[94]	[129]	[87]	[59]	[14]	
Seasonal variations in the yield of agricultural and animal products as well as fish	A	5	2	8	9	3	8	13	29	15	0	7	4	6	18	1	5	3	2	0
	B	16	14	20	23	14	19	13	6	26	40	18	15	17	20	10	17	21	10	14
	C	17	14	21	25	17	12	13	12	19	60	19	16	20	20	10	22	28	12	7
	D	50	59	38	36	49	58	25	41	33	0	42	53	41	33	60	41	38	61	50
	E	12	10	11	6	17	4	33	12	4	0	13	11	15	6	20	14	10	15	29
	Unknown	1	0	2	1	0	0	4	0	4	0	1	1	1	2	0	1	0	0	0
Changes in the yield of agricultural and animal products caused by climactic aberrations (flooding, high/low temperatures, low rainfall)	A	1	0	1	4	0	8	0	0	4	0	2	1	2	2	0	1	1	0	0
	B	4	3	5	10	4	8	0	0	15	0	6	4	6	8	1	7	9	2	7
	C	7	5	13	9	5	12	4	6	26	20	9	6	8	18	2	8	9	3	7
	D	62	70	55	66	53	42	46	53	41	40	54	65	52	45	50	55	57	49	50
	E	25	22	23	10	36	31	46	41	7	40	28	24	31	22	47	29	23	46	36
	Unknown	1	0	2	1	0	0	4	0	7	0	2	1	1	4	0	1	0	0	0
Changes in fish yield caused by abnormalities in sea temperatures, changes in ocean currents, and ocean acidification	A	2	1	2	6	1	8	0	6	11	0	3	1	2	8	0	2	2	0	0
	B	9	6	12	23	6	15	17	18	7	0	11	9	9	10	4	7	9	2	0
	C	25	22	21	30	27	23	25	24	44	60	27	21	37	39	6	43	43	7	50
	D	47	58	40	31	42	42	29	35	26	0	38	51	36	27	50	36	40	54	21
	E	17	13	24	9	24	12	21	18	4	40	20	18	13	12	39	12	6	37	29
	Unknown	1	0	2	1	0	0	8	0	7	0	2	1	2	4	0	1	0	0	0
Losses incurred upon storing and transporting products as seen with fresh products	A	6	4	8	9	5	19	8	18	11	0	8	5	6	12	7	3	5	5	0
	B	25	30	17	20	26	19	21	18	15	20	21	26	24	16	26	26	33	27	7
	C	36	37	38	39	32	23	25	35	48	80	35	37	31	47	31	33	37	37	21
	D	27	26	28	26	31	31	17	29	11	0	27	27	30	16	30	32	22	25	57
	E	5	3	6	5	6	8	17	0	4	0	6	4	7	2	6	5	3	5	14
	Unknown	1	0	3	1	0	0	13	0	11	0	2	1	2	6	0	1	0	0	0
Price increases caused by the increase in food demand as result of economic growth and expansion of middle class	A	3	1	3	1	4	0	17	0	11	0	4	2	5	6	4	4	6	3	0
	B	14	10	6	9	26	15	13	6	22	0	17	11	25	14	22	29	40	20	7
	C	18	21	16	11	19	8	4	18	19	20	16	19	15	18	20	19	23	25	7
	D	48	54	48	48	35	46	29	53	37	80	41	51	34	47	38	32	20	39	64
	E	17	13	23	31	14	31	25	24	4	0	20	17	18	10	15	14	9	12	21
	Unknown	1	0	3	0	1	0	13	0	7	0	2	1	3	4	0	2	2	0	0
Increase in consumption of grains as feed material for domestic animals	A	3	1	2	4	3	15	17	6	11	20	5	1	8	10	1	5	3	0	14
	B	11	8	5	8	21	8	25	12	15	0	14	8	24	12	12	27	31	3	29
	C	20	20	15	18	22	15	13	29	30	20	20	19	22	29	19	25	28	20	29
	D	47	56	39	44	38	50	21	24	30	60	38	51	33	31	47	32	28	54	14
	E	18	14	36	26	15	12	13	29	7	0	22	20	11	14	21	11	10	22	14
	Unknown	1	0	3	1	0	0	13	0	7	0	2	1	2	4	0	1	0	0	0
Price increases of agricultural products caused by increased fuel prices and reduced production	A	1	0	0	4	0	0	0	0	4	0	1	1	0	2	1	0	0	0	0
	B	7	7	5	8	9	8	0	12	11	0	7	7	7	10	10	9	11	12	7
	C	17	21	12	18	15	8	0	12	11	20	14	19	11	12	18	13	17	19	0
	D	55	61	47	54	52	42	42	53	37	40	49	57	48	43	53	50	54	53	64
	E	19	11	33	16	23	38	50	24	30	40	27	16	32	29	17	27	17	17	29
	Unknown	1	0	4	1	1	4	8	0	7	0	2	1	2	4	1	1	0	0	0
Wasteful disposal of foodstuffs in wealthy countries and regions (e.g., the inefficiencies of disposing food without eating them)	A	3	1	5	5	3	4	8	6	4	0	4	2	4	4	2	4	5	3	0
	B	10	6	4	16	16	23	13	12	11	20	13	8	18	12	12	19	22	17	21
	C	20	18	21	18	20	15	29	18	37	40	21	19	18	31	26	16	20	29	0
	D	44	53	41	35	38	31	21	35	26	0	36	48	33	27	40	36	32	39	50
	E	23	22	27	25	22	27	17	29	15	40	24	23	23	22	20	24	21	12	29
	Unknown	1	0	2	1	1	0	13	0	7	0	2	1	3	4	0	2	1	0	0
Effects of massive speculation in the market for primary products (particularly agricultural products and seafood)	A	2	1	5	6	1	0	8	0	0	20	3	2	2	2	1	1	0	2	0
	B	6	4	5	11	5	12	8	0	7	20	7	5	6	6	6	4	5	3	7
	C	23	21	29	15	27	12	13	24	22	0	24	22	27	20	20	33	30	22	29
	D	43	47	36	39	41	35	33	53	33	40	39	44	37	41	45	39	40	47	43
	E	26	27	21	28	25	42	21	24	30	20	25	26	26	27	28	23	25	25	21
	Unknown	1	0	3	1	0	0	17	0	7	0	2	1	3	4	0	1	0	0	0
Effects of movements in foreign exchange	A	3	1	8	8	3	8	8	6	4	20	6	3	4	6	3	3	5	2	0
	B	12	12	4	13	16	12	13	18	11	40	12	11	15	16	16	16	15	14	14
	C	42	41	54	43	42	23	17	18	48	0	42	43	39	33	36	46	46	41	64
	D	34	39	24	23	31	54	33	53	26	40	30	34	32	37	36	28	30	36	14
	E	7	6	6	14	7	4	17	6	4	0	8	7	7	4	7	6	5	7	7
	Unknown	2	0	4	1	1	0	13	0	7	0	2	1	2	4	1	1	0	2	0

4-3. A variety of measures are possible to alleviate food problems. Please circle one item from A through E for each category below that best reflects your opinion.

A: Strongly disagree B: Somewhat disagree C: Neither agree nor disagree (I don't know) D: Somewhat agree E: Strongly agree

Unit: %

		Overall	Japan	U.S.A. & Canada	Western Europe	Asia	Latin America	Africa	Oceania	Eastern Europe & former Soviet Union	Middle East	Overseas Total	Developed Regions	Developing Regions	Other	Asian Four	Rest of Asia	China	South Korea	India
		[1000]	[468]	[129]	[80]	[223]	[26]	[24]	[17]	[27]	[5]	[532]	[771]	[179]	[49]	[94]	[129]	[87]	[59]	[14]
Expand arable land and pastures through sustainable land use that takes into consideration the environment, e.g. greening of deserts	A	5	3	9	5	5	4	8	6	11	0	6	4	7	8	2	7	8	0	0
	B	12	9	12	14	13	19	17	24	11	20	14	10	15	16	11	14	20	3	0
	C	9	7	10	11	10	0	4	18	11	20	10	9	7	14	11	9	13	10	7
	D	47	56	33	50	44	31	13	41	41	60	40	50	37	43	46	43	43	46	43
	E	27	25	34	19	28	42	50	12	22	0	29	26	31	16	31	26	16	41	50
	Unknown	1	0	2	1	1	4	8	0	4	0	2	1	3	2	0	2	1	0	0
Increase marine resources and moderate capture at sustainable levels by being conscious of upper limits, e.g., total allowable catch	A	1	0	2	3	2	0	8	0	4	0	2	1	3	2	0	3	3	0	0
	B	3	1	5	5	3	4	4	6	4	20	4	2	3	6	4	2	3	5	0
	C	5	3	2	4	11	4	4	0	15	20	7	4	11	10	6	14	11	7	29
	D	43	55	29	38	34	12	29	35	33	40	32	47	27	35	40	29	30	44	29
	E	47	40	62	50	49	77	38	59	37	20	53	46	52	43	49	50	51	44	43
	Unknown	1	0	1	1	1	4	17	0	7	0	2	0	4	4	0	2	1	0	0
Improve productivity of foodstuffs through advancements in breed improvement and irrigation technology	A	2	1	5	5	3	0	0	0	7	0	3	2	1	4	4	2	1	7	0
	B	8	5	13	9	10	4	0	6	11	20	10	8	3	10	18	4	5	25	7
	C	12	11	13	13	11	0	13	18	22	40	12	13	6	22	19	5	7	24	7
	D	49	60	47	41	37	35	25	65	33	40	40	53	35	45	37	36	36	36	50
	E	28	23	20	31	39	58	58	12	19	0	33	23	53	14	21	51	51	8	36
	Unknown	1	0	2	1	1	4	4	0	7	0	2	1	2	4	0	2	1	0	0
Modifications in food consumption (e.g., limit calorie intake; decrease meat consumption: 1 kg of beef requires 11 kg of grains, more efficient to consume grains directly)	A	2	0	2	5	5	4	8	0	11	0	4	1	7	6	2	7	7	2	0
	B	9	7	7	18	9	27	13	6	7	20	11	8	15	8	3	13	16	3	7
	C	15	18	13	14	9	12	25	6	19	20	12	15	13	14	5	12	11	5	14
	D	40	49	32	21	39	27	21	41	26	40	33	42	34	33	41	38	40	44	36
	E	32	25	46	41	37	27	21	47	30	20	38	33	27	35	48	29	24	46	43
	Unknown	1	0	1	1	1	4	13	0	7	0	2	0	3	4	0	2	1	0	0
Develop new food resources. (e.g., consume insects previously uneaten as a source of protein)	A	8	4	8	10	13	15	13	0	15	40	11	6	16	12	7	17	14	8	36
	B	25	29	17	15	25	19	13	24	22	20	20	26	20	22	29	22	26	34	29
	C	33	38	32	33	26	19	21	35	22	20	28	36	20	27	34	20	18	36	21
	D	26	25	31	31	22	15	25	41	22	20	26	26	24	29	18	26	25	14	7
	E	8	3	10	10	12	27	17	0	11	0	12	6	15	6	12	12	13	8	7
	Unknown	2	0	2	1	2	4	13	0	7	0	3	1	4	4	0	3	3	0	0
Suppress population growth	A	5	2	5	18	6	8	8	6	11	0	8	5	5	8	10	4	2	8	7
	B	15	17	12	9	14	19	25	12	26	0	14	15	15	18	17	12	15	17	14
	C	21	24	9	23	18	15	21	24	30	20	17	21	16	27	23	15	16	29	0
	D	34	41	30	26	33	23	13	29	11	0	28	37	27	16	35	31	31	36	29
	E	23	15	43	25	26	27	21	29	15	80	30	21	32	27	15	35	31	10	50
	Unknown	2	1	1	0	2	8	13	0	7	0	2	1	6	4	0	4	5	0	0
There should be no shortages when considering the absolute global food output; food shortages can be solved by adequate distribution	A	12	13	15	8	9	8	13	6	11	0	10	13	6	8	14	5	5	20	0
	B	24	33	13	20	16	12	4	12	22	20	16	27	13	18	17	16	22	15	0
	C	22	24	23	20	22	15	13	12	11	20	20	23	22	12	17	25	30	17	21
	D	28	25	32	25	34	23	33	47	26	40	32	27	32	35	35	33	26	31	36
	E	12	4	16	26	17	35	25	24	22	20	20	9	22	22	16	19	14	15	43
	Unknown	2	1	2	1	2	8	13	0	7	0	3	1	5	4	1	3	3	2	0

5. ENVIRONMENTAL SECURITY

5-1. Each of the categories below pertain to an element of environmental security, which supports human life and welfare. Please circle one item from A through E for each category to indicate whether or not you consider it to be a pressing issue.

A: Not at all pressing B: Not very pressing C: Neither (I don't know) D: Somewhat pressing E: Very pressing

Unit:%

		Overall [1000]	Japan [468]	U.S.A.& Canada [129]	Western Europe [80]	Asia [223]	Latin America [26]	Africa [24]	Oceania [17]	Eastern Europe & former Soviet Union [27]	Middle East [5]	Oversas total [532]	Developed Regions [771]	Developing Regions [179]	Other [49]	Asian Four [94]	Rest of Asia [129]	China [87]	South Korea [59]	India [14]
Water shortage	A	1	0	0	0	0	0	4	0	4	0	1	0	1	2	1	0	0	0	0
	B	2	3	1	3	1	0	0	0	15	0	2	2	1	8	2	1	1	3	0
	C	4	6	4	3	3	4	4	0	4	0	3	5	2	2	5	1	1	8	0
	D	33	39	26	39	29	19	17	18	26	20	28	36	23	22	33	26	23	46	21
	E	58	52	69	55	64	69	67	82	44	80	64	55	70	61	54	71	74	37	79
	Unknown	1	0	0	1	3	8	8	0	7	0	2	1	3	4	4	2	1	5	0
Food shortage	A	1	0	1	1	0	0	4	0	4	0	1	1	1	2	1	0	0	0	0
	B	2	1	2	4	4	0	4	6	7	0	3	2	3	6	5	3	3	8	7
	C	6	5	8	5	7	0	0	6	4	20	6	6	6	6	5	9	10	8	0
	D	44	42	53	54	41	46	21	35	48	40	45	45	40	43	40	42	41	44	64
	E	46	51	36	34	44	46	67	53	30	40	41	46	47	39	44	44	43	34	29
	Unknown	2	0	1	3	3	8	4	0	7	0	3	1	3	4	4	2	2	5	0
Pollution/contamination of atmosphere, rivers, and oceans (by chemical substances, excessive eutrophication through phosphorus and nitrogen particles)	A	1	0	0	0	0	0	8	0	4	0	1	0	1	2	1	0	0	0	0
	B	3	4	3	3	1	0	0	0	4	0	2	3	1	2	1	2	1	2	0
	C	5	8	2	6	2	4	4	0	11	20	3	6	3	8	1	2	2	2	0
	D	43	53	28	48	35	23	17	41	33	20	33	46	32	35	32	36	38	39	14
	E	47	35	67	43	59	69	58	59	44	60	58	44	60	51	61	58	57	53	86
	Unknown	1	0	0	1	3	4	13	0	4	0	2	1	3	2	4	2	1	5	0
Destruction of ecosystems through the acidification of oceans	A	1	1	1	3	0	0	13	0	0	0	1	1	2	0	1	0	0	0	0
	B	5	6	2	6	2	4	8	0	7	0	3	5	2	4	3	1	1	3	0
	C	19	27	5	14	13	8	8	6	44	0	12	19	17	27	4	20	23	5	14
	D	41	45	33	40	44	46	17	29	22	40	38	42	42	27	43	46	40	47	57
	E	32	21	60	36	36	38	42	65	19	60	43	32	33	39	45	30	32	39	29
	Unknown	2	0	0	1	4	4	13	0	7	0	3	1	4	4	4	3	3	5	0
Damage from extreme climates like heavy rains, drought, massive typhoons, etc.	A	0	0	0	0	0	0	4	0	0	0	0	0	1	0	1	0	0	0	0
	B	5	5	3	9	4	4	4	0	7	0	4	4	5	4	1	5	7	2	7
	C	12	15	6	13	11	8	0	12	7	20	9	12	13	10	3	17	23	3	7
	D	47	52	43	59	39	35	33	47	44	20	43	49	40	43	35	43	38	44	64
	E	35	28	47	19	43	50	46	41	33	60	40	34	37	39	55	33	31	46	21
	Unknown	1	0	0	1	3	4	13	0	7	0	2	1	3	4	4	2	1	5	0
Loss of basis for livelihood from the effects of global warming, like the rise in sea levels	A	1	1	1	1	1	0	4	0	7	0	2	1	1	4	2	1	1	2	0
	B	7	8	3	11	5	0	0	6	26	0	6	7	6	16	2	8	7	3	7
	C	15	19	7	13	12	19	8	6	15	20	11	15	15	12	7	16	15	7	29
	D	47	50	45	55	40	50	33	41	33	20	43	48	42	35	37	43	45	39	43
	E	28	21	44	19	37	27	42	47	11	60	35	27	31	29	46	30	29	44	21
	Unknown	2	0	0	1	4	4	13	0	7	0	3	1	4	4	5	3	3	5	0
Harm to human health from global warming, increased incidence of disease outbreak and mortality, rise in infectious diseases	A	2	1	1	4	1	0	4	0	11	0	2	1	2	6	1	2	2	0	0
	B	8	8	6	10	8	4	8	6	22	0	8	8	9	14	4	10	11	3	14
	C	18	22	9	18	17	15	8	18	19	40	15	18	20	20	11	22	25	7	14
	D	44	47	43	56	38	35	21	65	26	20	41	47	31	39	46	33	33	56	43
	E	27	21	41	11	33	42	50	12	15	40	31	25	36	16	34	32	26	29	29
	Unknown	1	0	0	1	3	4	8	0	7	0	2	1	3	4	4	2	1	5	0
Creation of environmental refugees	A	1	0	1	4	2	0	8	0	4	0	2	1	3	2	1	2	3	0	0
	B	7	5	2	10	11	4	8	6	19	0	8	5	13	12	4	16	18	5	14
	C	23	29	11	20	19	19	17	6	30	20	17	23	22	20	13	23	24	14	21
	D	45	46	44	45	46	54	33	53	30	40	45	46	42	39	51	42	38	61	57
	E	23	19	42	20	20	19	21	35	11	40	26	24	17	22	27	16	15	15	7
	Unknown	1	0	0	1	3	4	13	0	7	0	2	1	3	4	4	2	1	5	0
Conflict over resources	A	1	0	0	1	1	4	8	0	0	0	1	0	2	0	1	1	1	0	0
	B	4	3	3	1	5	4	0	6	15	0	4	3	6	10	2	8	10	3	7
	C	10	12	5	8	12	15	4	0	11	20	9	10	13	8	9	14	11	7	21
	D	43	44	33	56	47	46	38	35	26	20	43	44	45	29	48	47	48	59	43
	E	41	42	58	33	32	27	38	59	41	60	40	43	30	49	36	29	26	25	29
	Unknown	1	0	0	1	3	4	13	0	7	0	3	1	4	4	4	2	2	5	0
Population growth	A	1	0	0	3	2	0	0	0	7	0	2	1	1	4	3	1	0	3	0
	B	5	3	3	8	7	0	8	12	4	0	6	4	7	6	5	8	10	5	0
	C	11	13	5	5	14	12	4	0	19	20	10	12	8	12	21	9	11	25	0
	D	38	41	28	41	39	31	29	35	30	0	35	39	37	29	38	40	37	46	50
	E	44	42	62	44	34	54	50	53	33	80	45	44	43	45	27	40	38	15	50
	Unknown	2	0	2	0	4	4	8	0	7	0	3	1	4	4	5	3	3	5	0

RESPONDENT AFFILIATION

Employment

Unit: %

	Overall [1000]	Japan [468]	U.S.A. & Canada [129]	Western Europe [80]	Asia [223]	Latin America [26]	Africa [24]	Oceania [17]	Eastern Europe & former Soviet Union [27]	Middle East [5]	Overseas Total [532]	Developed Regions [771]	Developing Regions [179]	Other [49]	Asian Four [94]	Rest of Asia [129]	China [87]	South Korea [59]	India [14]
Central government	5	2	5	9	6	15	29	12	11	0	8	4	11	10	5	7	3	3	7
Local government	6	10	2	1	3	0	8	6	0	0	2	7	2	2	5	2	2	2	0
University or research institution	37	48	11	33	36	23	8	12	63	20	28	37	39	41	20	48	57	19	50
Nongovernmental organization	19	8	22	25	32	42	33	47	22	40	29	17	26	33	46	22	8	58	43
Corporation	12	15	6	14	13	0	0	12	0	0	9	13	9	4	13	13	18	7	0
Mass media	7	4	31	1	2	4	0	6	0	0	9	8	1	2	3	1	1	3	0
Other	13	13	22	18	6	12	17	6	4	40	13	14	9	8	4	8	9	7	0
Unknown	1	0	1	0	1	4	4	0	0	0	1	1	1	0	3	0	0	2	0

Sex

Unit: %

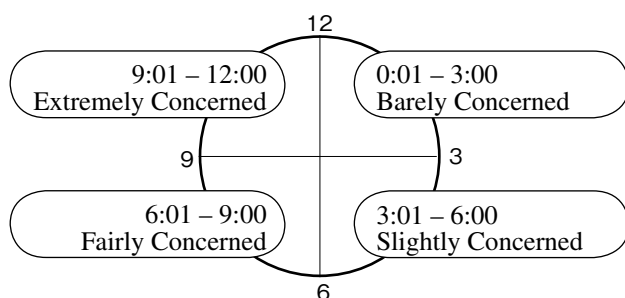
	Overall [1000]	Japan [468]	U.S.A. & Canada [129]	Western Europe [80]	Asia [223]	Latin America [26]	Africa [24]	Oceania [17]	Eastern Europe & former Soviet Union [27]	Middle East [5]	Overseas Total [532]	Developed Regions [771]	Developing Regions [179]	Other [49]	Asian Four [94]	Rest of Asia [129]	China [87]	South Korea [59]	India [14]
Male	77	91	60	76	58	73	75	88	78	80	65	80	64	82	56	60	54	56	93
Female	22	9	39	24	38	27	25	12	15	20	33	19	35	14	38	38	43	41	7
Unknown	1	0	1	0	4	0	0	0	7	0	2	1	2	4	5	2	3	3	0

VI. Questionnaire as Distributed to Respondents

I. REPEAT TOPICS

1. Awareness of the Crisis Facing Human Survival - Environmental Doomsday Clock

1-1. To what extent do you feel that the current deterioration of the global environment has created a crisis that will affect the survival of the human race? Write a time within the range 0:01 to 12:00 corresponding to the extent of your concern in the boxes below.



Please write your time here.

 :

(Example :)

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

Item	Main Elements
1. Climate Change	Atmospheric concentration of CO₂ ; global warming ; ocean acidification ; climatic aberrations (droughts, torrential rains and flooding, severe storms, heavy snow, abnormal temperatures, drying of rivers and lakes, desertification, etc.)
2. Biodiversity	Acceleration of species extinction ; effects of contamination, climate change, land use
3. Land Use	Expansion of cultivated land mass; destruction of forests due to erratic development; desertification caused by overgrazing; agriculture and land use without regard for the environment; urbanization
4. Pollution / Contamination	River and ocean pollution: eutrophication caused by excessive nitrogen and phosphorus and contamination by chemical substances; atmospheric pollution : particulates suspended in the atmosphere, soot and chemical substances
5. Water Resources	Diminution of usable fresh water resources (depletion, contamination)
6. Population	Population growth beyond what the Earth can support; aging of the population
7. Food	Diminution of food supply from land and oceans
8. Lifestyles	Transformation of lifestyles away from excessive consumption of resources like energy
9. Global Warming Measures	Progress of measures for mitigation and adaption
10. Environment and Economy	<u>Progress towards implementing an economic system to reflect environmental costs</u> , the bearing of social costs : imposition of taxes for fossil fuels that emit CO ₂ , which cause global warming-related damages; TEEB (The Economics of Ecosystems and Biodiversity), etc. <u>The operation of an environmentally conscious economy</u> : the realization of a green economy, sustainable economic development, etc.
11. Environment and Society	Environmental awareness at the individual and societal levels, progress of environmental education ; poverty ; the status of women
12. Other	()

II. MAIN FOCUS OF THE CURRENT YEAR'S QUESTIONNAIRE

This year represents a milestone for the questionnaire as its 20th year. Meanwhile, experts have pointed out many recent changes in the environment. As such, we have incorporated questions relating to climate, water, and food, aspects of environmental problems that are both intimate and essential to our everyday lives.

2. The Effects of Climate Change

2-1. Have you experienced any climate aberrations in the last 2-3 years, including heavy rains and flooding, drought, extreme storms, or witnessed irregularities in plant and animal life? Please circle one item from A through D for each category below that best reflects your experience.

A. No experience B. Very little experience C. Experience several times D. Experience Frequently

1. Frequent droughts and wildfires (A B C D)
 2. Climatic anomalies of torrential rains and flooding, severe storms, heavy snow (A B C D)
 3. Abnormally low or high temperatures (A B C D)
 4. Increases in severity and frequency of tornadoes, typhoons, hurricanes, cyclones (A B C D)
 5. Significant declines in water levels or drying of rivers and lakes (A B C D)
 6. Anomalies in plant and animal life (e.g., abnormal proliferation, modifications in blooming timing, significant changes in habitat, etc.) (A B C D)
 7. If you have experienced other anomalies, please specify below
-

2-2. How have the changes or anomalies that you have experienced changed in frequency or scope each year? Please circle one item that best describes your experience.

1. The frequency is increasing, and / or the scope is expanding
2. The frequency is decreasing, and / or the scope is diminishing
3. There have been no changes to the frequency or the scope
4. There have been no changes or anomalies

2-3. There may be a need for people to put measures into place at an individual level to respond to damages and effects from the climate change that is anticipated in the future. Please circle one item from A through E for each category below that best reflects your opinion.

A. Strongly disagree B. Somewhat disagree C. Neither agree nor disagree (I don't know)
D. Somewhat agree E. Strongly agree

1. Individual responses are unnecessary as I do not expect sudden changes in the immediate future (A B C D E)
 2. Measures and preparations should be put into place by the national and local government and not by individuals (A B C D E)
 3. Individuals need to prepare at some minimal level, though it may not be a full scale response (e.g., emergency food and water supply, watercraft in case of flooding or submerging, etc.) (A B C D E)
 4. Individuals need to take full-scale response measures (A B C D E)
 5. If you have other opinions regarding individual responses, please specify below
-

2-4. The Earth's average temperature has gradually been rising since the Industrial Revolution, and it is said that we are experiencing global warming. Please circle one item from A through E for each category below that best reflects your opinion..

A. Strongly disagree B. Somewhat disagree C. Neither agree nor disagree (I don't know)
D. Somewhat agree E. Strongly agree

1. Global warming is caused by the increased emissions of CO₂ which can be attributed to human activity, namely the industrialization that occurred after the Industrial Revolution (A B C D E)
2. Global warming is caused by the increased emissions of CO₂ but those emissions are largely from volcanic activity or from the oceans (A B C D E)

3. Global warming is largely attributed to the effects of water vapors rather than the increased emissions of CO₂ (A B C D E)
 4. The increase in CO₂ is rooted in global warming, and it is not an effect of human activity (A B C D E)
 5. Global warming is due to periodic changes in nature, including solar activity and the mechanisms of the Earth's interior (A B C D E)
 6. If you have other opinions regarding the cause of global warming, please specify below
-

3. The Diminution of Water (Fresh Water) Resources

3-1. It is said that there are increasing instances where the diminution of usable fresh water can be felt in everyday life. Please circle one item from A through D for each category below that best reflects your personal experience.

- A. No experience at all** **B. Almost no experience**
C. I have experienced this phenomenon **D. I experience this phenomenon often**

1. I face a decreased supply of drinking water on an occasional or daily basis (A B C D)
 2. There are occasional or daily restrictions on water for domestic use (A B C D)
 3. I face a decreased supply of water for agricultural or industrial use on an occasional or daily basis (A B C D)
 4. If you have experienced other situations regarding the diminished supply of water resources, please specify below
-

3-2. What are your opinions about the reasons behind the diminishing water supply, said to be occurring around the world? Please circle one item from A through E for each category below that best reflects your opinion.

- A. Strongly disagree** **B. Somewhat disagree** **C. Neither agree nor disagree (I don't know)**
D. Somewhat agree **E. Strongly agree**

1. The decrease in water supply was caused by climate change (like droughts and desertification) (A B C D E)
 2. The decrease in water supply was caused by allocating water from rivers and groundwater towards massive agricultural irrigation (A B C D E)
 3. The decrease in water supply was caused by increased industrial use (A B C D E)
 4. The decrease in water supply was caused by increased domestic use (A B C D E)
 5. The decrease in water supply was caused by pollution and contamination (A B C D E)
 6. There has been a decline in the geological capacity to retain water due to deforestation (A B C D E)
 7. If you have additional reasons behind the decline in water supply, please specify below
-

3-3. It is said that importing agricultural and industrial products from other countries consequently contribute to the water shortage in the producing country. Please circle one item from A through E for each category below that best reflects your opinion.

- A. Strongly disagree** **B. Somewhat disagree** **C. Neither agree nor disagree (I don't know)**
D. Somewhat agree **E. Strongly agree**

1. It is necessary to suppress the consumption of imported agricultural and industrial products, which require intensive water use in producing regions so that water shortages in those exporting countries can be alleviated (A B C D E)
2. It is necessary to consume products from one's own country as much as possible, and thus alleviate water shortages in other countries by consuming nearby water resources (A B C D E)
3. Consumers and consuming countries do not have any responsibility as they pay a price according to market mechanisms, which benefit producers and producing countries (A B C D E)
4. The problem is that the correct price reflecting the use of scarce water resources is not being established (A B C D E)
5. Securing water is the responsibility of the countries that produce agricultural and industrial products, who actually use the water resources (A B C D E)

6. It is not possible that the consumption of agricultural and industrial products creates water shortages in other countries and regions (A B C D E)

7. Other

4. Food Problems

4-1. Have you experienced abnormal food shortages or increases in food prices recently in the country or region where you reside? Please circle one item from A through D for each category below.

- A. No experience at all** **B. Almost no experience**
C. I have experienced this phenomenon **D. I experience this phenomenon often**

1. There has been abnormal shortages of /increases in prices of meats and dairy products (A B C D)
2. There has been abnormal shortages of /increases in prices of vegetables, grains, and fruits (A B C D)
3. There has been abnormal shortages of /increases in prices of nonessential grocery items like coffee (A B C D)
4. Please specify below any other experiences you have had regarding food shortages and price increases
-

4-2. Reports about food shortages and increases in food prices have stirred the news in recent years. What do you think are the reasons behind this problem? Please circle one item from A through E for each category below that best reflects your opinion.

- A. Strongly disagree** **B. Somewhat disagree** **C. Neither agree nor disagree (I don't know)**
D. Somewhat agree **E. Strongly agree**

1. Seasonal variations in the yield of agricultural and animal products as well as fish (A B C D E)
2. Changes in the yield of agricultural and animal products caused by climactic aberrations (flooding, high/low temperatures, low rainfall) (A B C D E)
3. Changes in the yield of fish caused by abnormalities in sea temperatures, changes in ocean currents, and the acidification of the ocean (A B C D E)
4. Losses incurred upon storing and transporting products as seen with fresh produce (A B C D E)
5. Price increases caused by the increase in demand for food as a result of economic growth and the expansion of the middle class (A B C D E)
6. The increase in consumption of grains as feed material for domestic animals (A B C D E)
7. Price increases of agricultural products are caused by increased fuel prices and reduced production (A B C D E)
8. Wasteful disposal of foodstuffs in wealthy countries and regions (e.g., the inefficiencies of disposing food without eating them) (A B C D E)
9. The effects of massive speculation in the market for primary products (particularly agricultural products and seafood) (A B C D E)
10. The effects of movements in foreign exchange (A B C D E)
11. If there are any additional important reasons, please specify below
-

4-3. A variety of measures are possible to alleviate food problems. Please circle one item from A through E for each category below that best reflects your opinion.

- A. Strongly disagree** **B. Somewhat disagree** **C. Neither agree nor disagree (I don't know)**
D. Somewhat agree **E. Strongly agree**

1. Expand arable land and pastures through implementing sustainable land use that takes into consideration the environment, for example, the greening of deserts (A B C D E)
2. Implement measures to increase marine resources and moderate their capture at sustainable levels by being conscious of upper limits, for example, the total allowable catch (A B C D E)
3. Improve the productivity of foodstuffs through advancements in breed improvement and irrigation technology (A B C D E)

4. Modifications in food consumption (e.g., limiting calorie intake; decreasing the consumption of meat: 1 kg of beef requires 11 kg of grains, and it would be more efficient for people to consume grains directly*) * Sample calculation based on corn (A B C D E)
 5. Develop new food resources (e.g., consume insects previously uneaten as a source of protein) (A B C D E)
 6. Suppress population growth (A B C D E)
 7. There should be no shortages when considering the absolute quantity of food output at a global level; food shortages can be solved by adequate distribution (A B C D E)
 8. If there are other measures you would recommend, please specify below (A B C D E)
-

5. Environmental Security

5-1. Each of the categories below pertain to an element of environmental security, which supports human life and welfare. Please circle one item from A through E for each category to indicate whether or not you consider it to be a pressing issue..

- | | | |
|---|---|---|
| <p>A. It is not at all pressing</p> <p>D. It is somewhat pressing</p> | <p>B. It is not very pressing</p> <p>E. It is very pressing</p> | <p>C. Neither (I don't know)</p> |
|---|---|---|
1. Water shortage (A B C D E)
 2. Food shortage (A B C D E)
 3. Pollution and contamination of the atmosphere, rivers, and oceans (contamination by chemical substances, excessive eutrophication through phosphorus and nitrogen particles) (A B C D E)
 4. Destruction of ecosystems through the acidification of oceans (A B C D E)
 5. Damage from extreme climates like heavy rains, drought, massive typhoons, etc. (A B C D E)
 6. Loss of basis for livelihood from the effects of global warming, like the rise in sea levels (A B C D E)
 7. Harm to human health from global warming, increased incidence of disease outbreak and mortality, rise in infectious diseases (A B C D E)
 8. Creation of environmental refugees (A B C D E)
 9. Conflict over resources (A B C D E)
 10. Population growth (A B C D E)
 11. If there are additional problems pertaining to environmental security that you are deeply concerned with, please specify below
-

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

**Results of the 20th Annual
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REPORT

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Chiyoda-ku, Tokyo 102-0081, Japan
Phone +813 5275 0620
Fax +813 5275 0871

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

af **THE ASAHI GLASS FOUNDATION**
2nd Floor, Science Plaza, 5-3, Yonbancho
Chiyoda-ku, Tokyo 102-0081, Japan
Tel.: +81 3 5275 0620 Fax: +81 3 5275 0871
E-Mail: post@af-info.or.jp
URL: <http://www.af-info.or.jp>