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For Immediate Release

September 8, 2021

The Asahi Glass Foundation Announces the Results of the 30th Annual "Questionnaire on Environmental Problems and the Survival of Humankind"

- The time on the Environmental Doomsday Clock is 9:42, five minutes earlier than last year, back over five minutes from the preceding year. This is the first significant decrease of time in eight years.
- The time on the Clock has receded back by 30 min in North America and the times are earlier than last year in most regions. The US rejoining the Paris Agreement might have positively affected the time on the Clock.
- "Climate Change" has been the top environmental issue since 2011 that the respondents worldwide have had on their minds.
- Regarding the transition to a decarbonized society, improvements have been observed every year in all the perspectives, "Public Awareness," "Policies and Legal System," and "Social Infrastructure."
- For "Climate Change", improvements have been noted in "Public Awareness" and "Policies and Legal System" every year since 2019.
- The category most commonly identified as showing signs of improvement in approach was "Climate Change."
- On the world average, in most regions, out of 17 SDGs, "No Poverty" and "Reduced Inequality" are considered to have the lowest level of realization in 2030.

The Asahi Glass Foundation (Chairman: Takuya Shimamura) has conducted an annual survey with environmental experts from around the world since 1992. This year, we sent the questionnaire to 210 countries around the world, and received responses from 1,893 people in over 134 countries. Below are the main points from this year's questionnaire results. Further details are available in the report of the "30th Annual Questionnaire on Environmental Problems and the Survival of Humankind," or online at the Foundation's web site, starting at 11 a.m. September 8.

I. Level of the Crisis Facing Human Survival - The Environmental Doomsday Clock

I-1 The Time on the Environmental Doomsday Clock

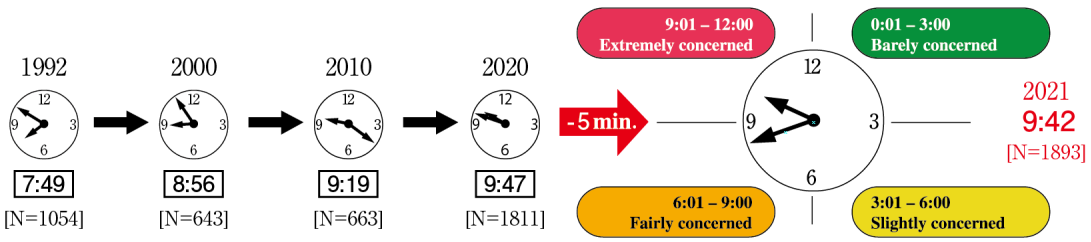


Fig. 1 Change in the Time on the Environmental Doomsday Clock Since 1992

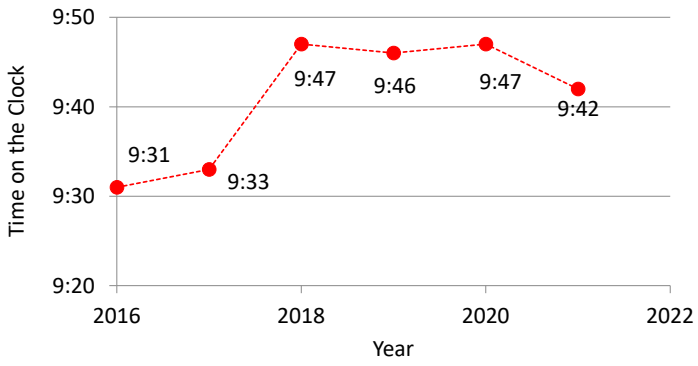
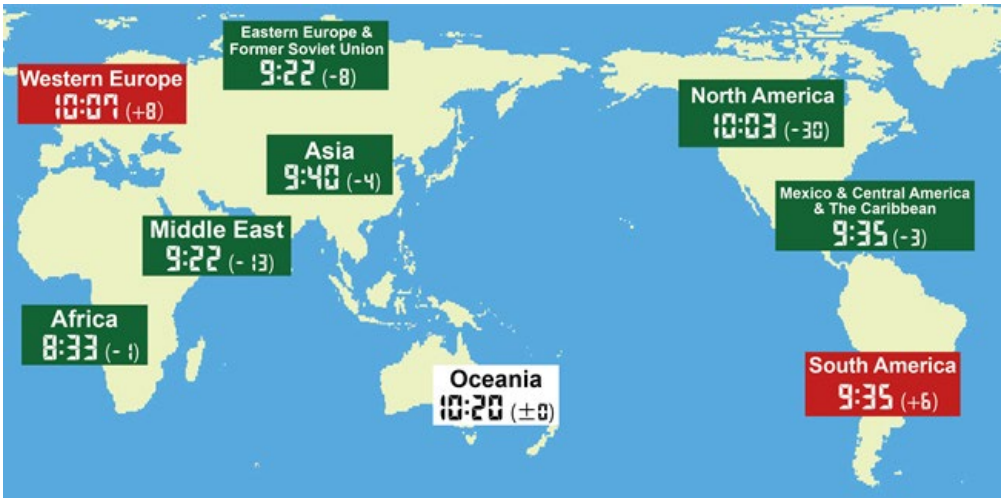


Fig. 2 Change in the Time on the Environmental Doomsday Clock over Six Years

・The Clock receded back 30 minutes in North America and the times are also earlier than last year in most regions. The US rejoining the Paris Agreement in January may have positively affected the times on the Clock around the world. Although the time on the Clock in North America is 10:03, 30 minutes earlier compared to last year, North America has still the third strongest sense of crisis in the world after Oceania and Western Europe. (Fig. 3)



represents regions where the time retreated further from midnight than last year
represents regions where the time became closer to midnight than last year
represents regions where the time remained the same

Fig. 3 Regional Times on the Environmental Doomsday Clock

・The "time on the Clock" for the world had been 9:46~47 since 2018, showing the strongest sense of crisis for three straight years. This year, it is 9:42, five minutes earlier than last year, and back over four minutes from the preceding year; this is the first significant decrease of time in eight years. (Table. 1)

Table 1. Change in the Time on the Environmental Doomsday Clock (World)

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Time	-	7:49	8:19	8:47	8:49	9:13	9:04	9:05	9:08	8:56
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Time	9:08	9:05	9:15	9:08	9:05	9:17	9:31	9:33	9:22	9:19
Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Time	9:01	9:23	9:19	9:23	9:27	9:31	9:33	9:47	9:46	9:47
Year	2021									
Time	9:42									

Since the inception of the survey, ■ represents the lowest sense of crisis, while ■ represents the highest.

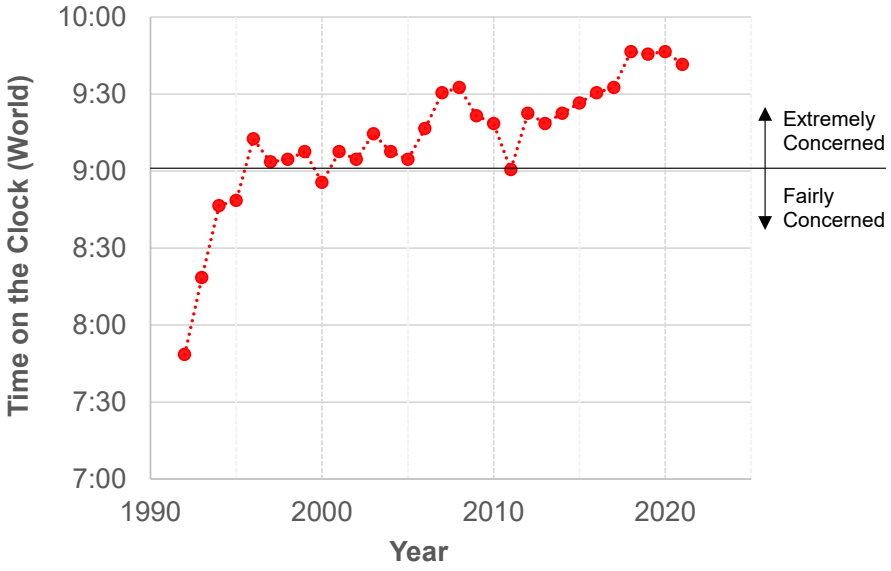


Fig. 4 Change in the Time on the Environmental Doomsday Clock since 1992

・The time on the Clock had had a tendency to get closer to midnight since 2011, but in 2021, it is 9:42, over four minutes earlier than the previous year, which is for the first time in eight years. (Fig. 4)

I-2 Change in the Time on the Environmental Doomsday Clock by Generation (2011 - 2021)

・Ten years ago, people in their 20s and 30s had an apparently lower awareness level about the environment than those of older generations. Recently, however, the difference in the awareness level of crisis among generations tends to become smaller. (Fig. 5)

・While all age groups had been developing a stronger sense of crisis each year, the Clock was set back in all age groups this year, for the first time in the last eight years. (Fig. 5)

・The times reported by respondents in their 40s and 50s, 60s and over had advanced from 2016 until 2019, but were set back consecutively in 2020 and 2021. (Fig. 5)

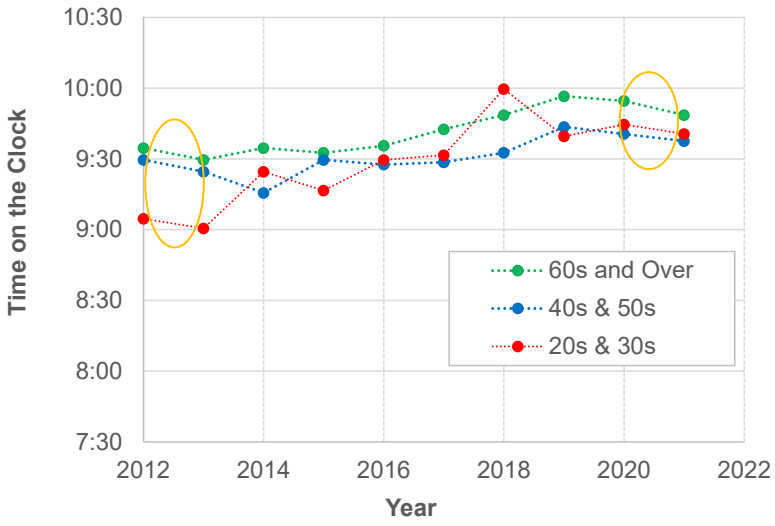


Fig. 5 Change in the Time on the Environmental Doomsday Clock by Generation

II. “Environmental Issues to be Taken into Account” in Determining the Time on the Clock (World)

In determining the time on the Environmental Doomsday Clock, the questionnaire asked respondents to select, from the following nine categories of environmental problems, the three most pressing issues for the country or region where they reside, and rank them in order of importance.
(See the Questionnaire Report for further details.)

Nine Environmental Issues to be Taken into Account:
1. Climate Change, 2. Biosphere Integrity (Biodiversity), 3. Land-system Change (Land Use),
4. Biochemical Flows (Pollution/Contamination), 5. Water Resources, 6. Population, 7. Food,
8. Lifestyle (Consumption Habits), 9. Society, Economy and Environment, Policies, Measures

II-1 Weighted Average Selection Percentage of the Nine Environmental Issues

・The top two issues that the respondents selected in determining the time on the Environmental Doomsday Clock have remained unchanged for four years in a row: “Climate Change” ranked first (31%), followed by “Biosphere Integrity (Biodiversity)” at 14%. (Fig. 6)

II-2 Weighted Average Time on the Environmental Doomsday Clock of the Nine Environmental Issues

・When arranging the "environmental issues to be taken into account" for the entire world in order of descending time on the Clock, "Biosphere Integrity (Biodiversity) (9:54)" and "Biochemical Flows (Pollution/Contamination) (9:53)" had the time closer to midnight by over 10 minutes compared to the world average time (9:42). (Fig. 6)
・“Biosphere Integrity (Biodiversity)” has shown the closest time to midnight recently, and the time for “Biochemical Flows (Pollution/Contamination)” has been getting consistently closer to midnight, compared to other environmental issues.

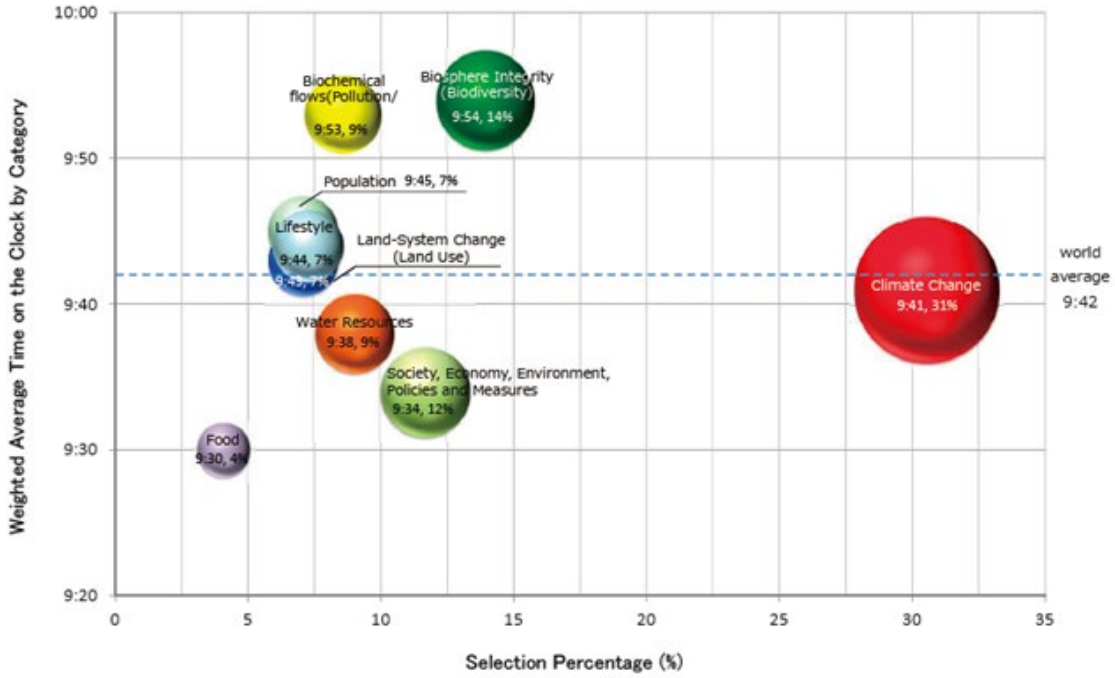


Fig. 6 2021 Distribution of the Environmental Issues, Showing Selection Percentage of Respondent's 3 Most Pressing Issues and the Time on the Clock

<The details regarding regional distribution of “Environmental Issues to be Taken into Account” are described in section III-1-2-5 of the Report.>

III. Signs of Improvement in the Approach to Environmental Issues: Comparison with the Situation Prior to 2015, When the Paris Agreement and SDGs Were Adopted

Signs of improvement were investigated from the three perspectives, (1) Public Awareness, (2) Policies and Legal System, and (3) Social Infrastructure (Funds, Human Resources, Technologies, and Facilities). We asked, from a list of "Environmental Issues to be Taken into Account," the respondent's opinion on whether there have been signs of improvement in the approach to global environmental issues with respect to a decarbonized society and where they saw signs of improvement.

We calculated the average score by quantifying the answers on whether there had been any improvements and giving a score of "-2" for the answer "Definitely not," "-1" for the answer "Not really," "0" for the answer "Cannot say either way," "+1" for the answer "Somewhat," and "+2" for the answer "Definitely."

III-1 Progress in a Transition to a Decarbonized Society

・With regard to the transition to a decarbonized society, some signs of improvement were noted, but the result shows that the advances made in "Policies and Legal System" and "Social Infrastructure (Funds, Human Resources, Technologies, and Facilities)" were less pronounced than those for "Public Awareness."
Nonetheless, many respondents think that improvements have been made in all three perspectives for two years in a row since 2019." (Fig. 7, based on Tab. 8 in Report)

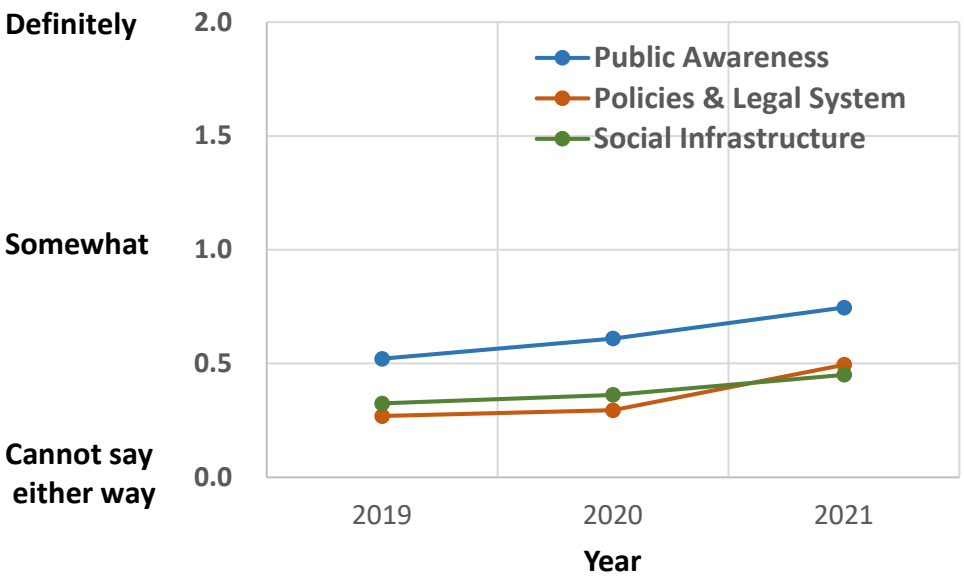


Fig. 7 Progress in a Transition to a Decarbonized Society: Change in Average Scores from 3 Perspectives

<Progress in a Transition to a Decarbonized Society: The details are shown on page 26 of the Report.>

III-2 Categories Showing Signs of Improvement

・The category most frequently selected for showing signs of improvement was “Climate Change” at 27.7%, followed by “Society, Economy and Environment, Policies, Measures” at 18.0%, and “Lifestyle (Consumption Habits)” at 16.5%. (Table 2, Fig. 8)

・ Concerning efforts against “Climate Change,” the respondents see more improvements in “Public Awareness (1.33)” than in “Policies and Legal System (0.81)” and “Social Infrastructure (0.72).” (Table 2)

Table 2. Signs of Improvement: Selection Percentage and Average Score in Signs of Improvement (2021)

Signs of Improvement Selected Category	Selection Percentage (%)	Public Awareness	Policies and Legal System	Social Infrastructure
Climate Change	27.7	1.33	0.81	0.72
Society, Economy and Environment, Policies, Measures	18.0	1.03	1.00	0.75
Lifestyle (Consumption Habits)	16.5	1.13	0.58	0.64
Biochemical Flows (Pollution/Contamination)	7.0	1.10	1.01	0.77
Biosphere Integrity (Biodiversity)	6.9	1.12	0.68	0.53
Water Resources	2.9	1.00	1.15	0.95
Population	2.8	0.66	0.40	0.43
Land-System (Land Use)	2.2	0.98	0.52	0.29
Food	1.8	1.23	0.71	0.80
No Sign of Improvement	14.1	-	-	-

<Signs of improvement in the approach to environmental issues: The details are shown on pages 25-28 of the Report.>

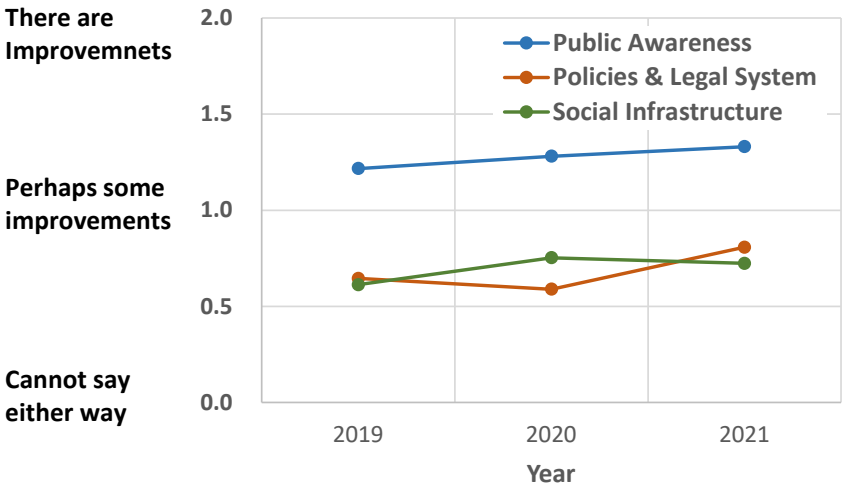


Fig. 8 Signs of Improvement (Climate Change): Change in Average Scores from 3 Perspectives

<Signs of Improvement (Climate Change): The details are shown on page 28 of the Report.>

IV Realization of 17 sustainable development goals (SDGs) in 2030

Regarding realization of 17 sustainable development goals (SDGs) in 2030, we asked the respondents to choose and rank three goals (out of 17 SDGs) that will have the highest/lowest level of realization in 2030, in terms of the realization level on the world average and in the respondents' own country/region. Responses were analyzed by the 1st-3rd summation method, and the results are shown in Fig.9. More detailed data is available in the 2021 annual report of the survey.

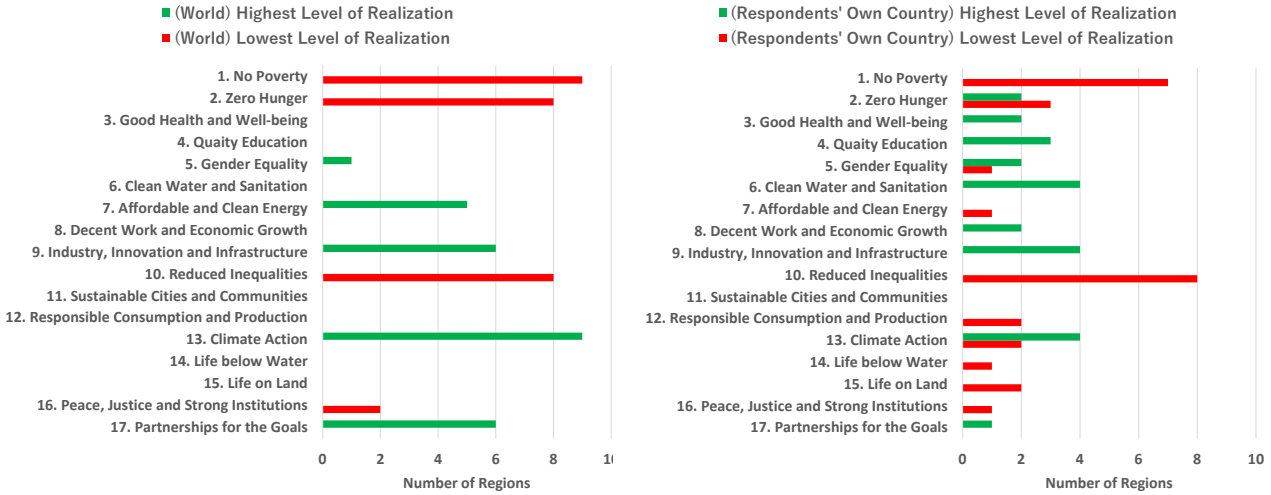


Fig. 9 SDGs That Will Have the Highest/Lowest Level of Realization in 2030

- On the world average, "13. Climate Action" was the most selected as the goal that will have the highest level of realization in 2030, followed by "9. Industry, Innovation, and Infrastructure" and "17. Partnership for the Goals."
- On the world average, "l. No Poverty," "2. Zero Hunger," and "10. Reduced Inequalities" were the three most selected goals that will have the lowest level of realization in 2030. Obviously, people around the world think that these are the most difficult goals to achieve.
- In the respondents' own country or region, "6. Clean Water and Sanitation," "9. Industry, Innovation, and Infrastructure," and "13. Climate Action" were the three most commonly selected goals that will have the highest level of realization in 2030.
- In the respondents' own country or region, many people selected "1. No Poverty," and "10. Reduced Inequalities" as the goals that will have the lowest level of realization in 2030. On the world average, these were also selected as the goals that will have the lowest level of realization, indicating that these are common major challenges worldwide.

This survey includes a section where respondents are invited to provide their opinions and write about the environmental realities they face in their region of the world, as well as offer suggestions for improvement. This year, we received a total of over 700 comments from over 130 countries abroad. These comments will be published on the Asahi Glass Foundation website at 11a.m. on September 8.

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Appendix

● Regarding the "Questionnaire on Environmental Problems and the Survival of Humankind"

Since 1992, the Asahi Glass Foundation has conducted a survey every year with experts around the world who are knowledgeable and are involved in environmental issues. The respondents are environmental experts who work or who have worked for governments, universities, research institutions, NGOs, corporations, and mass media. These experts are queried about various endeavors to counter environmental problems. The questionnaire is produced in six languages (English, Chinese, French, Korean, Spanish, and Japanese) and is sent out in April every year, and returned by June. After the responses are compiled and analyzed, the survey results are published in September. This year, the questionnaire was sent to respondents in 210 countries including Japan, with responses returned from over 134 countries. The highest respondent percentage by organization in descending order is, universities and research institutions, corporations, NGOs/NPOs, central governments, local governments, and mass media. (Fig.8, Table 3)

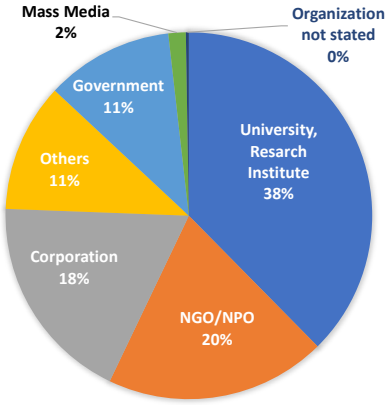

Fig. 8 Breakdown of Respondents by Organization

Table 3. Number of Countries Surveyed

Region	Number of Countries
Africa	29
Asia	20
Mexico, Central America, The Caribbean	14
Eastern Europe & former Soviet Union	20
Western Europe	17
Middle East	15
North America	2
Oceania	6
South America	11
Total	134

● Facts about This Year's Questionnaire

Survey period: April to June 2021

Respondents:

Environmental experts who work or who have worked for national or local governments, NGOs, NPOs, universities, research institutions, corporations, and mass media, worldwide (listed on the Asahi Glass Foundation database).

Number of questionnaires mailed:

31,806 (30,241 to overseas respondents and 1,565 to respondents in Japan)

Number of questionnaires returned: 1,893

Response rate: 6.0%

Table 4. Number of Respondents Surveyed

Region	Number of Respondents	%
Japan	472	24.9
Overseas	1421	75.1
World Total	1893	100.0
Africa	81	4.3
Asia	1145	60.5
Mexico, Central America, The Caribbean	61	3.2
Eastern Europe & former Soviet Union	39	2.1
Western Europe	193	10.2
Middle East	34	1.8
North America	179	9.5
Oceania	45	2.4
South America	116	6.1
Total	1893	100.0