



**Results of the 29th Annual
“Questionnaire on Environmental Problems and the Survival of
Humankind”**

Report

September 2020

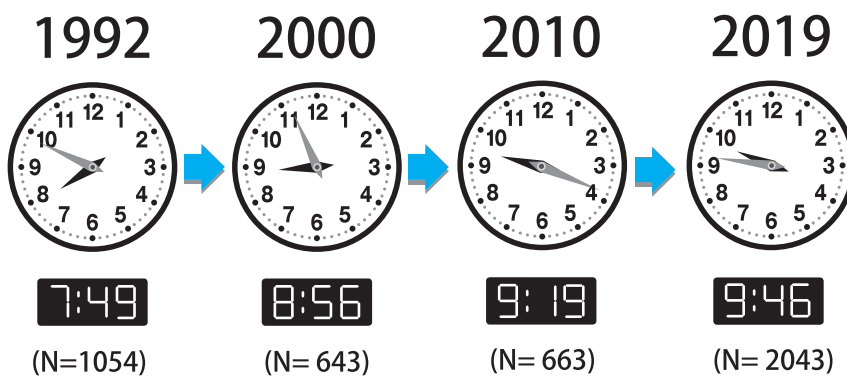
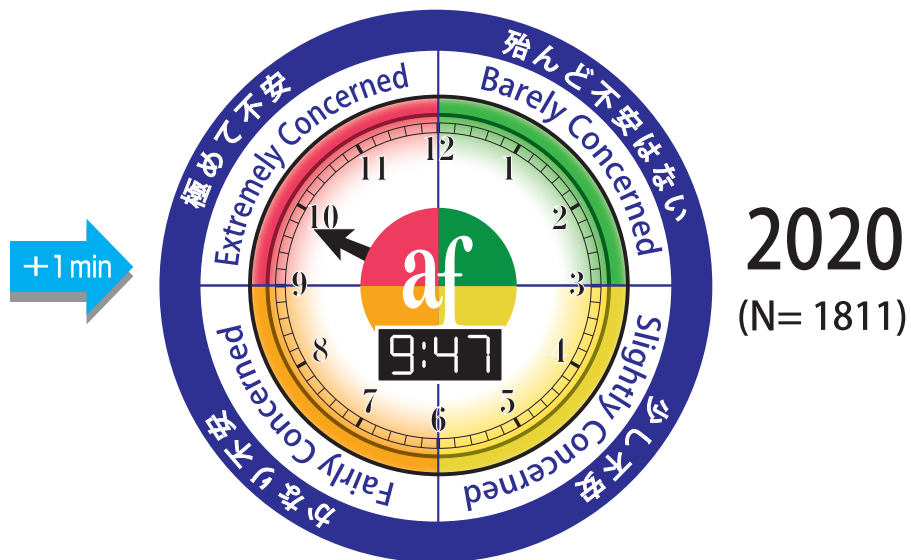
THE ASAHI GLASS FOUNDATION

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The Environmental Doomsday Clock

the sense of crisis felt about the continuance of the human race



Preface

This report summarizes the results of the 2020 Questionnaire on Environmental Problems and the Survival of Humankind, a survey conducted annually by the Asahi Glass Foundation since 1992. As in the previous years, the Asahi Glass Foundation wishes to continue communicating to as many people as possible the current thoughts and opinions of environmental experts around the world on the state of the global environment.

The environmental survey was conducted in April and May 2020 when novel coronavirus (COVID-19) infections began spreading worldwide. This raised a concern about a potential sizeable drop in the number of survey responses we would receive. Indeed, we received comments from some respondents that their workplaces were closed or their responses to the survey were delayed as they had been hospitalized with COVID-19. With the deterioration of postage services, many items we had posted were returned as “undeliverable”. Despite this situation, we are grateful that we eventually received responses from 1,813 people, only a little over 10% less than in 2019 when we had received responses from 2,072 people. We would like to take this opportunity to express our gratitude for being able to provide this report on the environmental questionnaire results in which people from regions around the world participated during this difficult time.

This year, the time on the Environmental Doomsday Clock (the “time on the Clock”) has struck 9:47. It first went closet to midnight at 9:47 in 2018, while it was at 9:46 in 2019. This year’s time is almost the same as in the past two years, demonstrating a strong awareness of crisis in these three consecutive years.

On the questions about *the signs of improvement* which were introduced in 2019, “Climate Change” was most frequently selected as the area where the respondents saw signs of improvement. The ratio of respondents who answered that an awareness of the general public had improved also rose in comparison with the previous year. We received many responses. Furthermore, more than half the respondents provided meaningful opinions and comments.

As in the previous year, we will post the comments we received from the respondents living in various countries on the Asahi Glass Foundation website (<https://www.af-info.or.jp/questionnaire/result.html>).

Please read the candid opinions of environmental experts.

We sincerely hope that we can make a contribution to the resolution of global environmental issues through this questionnaire by inspiring not only those who are involved in environmental issues but also as many other people as possible to take an interest in environmental issues.

We once again extend our deepest gratitude to the respondents for taking time to share their valuable opinions and experience through the survey. We would also appreciate valuable advice and guidance from the readers of this report.

The Asahi Glass Foundation
September 2020

I. Survey Overview

Survey period: April to June 2020

Respondents: Environmental experts working for national or local governments, NGOs, NPOs, universities and research institutions, corporations, mass media, and so on, worldwide (listed on the Asahi Glass Foundation database)

Number of questionnaires mailed: 27,925 (26,779+ to overseas respondents and 1,146 to respondents in Japan)

Number of questionnaires returned: 1,813

Response rate: 6.5%

Table 1 Breakdown of Respondents by Region and Occupational Affiliation

Region	Number of responses	Percent of total
Oceania	49	2.7
North America	176	9.7
Central America & The Caribbean	76	4.2
South America	112	6.2
Western Europe	223	12.3
Africa	86	4.7
Middle East	28	1.5
Eastern Europe & former Soviet Union	46	2.5
Asia	1017	56.1
Total	1813	100.0

Occupational Affiliation

Central government, Local government	221	12.2
University or research institution	628	34.6
NGO/NPO	369	20.4
Corporation	343	18.9
Mass Media	30	1.7
Other	217	12.0
No response	5	0.3
Total	1813	100.0

*1. Unless otherwise specifically explained, the questionnaire calculated the percentages for its analysis as follows:

For questions where respondents were asked to choose one response: the denominator is the number of questionnaires returned. For questions where respondents were given options to provide multiple answers: the denominator is the total number of valid responses.

*2. Figures have been rounded to whole numbers or the first decimal place.

*3. On the total number of responses basis: When the total number of responses given to a specific question is used as the base, instead of the number of questionnaires returned.

II. Summary of Questionnaire Results

II-1. Awareness of the Crisis for Human Survival—The Environmental Doomsday Clock

- The time on the Environmental Doomsday Clock (the “time on the Clock”) for the world is now 9:47, one minute closer to midnight than last year. This time is the same as that in 2018 when the strongest sense of environmental crisis was felt by the respondents since the start of the survey in 1992, and showing a strong sense of crisis through the three consecutive years.
- As in the last year, “Climate Change” was the most often selected category of the “environmental issues to be taken into account,” which were used to calculate the time on the Clock worldwide. This was followed by “Biosphere Integrity (Biodiversity),” “Society, Economy and Environment, Policies, Measures,” “Water Resources,” “Population,” “Biochemical Flows (Pollution/Contamination),” “Lifestyles (Consumption Habits),” “Land-System Change (Land Use),” and “Food.”
- When arranging the “environmental issues to be taken into account” for the entire world on the Environmental Doomsday Clock, “Biosphere Integrity (Biodiversity)” had the time closest to midnight, followed by “Climate Change,” “Biochemical Flows (Pollution/Contamination),” “Population,” “Lifestyle (Consumption Habits),” “Society, Economy and Environment, Policies, Measures,” “Land-System Change (Land Use),” “Food,” and “Water Resources.”

II-2. Awareness of Signs of Improvements in the Approach to Environmental Issues: Comparison with the Situation before the Adoption of the Paris Agreement and the SDGs in 2015

- In 2019, we introduced questions on signs of improvement in the approach to environmental issues in transitioning to a decarbonized society and choosing one category from “environmental issues to be taken into account,” respectively, in terms of the following three aspects: “Public Awareness,” “Policies and Legal System,” and “Social Infrastructure (Funds, Human Resources, Technologies, and Facilities).”
- 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, improvements were made in all three areas compared with the 2019 results.
- The category most commonly identified as showing signs of improvement in approach was “Climate Change” at 28%, which was followed by “Lifestyle (Consumption Habits)” (14%) and “Society, Economy and Environment, Policies, Measures” (14%). Sixteen percentage of the respondents selected the answer, “There is no sign of improvement at all.” In comparison with the 2019 results, a larger percentage of the respondents considered that improvements have been made in “Public Awareness” and “Social Infrastructure (Funds, Human Resources, Technologies, and Facilities),” while a smaller percentage of the respondents answered that improvements have been made in “Policies and Legal System.”
- By region, a greater percentage of the respondents in the USA and Western Europe (except UK) selected “Public Awareness” as a category showing signs of improvement, while a greater percentage of the respondents in China selected “Policies and Legal System” as a category showing signs of improvement. There were fewer regional differences with respect to “Social Infrastructure (Funds, Human Resources, Technologies, and Facilities).”

III. Questionnaire Results

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

In Table 5 on page 7, “Environmental issues to be taken into account” are shown. Keeping in mind the problems that the environment faces at a global level, please select the three most pressing issues for the country or the region where you reside. Then, please rank them in the order of importance. Lastly, for each item, select a time using hours and minutes between 0:10 to 12:00, to indicate the level of crisis for that issue. For the purpose of calculating results, please select your times in units of no less than 10 minutes.

About the calculation of the time on the Environmental Doomsday Clock

The time on the Environmental Doomsday Clock will be determined by taking the weighted average of the data. The issue ranked in first place will be weighted at 50%, second place at 30%, and third place at 20%.

If a respondent selected only two issues, the first-ranked issue is weighted at 62.5% and second place at 37.5%. If the respondent selected only one issue, the selected issue is weighted at 100%.

III-1-1. The Time on the Environmental Doomsday Clock

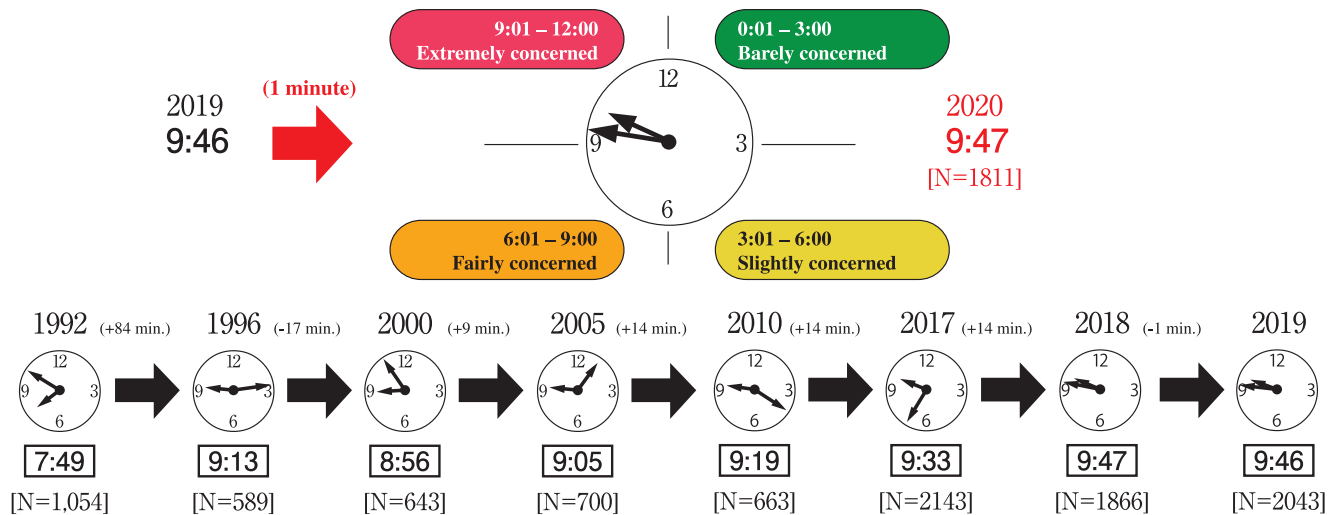


Fig. 1 Changes in the Time on the Environmental Doomsday Clock since 1992

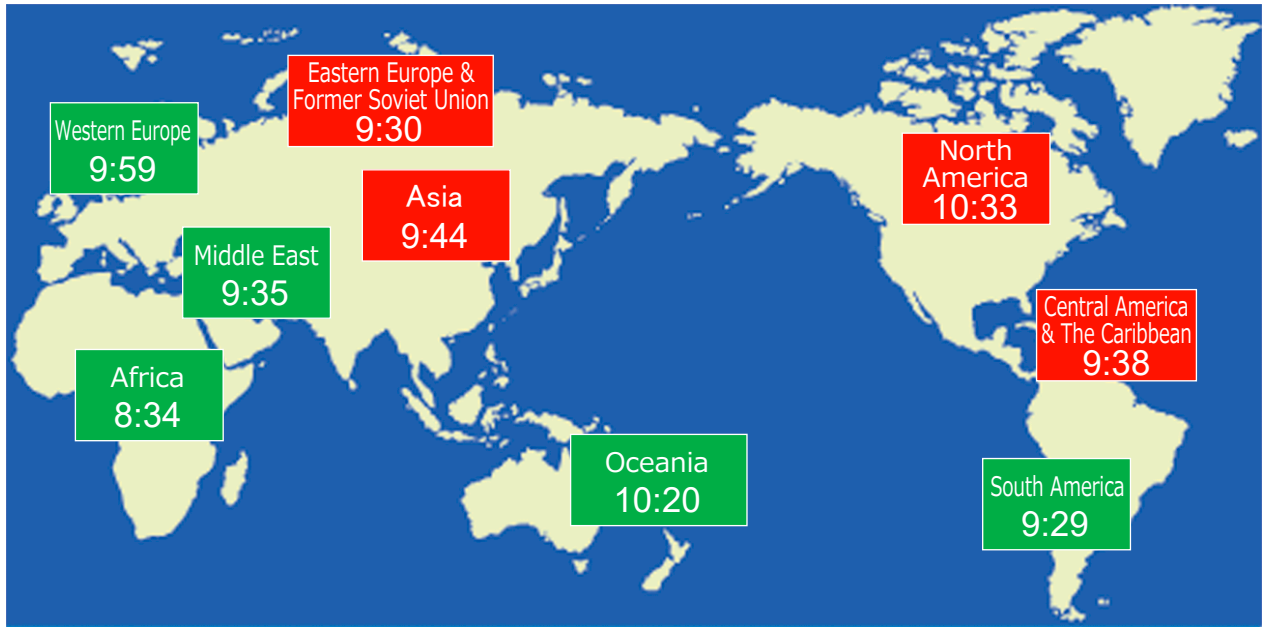
Table 2 Changes in the Time on the Environmental Doomsday Clock over Time

Year	Change in Time on the Clock			Change in Time (min)	
	2010	2019	2020	2010 → 2020	2019 → 2020
World	9:19	→ 9:46	→ 9:47	+28	+1
Oceania	10:29	→ 10:31	→ 10:20	-9	-11
North America	10:13	→ 10:30	→ 10:33	+20	+3
Central America & The Caribbean	9:48*	→ 9:36	→ 9:38	-10	+2
South America		→ 9:38	→ 9:29	-19	-9
Western Europe	9:45	→ 10:06	→ 9:59	+14	-7
Africa	10:24	→ 8:59	→ 8:34	-110	-25
Middle East	10:47	→ 9:45	→ 9:35	-72	-10
Eastern Europe & former Soviet Union	9:47	→ 9:13	→ 9:30	-17	+17
Asia	9:06	→ 9:38	→ 9:44	+38	+6

Red numbers indicate the time moved closer to midnight; green numbers indicate the time receded back from midnight.

*: Time for South America, Central America and The Caribbean

- The time on the Clock for the world is 9:47, which is one minute closer to midnight than last year.



■ represents regions/countries where the time is closer to midnight than last year.
 ■ represents regions/countries where the time receded back from midnight than last year.

Fig.2 Regional Times on the Clock

Table 3. Changes in the Time on the Environmental Clock (World) since 1992

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

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

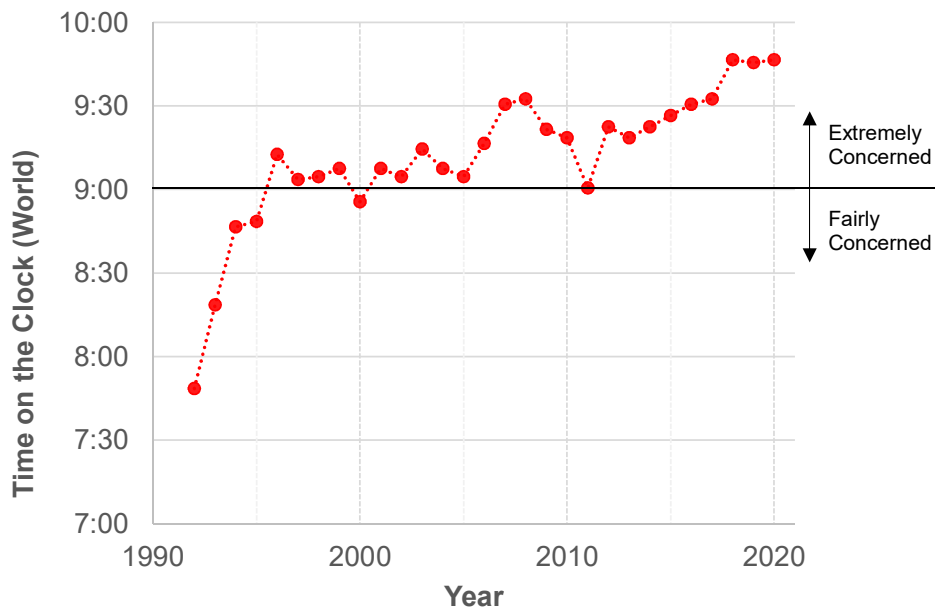


Fig. 3 Changes in the Time on the Environmental Clock (World) since 1992

III-1-1-2. Changes in the Times on the Environmental Doomsday Clock by Generation

- The survey respondents aged 60 or over tended to report more advanced times on the Clock than other age groups.
- While all age groups are developing a stronger sense of crisis each year, the result shows only a small change overall from last year.
- The times reported by the respondents aged 60 or over were closer to midnight than the times reported by other age groups and remained stable (between 9:28 and 9:36) until 2016. The Clock started moving forward in 2017 and reached the upper 9:50 range last year and this year.
- The times reported by the respondents in their 40s and 50s remained stable at around 9:30 between 2012 and 2017, but advanced to the 9:40 range last year and this year.
- Times reported by the respondents in their 20s and 30s have kept moving forward since 2011 (when the Clock struck 8:34). In 2018, the time on the Clock hit 10:00 for these age groups due to the impact of the growing sense of crisis among the Chinese respondents in their 20s and 30s. It returned to the 9:40 range last year and this year.

Table 4 Changes in the Times on the Environmental Doomsday Clock by Generation

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
60 or Over	9:28	9:35	9:30	9:35	9:33	9:36	9:43	9:49	9:57	9:55
40s, 50s	8:56	9:30	9:25	9:16	9:30	9:28	9:29	9:33	9:44	9:41
20s, 30s	8:34	9:05	9:01	9:25	9:17	9:30	9:32	10:00	9:40	9:45

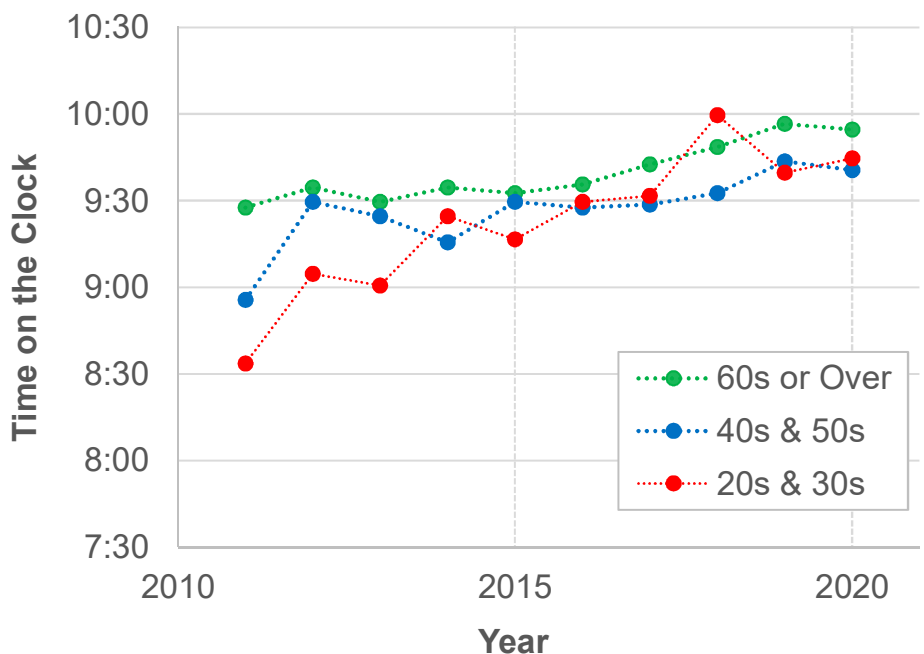


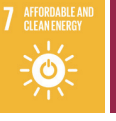
Fig. 4 Changes in the Time on the Clock by Generation

III-1-2. Environmental Issues to be Taken into Account

Table 5 Environmental Issues to be Taken into Account

No.	Category	Examples of Observable Changes in the Country or the Region in which You Reside	Planetary Boundaries (PB)
1.	Climate Change	Global warming: Increase in CO ₂ %, Ocean acidification, Climatic aberrations (droughts, torrential rains and flooding, severe storms, heavy snow, abnormal temperatures, desertification, etc.)	Climate change, Ocean acidification, Atmospheric aerosol loading, Stratospheric ozone depletion
2.	Biosphere Integrity (Biodiversity)	Acceleration of species extinction rate (Effects of contamination, climate change, land use)	Genetic diversity, Functional diversity
3.	Land-System Change (Land Use)	Change in the amount of forest cover remaining at the tropical, temperate and boreal biomes, Change in the amount of cropland	Land-system change
4.	Biochemical flows (Pollution/Contamination)	Increase in river, ocean, and soil pollution: eutrophication caused by excessive nitrogen and phosphorus, contamination by microplastics and chemical substances; Atmospheric pollution: particulates suspended in the atmosphere, soot, and chemical substances	Chemical pollution, Nitrogen and phosphorous cycles
5.	Water Resources	Diminution of usable fresh water resources (depletion, contamination), Control and degeneration of green water quality (water contained in soil and used by plants)	Freshwater use
6.	Population	Population growth beyond what the Earth can support, Aging of the population	Related with almost all the PB
7.	Food	Diminution of food supply from land and sea	Related with almost all the PB
8.	Lifestyle (Consumption Habits)	Transformation of lifestyle away from excessive consumption of resources like energy	Related with almost all the PB
9.	Society, Economy and Environment, Policies, Measures	Establishing a green economy with environmental economics and accounting, Environmental awareness at the individual and societal levels, Progress of environmental education, Legal system, Social foundation, Poverty, Governance, Status of women	Related with almost all the PB

Category by SDGs # (Sustainable Development Goals: SDGs)



Terms in blue are categories listed in Planetary boundaries:

Will Steffen, Katherine Richardson, Johan Rockstrom et.al. Science 13 Feb 2015 vol. 347, issue 6223

III-1-2-1. Distribution of the Environmental Issues

(showing selection rate of respondent's 3 most pressing issues as a percentage and the time on the Clock)

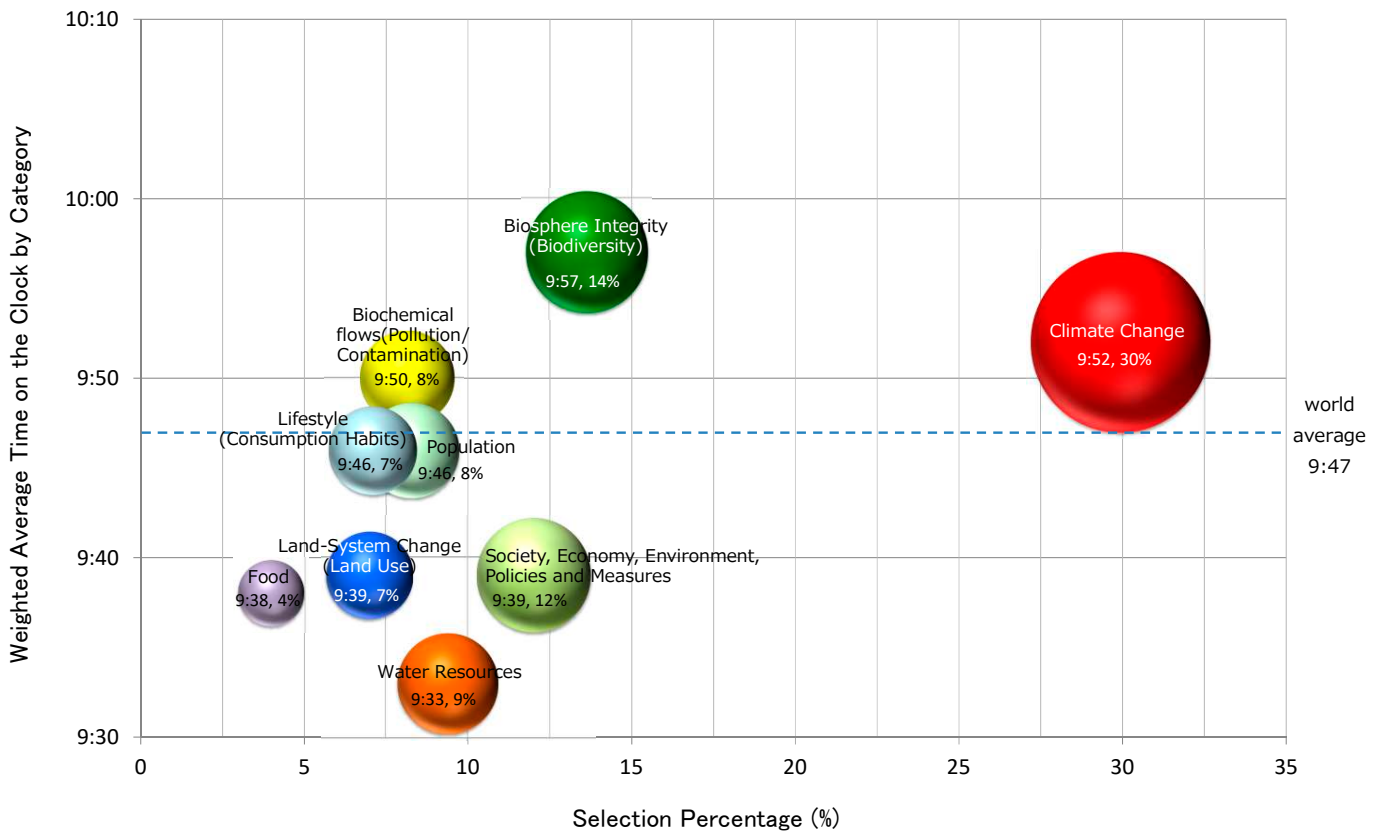


Fig. 5-1 2020 Distribution of the Environmental Issues (showing selection rate of respondent's 3 most pressing issues as a percentage and the time on the Clock)

- As in the last year, “Climate Change” (30%) was the most often selected category among the “environmental issues to be taken into account,” which are used to calculate the time on the worldwide Environmental Doomsday Clock. This was followed by “Biosphere Integrity (Biodiversity)” (14%), “Society, Economy and Environment, Policies, Measures” (12%), “Water Resources” (9%), “Population” (8%), “Biochemical Flows (Pollution/Contamination)” (8%), “Lifestyles” (7%), “Land-System Change (Land Use)” (7%), and “Food” (4%).
- When arranging the “environmental issues to be taken into account,” for the entire world on the Environmental Doomsday Clock, “Biosphere Integrity (Biodiversity)” was at 9:57, “Climate Change” 9:52, and “Biochemical Flows (Pollution/Contamination)” 9:50 were closer to midnight than the world’s average time, followed by “Population” 9:46, “Lifestyles” 9:46, “Society, Economy and Environment, Policies, Measures” 9:39, “Land-System Change (Land Use)” 9:39, “Food” 9:38, and “Water Resources” 9:33.

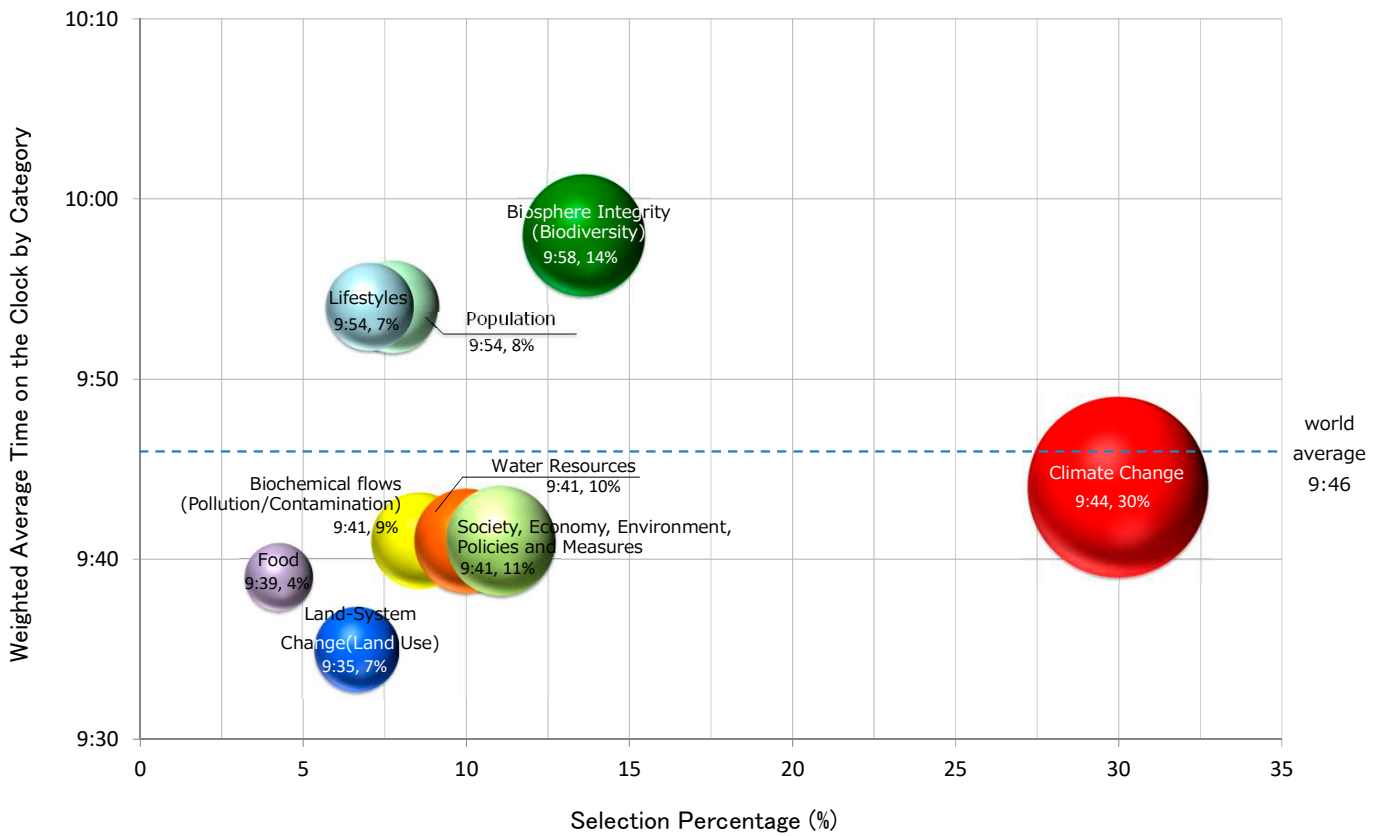


Fig. 5-2 2019 Distribution of the Environmental Issues (showing selection rate of respondent's 3 most pressing issues as a percentage and the time on the Clock)

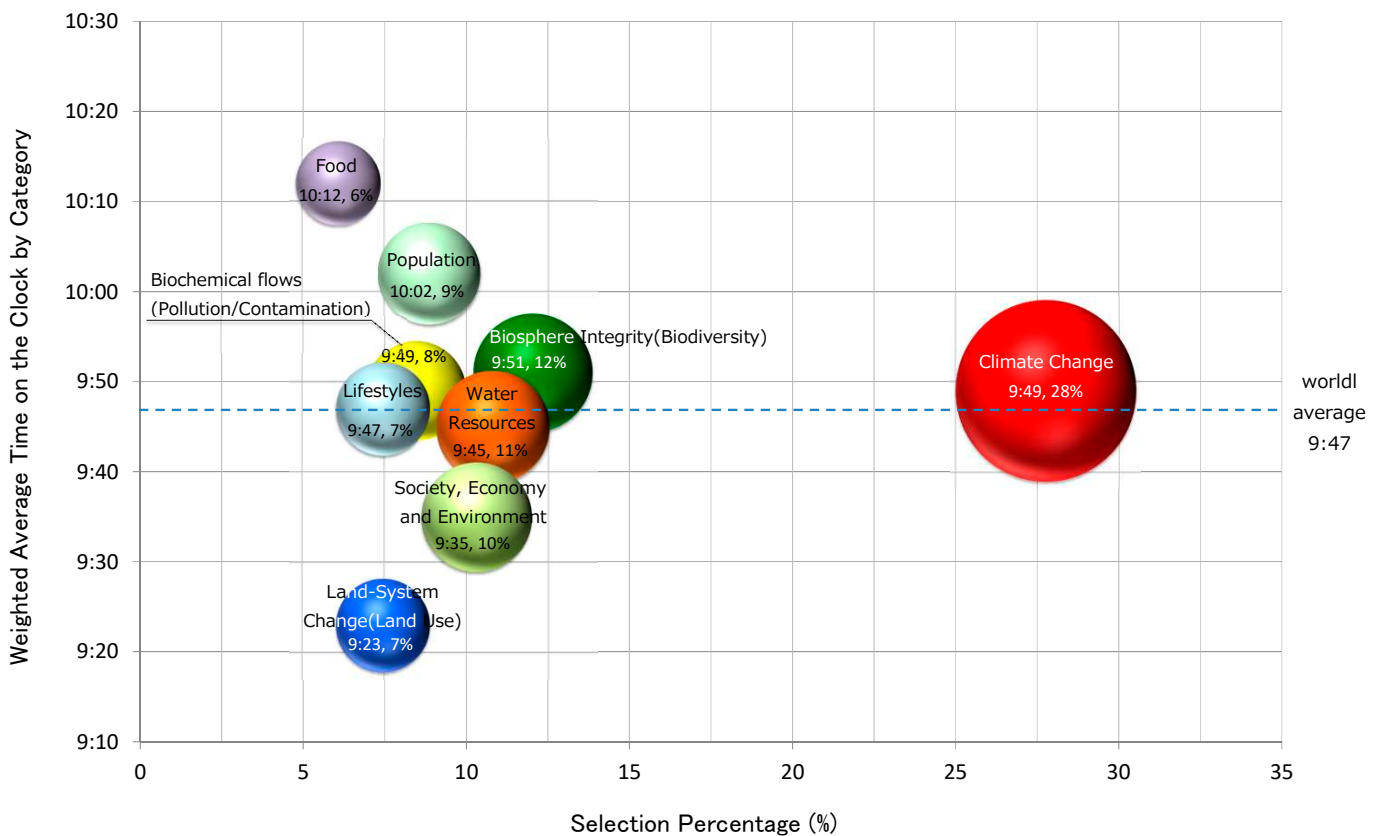
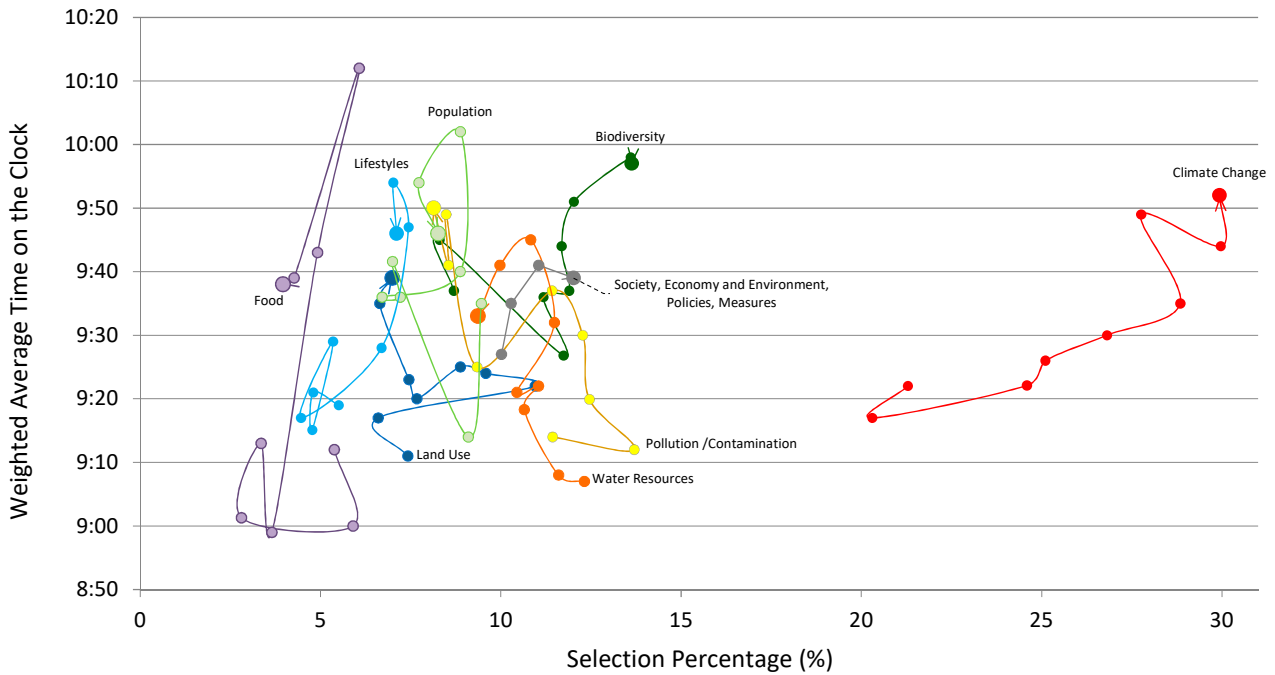


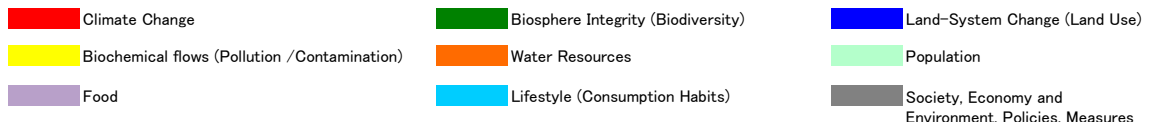
Fig. 5-3 2018 Distribution of the Environmental Issues (showing selection rate of respondent's 3 most pressing issues as a percentage and the time on the Clock)

III-1-2-2. Annual Change of the Time on the Clock and Selection Percentage of Environmental Issues- FY2012-2020



*1. The categories “Warming Measures,” “Environment and Economy,” “Environment and Society” have not been used since 2017. Instead, “Society, Economy, and Environment” have been used.

*2 “Society, Economy and Environment” has been changed to “Society, Economy and Environment, Policies, Measures” since 2019.



**Fig. 6 Annual Change of the Time on the Clock and Selection Percentage of Environmental Issues-
FY2012-2020**

- While the selection rates of “Biosphere Integrity (Biodiversity)” and “Lifestyle” have not changed significantly since 2016, their times on the Clock have moved closer to midnight by 20 and 29 minutes, respectively. Meanwhile, the selection rate of “Climate Change” has increased 9.6 percentage points since 2013 and its time on the Clock has moved 35 minutes closer to midnight.

III-1-2-3. Selection Percentage for “Environmental Issues” by Region

Table 6. Selection Percentage for “Environmental Issues” by Region

	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. Lifestyles	9. Society, Economy and Environment, Policies, Measures
World	30%	14%	7%	8%	9%	8%	4%	7%	12%
Oceania	38%	27%	8%	2%	8%	8%	0%	3%	6%
Australia	37%	25%	9%	1%	7%	10%	0%	3%	8%
Oceania (except Australia)	39%	31%	7%	2%	8%	5%	1%	3%	3%
North America	35%	18%	4%	4%	6%	10%	1%	8%	14%
Canada	30%	18%	6%	6%	4%	7%	0%	12%	17%
USA	37%	17%	4%	4%	6%	11%	1%	7%	14%
Central America & The Caribbean	28%	19%	12%	4%	12%	4%	2%	5%	15%
South America	17%	18%	22%	4%	10%	5%	2%	7%	16%
Western Europe	31%	23%	8%	4%	4%	7%	1%	9%	11%
Western Europe (except UK)	30%	23%	9%	5%	4%	7%	1%	9%	11%
UK	34%	23%	5%	1%	4%	7%	3%	9%	13%
Africa	30%	14%	13%	3%	11%	11%	4%	2%	12%
Middle East	23%	15%	15%	6%	24%	7%	1%	1%	9%
Eastern Europe & former Soviet Unions	20%	17%	10%	12%	10%	5%	1%	12%	13%
Asia	31%	9%	4%	11%	10%	9%	6%	7%	12%
Japan	39%	11%	4%	7%	5%	6%	5%	7%	14%
India	25%	10%	10%	5%	16%	16%	3%	5%	11%
China	22%	7%	3%	13%	15%	12%	8%	8%	10%
Taiwan	37%	5%	4%	25%	10%	5%	2%	4%	9%
Korea	43%	10%	4%	15%	4%	2%	2%	14%	5%
Asia (excl. the above 5 nations)	28%	17%	10%	4%	11%	9%	2%	2%	16%

*Red columns (■) represent the most frequently selected category in the region/country; blue columns (■) represent the second most frequently selected category in the region/country.

- “Climate Change” was the issue that the respondents worldwide most often selected as the most pressing environmental issues to be taken into account (30%), which is almost at the same level as last year, followed by “Biosphere Integrity (Biodiversity)” (14%). This trend is shown in many geographical regions.
- Regional differences emerged, however, in the second most often selected category, as it was “Population” in India, “Water Resources” in China, “Biochemical Flows (Pollution/Contamination)” in Taiwan and Korea, and “Society, Economy and Environment, Policies, Measures” in Japan.
- While “Climate Change” has the highest selection rate worldwide, the respondents in the Middle East and South America most often selected “Water Resources” and “Land-System Change (Land Use),” respectively.

III-1-2-4. Times on the Clock for Environmental Issues by Region

Table 7. Times on the Clock for Environmental Issues by Region

	Weighted Average Time	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. Lifestyles	9. Society, Economy and Environment, Policies, Measures
World	9:47	9:52	9:57	9:39	9:50	9:33	9:46	9:38	9:46	9:39
Oceania	10:20	10:33	10:41	10:32	11:22	9:51	10:14	6:20	4:26	9:02
Australia	10:37	10:38	11:15	11:04	11:19	10:13	10:08	-	4:32	9:10
Oceania (except Australia)	9:38	10:17	9:52	7:04	11:40	7:53	10:32	6:20	9:25	7:45
North America	10:33	10:46	10:36	10:45	10:39	10:24	10:34	9:54	10:12	10:20
Canada	10:20	10:51	10:25	10:05	10:28	10:33	10:58	-	9:55	9:48
USA	10:37	10:45	10:40	10:10	10:32	10:18	10:34	9:54	10:27	10:32
Central America & The Caribbean	9:38	9:23	9:52	9:34	9:41	9:33	9:43	7:44	9:46	10:10
South America	9:29	9:13	9:50	9:39	9:45	9:14	10:24	9:52	9:39	9:06
Western Europe	9:59	10:01	10:08	9:30	10:07	9:36	9:44	9:24	10:14	10:00
Western Europe (except UK)	9:58	10:02	10:13	9:32	10:05	9:59	9:40	9:09	10:06	9:44
UK	10:02	9:57	9:39	10:02	10:00	8:23	9:43	9:43	10:47	10:40
Africa	8:34	8:28	8:51	8:30	9:58	8:03	8:26	7:43	8:29	8:53
Middle East	9:35	10:00	9:47	9:54	10:00	8:57	9:30	7:00	6:50	8:41
Eastern Europe & former Soviet Unions	9:30	9:41	9:20	8:40	9:30	9:39	10:29	7:13	10:04	9:32
Asia	9:44	9:49	9:50	9:47	9:45	9:40	9:41	9:40	9:35	9:38
Japan	9:46	9:51	9:54	9:16	9:24	9:24	9:41	8:54	9:28	9:44
India	9:14	9:30	9:43	10:14	8:27	9:08	9:14	10:03	8:19	8:34
China	10:01	10:13	10:04	10:14	10:03	9:54	9:55	9:57	9:46	10:00
Taiwan	8:52	8:52	7:21	10:07	9:11	9:08	8:36	8:23	9:09	8:51
Korea	9:56	9:53	10:01	9:47	9:24	10:56	10:08	8:21	10:18	7:54
Asia (excl. the above 5 nations)	9:13	9:15	9:37	9:52	9:09	8:47	9:06	7:09	9:41	8:49

■ : 11:00-11:59, ■ : 10:00-10:59, □ : 9:00-9:59, ■ : 8:00-8:59, ■ : 7:00 and earlier

- The world’s average time on the Clock is 9:47. Only three issues, namely “Climate Change” (9:52), “Biosphere Integrity (Biodiversity)” (9:57), and “Biochemical Flows (Pollution/Contamination)” (9:50), are closer to mid-night than the world’s average time.
- In Australia, the Environmental Doomsday Clock moved beyond 11:00 for three issues, namely “Biosphere Integrity (Biodiversity),” “Land-System Change (Land Use),” and “Biochemical Flows (Pollution/Contamination),” showing a noticeably heightened sense of crisis for these areas.

III-1-2-5. Regional Distribution of Times on the Clock (showing selection rate of respondent's 3 most pressing issues as a percentage and the time on the Clock)

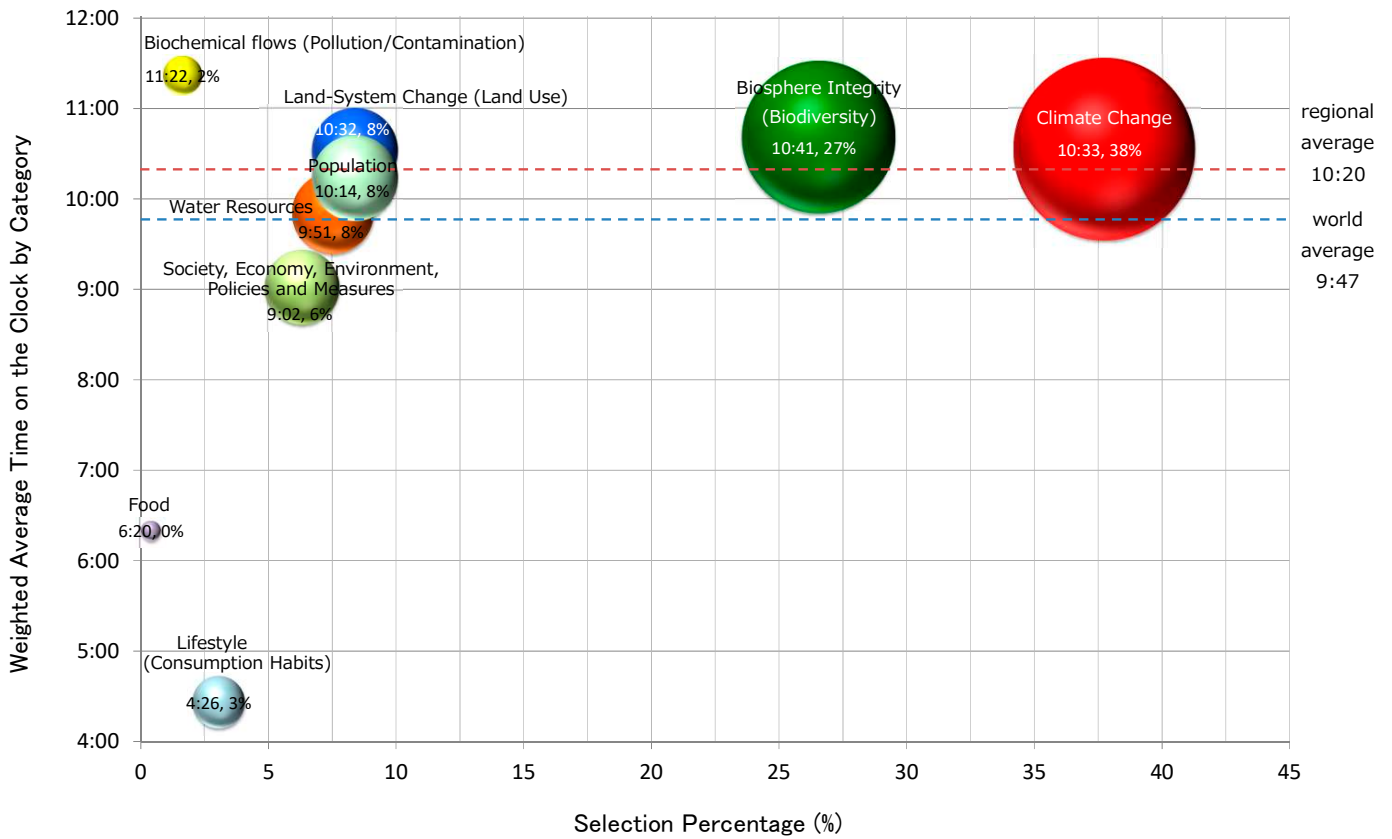


Fig. 7-1. Oceania

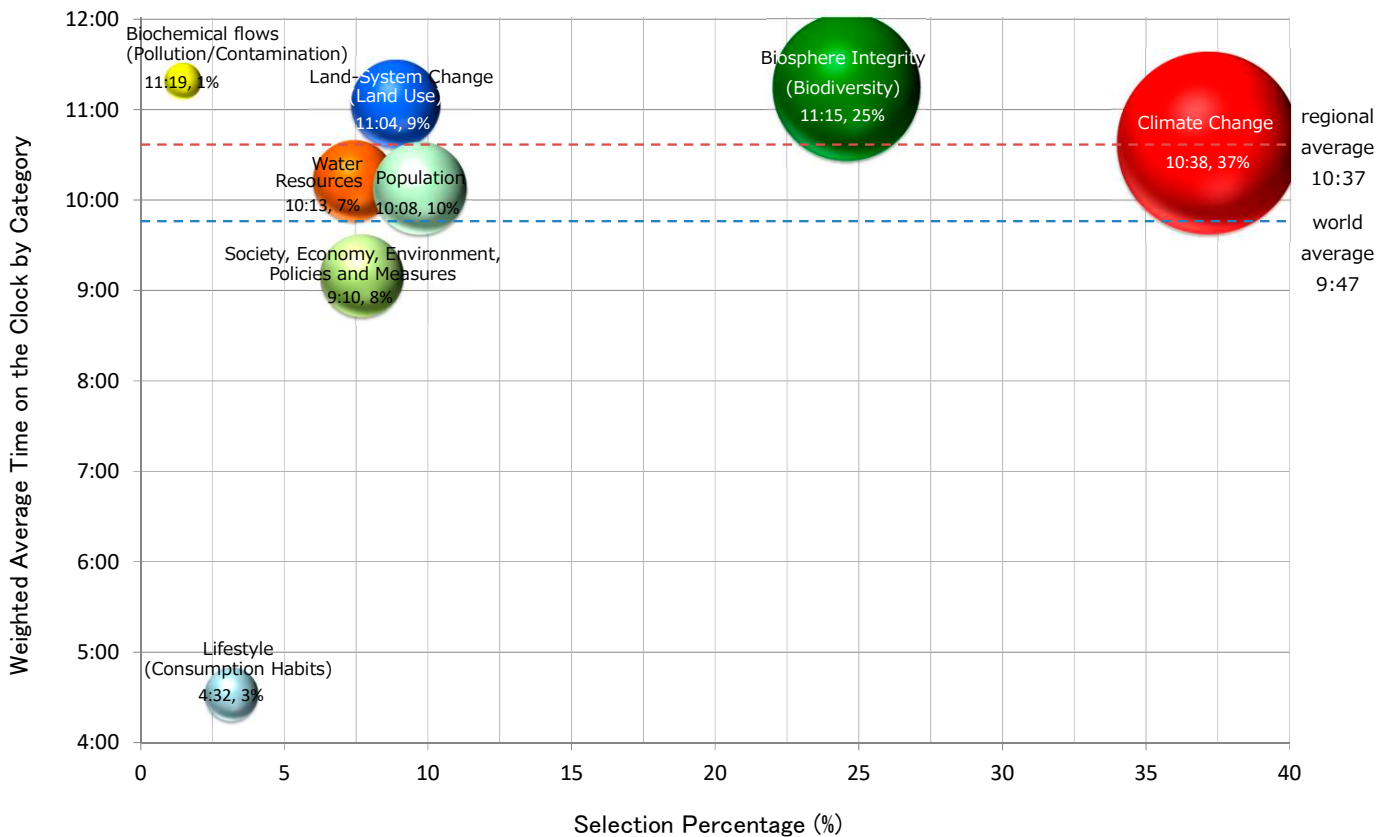


Fig. 7-2. Australia

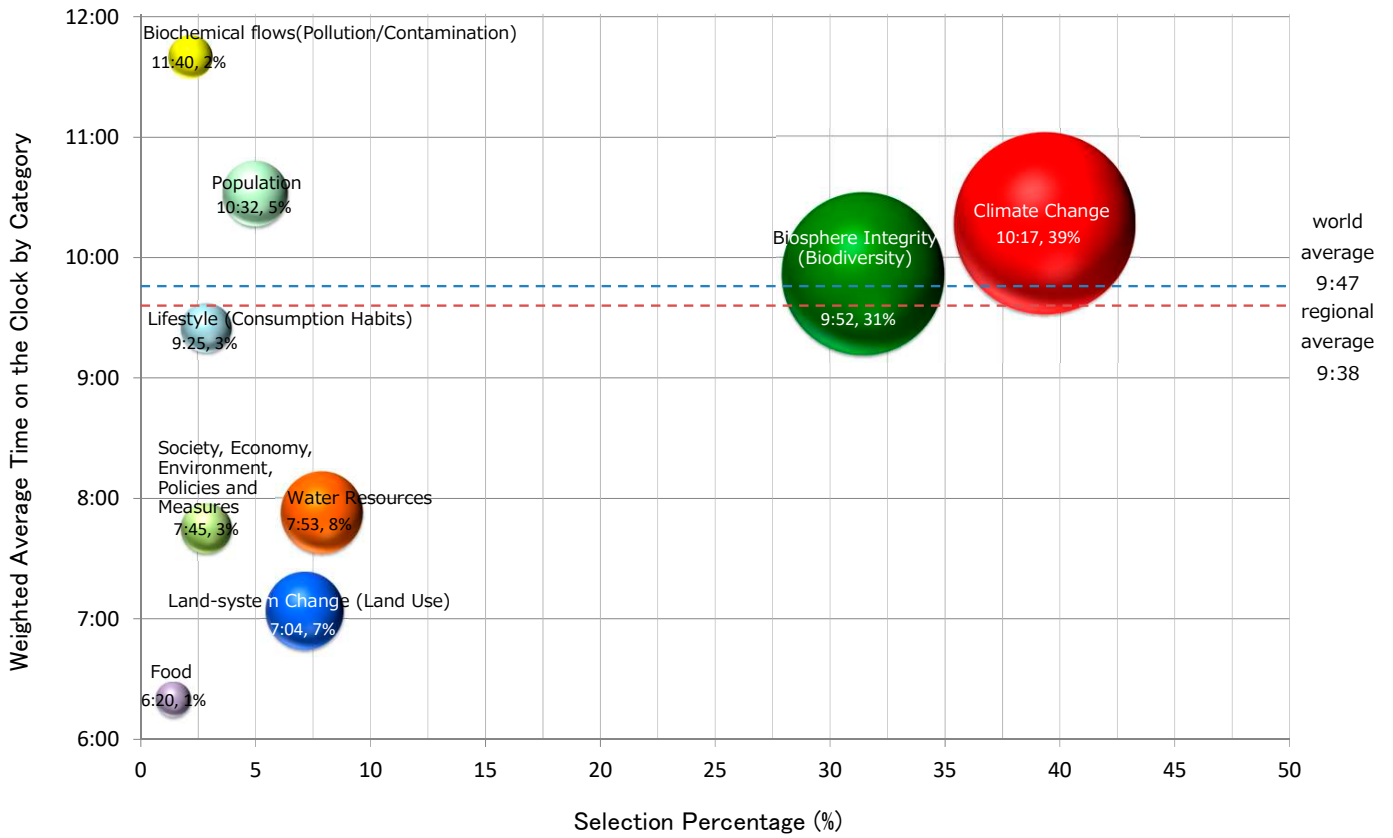


Fig. 7-3. Oseania (excl. Australia)

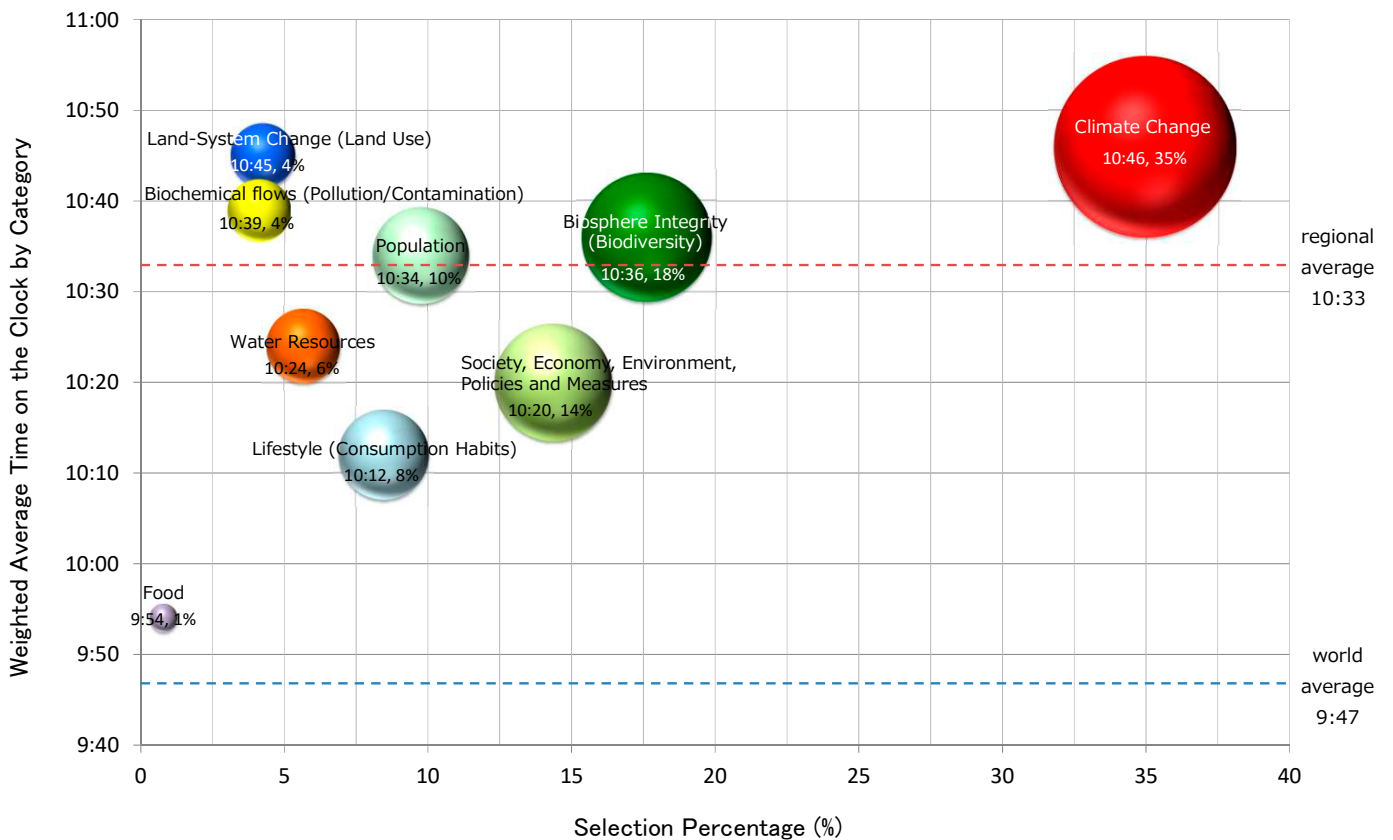


Fig. 8-1. North America

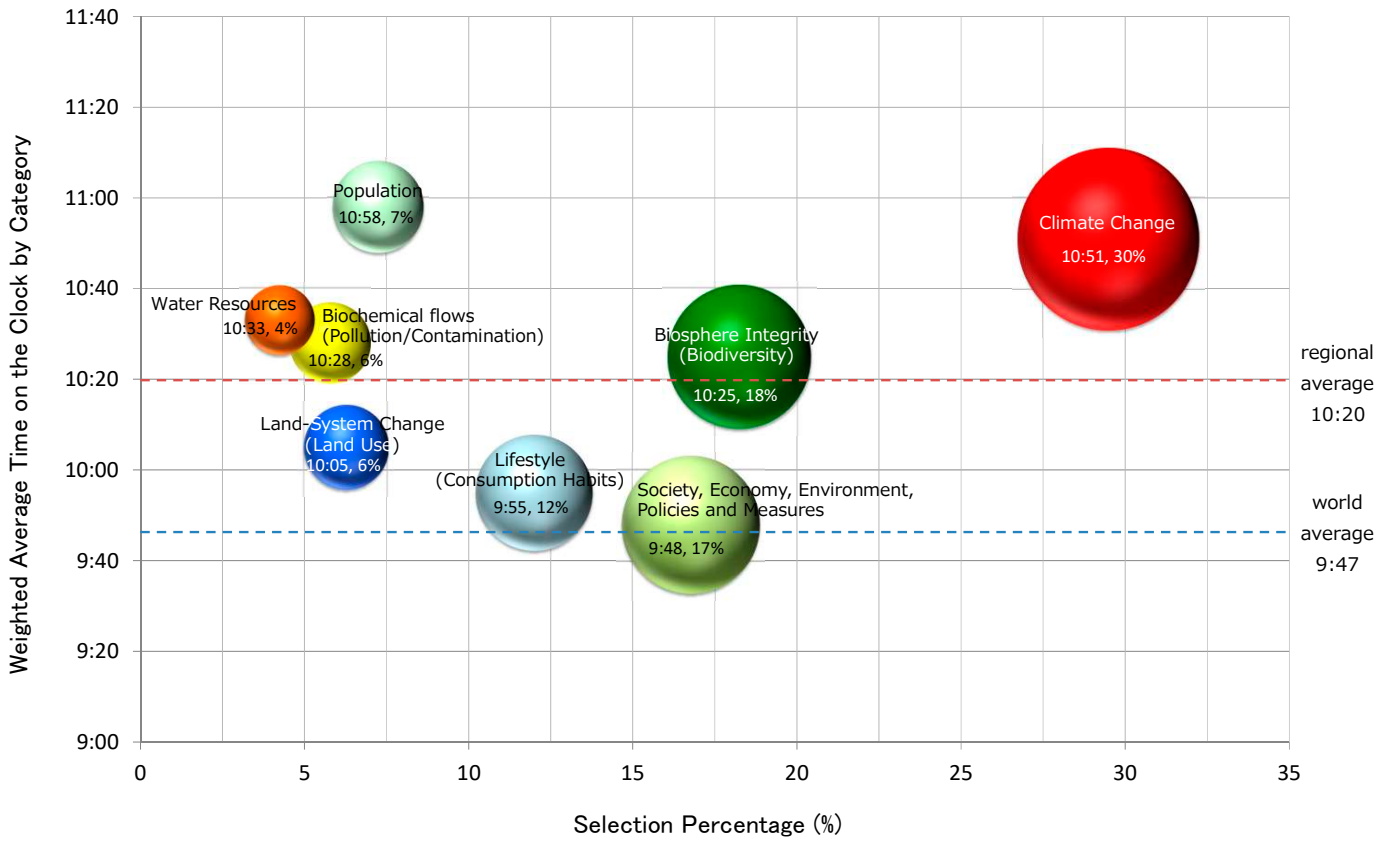


Fig. 8-2. Canada

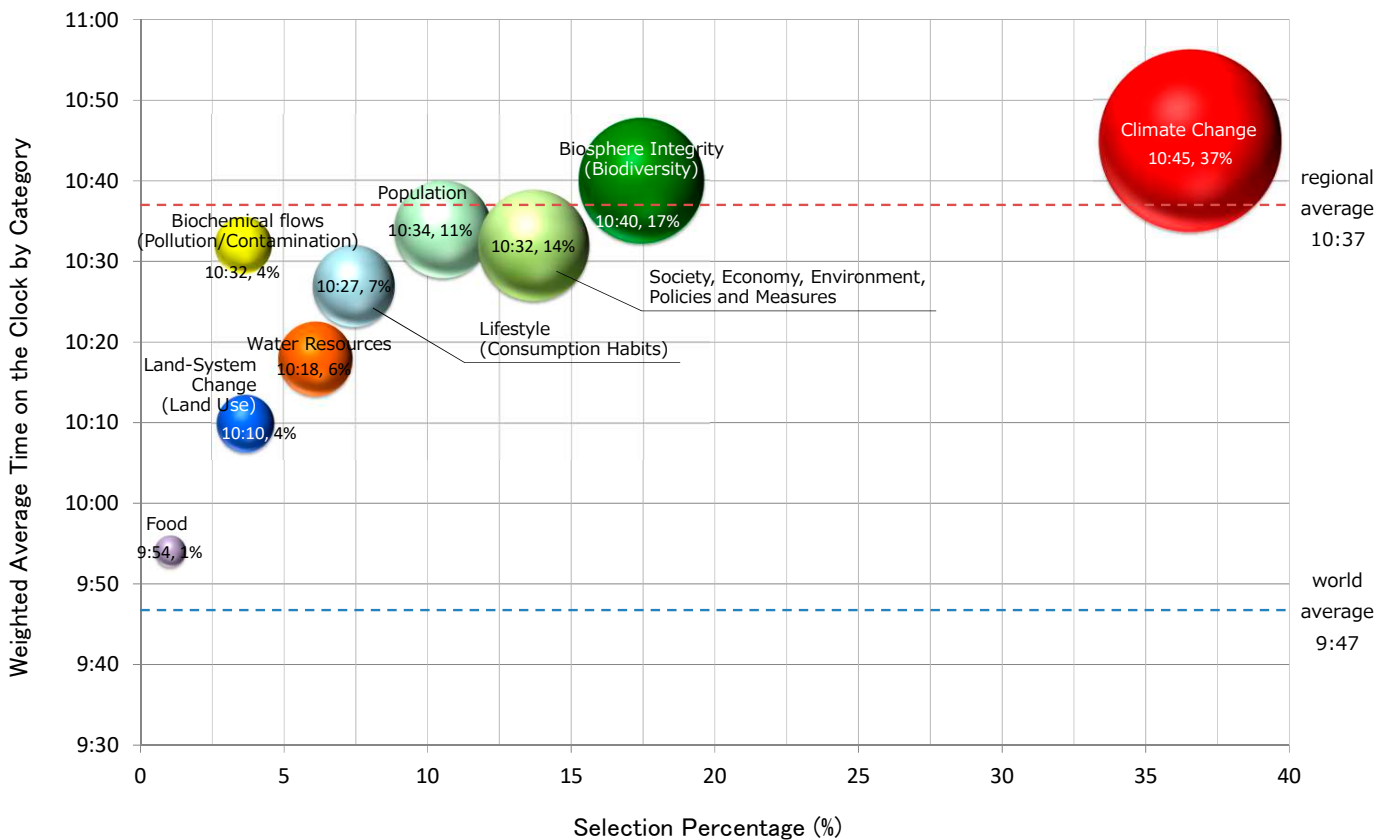


Fig. 8-3. USA

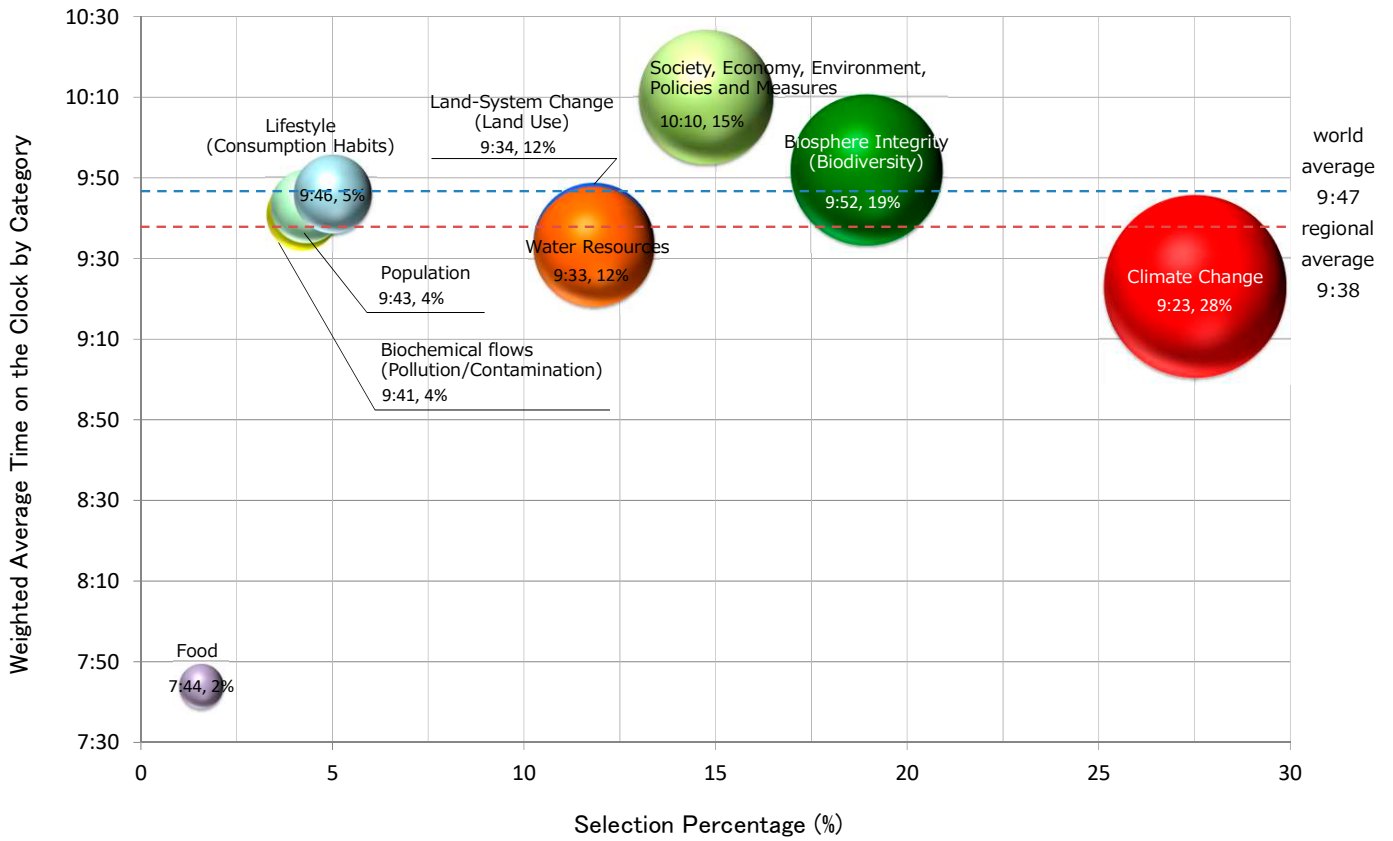


Fig. 9. Central America & The Caribbean

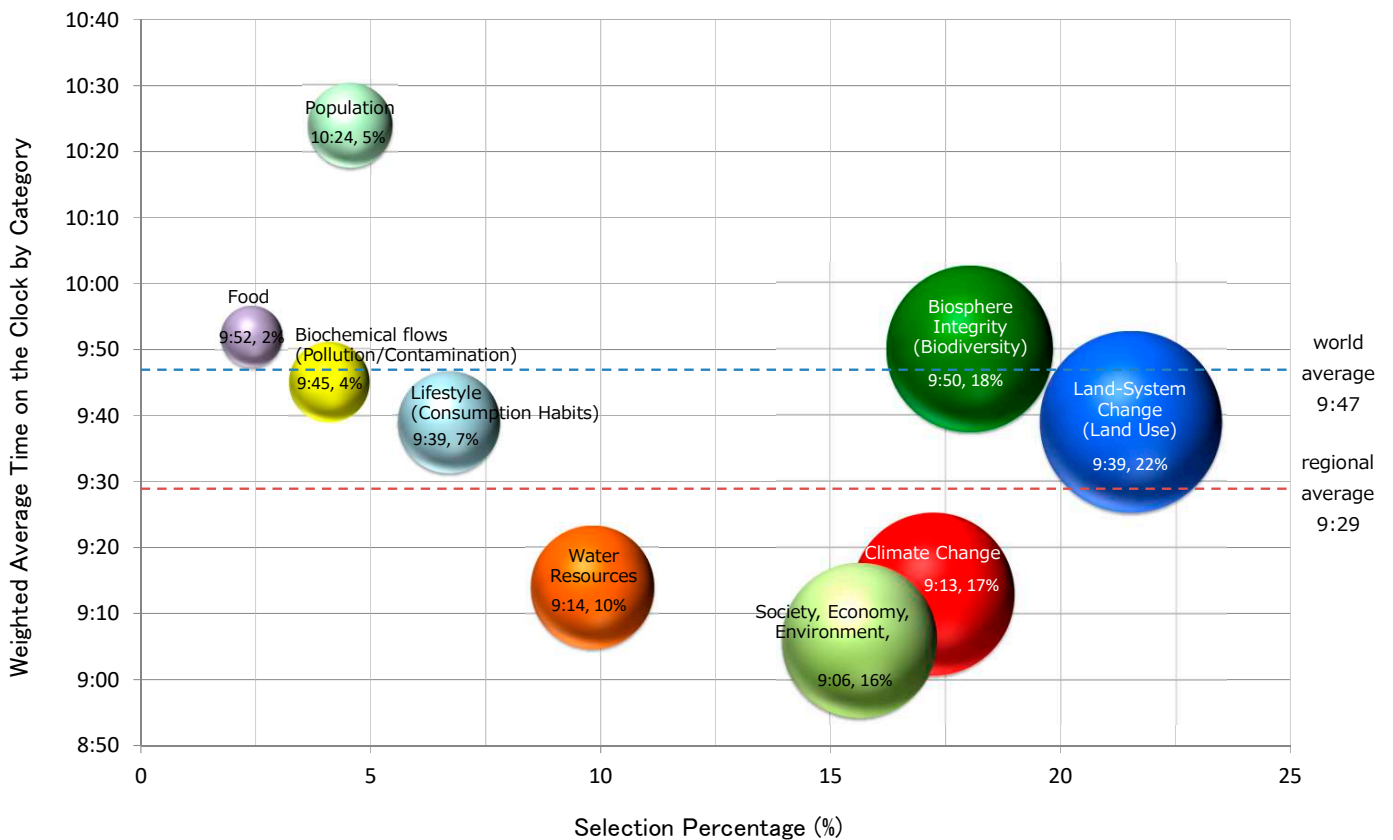


Fig. 10. South America

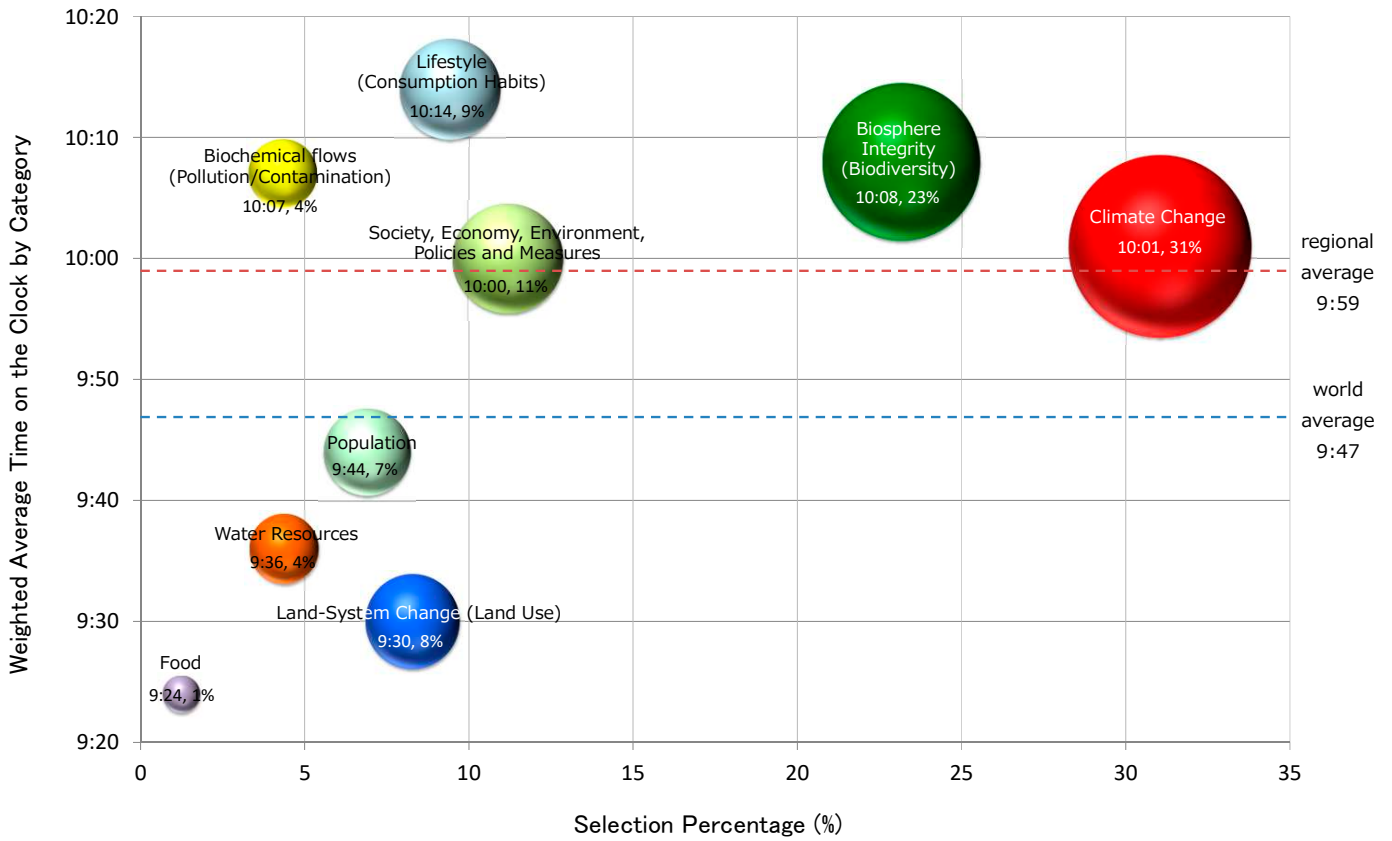


Fig. 11-1. Western Europe

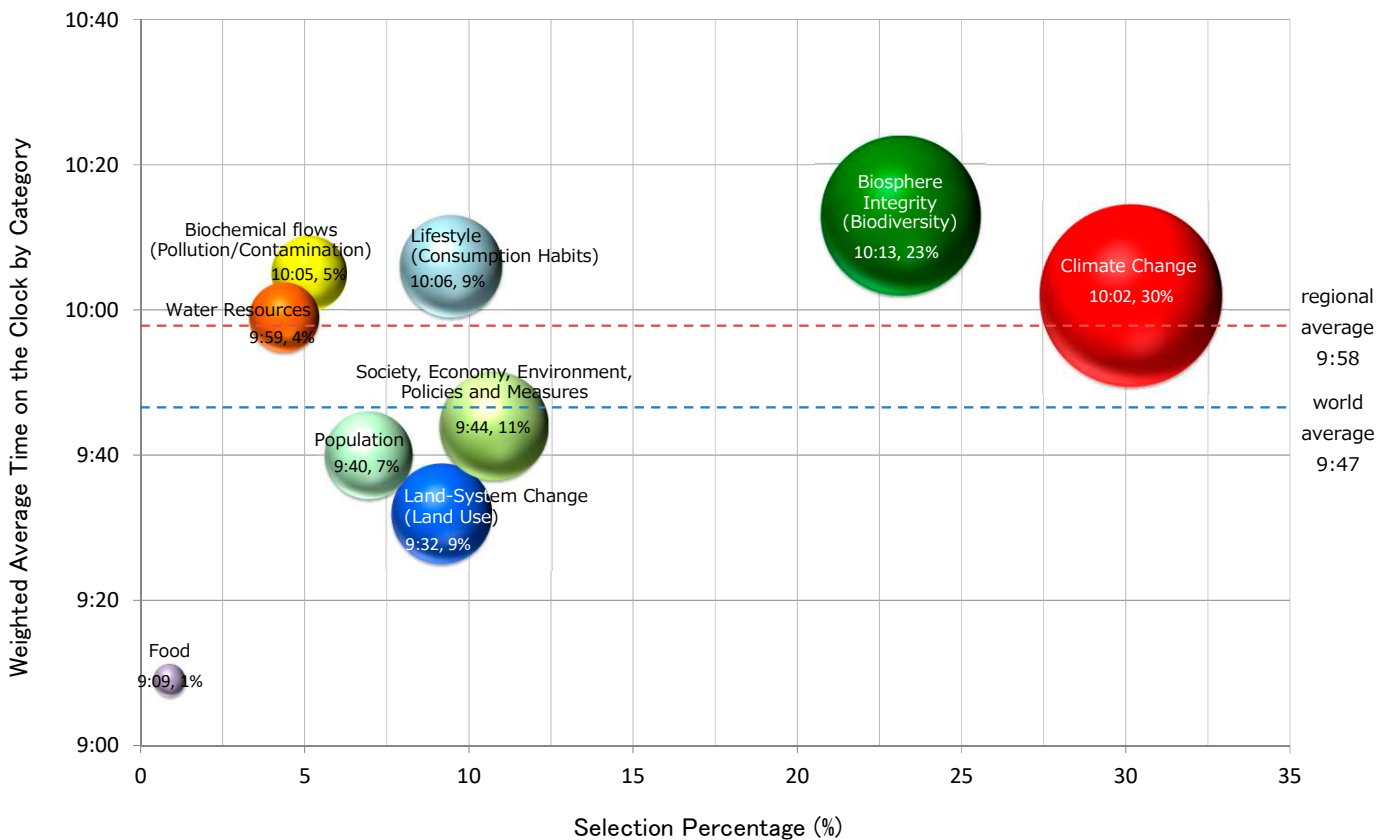


Fig. 11-2. Western Europe (except UK)

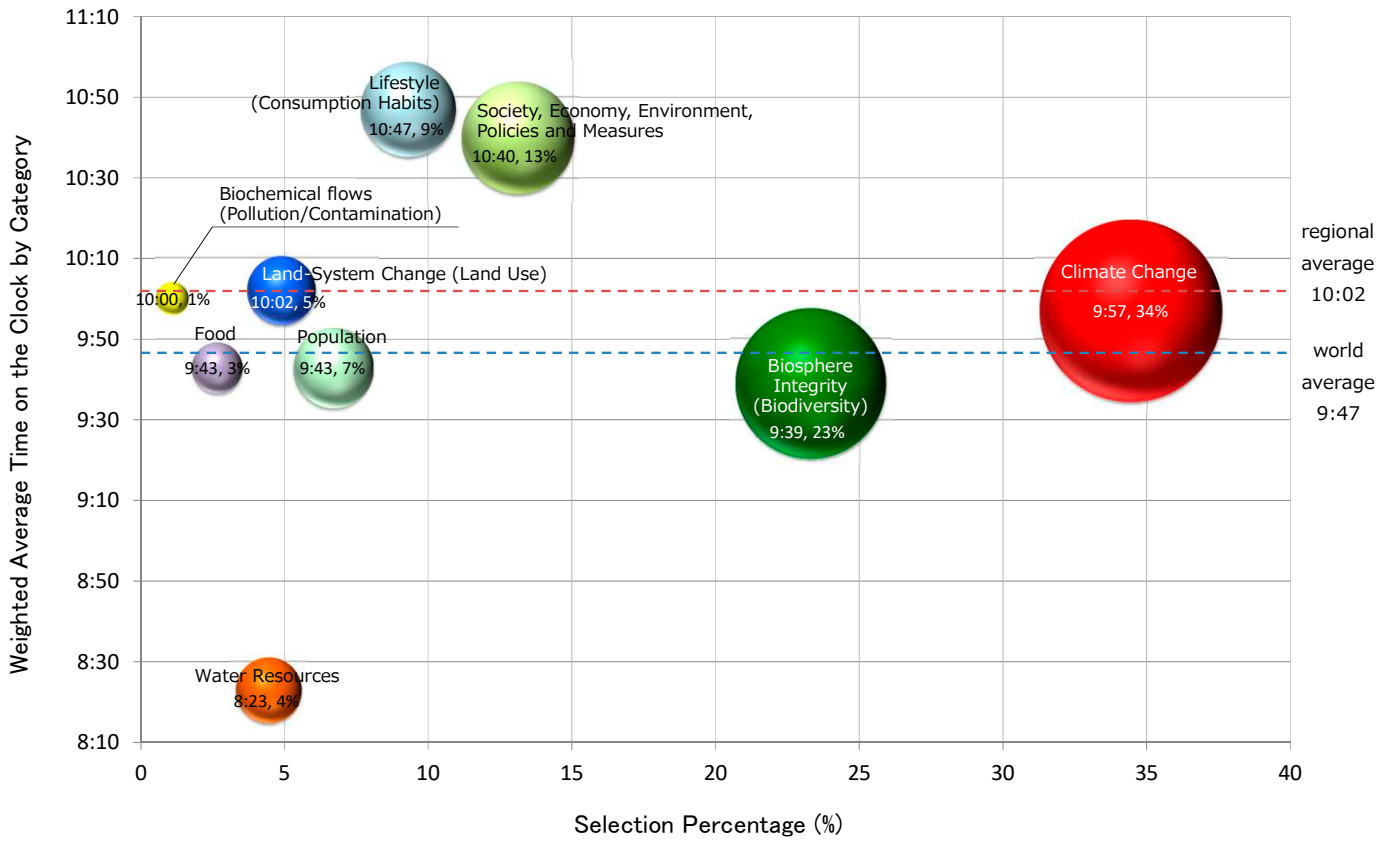


Fig. 11-3. UK

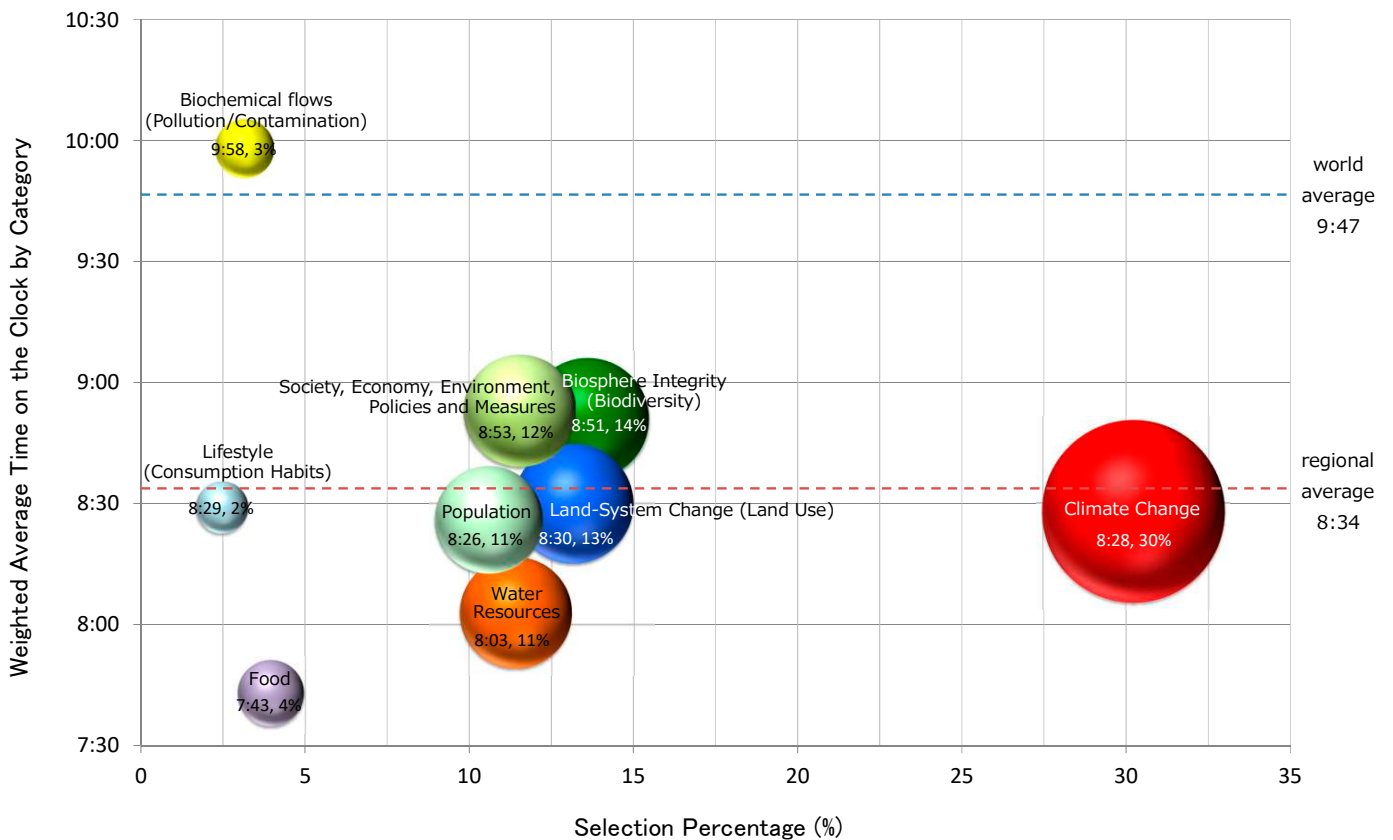


Fig. 12. Africa

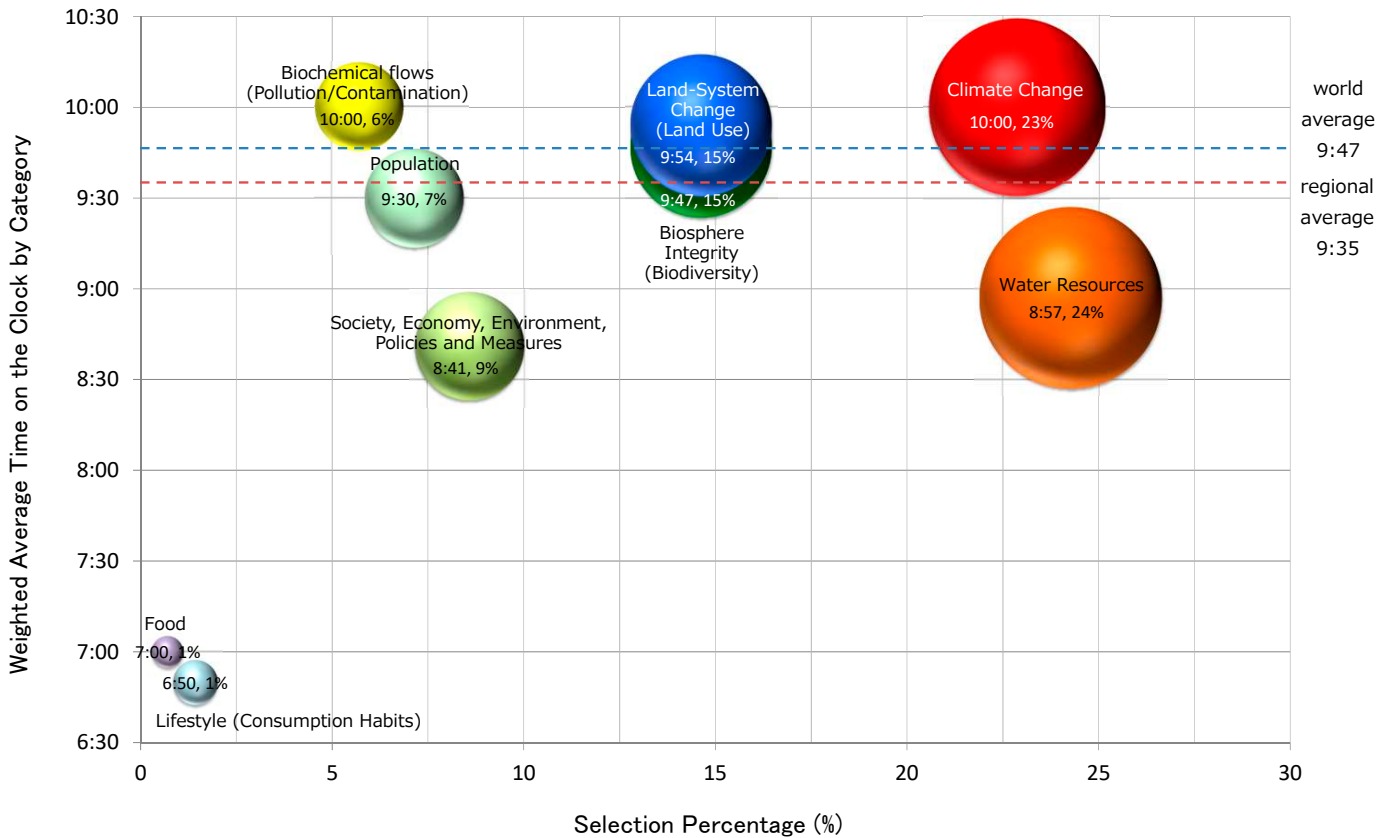


Fig. 13. Middle East

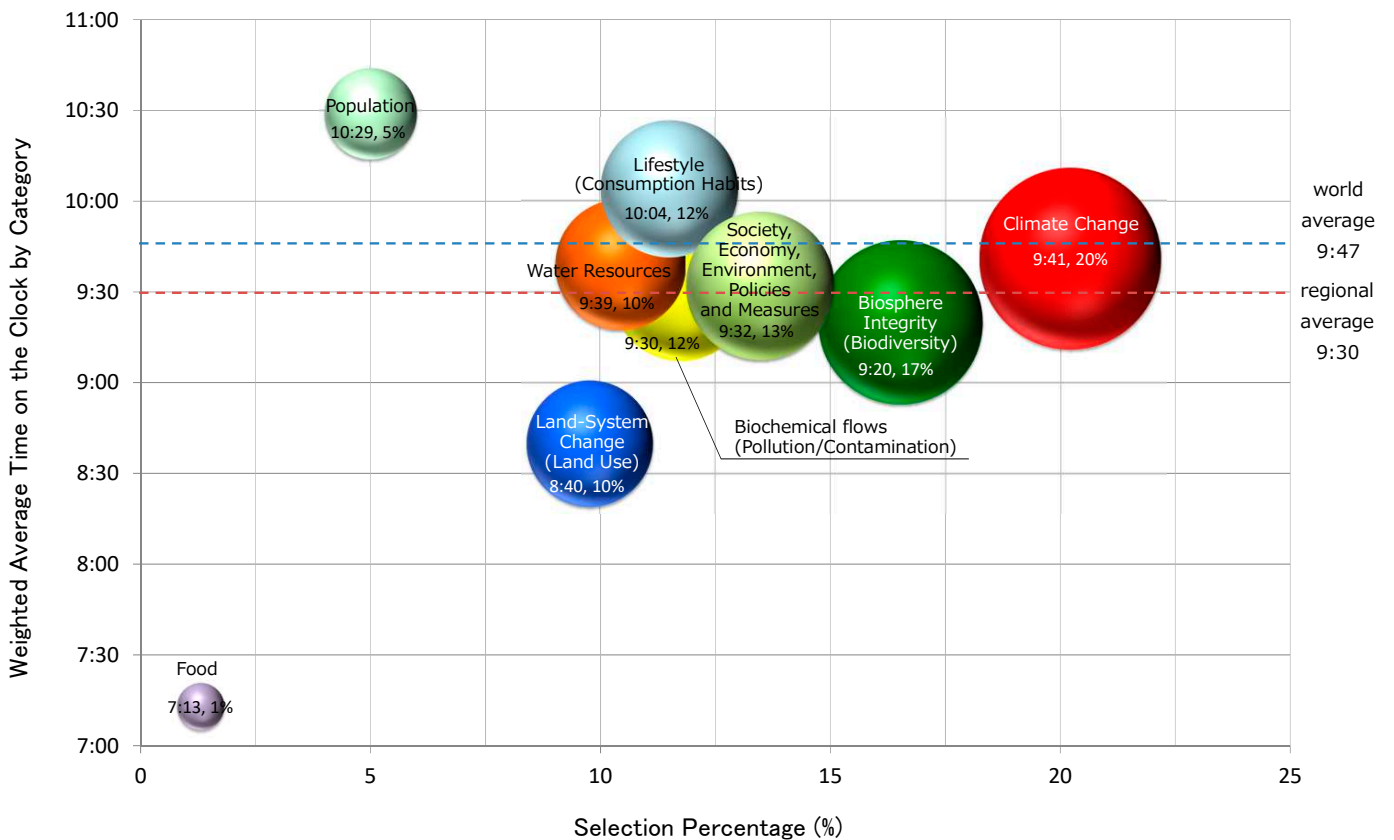


Fig. 14. Eastern Europe & former Soviet Union

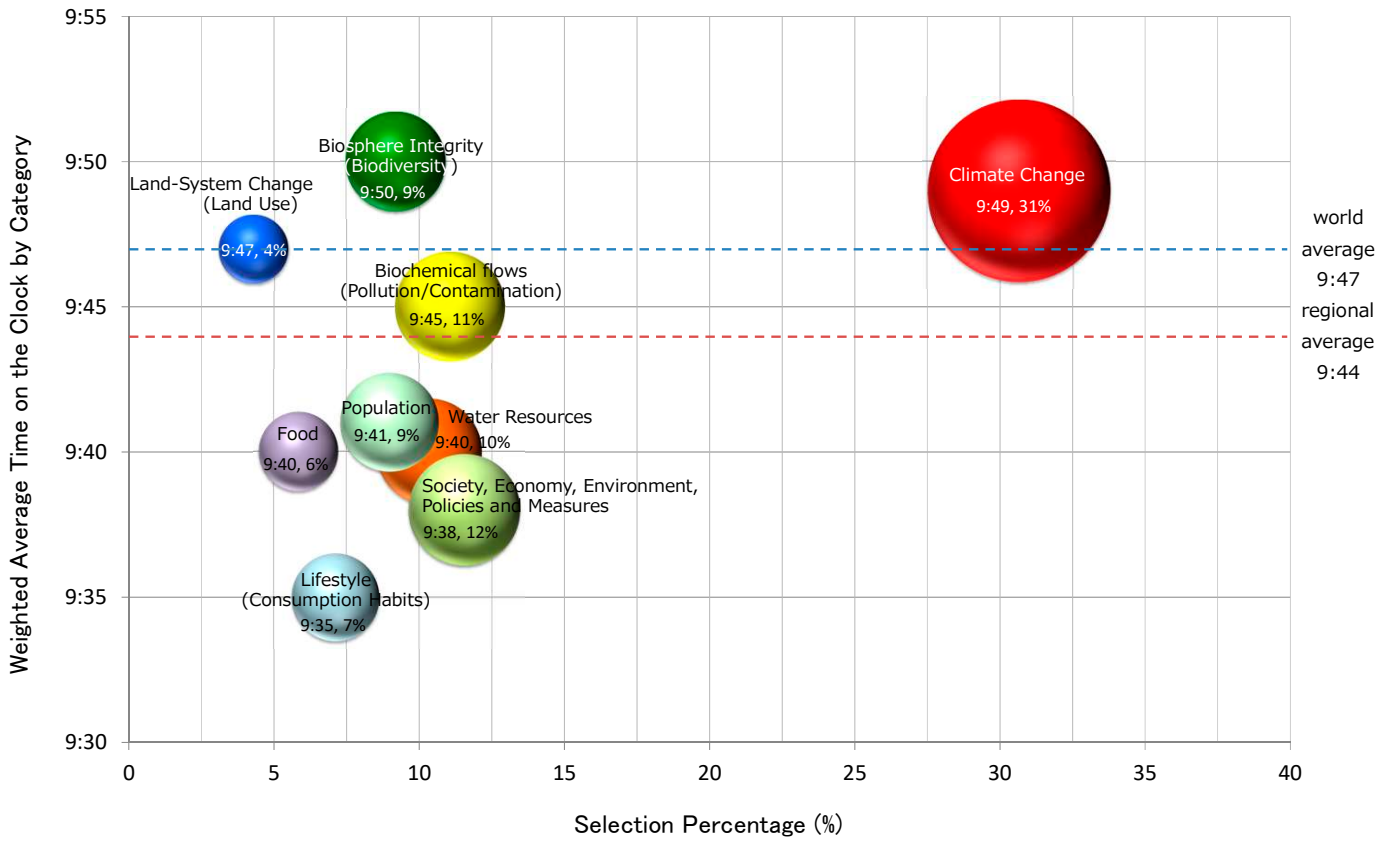


Fig. 15-1. Asia

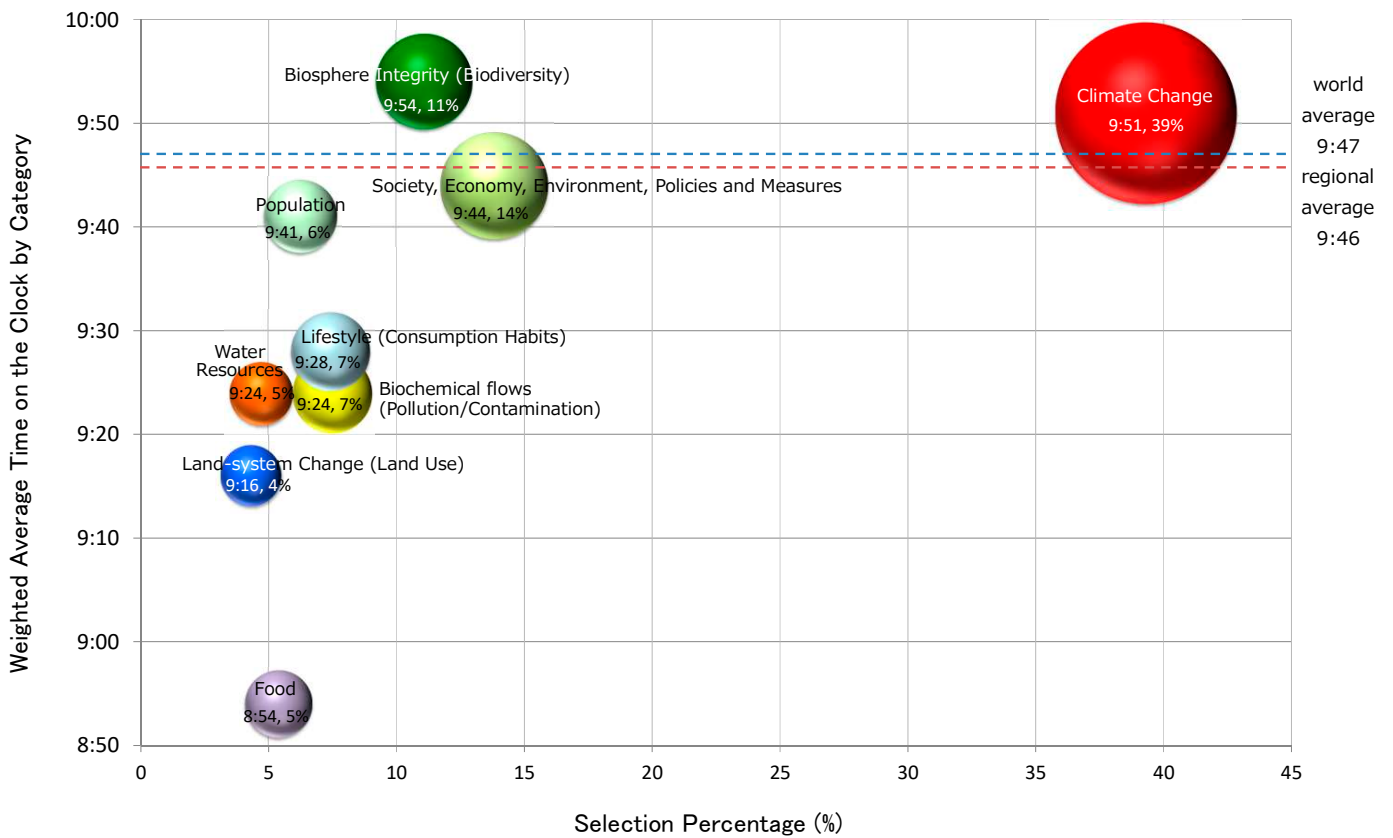


Fig. 15-2. Japan

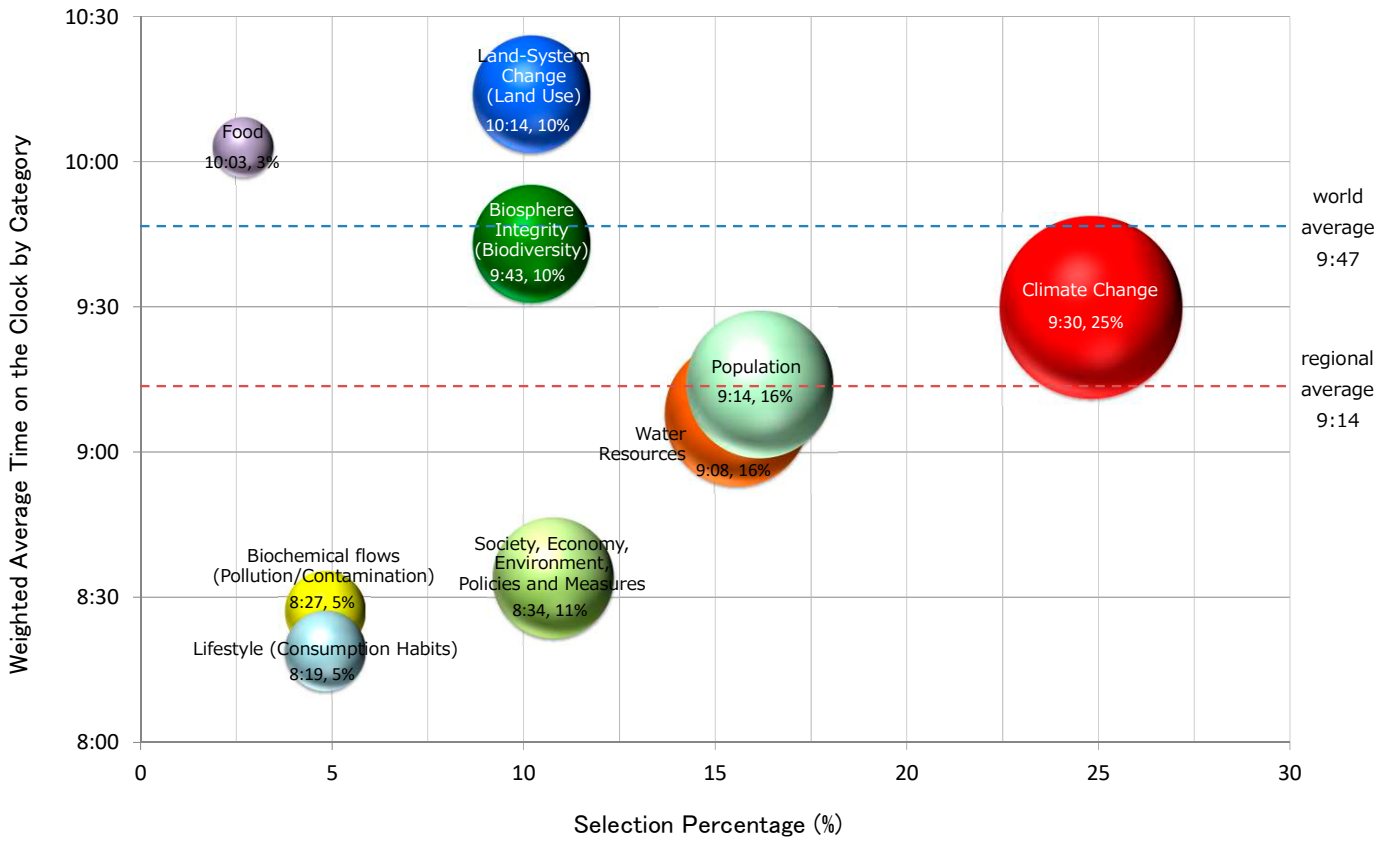


Fig. 15-3. India

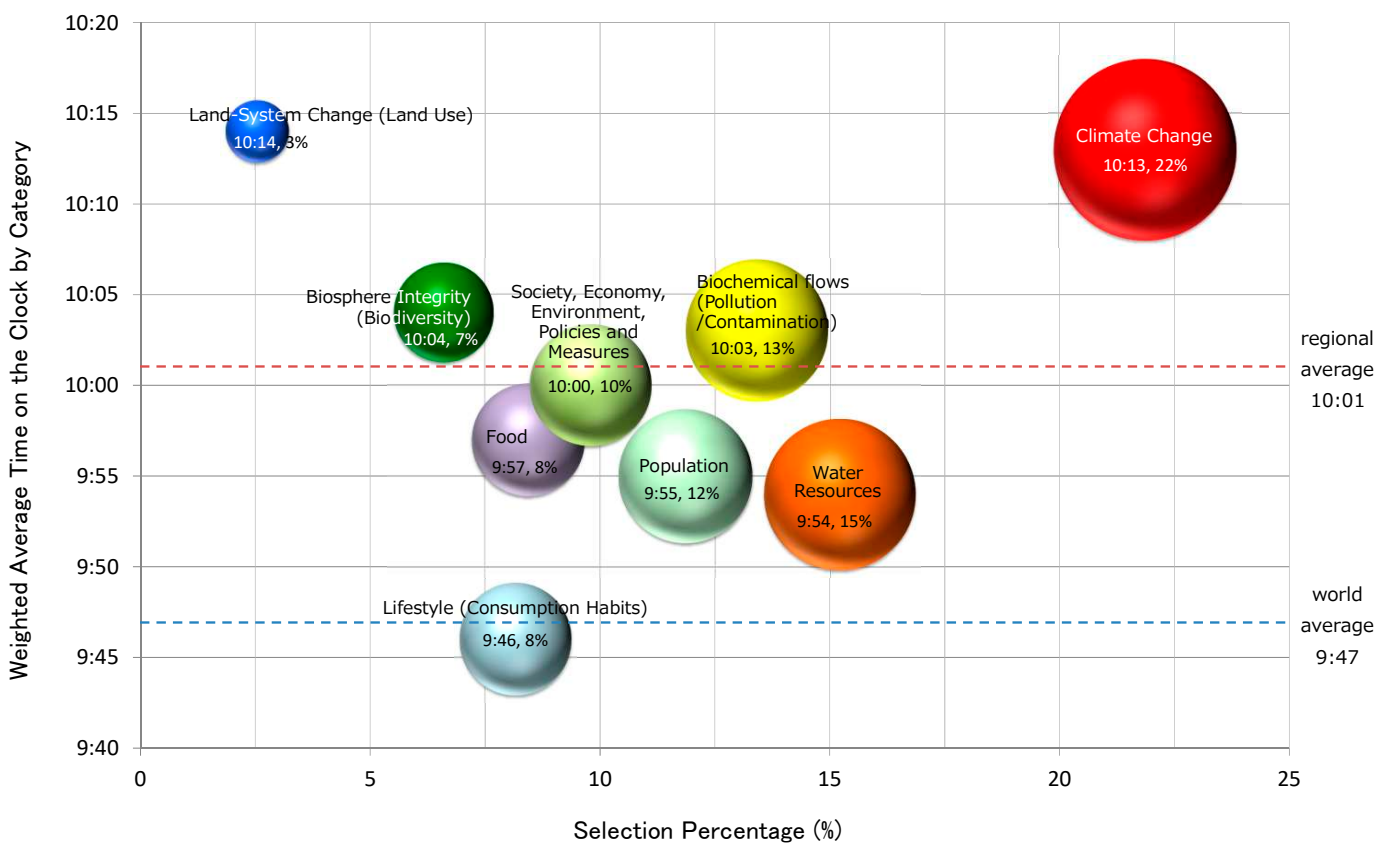


Fig. 15-4. China

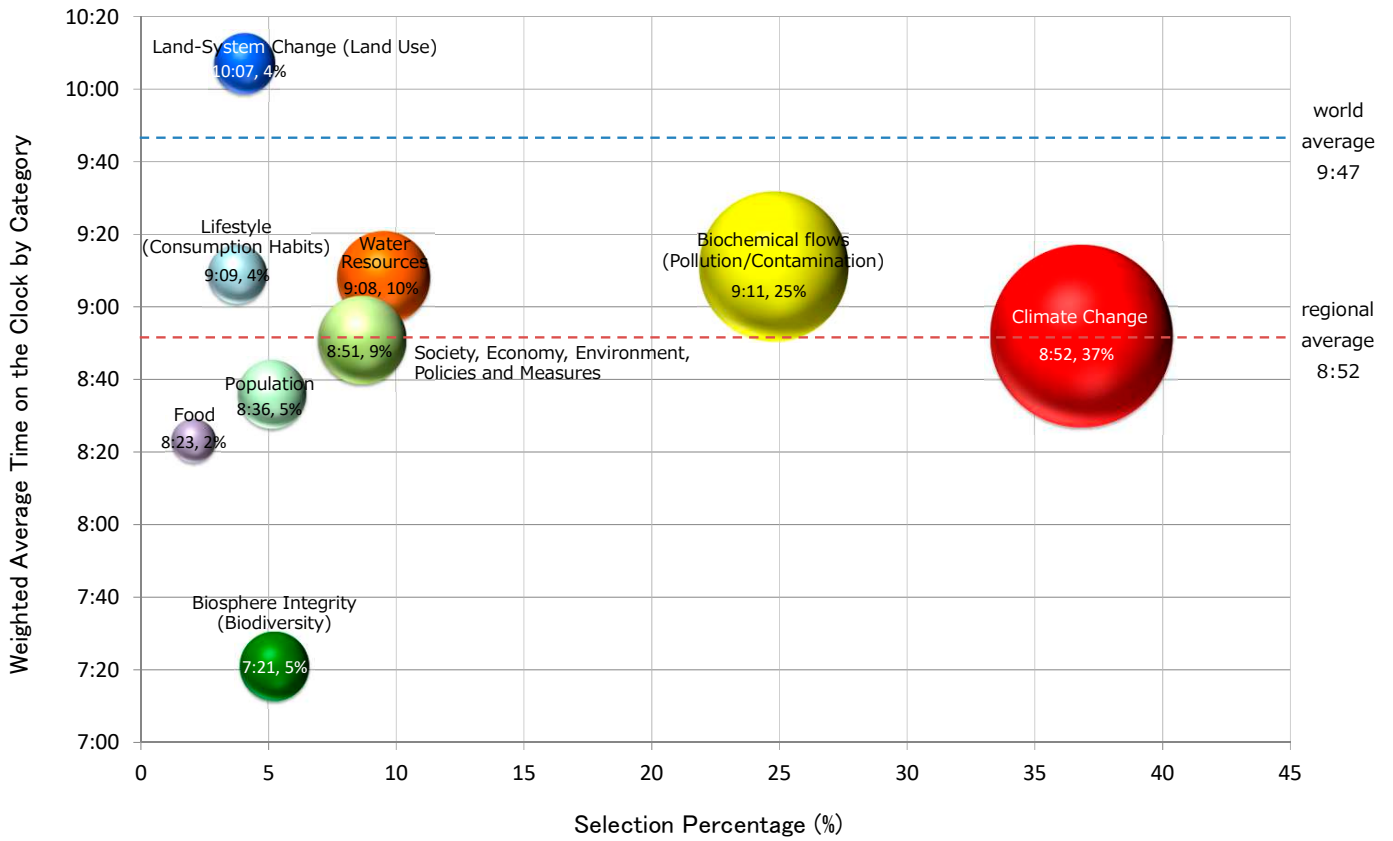


Fig. 15-5. Taiwan

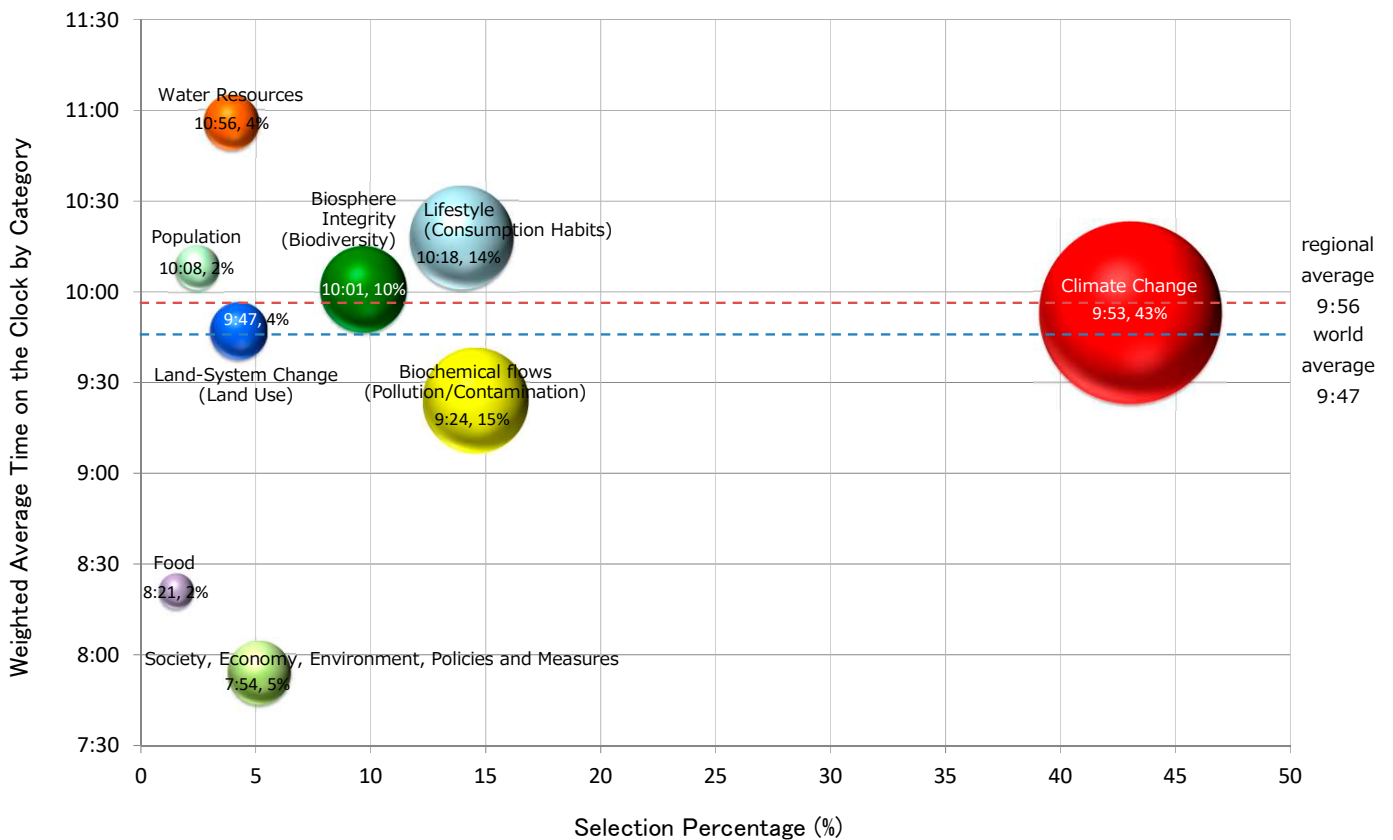


Fig. 15-6. Korea

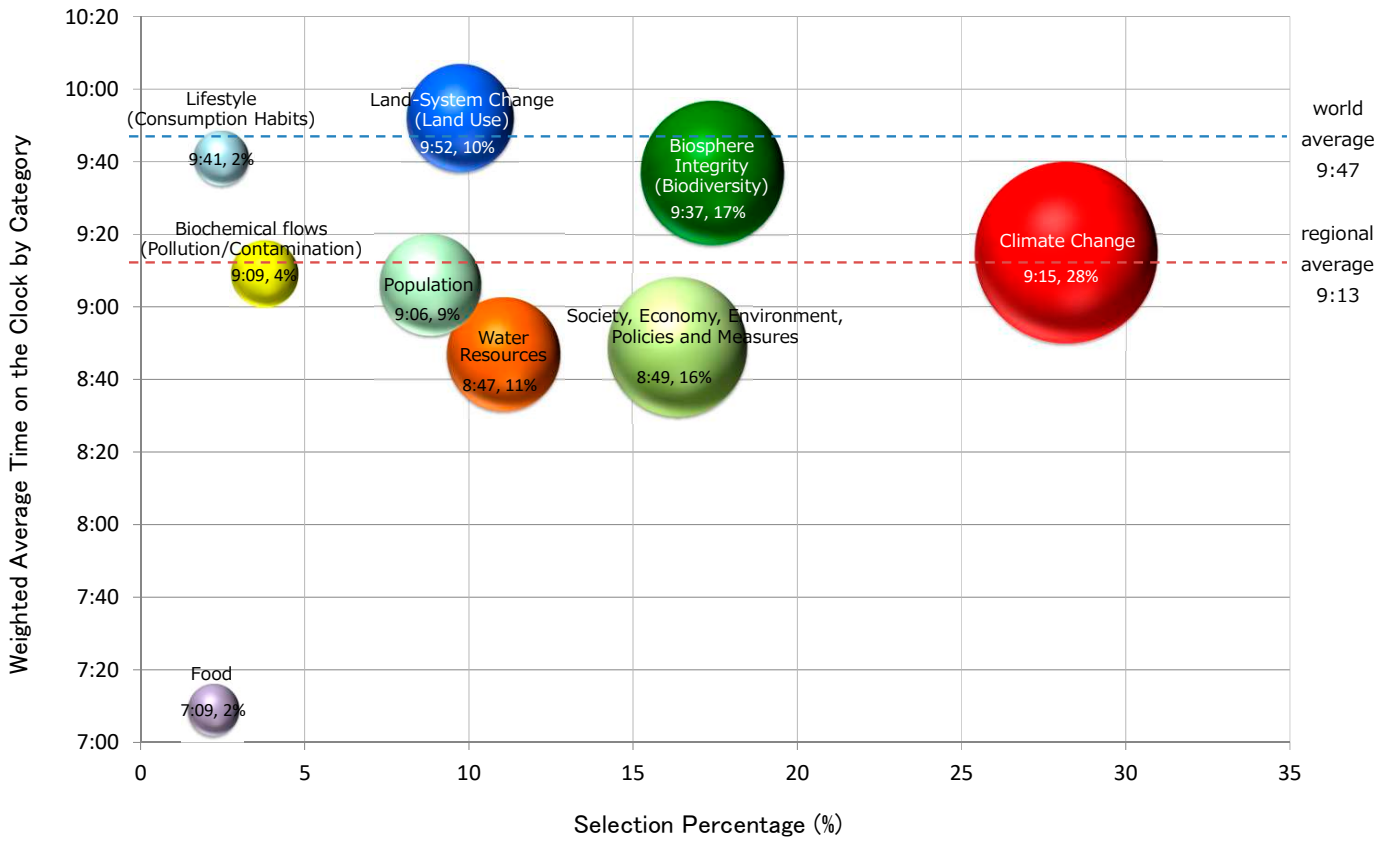


Fig. 15-7. Asia (excl. Japan, India, China, Taiwan, and Korea)

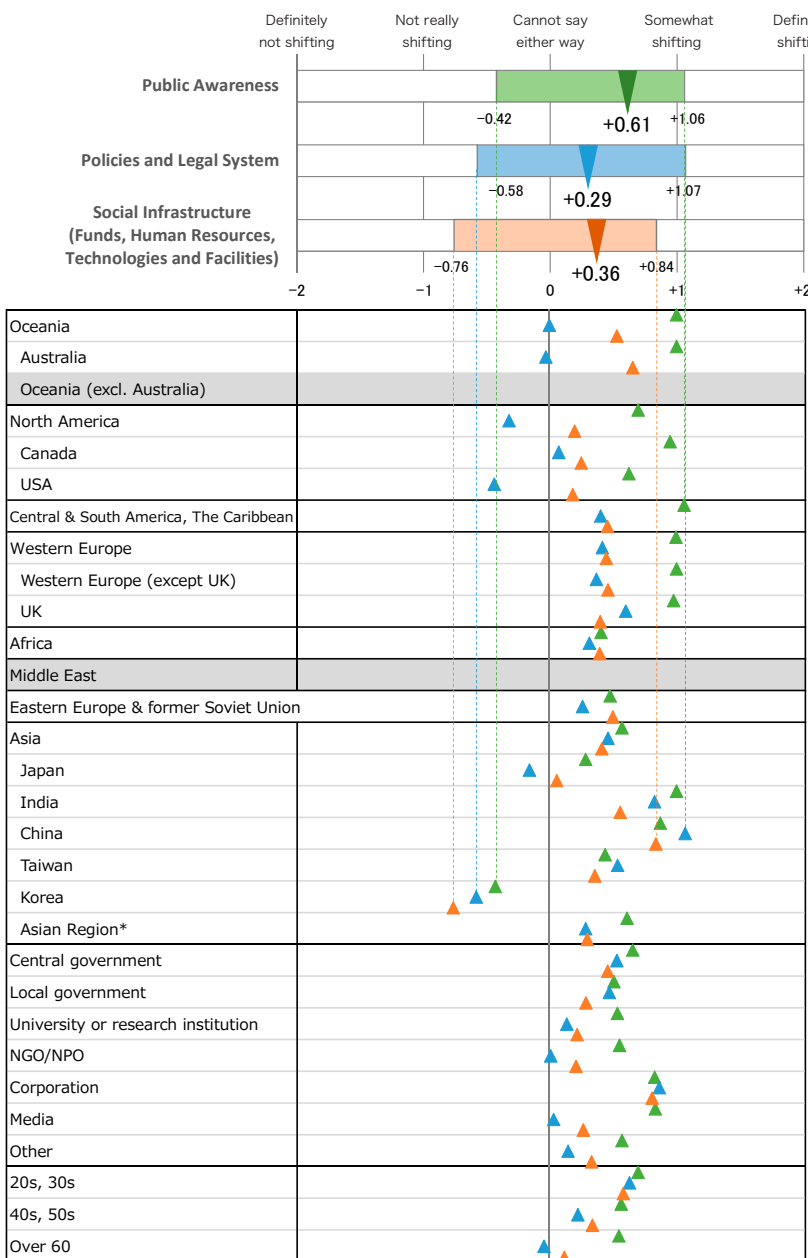
III-2. Awareness of Signs of Improvement in the Approach to Environmental Issues

Question 2-1: Do you see any signs of improvement in the approach to global environmental issues? Please answer these questions from the following three viewpoints in comparison with before 2015 when the Paris Agreement and SDGs were adopted.

Signs of improvement were investigated from the three perspectives, “Public Awareness,” “Policies and Legal System,” and “Social Infrastructure (Funds, Human Resources, Technologies, and Facilities). We asked 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 for from a list of “Environmental Issues to be Taken Account.”

We calculated the average score by quantifying the answers giving a score of “-2” for the answer “Not improved at all,” “-1” for the answer “Somewhat not improved,” “0” for the answer “Neither improved or not improved,” “+1” for the answer “Somewhat improved,” and “+2” for the answer “Definitely improved.” We used 30 or more samples to calculate the average score for each region or country.

Question 2-1 Do you think that we are shifting to a decarbonized society?



*excl. Japan, India, China, Taiwan, and Korea

Fig. 16 Progress in a Transition to a Decarbonized Society: World Average and Average Scores by Region, Organization, and Age Range

The average score for the entire world and the average score for each region and country are shown in Fig. 16. The world’s average scores are as follows. The figures in the parentheses are the average scores in 2019.

- Public Awareness +0.61 (+0.52)
- Policies and Legal System +0.29 (+0.27)
- Social Infrastructure +0.36 (+0.32) (Funds, Human Resources, Technologies, and Facilities)

• Overall, the results indicated that there were some signs of improvement in the efforts to transition to a decarbonized society but the same degree of progress was not made in “Policies and Legal System” and “Social Infrastructure (Funds, Human Resources, Technologies, and Facilities)” as in “Public Awareness.” Nonetheless, a positive change was seen from all three viewpoints, “Public Awareness,” “Policies and Legal System,” and “Social Infrastructure,” in comparison with comparison with the results in 2019. By region, the ratio of respondents who considered that progress had been made in “Public Awareness” was greater in India, Australia, Canada, Central & South America, The Caribbean, and Western Europe than other regions.

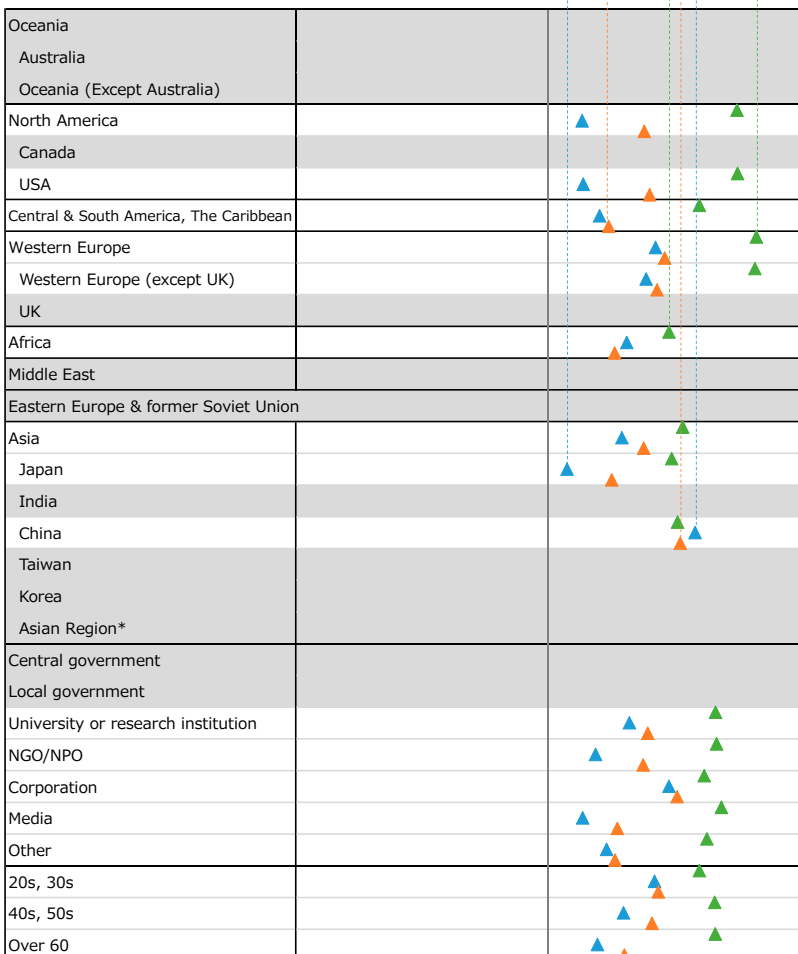
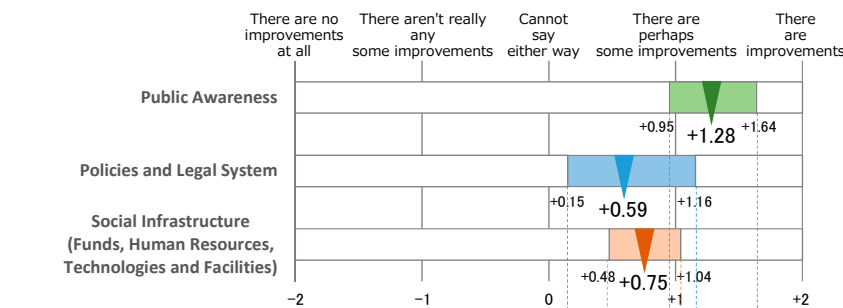
- In Japan, Korea, and the USA, the average score for “Policies and Legal System” was negative, indicating that the respondents considered that no progress had been made in this area.
- As in the previous year, the responses from China and Taiwan showed their view that a greater degree of progress had been made in “Policies and Legal System” than in “Public Awareness.”
- Korea was the only country/region whose results showed that no progress had been made in all aspects.

Question 2-2. Where do you see signs of improvement? Please choose one category from Table 5 that shows a list “Environmental Issues to be Taken into Account.”

The category most frequently selected for showing signs of improvement was “Climate Change” at 28%, followed by “Lifestyles” and “Society, Economy and Environment, Policies, Measures” both at 14%. Sixteen percentages of the respondents selected the answer, “There are no improvements at all.” The result was quantified in the same manner as in Q2-1 and shown in Table 8.

Table 8. Signs of Improvement: Selection Percentage and Average Score in Signs of Improvement

Selected Category	Selection Percentage (%)	Public Awareness	Policies and Legal System	Social Infrastructure (Funds, Human Resources, Technologies and Facilities)
Climate Change	28	1.28	0.59	0.75
Lifestyle	14	1.09	0.52	0.60
Society, Economy and Environment, Policies, Measures	14	1.07	1.02	0.91
Biosphere Integrity (Biodiversity)	8	1.05	0.72	0.51
Biochemical Flows (Pollution/Contamination)	7	1.09	0.91	0.79
Water Resources	5	0.94	0.87	0.72
Land-System Change (Land Use)	3	0.70	0.66	0.45
Population	3	0.96	0.50	0.42
Food	2	1.33	0.85	0.90
None	16	-	-	-



*excl. Japan, India, China, Taiwan, and Korea

Fig. 17 Signs of Improvement: World Average and Average Scores by Region, Organization, and Age Range

Figure 17 shows the average score of all respondents and the average score of each country and region, in which climate change was most frequently selected and 30 or more samples could be taken.

The average scores for the entire world were as follows. The figures in the parentheses are the figures in 2019.

- Public Awareness: +1.28 (+1.22)
- Policies and Legal System: +0.59 (+0.65)
- Social Infrastructure: +0.75 (+0.61) (Funds, Human Resources, Technologies, and Facilities)

The world’s average score for “Public Awareness” is +1.28, which is greater than the last year, showing that the respondents worldwide recognized signs of improvement. This trend is particularly noticeable in the USA and Western Europe (except UK).

China’s score for “Policies and Legal System” of “+1.16” far outweighs others, while the scores in Japan, the USA, Central and South America, and The Caribbean are smaller at less than “+0.5.”

The scores for “Social Infrastructure (Funds, Human Resources, Technologies, and Facilities)” are relatively high in China and the Middle East, and are lower in Africa, Central and South America, The Caribbean, and Japan.

No graph was created for other indicators due to the small number of samples viewed in each country/region.

IV. Closing Comment

The average time on the Environmental Doomsday Clock in 2020 at 9:47 has barely changed from the times recorded in the previous two years. The result shows the highest level of sustained crisis awareness since the beginning of the survey in 1992. With regard to “Environmental Issues to be Taken into Account,” which are used to decide the time on the Clock, 30% of the respondents selected “Climate Change”. The selection rate for this category has been on the rise since 2013, indicating that climate change is considered more urgent than other categories.

As in the previous year, the survey asked the respondents if they saw any signs of improvement in comparison with the situations before 2015 when the Paris Agreement and SDGs were adopted. Given that the respondents’ answer to this question in terms of “Policies and Legal System” and “Social Infrastructure (Funds, Human Resources, Technologies, and Facilities)” varied from one region or country to another, we calculated the average scores for the entire world and for each region/country and showed them as graphs to display an overall image and regional distribution.

With regard to a transition to a decarbonized society in Question 2-1, there were regional differences in the respondents’ perception of improvements made in “Public Awareness” and “Policies and Legal System.” In China and Taiwan, the difference in the scores for the two was small, with “Policies and Legal System” being perceived as having made a slightly greater degree of improvement than “Public Awareness.” In contrast, the difference between the two issues was significant in Australia and the USA, with “Policies and Legal System” considered to be falling significantly behind “Public Awareness.” These results indicate that, while in China and Taiwan people’s awareness is not keeping up with the measures the governments are taking proactively, in Australia and the USA, the governments’ measures are not keeping up with a strong concern their citizens have. Looking at the responses to this question by generation, the older the age group gets, the greater the difference between the perception of improvements made in “Public Awareness” and “Policies and Legal System” grows—that is, the older respondents tend to consider that the governments’ measures were not improving as fast as their citizens’ awareness.

In Question 2-2, the categories showing signs of improvement in the approach to environmental issues were as follows in the descending order of the selection rate: “Climate Change” at 28%, “Lifestyles” at 14%, “Society, Economy and Environment, Policies, Measures” at 14%, and “Biosphere Integrity (Biodiversity)” at 8%. “Climate Change” was also selected most frequently as a category that was important in considering environmental issues in Q1. This shows the strong worldwide interest in the “Climate Change” issue and the efforts to improve it. Meanwhile, “Biosphere Integrity (Biodiversity),” which was also a factor in moving the time on the Clock closer to midnight, was the second most frequently selected category in Q1 but ranked fourth as the categories showing signs of improvement. It is thus feared that the situation concerning “Biosphere Integrity (Biodiversity)” is serious but there are not many perceived signs of improvement.

We will continue using the above questions for a while and continue conducting this survey, paying attention to the average scores for the entire world and variances among regions and countries.

Looking back at the worldwide environmental incidents in the year immediately preceding the response period of this survey, there were many widely reported news events such as bush fires in Australia and Brazil from 2019 to early 2020, a desert locust plague in Africa, flooding in Venice, Italy, and a record high temperature of 38 degrees Celsius in the Arctic Circle. It may be interesting to read this report imagining that these incidents might have influenced the responses in each location.

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