The Mymizu Project

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Is the project a case of…:

☐ State-initiated co-creation

☒ Entrepreneur-driven co-creation

☐ Grassroots-based co-creation*

**For an elaboration of the typology, please consult the GOGREEN theoretical framework p. 25.*

Integrated case analysis

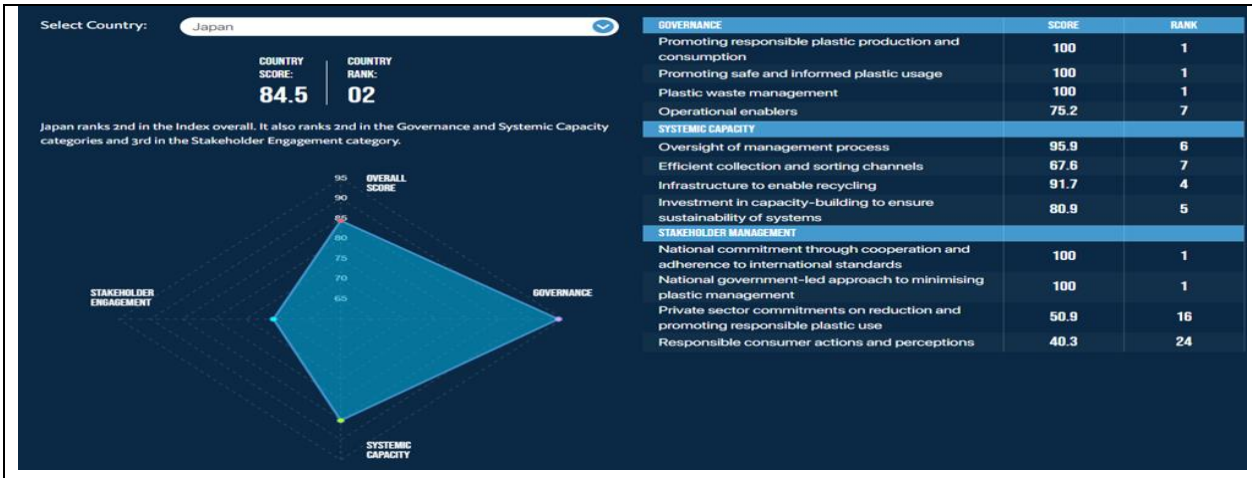
Before proceeding to the scoring of the GFs, please provide a *3–5 page case analysis* in which you describe the background, history, and national, regional, and local contexts of the case, the problems and goals addressed by the local collaboration, the participating actors and their relationships, the unfolding of the co-creation process, the most important governance factors (this may include factors other than those in focus in this project), and the generated outputs and outcomes. The conclusion may specify a few lessons learned from the case study.

1) Background, history, and national, regional, and local contexts of the case

Japan, one of the world's largest generators of plastic packaging waste, is known for its excessive packaging and consumption of PET bottles from vending machines and stores. Japan is well-known for its excessive vending machines, selling many beverages in plastic bottles. Due to hygiene-related concerns, food in Japan is wrapped and bagged in several layers of plastic.

According to the Plastic Management Index (PMI), Japan is ranked second in the world in terms of plastic management (scored 84.5). Although Japan is considered one of the high-ranked countries for dealing with the plastic management system, plastic consumption in Japan per capita is overwhelmingly high. According to the World Population Review (WPR), 4.88 tons of plastic waste in Japan were generated within the year of 2016, and the government aims to reduce plastic use by 25% by 2030. Furthermore, an average Japanese person buys 183 PET bottles and uses around 450 plastic shopping bags per year (IGES, 2022).

The waste issue is a growing concern in Japan. On a positive note, preventive measures and solutions for controlling and eliminating plastic waste are also taking place. Local governments have started to introduce solution-oriented policies and developed strategies to tackle waste issues. For example, Kameoka City, in the western part of Japan, became the first municipality to sign the Zero Plastic Waste Declaration in 2018 aimed to ban plastic shopping bag usage and promote reusable bags for shopping. Furthermore, new initiatives and social ventures also emerged to tackle plastic waste in support of the Ministry of the Environment (MOE)' Plastic Smart campaign. This was a new target in line with the commitment to a nationwide circular economy.



GOVERNANCE	SCORE	RANK
Promoting responsible plastic production and consumption	100	1
Promoting safe and informed plastic usage	100	1
Plastic waste management	100	1
Operational enablers	75.2	7
SYSTEMIC CAPACITY		
Oversight of management process	95.9	6
Efficient collection and sorting channels	67.6	7
Infrastructure to enable recycling	91.7	4
Investment in capacity-building to ensure sustainability of systems	80.9	5
STAKEHOLDER MANAGEMENT		
National commitment through cooperation and adherence to international standards	100	1
National government-led approach to minimising plastic management	100	1
Private sector commitments on reduction and promoting responsible plastic use	50.9	16
Responsible consumer actions and perceptions	40.3	24

Souce: Plastic Management Index (PMI)

Introduction to the mymizu Project

The mymizu (''mizu'' means ''water'' in Japanese) project, a sustainability start-up, is a significant example of how a grassroots initiative can grow into a collaborative platform addressing environmental issues like plastic pollution. Starting from a personal experience on a beach in Okinawa in 2019, the co-founders developed the idea into a movement that engages various stakeholders—students, universities, organizations, and volunteers—in reducing plastic waste, particularly through water refilling stations and educational events. The 2023 Campus Changemakers Summit at the University of Tokyo is a great example of how the project engages youth, fosters networking, and promotes sustainable living. This kind of initiative not only provides solutions but also creates a community committed to long-term environmental change.

Mymizu is a registered non-profit organization and a co-creative platform based on building a movement for sustainable living by reducing single-use plastics and preventing plastic pollution innovatively and jointly. The project involves public and private multi-stakeholders and brings different actors during the mobilization. These stakeholders are mainly co-founders, entrepreneurs, members, volunteers, schools (such as Meisei Gakuen), and universities. They aim to reduce plastic waste on campuses through student motivation and actions - powerful and high-potential groups, partner organizations and collaborators, participants of water refilling stations voluntarily, service users and consumers, etc. It provides creative educational experiences, online and in-person events, consultancy and coaching services with active communication and networking, and lifestyle products.

Activities

The project collaborates with local governments to increase water access, especially during the hot summer, to keep people, especially elderly ones, safe from heat stroke and dehydration. It also focuses on partnerships with several entities within the country and beyond. Among such entities are IKEA, NIKE, and LUSH, which enable them to work together on joint product development, communications, and brand collaborations. This opportunity creates win-win partnerships so that these entities can engage their customers in 'meaningful ways' - from plastic-free running campaigns to the creation of co-branded videos that promote a more attractive lifestyle aligned with nature. The project values the engagement of people to design a participatory system for a circular economy.

Furthermore, the crowdsourced mymizu application (Japan's first free water refill app) connects people and provides people with access to more than 200,000 water refill points globally so that consumers can enjoy refilled water on the go for free. Additionally, the application provides a 'refill tracker', allowing users to track the amount of single-use plastic bottles and how much money and CO2 are saved. This leads to the creation of responsible and conscious consumerism and increased motivation for those who use those water fillers in the designated areas. Also, this user-focused application enables users to track and report their plastic savings through the app, contributing to broader research on plastic waste reduction and providing insights for the project overall.

Image i: Photo of a project member refilling the water bottle in a designated area, provided by the cofounder

Image ii: The photo was taken by Pinar Temocin at the University of Tokyo, Komaba Campus in January 2024, where 13 water refilling stations exist. Students bring their own bottles and use the water refilling stations which were stalled thanks to the project' support. It is also jointly supported by the Sustainable Campus Student Committee, an active student organization, and the President of the Univ. of Tokyo.

2) The aims of the project and the sustainability problems that it seeks to address

The project aims to provide creative environmental solutions and systematic change toward the ongoing plastic issue through technology and with people who want to combat the extreme plastic usage engendering plastic waste and environmental degradation. This aim in combination with joint co-created sustainability activities led mymizu to build a joint movement for environmental sustainability both regionally and globally.

Mymizu initially sets out to tackle PET bottle consumption. Therefore, the project's aims and objectives are relevant to SDGs, particularly on clean water and sanitation (SDG 6), sustainable cities and communities (SDG 11), responsible consumption (SDG 12), and protecting the planet (SDG 13).
The crucial project aim is creating a participatory movement with many actors involved and contributing to the project and meaningful solutions on behalf of the environment. This is well-articulated by the co-founder:

"We began to look into the problem of what is plastic waste, how many pet bottles are consumed in Japan, what is the recycling rate, and all of these things. And we ultimately thought it would be good to have a circular economy solution for the single plastic waste usage in a country like Japan where we are surrounded by drinkable, safe, tasty water. For us, the mission from day one has been to make a movement together. The initial idea and later mission was not to make an app. Honestly, I would much rather make a movement than technology. We wanted to have a platform that people can take part in, that people can contribute to (Interview with the co-founder, January 2024).''

3) The participants and their interaction and communication in and between meetings

The core team consists of the two co-founders, who make strategic decisions, alongside key decision-makers within the organization. These include a sustainable development professional and a journalist. Other team members, who fulfill various roles from marketing to technology development, include the Chief Technology Officer, the Business Development and Marketing Lead, the Communications and Community Development Manager, the Social Media Manager, Product Manager, Software Engineer, and Refill Spot Networker, and volunteers.

Team members are based in different parts of the world. For instance, the Business Development Lead is located in the United States. As a result, physical meetings are rare, and the team communicates primarily through decentralized methods, such as online meetings.

Participation and membership in the project are straightforward and flexible. Interested individuals, groups, and organizations can join at any time by reaching out in several ways: signing up via social media, attending local events in person or online, or directly contacting the team through their website. For those interested in volunteering, social media platforms serve as a convenient tool to connect with the project. Based on our observations, volunteers tend to be young, educated individuals.

4) How often do they meet, and do they communicate between meetings?

Approximately 400,000 people (as of 2024) are now participating in mymizu globally in various capacities (see Figure i for the updated numbers), and this number continues to grow over time. Many participants

are also actively involved in the co-design and co-implementation of activities. Given the high number of users, communication primarily occurs online, facilitated by project leaders, even with a substantial number of project members.

Project members primarily meet both in person and online to discuss the project and its programs, as the project does not have a dedicated physical office. Meetings with other stakeholders, such as representatives from local authorities, are held regularly—though mostly online. Project facilitators also travel to meet stakeholders in person whenever possible.

5) The role and forms of knowledge sharing, coordination and joint problem-solving

Knowledge creation and sharing related to promoting sustainable actions among relevant stakeholders is rooted in **coordinated and collaborative efforts with like-minded actors and businesses**. These efforts aim to unite stakeholders in addressing shared challenges by brainstorming potential solutions together. This approach fosters the development of creative actions through the exchange of internal and external resources, as well as the diverse backgrounds and experiences of the actors involved. Such collaboration requires strong leadership skills during meetings, a commitment to ongoing dialogue, and the organization of social activities for knowledge and experience sharing.

Knowledge sharing occurs both informally and in structured formats, including:

a) Organizing workshops, seminars, and similar events.

b) Establishing partnerships with large companies like LUSH and IKEA, as well as with schools and universities.

c) Collaborating with local governments to enhance water access, especially during hot summers. These efforts not only aim to reduce plastic waste but also prioritize public safety by mitigating risks of heat stroke and dehydration.

d) Engaging in activities such as voluntary river and beach cleanups.

One of the notable aspects we observed is that the project effectively engages young people in environmental issues by working with schools and universities. For instance, mymizu members organize reusable bottle design contests, where volunteer students submit their own designs. The winning design is printed on 100–200 bottles for the entire class, providing a creative and engaging way for students to raise awareness of socio-environmental issues while also developing teamwork skills.

Another way the project engages communities in knowledge diffusion is through the use of an artificial intelligence algorithm developed by a volunteer AI engineer as part of a coordinated, voluntary effort. This machine learning algorithm enhances and streamlines data management, increasing efficiency in identifying and focusing on public refill spots, such as water fountains in train stations or airports.

The project takes a forward-looking approach, enabling its members to adapt and restructure business conditions as needed. They prioritize increasing the number of active users on their platform, expanding partnerships with refill spots such as shops, cafes, hotels, restaurants, and businesses, and maximizing collective impact within available resources. Additionally, they measure success through key metrics, such

as the number of people reached via educational programs, including seminars, workshops, and events. These metrics have been consistently tracked since 2019.

Also, according to our observations, a diverse group of young people from schools and universities actively participates, contributing to knowledge dissemination and collaborative problem-solving. For instance, in one of the online events, we noted that nearly 90% of the participants were in their 20s.

Image iii: The photo was provided by Mahi Patki from the University of Tokyo, who was one of the organizers of the Japan's largest Climate Fresk Workshop held in Tokyo on November 10, 2024. Social Innovation Japan, from which mymizu is derived, participated in the workshop and mobilized young students.

6) The relation between consensus and conflict and the handling of the latter

We have not observed any visible conflicts in the views or objectives of the main project members and organizers thus far. Based on our discussions, there is broad consensus among project participants regarding the necessity and urgency of addressing plastic waste management, particularly in Japan. Collaborative and participatory action is widely recognized as essential, and most participants are aware of its importance.

Many informants express that a shared sense of concern and obligation unites them within the organization, serving as a key connecting point. Notably, a consensus-based approach is emphasized through statements such as, "We don't provide a service or platform; we build it together with proactive people and communities striving for societal contribution." This sense of **"togetherness" toward a common goal, coupled with a "shared responsibility,"** reinforces consensus among participants and actively engages them in problem-solving initiatives.

7) The role and form of leadership: lead actor, steering group and/or collective leadership

Mymizu aligns with voluntary reduction strategies by promoting effective and sustainable alternatives. Many agree that changing consumption patterns, altering large-scale behaviors, and creating systems that

are environmentally friendly, culturally acceptable, and economically feasible presents a significant challenge.

As a start-up initiative launched by concerned citizens, mymizu provides eco-friendly alternatives by offering free opportunities to reduce reliance on conventional plastic bottles for end-users. Achieving one of the world's fastest-growing and largest crowdfunded and co-created water databases—with 2,500 refill partners and over 13,000 refill spots—is a remarkable accomplishment. This success reflects strategic and collective leadership working collaboratively toward a shared goal.

Such efforts require the ability to make decisions, execute plans, communicate effectively, and track progress. In this context, the co-founders of mymizu exemplify facilitative and strategic leadership by addressing plastic bottle reduction through creative problem-solving, innovative approaches, and a clear strategic vision.

8) The temporal unfolding of the co-creation process: major shifts and ups and downs
The co-creation process can be divided into two stages:

a) Background and Preparatory Phase Overlapping the COVID Era (2019–2021):
This stage includes the project's initial commitment, promoting activities through online tools, developing crowdfunding and donation strategies, and focusing on marketing efforts. While the project was launched with enthusiasm, its progress was significantly slowed due to the COVID-19 pandemic.

b) Effective Implementation and Scaling-Up Phase (2021–Present):
This stage involves strengthening partnerships with companies and local governments, maximizing public outreach activities both domestically and internationally, and increasing efforts in knowledge- and experience-sharing.

9) The most important governance factors (may include factors other than those in focus in this project)
According to our findings, the most significant governance factors are GF 10 (leveraging support) and GF 16 (facilitative leadership). These factors were visibly observed and scored as 1 based on the available qualitative data, with a high level of confidence.

GF 10
The project has been successful in leveraging support by developing strong relationships with local authorities, overcoming higher-level challenges, and securing high-level backing, especially in a country known for its top-down decision-making structures. According to our findings, the interaction between different levels of regional and local government and local actors has been key to the mymizu project's success, particularly in terms of the collaborative project management process. The project members, especially the co-founders, excel in engaging in close and continuous dialogue with other committed stakeholders. Some of the capacity-building, knowledge-sharing activities, and policy engagements include public speaking events, campus events, and meetings with local governments, both directly and on-site in various locations across Japan. It is also worth noting that linguistic abilities play a significant role, as the

co-founders and key project leaders are fluent in both Japanese and English, which facilitates communication and the internationalization of the project.

GF 16

Another crucial governance factor driving the co-creation process is leadership. While all partners contribute to effective project leadership in a participatory manner, the co-founders exhibit strong facilitative and strategic leadership skills, which are clearly visible.

The project facilitators, who are well-connected and networked, have played a critical role in the project's growth and successful implementation through their facilitative and strategic leadership. Based on our personal interactions, we observed that the project's leading actors respond to situations in a timely and effective manner. Their success is also driven by their network-building and maintenance efforts, along with their negotiation skills. Without a robust network and persuasive arguments, fostering a symbiotic relationship between project leaders, participants, and other actors would be challenging. This leadership approach also helps gain legitimacy for the project, secure broader support, and build trust among stakeholders.

Other Factors

In addition to GF 10 and GF 16, other governance factors are also effective in fostering collaboration and mobilization within the mymizu project.

GF 1

Ongoing climate crisis, environmental degradation, plastic pollution, and concern for marine ecosystem

GF 4

Legal, institutional, and local efforts by the Japanese government supporting environmentally friendly policy frameworks that allow wider civic engagement and local participation

GF 6

The project's green SDGs orientation and sustainability-focused goals, along with the positive narratives surrounding them, have made the project well-known and attractive. These elements help diversify and strategize the organization's activities.

GF 7

By centering the terms "people, sustainability, and action" in their organizational activities to address plastic waste, the project maintains active and continuous communication, driving engagement and participation.

GF 14

The promotion of innovative technology, such as Japan's first water refill app, mymizu, along with the engagement of both internal and external stakeholders, has significantly contributed to the project's widespread recognition.

10) The generated outputs and outcomes

Commitment and openness to collaboration have enabled the project to drive inclusive innovation (such as the mymizu application) and gain recognition in a short time, as evidenced by the increasing number of collaborators and members both within Japan and internationally. At the same time, mobilizing efforts toward a common goal under the strategic leadership of the co-founders has been instrumental in achieving the project's sustainability objectives.

	2019	2021	2023
Number of team members	8 core members	8 core members (30+ including volunteers)	8 core members (30+ including volunteers)
Number of users	10,000+ worldwide	160,000+ worldwide	200,000+ worldwide
Number of mymizu refill spots	160+ in Japan	1800 worldwide	2300+ in Japan and 10+ countries
Number of public refill spots	8000+ in Japan	9500+ in Japan 200,000+ worldwide	10,000+ in Japan 205,000+ worldwide
Number of PET bottles saved	100,000+ worldwide (in early 2020 when tracker was launched)	250,000+ worldwide	650,000+ worldwide
Number of media coverage	30+	N/A	500+ worldwide in 20+ countries
Number of participants in events, workshops and programs	N/A	40,000+	50,000+

Figure i: This shows the outcomes of the mymizu project in 2019, 2021, and 2023, provided by Francois and Goi (2023). In this figure, the numbers of users worldwide, water refilling spots, saved bottles, media coverage, and the number of participants in the events increasing over time (in Japan and worldwide) can be seen.

11) Lessons learned about the conditions for co-creating green solutions

According to our observation and findings, the lessons that can be drawn from the projects are as follows:

a) Sustainability-oriented concerns that people find urgent and undesirable are helpful to have a joint recognition and acceptance of these concerns and allow people to provide a solution by collaborating and raising awareness.
b) Openness to include of wide range of actors mobilizing for a sustainability-oriented issue (growing plastic waste in our case) increases the attention and willingness to collaborate domestically and globally.
c) Leadership skills of co-founders (or project leaders) are fundamental to creating and maintaining consensus and steering a team (from small to large) toward the successful outcome of a project.
d) A focus on co-creation with multiple actors is valuable and meaningful to have an inclusive and diverse collaboration and partnership when tackling environmentally undesired issues.

Opportunities

There are several opportunities for Japan.

Innovation and Technology Development: MoE has been supporting several technological projects, such as new-generation incineration and recycling technologies with antipollution policies and strategies, aiming to improve efficiency and reduce the environmental impact of plastic usage.
Adopting a Circular Economy Model: The Act on the Promotion of Resource Circulation for Plastics, enacted in 2022, focuses on improving the circulation of plastics in collaboration with municipalities, businesses, and consumers.
International Collaboration: Japan can turn its own waste issue into a collaborative opportunity through the involvement of other partners while developing plastic reduction initiatives and sharing the best technologies and practices. Japan can turn this domestic plastic crisis into an opportunity while showing global environmental leadership. In this regard, the Japan International Cooperation Agency (JICA) signed a MoU with the Alliance to End Plastic Waste, an international non-profit organization.
Increased Consumer Awareness and Behavior: Increased public awareness and socio-behavioral change can happen via providing educational programs and introducing eco-friendly products. For example, thanks to the Kitakyushu Plastic Smart Campaign, started in 2019, the plastic bag rejection ratio in supermarkets has risen from 38% to 75%.
Economic Opportunities and Creation of Green Jobs: A transition to sustainable practices while reducing the usage of plastics can create new employment opportunities in green industries through localized waste management systems and small entrepreneurship and businesses in the locality. Development of environmentally friendly packaging and manufacturing processes, and R&D and technological development would provide job opportunities in the plastic industry.

Scoring and analysis of governance factors

1. Perceived importance of biosphere conditions

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☒ Documents
☐ 0.66	☒ High confidence	☒ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

The concern for biosphere conditions is one of the major factors driving the project, given the threat of **plastic pollution on the marine ecosystem and the negative impact of the plastic lifecycle**. Marine life is affected when plastic and other non-biodegradable materials enter rivers, lakes, and oceans. These pollutants harm living organisms, including countless species of marine plants, algae, and seaweed. Even smaller pieces of plastic packaging can be ingested by marine organisms. Notably, in Japan, the daily consumption of seaweeds and shellfish is high and forms an integral part of traditional cuisine. The detrimental impact of plastic on the marine food chain, and the feeding and reproduction of marine organisms, is particularly concerning for a country where seafood plays a central role in its eating culture.

Although single-use plastic products are ubiquitous in daily life (such as in food and beverages, beauty products, etc.), their environmental impact is undeniable, with a high environmental cost. This contributes

to ongoing sustainability concerns, especially in the context of climate change. Plastics are partially responsible for global greenhouse gas emissions (GHGs). They are produced using fossil fuels as base materials in the petrochemical industry, through an energy-intensive process that emits GHGs.

Document analysis, participant information, and semi-structured interviews highlight that plastic pollution in Japan—which has the second-highest plastic waste emissions per person in the world—has become a key issue in sustainability discussions. The excessive consumption of PET bottles and overpackaging of commercial products, which contain toxic chemical additives, adversely affect both human health and marine ecosystems. Various stakeholders are working to address the growing environmental degradation and marine pollution, taking steps to eliminate plastic pollution. Additionally, it is important to mention a cultural aspect: Japan's declining and aging population. Hydrating elderly people with water and green tea, both widely consumed in Japan, is one of the measures local governments are implementing to support public health.

For example, city governments such as Itami City in Hyogo Prefecture, Tokorozawa City in Saitama Prefecture, and Kurume City in Fukuoka Prefecture wanted to reduce their plastic waste and keep citizens hydrated. These municipalities decided to install water spots at city halls and public facilities. To this end, they promoted mymizu project in local stores and businesses in 2022.

2. Legislation, programs, and formal goals

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☐ Interviews
☐ 0.33	☐ Medium confidence	☒ Documents
☐ 0.66	☒ High confidence	☐ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

The national government has implemented measures and plans to combat plastic pollution, such as the Act on the Promotion of Resource Circulation for Plastics, which was enforced in 2022. The Ministry of the Environment provides preventive measures through laws and legislation, along with guidelines for monitoring and addressing this issue. On the international front, the Minister works on capacity-building initiatives for plastic waste management, offers technical training on plastic monitoring, and submits the G20 report on Actions against Marine Plastic Litter as part of the G20 Implementation Framework. (See the report here: https://www.env.go.jp/content/000086490.pdf). Furthermore, Japan has set ambitious targets to combat single-use plastics, aiming for a 25% reduction by 2030. To support this goal, the government made it mandatory for all retailers to charge for plastic bags in 2020.

The SDGs have an international origin and planetary focus, and Japan has worked to internalize and localize these goals. With a growing sustainability orientation, the government has increasingly focused on local initiatives, promoting the SDGs in a variety of ways. One key driver of this is the experience of two major disasters: the 1995 Great Hanshin Earthquake and the 2011 Great East Japan Earthquake (3/11), followed

by the tsunami and nuclear accident in Fukushima. These disasters prompted local communities to come together to tackle pressing issues. For instance, Fukushima has become known for its revitalization projects, supported by the central government's backing of local initiatives. In line with this, in FY 2022, the Ministry of the Environment selected Inawashira Town in Fukushima Prefecture for a project aimed at recycling plastic products and studying their composition, environmental impacts, and economic effects. In a disaster-prone country with a decreasing and aging population, these sustainability concerns, alongside socio-political and environmental challenges, have driven national, regional, and local governments to address issues like plastic waste, often through grassroots efforts.

Mymizu brands itself as a **sustainability-oriented organization, effectively integrating sustainability concerns into its marketing strategy**. The increased recognition of the mymizu app, its organizational goals of tackling plastic waste through sustainable approaches, and the ongoing recognition of the project have made it appealing and enhanced its legitimacy. For example, the MoE has included mymizu in its official documents to promote sustainability efforts. (See the document here:
https://www.wbgt.env.go.jp/pdf/ic_rma/R0303/doc03-2.pdf)
Furthermore, they featured mymizu on their Plastics Smart initiative:
https://plastics-smart.env.go.jp/interview?interview=57

The project has also gained **significant visibility through media appearances** on outlets such as CNN, Forbes, Bloomberg, NHK, and MIT Tech Review, which has strengthened its legitimacy, acceptance, and practical support. For example, the appearance on CNN can be found here:
https://www.youtube.com/watch?v=mio2sxh5RH4 These media appearances help the project attract attention from formal avenues, such as funders and individual donors who contribute monthly to support its activities and open up collaborative opportunities.

To this end, the project has developed several revenue streams. One of the primary sources is corporate partnerships. Most of the corporate sponsors are water-related companies, such as water filter manufacturers and water service providers. The project facilitators and members also collaborate on specific projects with these companies. For example, they worked with NIKE during the summer to raise awareness about sustainability among runners. Additionally, they organize a variety of informative talks, workshops, and seminars for companies and universities, which generate a portion of their revenue.

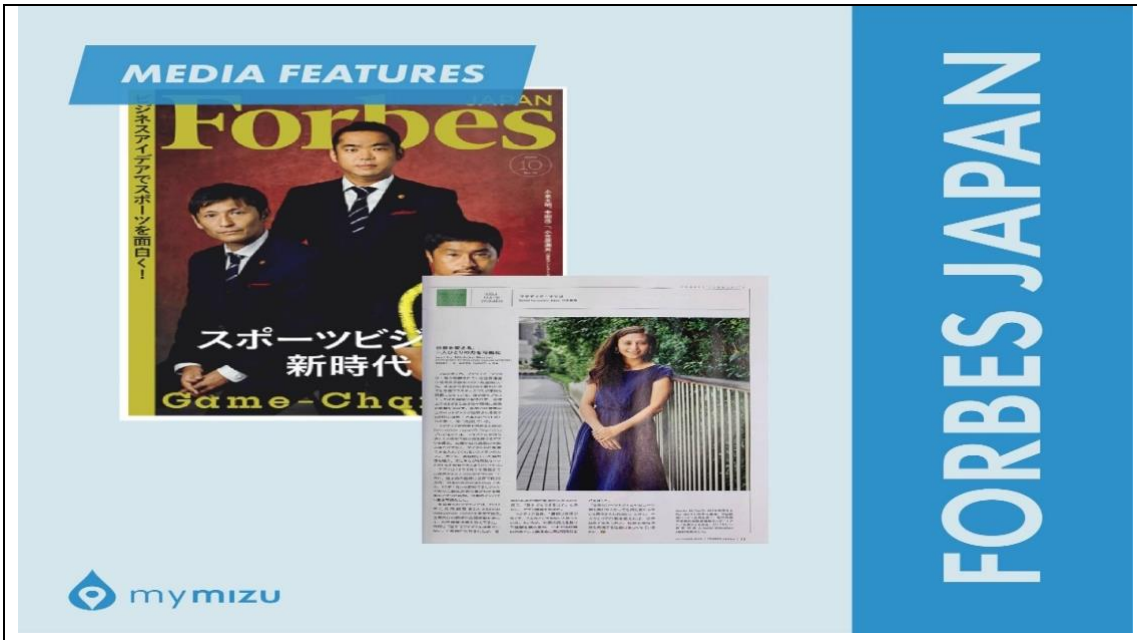


Image iv: The co-founder of the mymizu project is shown in Forbes Japan in 2020

3. Relative openness of public governance paradigms

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☒ Medium confidence	☒ Documents
☒ 0.66	☐ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

The governance paradigm in Japan has been shifting from a centralized, top-down, and closed model to a more decentralized and open approach, which includes greater collaboration with civil society organizations, local citizens, and other stakeholders. As the **green transition becomes a key agenda for all involved parties, the government has become more receptive to involving multiple actors in the formulation and adoption of environmental policies**. Government agencies are increasingly open to listening to non-governmental actors, providing policy tools, and creating opportunities for partnerships, often through capacity building and funding.

However, one question remains: it is unclear whether this openness is fully realized within the policy domain, given Japan's hierarchical policy-making structure and the influence of powerful industrial elites. Despite this uncertainty, it is evident that Japan is making efforts to listen to the public and offer tools for collaboration, driven by growing sustainability concerns.

While the Japanese government is open to collaborative governance on sustainability actions and is sympathetic to the idea of solving environmental problems with citizens at the local level (such as in cities, towns, and villages), implementing this at the national level proves challenging. For instance, the Ministry

of Environment runs several programs, such as partner city collaboration initiatives, creating many opportunities for local actors to engage in collaborative problem-solving. This is particularly noticeable when there is a shared commitment to the SDGs and an open, inclusive approach. While Japan has been criticized for lagging in achieving certain SDGs (such as SDG 1, SDG 2, and SDG 5), its performance in green SDGs is notable and impressive.

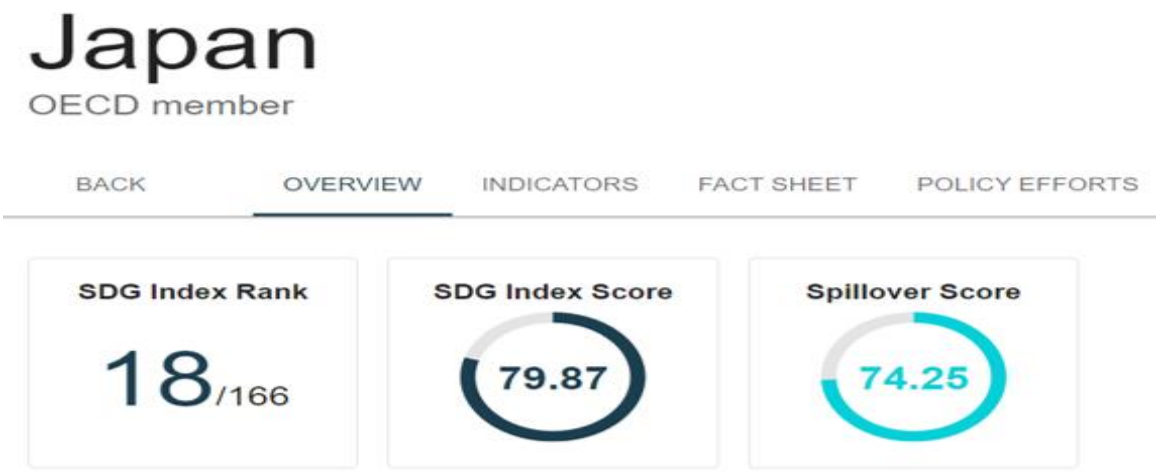


Figure ii: This figure shows Japan's most recent SDG Index (Source: Sustainable Development Report, 2024)

In this regard, partnership and collaboration with citizens, companies, educational establishments such as universities and schools, and local governments (such as Kobe City, Kameoka City, Fukui Prefecture, Machida City, and Miyakajima City) under the **commitment to SDGs 6 (clean water), 12 (responsible consumption), and 13 (climate action)** allows the government and governmental and nongovernmental initiatives tp work together under a common socio-environmental goal. A citizen-initiative aspect of the project is also related to the grassroots understanding of sustainability issues openly and strategically. Notably, the project members are open to input and collaboration with many forms of societal actors. To this end, the project recently launched a new 'local government alliance (jichitai)', and this is supported by the Ministry of Environment in Japan.

4. Formalized institutional channels for citizen participation and community mobilization

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☒ Documents
☐ 0.66	☒ High confidence	☒ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Since the 3/11 disaster and the 2016 Paris Climate Agreement, environmentally-focused civic partnerships and cooperation have become more prevalent in Japan than ever before. Environmental civil society organizations now engage in knowledge-sharing and lobbying activities, reaching out to the broader public. Well-known civic organizations, such as Kiko Network, have regular access to governmental

institutions, maintaining a presence in policy agenda setting and formulation. These activities are primarily climate-related, with the government showing openness to local renewable energy initiatives and projects. However, the energy issue in Japan remains contentious, influenced by both geopolitics and nuclear controversies. In contrast, the issue of plastic waste, which is also part of the government's environmental agenda, tends to be less controversial, and the government is more open to involving citizens in addressing it. Citizens mobilizing against plastic waste are often viewed as more innocent and sympathetic than those protesting energy projects, thereby providing more opportunities for furthering citizen engagement in environmental debates, particularly around the climate crisis.

Legal, industrial, and local efforts are ongoing. The Japanese government actively supports environmentally friendly policy frameworks, such as the Act on Promotion of Resource Circulation for Plastics (enacted in 2022), which emphasizes the 3R principle: Reduce, Reuse, and Recycle. Industries are also becoming more aware of the waste issue, offering sustainable products. For example, BRITA Japan, a household water purifier manufacturer, encourages the use of thermoses and bottles at home. Local governments like Kameoka City in Kyoto Prefecture and Kesennuma City in Miyagi Prefecture are working toward a sustainable society by reducing marine plastic waste. Other local initiatives include the Mirai-Sozo-Bu and Pla-Catch Projects (ISHES, 2021).

For mymizu, formal institutions and organizations are receptive to the project's goals and activities. This has created a symbiotic relationship where mymizu promotes its business activities, gains recognition, and meets its goals, while formal institutions also tackle the waste issue with resources beyond their own institutional frameworks. Local governments, in particular, mobilize support, especially in an aging society, by providing water refill stations to help protect local residents from heatstroke and dehydration. According to our observations and informants, factors supporting this claim include accountability, trust-building through open data sharing, a willingness to address the challenging environmental issue of plastic waste, organizational commitment to solving the ongoing problem, and awareness-raising activities in a society where plastic use is deeply embedded in daily life. Furthermore, the project aims to partner with local governments to increase water refill points at the local level, thereby fostering partnerships that engage citizens and **promote a lifestyle aligned with nature**. In fact, this is also aligned with the Satoyama initiative which promotes "societies in harmony with nature" through biodiversity conservation and human well-being.

It is important to note that mymizu has not focused directly on formalized channels, as the project primarily mobilizes citizens, particularly consumers, by engaging them as a focus group. The project facilitator has made significant efforts to reach out to all relevant and affected actors.

The project is **entirely citizen-driven, leveraging business practices such as maximizing partnerships with both family-owned small businesses and globally recognized companies**. The increasing media presence and growing recognition of the project have helped to facilitate the acceptance of its socio-environmental impact, influencing end-users. While the project primarily focuses on Japan, it now has users across 50 countries, including Singapore, Australia, the US, and parts of Europe, particularly Germany. Although a wide-scale behavioral change within the context of plastic usage is not easy, the public is receptive and supportive, and this is also supported by the local governments (as mentioned above).

5. Mechanism for ensuring top-down government and bottom-up social accountability

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☒ Medium confidence	☒ Documents
☒ 0.66	☐ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

A bottom-up approach is observed through involved citizens, and small and large-scale businesses, among others. A top-down approach is observed through participating local governments and municipalities. Regular communication with participating actors from businesses and municipalities can be a good example of accountability. Our interviewee mentioned that one thing they do for reporting and accountability is to provide annual Impact Reviews (https://www.mymizu.co/blog-en/2023-year-of-impact) as well as hosting updates for their community, such as on the 4th birthday party, which often become a platform for open discussion/town hall-style meetings (https://www.mymizu.co/events-ja/4th-birthday-event)

They also use tools such as newsletters, social media (Instagram, Facebook, Twitter, LinkedIn, YouTube), as well as homepage and website updates. However, we do not have sufficient information regarding the existence of a solid accountability mechanism that ensures actors are fully engaged and in line with institutional norms and rules.

6. Strategic agenda-setting by means of translation

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☒ Documents
☐ 0.66	☒ High confidence	☒ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

The project facilitators and members collaborate at every stage of the project, from agenda setting to implementation. During their meetings, they discuss key questions such as: What are we going to do? What's the key goal for this year? How do we break it down into specific phases, such as the first, second, third, and fourth quarters? This approach applies to their tech, financial, and communications goals. The team works together, sharing ideas openly and strategically.

In addition, since the project focuses on the plastic issue, which is a growing concern in Japan, its **green SDGs orientation and sustainability goals** make it known and attractive. Collaborators, funders, and partners from all sectors (private, government, and civil society) are increasingly engaged in addressing SDGs and working towards solving sustainability challenges. In this regard, nearly every respondent reported that the SDGs orientation plays a motivational role at most stages of the project.

7. Construction of narratives about successful multi-actor collaboration

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☒ Documents
☐ 0.66	☒ High confidence	☒ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

The main narrative for the project centers on the idea that "change comes when lots of people take coordinated action, regardless of how big or small." As a co-created platform and movement focused on tackling plastic waste, the project depends on the participation of hundreds of thousands of people to drive impact forward together. In other words, **multi-actor engagement and collaboration through coordinated actions are crucial to achieving a desired socio-environmental change**. To this end, our interviewee with the co-founder emphasized that "*Our entire philosophy is 'let's collaborate with as many different stakeholders as possible'. So I wouldn't say I'm the main committed person. I'm just one of many people leading different projects with different people and we do that with a positive message.''*

One of the most important elements of the mymizu project is focusing more on the positive aspects of collaboration than on the negative aspects of the ongoing issue of plastic waste. By emphasizing positive images of togetherness, solution-creation, and changing the status quo, the project becomes more attractive than simply reacting negatively to the plastic issue. Even on the mymizu website, the images and text are constructive. This approach is particularly motivating for young people, especially in Japan, where there is a growing interest in SDG-related discussions among high school and college students.

A clever approach for the mymizu project to achieve wider recognition is to strategically center the terms of 'people, sustainability, and action' to tackle plastic waste. 'People' refers to the participation of multiple actors, including volunteers and donors; 'sustainability' refers to living in harmony with nature; and 'action' serves as an invitation to collaborate and address this issue together. This is one of the key factors behind the project's success, which was created just before COVID-19 by two individuals with limited resources. Despite the pandemic posing significant challenges to progress and mobilization, the project has had a positive experience and productive outcome in fostering multi-actor collaboration.

As a result of the increased recognition and productive outcomes, the project has made remarkable progress in recent years, achieving an impressive number of partnerships. The mymizu network now includes 2,500 refill partners (partner stores) and over 13,000 refill spots across all 47 prefectures of Japan (including both partner stores and public water points). Moreover, an official partnership allows for the provision of free water (with registration required). The project members don't sell water server machines. The shop or cafe orders and sets up their own water points. Overall, this suggests that the project's strategy was effective and that its storyline succeeded in terms of gaining people's acceptance, recognition, and active participation in such a short time.

Furthermore, the project leaders actively seek collaborative opportunities, engaging both global large companies and small family-run businesses, according to our informants. Ongoing and open

communication allows project participants to discuss challenges and opportunities in an inclusive and participatory manner. While we do not have the exact number of volunteers involved in the project, we have observed an increase in volunteerism and a collaborative spirit, especially among young people.

Importantly, our respondents mentioned that they aim to **accelerate positive change and build a world with cleaner oceans, healthier ecosystems, and happier people**.

8. Building or harnessing institutional platforms and arenas

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☒ Medium confidence	☒ Documents
☒ 0.66	☐ High confidence	☒ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

The mymizu project members benefit from several platforms to enhance their reach and impact. In addition to local initiatives, they are active in university forums, networks, and initiatives aimed at promoting the idea of 'sustainable campuses' in Japan. For instance, the UTokyo GX Student Network (GXSN), which engages students from the University of Tokyo, the most prestigious university in Japan, successfully installed 13 water refilling stations in collaboration with mymizu, despite facing some administrative challenges.

Both digital and physical platforms create spaces for pluralistic participation. By utilizing various digital platforms in both English and Japanese, such as email, Facebook, LinkedIn, Twitter, and others, the project has gained global accessibility. The project has also been featured on platforms like TED Talk, Netflix, and CNN, which have significantly boosted its visibility, popularity, and institutional networks, leading to more collaborative opportunities with local governments and international companies.

9. Provision of access to blended financing

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☒ Medium confidence	☒ Documents
☐ 0.66	☐ High confidence	☐ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

The mymizu project is crowdsourced and sponsored by companies, with a key platform called the 'mymizu Challenge'. This is a paid service designed for companies, institutions, and organizations to track their plastic production worldwide. This platform not only helps generate revenue but also fosters collaboration and raises awareness among consumers. It encourages partnerships with organizations and foundations,

as well as contributes to scientific consensus on the relevant environmental issues, particularly concerning plastic waste. Through this model, the project builds a network of stakeholders actively engaged in sustainability efforts. The project also has monthly supporters and donors, and grant-providing companies regularly.

According to the discussion with the cofounder, the annual revenue of Social Innovation Japan, which includes the mymizu project, tends to range between 20-30 million yen. However, it is challenging to pinpoint the exact revenue generated by mymizu alone, as there is significant overlap with other activities and projects under Social Innovation Japan. Nonetheless, mymizu accounts for the majority of the overall budget. Additionally, the project receives donations from both individuals and organizations, which are critical for sustaining and expanding its impact. These donations support various aspects of the project, including the mymizu platform (which remains free for users), sustainability education initiatives, and leadership training programs.

10. The capacity to leverage support from authorities to enable local collaboration

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☒ Documents
☒ 0.66	☒ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

From the government side, the new concept of a "Circular and Ecological Economy" has emerged, with policies being formulated to design and build a sustainable society based on principles of circulation and symbiosis. This policy support has led to wider recognition of co-creative approaches and growing participation in the co-creation of a plastic-free society, with the aim of revitalizing affected regions through participatory practices and processes.

There is a two-way support mechanism for local collaboration. Local governments proactively reach out to the project founders and facilitators, creating a mutually supportive dynamic. This is not a one-way relationship; both parties offer and receive support. Mymizu has been successful in leveraging support from high-level authorities, such as the "local government alliance" provided by the Ministry of the Environment (MoE). The MoE has recognized the project, further strengthening its legitimacy and fostering partnerships for broader impact. For example, they are the winner of the MoE Good Life Award. Similarly, the MoE gave them the Minister of Environment Award / Zero Ocean Waste Award

Importantly, the project members maintain a **continuous and close dialogue with authorities** and have affiliations with significant platforms, such as the World Economic Forum Global Future Council on Japan, the Ministry of Environment's Plastics Smart initiative, and the Osaka Expo 2025.

However, due to the lack of confirmation or specific data from the actors and members of the Ministry of Environment (MoE) regarding how the MoE reaches out to mymizu, there remains some uncertainty about the highest scoring for this Governance Factor (GF). This lack of clarity raises questions about the extent of MoE's engagement with the project.

11. Inclusion and empowerment of relevant and affected actors

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☒ Medium confidence	☒ Documents
☐ 0.66	☐ High confidence	☒ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Although the project's global reach has expanded, the core focus on engaging local citizens and increasing water points at the local level remains essential for its continuation and growth. This engagement helps **build capacity in smaller regions by involving local people**, ensuring that the project is both relevant and sustainable.

For key stakeholders with knowledge, skills, and resources, the mymizu platform facilitates transparency and accountability through the use of open data. Supporters from various fields, including designers, software engineers, and product managers, contribute to the platform's development and success.

However, there is a lack of detailed information regarding the direct impact on certain affected groups, such as fishermen on beaches who might benefit from cleaning activities. While these activities have a broad positive impact, the exact outcomes for specific marginalized groups are not yet fully documented.

The process of involving stakeholders in the project is largely organic, driven by word of mouth. Businesses, including shops, offices, and hotels, can easily sign up to participate, often by simply adding a photo or registering as participants. The project has successfully engaged thousands of individuals through its app, with impressive environmental outcomes, such as the reduction of over 750,000 PET bottles (by December 2024) through the refilling function. According to Zero2 carbon calculation methodology, this allows to save 712.5 kilograms of carbon dioxide emissions (0.95 carbon saving per bottle).

Despite the clear empowerment and inclusivity of the project, particularly for young people in urban areas like Tokyo, there is some hesitation about categorizing this aspect as 'high' at this stage. This uncertainty stems from the lack of detailed insights into the direct effects of these inclusive activities on marginalized or affected groups, such as those living near beaches or directly impacted by local plastic waste.

12. Clarification of interdependence vis-à-vis common problem and joint vision

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☒ Medium confidence	☐ Documents
☒ 0.66	☐ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Interdependence arises from the **shared recognition of urgent issues**, such as plastic waste, which demand collaborative efforts. According to our respondents, addressing these critical concerns often involves prioritizing urgent matters and facilitating joint brainstorming sessions among internal project members, with support from project leaders. Clarifying the key issues at hand and empowering relevant actors are essential for fostering a communication- and collaboration-driven problem-solving process.

Plastic waste, being a widespread issue, cannot be solved overnight or by any single agency alone. Tackling this challenge requires extensive synergy and cooperative actions from stakeholders, each playing a complementary role. Every actor brings their own unique skills, resources, and perspectives, contributing to the collective effort and aligning with the project's broader goals. This collaborative approach allows the project to address the complexities of plastic waste more effectively, with each participant adding value to the solution.

13. Trust-building and conflict mediation

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☒ Medium confidence	☐ Documents
☐ 0.66	☐ High confidence	☒ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

One of the key enabling factors behind the project's success—measured by its acceptance, progress, and overall efficiency—is the **shared understanding, respect, and mutual trust among all involved**. Our observations and interviews reveal a strong sense of optimism, consensus, and trust-building at the heart of the project. This trust spans both micro and macro levels, involving everyone from environmental activists to governmental representatives. The project facilitators play a crucial role in proactively establishing and maintaining this trust consistently.

Another important factor contributing to the project's success is the influence of socio-cultural elements. In Japanese culture, peace-building and conflict avoidance are highly valued, which shapes the project's solution-oriented approach. There is no indication of mistrust toward the government; rather, there is mutual trust between the government and the project members. The project members are seen as

facilitators who help implement the government's environmental protection goals, fostering an optimistic relationship between the project and government actors, including policy elites.

In addition to organizational and socio-cultural factors, the **narratives and positive messaging presented in the media** and during activities play a significant role. The way the issue is framed is key. Rather than blaming those responsible for creating waste or highlighting the problem through a victimized lens, the project focuses on positive messages and collaborative solutions. Respondents frequently emphasize the collective nature of the effort, using phrases like "let's" to convey inclusivity and shared responsibility. This approach of promoting sustainability-oriented solutions with positive, engaging messages has contributed to the project's appeal.

Lastly, for our understanding, mistrust and conflict feed into each other, but without the trust built among members and toward the facilitators, the project would not have flourished or grown. Trust is foundational to the project's success and sustainability.

14. Use of experimental tools for innovation

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☒ Documents
☐ 0.66	☒ High confidence	☒ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Accessing and exchanging knowledge is crucial for the mymizu project members, and organized hackathons for the tech community provide a valuable platform for this. These hackathons bring together engineers, designers, and other stakeholders for collaborative, one-day events focused on discussing and designing new products. Hackathons enable rapid innovation, foster collaboration, and encourage the sharing of expertise among participants.
Recent hackathons that the mymizu project members have been involved in include:

a) mymizu Open Source Community Hackathon #2 with Code Chrysalis in 2023
b) mymizu Open Source Hackathon with Code Chrysalis in 2022

The mymizu application, as part of the sustainability movement, serves **not only as a user-oriented tool but also as an experimental platform that enhances the project's collaborative and coordinated efforts with a growing number of participants**. By providing an easy-to-use interface for finding and promoting water refilling stations, the app fosters engagement across different sectors and communities, driving sustainability in a way that aligns with the project's mission.

The mymizu case demonstrates that the app, as an innovative tool, plays a key role in facilitating joint efforts among diverse stakeholders with shared environmental goals. Its design creates task

interdependencies throughout the various stages of the project—from software development to daily use by consumers—which strengthens collaboration across boundaries. The app's ability to support both internal and external stakeholders has allowed the project to scale, as more people and organizations become involved.

Indicators of the project's success include the expanding network of water refilling stations and the continuous growth in the app's usage. These metrics reflect not only the effectiveness of the mymizu platform in achieving its goals but also the broader impact of promoting collaborative, sustainable practices at the local and national levels.

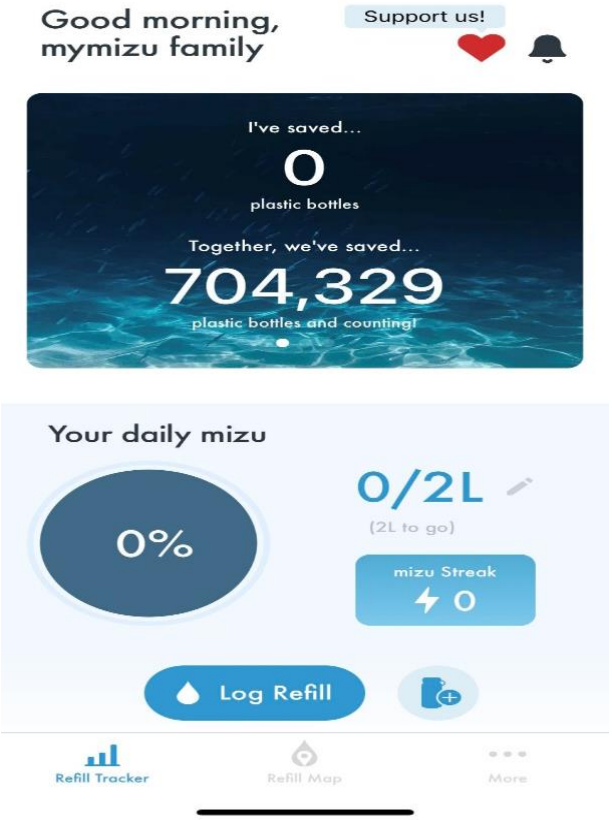


Image iv: The screenshot of the mymizu application was taken by Pinar Temocin. The application which shows information about the refill spots worldwide, including spots added by the users and partner shops as well as cafes provides the information about updated number of plastic bottles saved.

15. Ongoing critical self-reflection and learning (i.e., process and/or developmental evaluation):

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☒ High confidence	☐ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

The mymizu project members place a strong emphasis on **evaluating the process and assessing the accessibility and quality of the project**. Regular process evaluations, involving different actors, ensure continuous improvement and foster a higher degree of collaboration. Feedback is a critical element of this evaluation process, as it helps identify areas for refinement and ensures that the project remains effective and efficient.

To gather valuable insights, the project regularly conducts surveys. For example, surveys are sent out to partner stores to collect basic data on their involvement and satisfaction. Additionally, after each event, feedback is solicited through surveys, allowing participants to share their opinions. This feedback loop enables the project leaders and facilitators to incorporate the input received and make necessary adjustments, ensuring that the project evolves in response to the needs and perspectives of its stakeholders.

16. Exercise of facilitative leadership:

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☒ Documents
☐ 0.66	☒ High confidence	☒ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

The project is led by two co-founders, one of whom has strong leadership and communication skills. This co-founder is an award-winning social entrepreneur, recognized as an Innovator Under 35 Japan by MIT Technology Review. Additionally, the co-founder is affiliated with Social Innovation Japan, where they focus on sustainable and equitable development. Our engagement with the co-founder revealed that their leadership skills are crucial for the project's success, as confirmed by other informants.

A key governance factor in the project is leadership centered on facilitation and strategizing actions that align with the interests of all parties involved. The co-founder maintains an active and energetic dialogue with other actors, promoting a synergistic approach that encourages cooperation. This inclusive leadership style helps secure both moral and financial support, maximizes organizational resources, fosters supportive partnerships, and confidently promotes the project's brand and products.

Our observations also highlight the co-founders' facilitative leadership approach in several ways. They create an open space for all team members and participants to express and share their thoughts during meetings. They also facilitate online discussions, encouraging brainstorming and collaboration among participants and students. Furthermore, the co-founders are receptive to meaningful feedback from stakeholders, welcoming input in a professional yet friendly manner.

Outcome variable: Successfully co-created green transitions

The outcome variable 'co-created green transitions' will be scored in two parts. First, 'co-creation' will be scored based on an assessment of whether the participants in the initiative, project or process engaged in collaborative problem-solving that fostered creative ideas and innovative solutions (data will consist of survey data combined with interviews and documents). Next, 'green transitions' will be scored based on an assessment of whether the initiative, project, or process has fulfilled or is expected to fulfill its green goals, ambitions and aspirations (data will consist of survey data combined with interviews and internal and/or external evaluation reports, including scientific publications).

The scoring of this variable is done in two parts:

1. *Is the developed solution based on collaborative problem-solving spurring creativity and innovative solutions?*
2. *Does the developed solution engender a green transition?*

This scoring should be conducted based on both the survey and complementary green outcome evaluations. Please consult Sections 4.4 and 6.10 in the Research Protocol for more details.

1. Is the developed solution co-created?

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☐ Survey
☐ 0.33	☐ Medium confidence	☒ Interviews
☐ 0.66	☒ High confidence	☒ Documents
☒ 1		☒ Observations

Please elaborate on the reasoning behind your scoring for this part of the governance factor, including the data sources used for the scoring.

Our observations, document analysis, interviews, and both online and in-person discussions reveal that the project has been collaboratively developed, inclusive, and innovative since its inception. Several factors contribute to this development, including commitment, partnership, openness, inclusion, and strong leadership. The project has expanded in terms of participating members, involved stakeholders, and organized events. It has been inclusive, with a wide range of participants—from individuals and university students to local government members. Additionally, the project has demonstrated socio-technical innovation, with its application serving not only domestically but also internationally.

Overall, the co-creation practices and circular economy principles at the heart of this project take various forms, increasing mutual benefit and strengthening community ties. These include:

a) Refill Networks: Encouraging the reuse of water bottles instead of purchasing single-use plastic ones, reducing waste and extending the lifecycle of products.
b) Eco-Friendly Product Design: Utilizing sustainable and biodegradable materials in product development.
c) Sustainable Partnerships: Collaborating with businesses that prioritize circular practices, such as packaging-free products.

d) Community-Led Refill Locations: Enabling local users to identify and submit new refill station locations through the app, fostering local engagement.
e) Participatory and User-Centered Workshops: Allowing participants to share local and regional interests and experiences, and suggest new features or improvements for the project.
f) Participatory Financing: Funding and crowdsourced support through monthly supporters, donors, and grant-providing companies.
g) Localized Campaigns: Organizing campaigns in collaboration with communities to ensure social relevance and cultural acceptability within different local contexts.
h) Empowerment through Ambassador Programs: Developing a network of ambassadors who promote the project, host events, and lead local/regional initiatives, fostering mutual learning.
i) Educational Workshops and Webinars: Providing educational and workshop opportunities for community members to learn about sustainable living practices, the environmental impact of single-use plastic waste, and the benefits of reusable bottles.
j) These practices align with the project's commitment to building an inclusive, sustainable future while leveraging the power of community collaboration and circular economy principles.

2. Does the developed solution engender a green transition[1]?

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☐ Survey
☐ 0.33	☐ Medium confidence	☒ Interviews
☐ 0.66	☒ High confidence	☒ Documents
☒ 1		☒ Observations

Please elaborate on the reasoning behind your scoring for this part of the governance factor, including the data sources used for the scoring:

Various documents and reports analyzed for this research have highlighted the critical aspects of co-creation within the mymizu project. The project emphasizes its collaborative nature, with the lead acknowledging the participation and contributions of all members and actors involved. This approach aligns with SDG 17 – "Partnerships for the Goals," reflecting a shared responsibility and cooperative effort to meet the project's objectives.

One limitation of this research was the difficulty in conducting a comprehensive survey, either online or in-person, due to challenges in accessing participants. The decentralized nature of the project made it challenging to distribute an online survey to all members, and the small scale of the project—despite its global reach and high number of participants—meant that in-person surveys were not feasible. However, we remained in close contact with those involved in the project over several months, receiving feedback whenever possible. We also relied on other data sources, such as document analysis in both English and Japanese, semi-structured interviews with project members, and ongoing collaboration with the co-

[1] By "green transitions", we mean objectives and aspirations that correspond to at least one of the Green SDGs (SDG 6, 7, 11, 12, 13, 14, 15). The project does not have to refer explicitly to the green SDGs, but the project's green objectives

founder over the course of a year. These combined data sources allowed for a comprehensive and detailed analysis to assess whether the mymizu project contributes to the green transition in Japan.

Based on these sources, we can confidently claim that the mymizu project embraces co-creation through strong leadership, active communication, and collaborative problem-solving. The project has fostered meaningful and equal participation from all involved, which has been crucial to its success in achieving its objectives. There has been no evidence of skepticism or hesitation; on the contrary, we observed a high level of optimism and enthusiasm when engaging with participants. This is largely due to the widespread recognition of the problem in society, the readiness to address it collectively, the supportive institutional environment, the eagerness of young participants, and the popularity of SDGs in Japan.

The coordinated and collaborative approach has stimulated creative idea generation, fostered actions, and produced positive outcomes since the project's inception. It has also led to the development of innovative solutions, shaped by social conditions, existing supportive institutions, actors, and discourses, as well as the growing number of members. All of these factors contribute to the successful green transition driven by the project.

Please list all the informants you have interviewed for the case study (list project role + interview date):

Participants:

a) Co-founder, meeting online and in person several times since 2022. We have been in close communication and received huge support for the project since the beginning and until now. The co-founder provided a substantial amount of materials and responded to any questions and concerns whenever possible.
b) Anonymous, employee in IKEA in November 2023
c) Anonymous, employee in LUSH in November 2023
d) Anonymous, University of Tokyo, in-person interview, involved in sustainability project at university campus and involved in projects of mymizu
e) Anonymous, Refill Partner Community Management & Business Development Support of mymizu project (online interview and several email correspondence) in January and February 2024
f) Anonymous, Digital marketing, in-person meeting and email correspondence for questions

Selected interview questions:

a) Who got the initial idea to bring together public, private, and civic actors to find a green and sustainable solution to the plastic waste issue?
b) Who are the main participants in the meetings?
c) How often do the project members meet and what platform do you largely use?
d) In what ways does the mymizu project leverage support from authorities & local governments/institutions that increase the legitimacy and acceptance of mymizu?

Please list all the observations you have made (type of meeting/workshop/etc. + observation date):

Visiting IKEA and LUSH to see the water refilling spots (November 2024) and discussing with the staff to see the motivations for the collaboration with mymizu project

Visiting the water refilling spots at the University of Tokyo Komaba Campus (January 2024) – This visit helped to see students' motivations to refill their bottles and provided an opportunity to discuss the factors behind and what they think about having the refilling spots on campus

Attending several online mymizu gathering in the year of 2023, such as 4th year anniversary meeting, and allowed us to observe the participants and their motivation for their involvement in the mymizu project.

Discussion with an academic at Tokyo University who invites the cofounder to his class so that students can learn from his experience and implement their own team projects. This helped us assess how impactful the project on students understanding.

Please list all the documents you have analyzed (document name + source + year):

Articles and pieces published in English:
The Japan Times: https://sustainable.japantimes.com/roundtable/35
Arab News: https://www.arabnews.jp/en/business/article_37571/

Academic papers:
François KK, Goi HC. Business Model for Scaling Social Impact towards Sustainability by Social Entrepreneurs. Sustainability. 2023; 15(18):14027.

Videos:
NHK World feature (15 minutes): https://www3.nhk.or.jp/nhkworld/en/ondemand/video/2058946/
Asian Development Bank: https://youtu.be/fKoox_gRM60?si=WxEB1Q02PN5Mng38&t=1330
Asia Productivity Organisation: https://youtu.be/Tfx8iuBabLo?si=1FDE8dl-8p3AwoL4
CNN: https://youtu.be/mio2sxh5RH4?si=Gzq1PoW8Ft8H36UR
Mymizu Hackathon: https://youtu.be/X2nPFf0h7II?si=F6A-Ge931m_tXsaq

Others:
Ambassador Program: https://www.mymizu.co/ambassadors
Asia-Europe Foundation: https://asef.org/wp-content/uploads/2021/06/Plastic-Case-Studies_ENVforum.pdf
City-to-City Collaboration Program, MoE https://www.env.go.jp/earth/coop/lowcarbon-asia/english/project/
Concerning the Act on Promotion of Resource Circulation for Plastics, Gov. of Japan: https://www.gov-online.go.jp/eng/publicity/book/hlj/html/202205/202205_09_en.html
Forbes Japan, 2020: https://forbesjapan.com/articles/detail/37609
G20 Report on Actions against Marine Plastic Litter: https://www.env.go.jp/content/000086490.pdf
Hackathon events: https://www.mymizu.co/partners-en & https://www.mymizu.co/en/events/open-source-web-app-hackathon-july-2022

IGES (Institute for Global Environmental Strategies), 2022: https://www.iges.or.jp/en/pub/japans-plastic-waste-management/en
Japan Partnership for Circular Economy (J4CE): https://j4ce.env.go.jp/
Japan's Initiatives on Plastics by ISHES: https://www.ishes.org/en/happy_news/2021/hpy_id002945.html
JICA signs MoU with Alliance to End Plastic Waste to cooperate on plastic waste management: https://www.jica.go.jp/english/information/press/2020/20210318_30_en.html
Kobe University Symposium: https://www.office.kobe-u.ac.jp/ipiep/materials/EuropeanCenterSymposium2022/WS-C_RobinTakashi-Lewis.pdf
MoE Project in Fukushima in FY 2022: https://www.env.go.jp/en/press/press_00292.html
Mymizu 4th Birthday party: https://www.mymizu.co/events-ja/4th-birthday-event
Mymizu on CNN | mymizu がCNNニュースに紹介されました: https://www.youtube.com/watch?v=mio2sxh5RH4
Monthly supporter: https://www.mymizu.co/en/monthly-supporter
No Plastic Japan: https://noplasticjapan.com/
2022 Impact Highlights: https://www.mymizu.co/blog-en/2022-year-of-impact
2023 Impact Highlights: https://www.mymizu.co/blog-en/2023-year-of-impact
Partners & Collaborators: https://www.mymizu.co/partners-en
Plastic Smart: https://plastics-smart.env.go.jp/interview?interview=57 & https://www.gov-online.go.jp/eng/publicity/book/hlj/html/201906/201906_09_en.html
Plastic Management Index (PMI): https://backtoblueinitiative.com/plastics-management-index/#country-profile
Plastic waste management in the City of Kitakyushu: https://www.jesc.or.jp/Portals/0/center/training/12thasia3r/3-(1)12thasia3r_Kitakyusyu.pdf
SDG Development Report, 2024: https://dashboards.sdgindex.org/profiles/japan
Solid Waste Management and Recycling Technology of Japan ― Toward a Sustainable Society https://www.env.go.jp/en/recycle/smcs/attach/swmrt.pdf
World Population Review (WPR): https://worldpopulationreview.com/country-rankings/plastic-pollution-by-country

Please note the response rate for the survey/measurement of outcome variable:

Several semi-structured interviews were carried out with 6 people (especially with the co-founder interviews took part several times since 2023) and the response rate is 100%.