

Japan’s Integration of All-Hazard Resilience and Covid-19 Countermeasures

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Introduction

In Japan, Covid-19 has led to an accelerating diffusion of all-hazard, disaster-resilient, policy integration. This paper shows that Japanese experts not only built a resource-efficient Covid-19 response, but are also using the crisis to ramp up Japanese-style collaboration on resource-efficient and sustainable communities, both in Japan and overseas. In a year when action on the climate challenge everywhere risks being derailed, Japan’s initiatives are an important indicator of how it remains possible to stay on track. Japan’s measures further integrate the UN 2030 Agenda’s three pillars of the Paris Agreement, Sustainable Development Goals (SDGs), and the Sendai Framework of Disaster Risk Reduction (SFDRR). In short, Japan is using the pandemic as yet another opportunity to accelerate transformative industrial policy.

Japan has waged a surprisingly aggressive and apparently successful campaign against Covid-19. In the May 7 *Financial Times* former head of the UN Framework Convention on Climate Change, Christiana Figueres, included Japan among the few countries that “acted in line with the risks.” A number of previous vocal critics of Japan’s response have conceded its success in preventing an outbreak “on the scale seen in many Western countries” (Normille, 2020). One key to Japan’s achievements on Covid-19 is an “expert-led approach” (Du, 2020): experts implemented countermeasures that maximized the effective use of constrained resources in the midst of a complex institutional environment and still-confusing scientific data on what is best practice. Those lessons apply to Japan’s smart-city decarbonization and other goals as well.



Doing Public Goods

While fighting Covid-19, Japanese policymakers invest in a wide range of smart projects to reduce the cost of crucial public goods, including diversifying access to the massive increase in critical raw materials (e.g., cobalt, lithium, rare earths and copper) essential to sustainability (World Bank Group, 2020), further decarbonizing the energy economy, and bolstering multilateral collaboration. Indeed, while most other countries are still debating whether to aim at a “green recovery,” Japan is already investing heavily in the governance and technology of decarbonizing and disaster-resilient transformation.

Countering Covid-19

Table 1 COVID-19 Fiscal Stimulus, % GDP (as of May 31, 2020)		
Country	Fiscal Stimulus (Amount)	Fiscal Stimulus (% GDP)
Japan	JPY 234.2 trillion (USD 2 trillion)	42.2
US	USD 2.9 trillion	14
Germany	EUR 913 billion	26.9
France	EUR 425 billion	19
China	RMB 3.6 trillion	3.5

Source: Japanese Cabinet Secretariat, 2020; IMF, 2020

The evidence of Japan’s proactive approach includes its largely misunderstood fiscal stimulus. Table 1 shows that as of May 31, Japan's Covid-19 fiscal countermeasures exceed 234 JPY trillion (about USD 2.0 trillion), roughly 42% of GDP. This total is the combined result of two major stimulus packages, both just over JPY 117 trillion, in March and then in May of 2020. Back in March, when Japan’s first headline-grabbing JPY 117 trillion Covid-19 stimulus was announced, much expert commentary pointed to the fact that it was not new finance. They noted that the JPY 117 trillion stimulus (passed in April) built on Japan's JPY 26 trillion December 2019 fiscal stimulus, displayed in table 2. Their point was that the math of the April stimulus was exaggerated and misleading (Takemoto and Nakagawa, 2020), though the Japanese government did not hide the continuity from

December.

Table 2 December 2019 Fiscal Stimulus (JPY trillion)		
Measure	Public Spending	Total Public/Private
NRP and Disaster Reconstruction	5.8	7
Economic Risk	3.1	7.3
Post 2020 Olympic Games	4.3	11.7
Total	13.2	26

Source: Japanese Cabinet Secretariat, 2020

Lamentably, such criticism directed at the math of the April Covid-19 stimulus deflected attention from the December 2019 package’s content and its role in framing ongoing efforts. To be sure, the December 2019 stimulus had nothing to do with Covid-19, per se. Rather, as I briefly detail below, it focused on decarbonizing, all-hazard resilience in the wake of unprecedented floods, blackouts, and the other shocks Japan endured during 2018 and 2019. This emphasis on content is very important, as in March and April, World Bank and other experts were urging countries to include sustainability goals in their fiscal stimulus packages (Hammer and Hallegate, 2020). By then, Japan was already battling Covid-19 and climate change at the same time thanks to building on the December 2019 stimulus.

Table 2 shows that there were three key pillars in the December 2019 stimulus: National Resilience Plans (NRP) and disaster reconstruction; economic risk countermeasures; and “Post 2020 Olympic Games” legacy investment in Society 5.0, SDGs-inclusive society. The NRP projects

emphasize that "coping with climate change is also conducive to disaster prevention." Hence, investments in more robust communications, water, transport and other critical infrastructure is complemented with Net Zero Energy Buildings. In tandem, the Society 5.0/SDG initiatives explicitly target zero-emissions technology (such as natural refrigerants), energy efficiency, and related decarbonization (Japanese Cabinet Secretariat, 2019). Of course, the 2020 Olympic Games have since been postponed to 2021, and in the end may not even be held. But that hardly means the investment in critical infrastructures is wasted, since they increase Tokyo's holistic resilience and its capacity to accelerate its "Zero Emissions Tokyo Strategy" ambitions to decarbonize (DeWit, Djalante and Shaw, 2020).

We have seen that this initial December 2019 fiscal stimulus was more than quadrupled in the first Covid-19 stimulus (of April 20), which brought additional spending on the National Resilience, SDGs and Society 5. detailed above. The expanded package also included JPY 15 trillion for restructuring supply chains to re-shore or at least further diversify (e.g., among ASEAN countries) the production of a host of critical raw materials. Moreover, consistent with the December 2019 approach, the April package ramps up digital transformation, decarbonization, and other measures specifically to reduce the risks of future pandemics. It also emphasizes smart, SDG-style multilateral engagement on overseas water systems, public health and other critical infrastructure via Japan's aid agencies plus the IMF, the World Bank, the Asian Development Bank, and other multilateral institutions with whom Japan has a record of close collaboration. Indeed, Japan is the largest contributor to the IMF, and its April stimulus included an additional USD100 million "contribution to the IMF's Catastrophe Containment and Relief Trust as immediately available resources to support the Fund's capacity to provide grant-based debt service relief for the poorest and

most vulnerable countries to combat COVID-19" (Georgieva, 2020).

And then on May 27, the Japanese government doubled the stimulus yet again, to the over JPY 234 trillion total shown in table 1. It remains too early to track how that additional fiscal boost, to an unprecedented 42% of GDP, will be used to further enhance all-hazard resilience. The early evidence looks encouraging, but the question deserves detailed examination at a later date.

The Collaborative Industrial Policy Context

Japan's smart mitigation and adaptation measures are expanding within a larger holistic paradigm of collaborative industrial policy (DeWit, 2019). Japan's "Society 5.0" industrial policy regime predated Covid-19, and indeed was heavily funded in Japan's pre-pandemic, December 2019 stimulus. Society 5.0's policy arms include such critical cyber-physical linkages as digitalization in smart cities, "post 5G" next-generation communications, remote-sensing for disaster risk reduction, 3-D mapping for compact cities, monitoring and controls for integrating variable renewable energy, and other means to bolster evidence-based collaborative governance. Japan's Society 5.0 is also directly linked to the 2030 Agenda's Sustainable Development Goals (SDGs). Indeed, Japan's approach to SDGs initiatives appears to be unique among the developed countries: its multi-level SDGs collaboration deliberately uses the SDGs' 17 goals and 169 targets to focus local government projects on myriad domestic challenges in combination with overseas engagement and contributions. In short, Japan does not see SDGs as external aid but rather as a platform for integrating sustainable domestic and overseas development (Seki, 2019).

As is shown in Table 3, Japan has organized a broadly inclusive Local SDGs Public-Private

Collaborative Platform. The platform includes 453 local governments in addition to most of the national government’s central agencies. It also includes 769 business firms, research institutions, NPOs and other members, bringing the total to 1,235 members as of April 2020.

Source: SDGs Journal, 2020

Member Class	Number
Subnational Governments	453
Central Agencies	13
Private Firms and others	769
Total Membership as of end March, 2020	1,235

Source: SDGs Journal, 2020

Table 4 shows the ongoing results of the Japanese Cabinet Office’s efforts to disseminate best practice. Since 2018, the Cabinet Office has opened a competition for subnational governments to be designated as SDG Future Cities and for particularly well-integrated initiatives to be designated as Model Cases. As of April of 2020, there are 60 SDG Future Cities and 20 Model Cases, indicative of the prioritization of the program and its widespread impact.

Table 4 Japan’s Local SDGs Communities and Model Cases (as of April, 2020)

Category and Year	Number
2018 SDG Future Cities	29
2018 SDG Model Cases	10
2019 SDG Future Cities	31
2019 SDG Model Cases	10
Total Cities and Cases	Cities: 60, Model Cases: 20

A further important platform context for shaping Japanese action is its Smart City Public-Private Collaborative Platform, whose membership is itemized in table 5. Of particular note is the growing number of local governments, at present 114. The platform is yet another venue via which the 2030 Agenda integration of decarbonizing and inclusive Paris Agreement, SDGs, and SFDRR best practices are shared among multiple stakeholders.

Table 5 Japan’s Smart City Public-Private Collaborative Platform (as of March, 19, 2020)

Member Class	Number
Subnational Governments	114
Central Agencies	11
Businesses, Research Centres, and others	357
Business Associations	2
Total Membership	484

Source: MLIT, 2020a

A more recent platform is Japan’s Green Infrastructure Public-Private Collaborative Platform. Table 6 shows that its membership as of March 2020 exceeds 400 local governments, central agencies and other stakeholders. The local government membership includes Sendai

City (the host city for the Disaster Risk Reduction program), Tokyo, and other influential cases. Moreover, the important role of central agencies is coupled with the participation of business, academe, NPOs and other stakeholders whose collective expertise encompasses water, energy, construction, and other areas crucial to designing and implementing comprehensive green-infrastructure solutions. This emphasis on green infrastructure not only helps achieve the 2030 Agenda goals of mitigation, adaptation and inclusive sustainability; it also reduces the burden of future costs for maintain traditional “grey infrastructure” such as levees (Nakamura, et al, 2019).

infrastructures that are essential to holistic resilience in the modern city. It should be no surprise that Japan is doing this, as it confronts innumerable natural hazards plus severe demographic, fiscal and other challenges. Japan has also historically been the leader on international disaster resilience frameworks, which is why the first international framework is the Yokohama Strategy (1994) and the second the Hyogo Framework (2005-2015). The 2015-2030 Sendai Framework of Disaster Risk Reduction (SFDRR) continues this tradition of Japanese leadership, which emphasizes community involvement and integration with other objectives (de la Poterie and Badoin, 2015).

Table 6 Japan’s Green Infrastructure Public-Private Collaborative Platform (as of March, 19, 2020)	
Member Class	Number
Subnational Governments	23
Central Agencies	4
Businesses, Research Centres, and others	150
Individual Memberships	232
Total Membership	409
Source: MLIT, 2020b	

National Resilience is also Japan's program for closely linking national and subnational governments in a rapidly expanding portfolio of national and subnational NRPs that have legal precedence over other plans. NRPs are aimed at bolstering the country’s resilience to natural disasters and other hazards, before they happen, as well as fostering the capacity to recover from such disasters when they occur. Since 2014, there have been 2 iterations (2014, 2018) of the NRP Basic Plan as well as 6 annual action plans that decide and then monitor the planning cycle and the achievement of Key Performance Indicators (KPI). These KPIs include hard measures, such as monitoring hazards via smart sensors, strengthening back-up power for hospitals and other facilities, reinforcing flood-control systems, and hardening critical communications infrastructure. The KPIs also include soft measures, such as skill-building, risk communication, and measures to break down governance silos. In the 2019 revision of the original 5-year NRP basic plan, the number of KPIs had increased to 179. Moreover, Japanese National Resilience has been funded at roughly JPY 5 trillion per year since FY 2018. The investments finance soft and hard measures in addition to training and international engagement.

One of Japan's key governance platforms for designing, implementing and revising integrated policy is National Resilience (DeWit, Djalante and Shaw, 2020). National Resilience predates the 2030 Agenda's SFDRR, and closely parallels the latter’s content by emphasizing all-hazard disaster preparation, building back better, and "whole of government" inclusive collaboration. National Resilience also encompasses smart communications, sustainable energy systems, resilient water networks, and the other critical

Table 7 Increase in Japan’s Local National Resilience Plans (NRPs)		
Administrative Level	April 1, 2019	April 1, 2020
Local Government	190	1,445

Source: National Resilience (2020)

A key test of any such ostensibly collaborative initiative is how well it diffuses and how purposefully engaged the actors are. By April 1, 2020, all of Japan’s 47 prefectures had adopted their own regional versions of the NRP. Moreover, as table 7 shows, 1,445 of Japan’s 1741 cities, special wards, and towns had either adopted their own local versions of the NRP or were formulating plans. This number of local governments doing NRPs was more than seven times the 190 total from a year earlier, April 1, 2019. That startling 760% rate of increase in one year is testament to the rapid spread of comprehensive risk-awareness in Japan. Recent years of unprecedentedly destructive typhoons, floods and other disasters have led to a consensus on the need for comprehensive planning and integrated counter measures. Japan's subnational governments now routinely request increased regular budget and special fiscal stimulus spending on NRP, SDGs, Society 5.0 projects and their integration in the smart city. These fiscal and related requests are articulated collectively through such subnational representative organizations as the National Governors’ Association, The National Mayors’ Association and others.

Table 8 Sapporo City’s 2020 Economic Stimulus-Related Spending (unit: JPY billion)		
Disaster-Recovery and Resilience: 20.9	Resilient Schools	9.36
	Emergency Power	0.24
	Flood and Other	11.32
Future-Oriented Investment: 11.1	ICT in Schools	9.54

Source: Sapporo, 2020

One example of how the December, 2019 fiscal stimulus was used at the subnational level is seen in Table 8 on Sapporo City. The table shows that Sapporo’s 2020 initial spending on economic stimulus, responding to the national government’s December package, focused on close to JPY 19 billion for resilient and smart schools. Resilience schools emphasize enhanced seismic countermeasures in addition to safe water and power supply. Other spending included JPY 11.32 billion on bolstering the city’s waterways, transport networks and other critical infrastructure. This emphasis on resilience is no surprise. Like many of Japan’s subnational governments, Sapporo is aggressive in building on national policy to pursue integrated solutions to disaster, demographic, fiscal, and myriad other hazards. Sapporo was thus selected as one of the SDGs projects in June of 2018, and followed that up in December 2019 by revising the NRP it had adopted in January of 2016. Sapporo had already been undertaking a Compact City Plan from March of 2016, and had also implemented a Smart City initiative from March of 2017. The Sapporo case is illustrative of the permeation of holistic resilience planning to the local community. This local initiative is stimulated not only by central government financial incentives on a scale found in few other nations but also by silobreaking, comprehensive

planning and industrial policy.

Conclusion

This paper has shown that Covid-19 led Japan to accelerate its diffusion of all-hazard, disaster-resilient, and silobreaking policy integration. I have outlined the fiscal and organizational evidence. Sapporo provides one example of the productive use of the fiscal stimulus within Japan's larger context of 2030-Agenda oriented platform institutions. But myriad other examples could just as easily have been adduced to illustrate Japan's inclusion of coping with Covid-19 while building on a larger, pre-existing industrial policy of holistic and transformative resilience. In short, the evidence shows that Japan is already emphasizing mitigation and adaptation in its countermeasures to Covid-19. Attention to this fact could not only help Japan maximize the beneficial impact of its investment, but also help other countries learn how to do holistic, silobreaking policymaking and project implementation.

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