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Japan's Integrated Approach to Human Security

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The Intergovernmental Panel on Climate Change's Fifth Assessment Report (IPCC AR5)[1] on human security identifies "Critical infrastructure and state capacity" as a major concern. The report points out that "Climate change and extreme events are projected to damage a range of critical infrastructure, with water and sanitation, energy, and transportation infrastructure being particularly vulnerable. Climate change is expected to exacerbate water supply problems in some urban areas that in turn pose multiple risks to cities."[2]

Of course, for some observers, Japan seems an unlikely candidate to contribute to human security. The country is insular, governed by conservative nationalists, and ravaged by natural and other hazards. But Japan has long been engaged in bolstering human security through disaster risk reduction. The UNISDR's 2015-30 Sendai Framework on Disaster Risk Reduction[3] is heavily informed by Japanese expertise and experience.[4] And Japan's JPY 5 trillion-plus program of National Resilience – almost certain to exceed defence spending this year – strongly expresses the governance and other goals of the Sendai Framework. Japan's approach is hardly sufficient to cope with climate threats to human security. But Japan affords some important, overlooked lessons in integrating hard and soft infrastructure. Japan's approach maximizes the number of stakeholders and co-benefits, fostering pragmatic collaboration and bolstering human security.

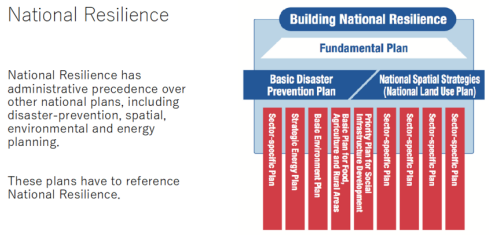

Figure 1: Japan's National Resilience Plan

Source: Japan Cabinet Secretariat (nd: 9).[5]

Since 2014, Japan's imperative of resilient adaptation, for lifeline infrastructures (water, communications, transport), has become institutionalized in a variety of new commissions and agencies, including the National Resilience Promotion Office.[6] The policy is also inscribed in an expanding portfolio of national and subnational "National Resilience" plans that have legal precedence over other plans.[7]

As of August 1, 2018 the Japanese central government's National Resilience umbrella programme is also matched by local programmes in all 47 prefectures and 135 cities and towns.[8] Also, these numbers are growing, fostered by local collaboration and other means to diffuse the programme and facilitate its adoption by cash-strapped and people-poor local governments.

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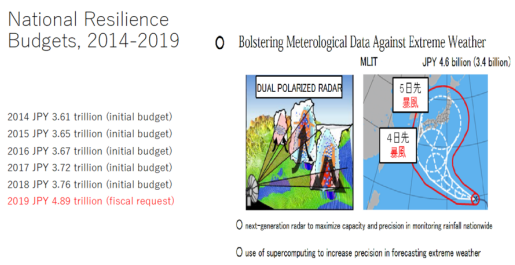

Figure 2: Japan's National Resilience Budgets, 2018-2019

Source: National Resilience Promotion Office, Cabinet Secretariat[9]

The resilience budgets are also quite large. Figure 2 shows that the initial budgets between FY 2014 and 2018 are over JPY 3.5 trillion.[10] This year, spending requests are accelerating, driven by this summer's unprecedented disasters[11] and other factors. The JPY 4.89 trillion request for FY 2019, when coupled with the inevitable supplementary budgets and expanding tax breaks,[12] may see Japan spend more on resilience than the JPY 5.5 trillion requested for national defence.[13]

Figure 2 also shows that Japan's National Resilience programme is evolving into full-fledged industrial policy. The focus of National Resilience increasingly centres on information technology (ICT, IoT, AI) to smarten power, water, communications, transport and other critical infrastructure as well as network them together. The most comprehensive and recent discussion of this use of smart technology is available (in Japanese) in Kashiwagi Takao's *Super-Smart Energy Society 5.0*, published on August 27, 2018.[14] An example of how smart technology is used in National Resilience is seen, in figure 2, in the development and deployment of advanced radars for bolstering meteorological data against extreme weather. These next-generation radars give rapid and pinpoint advance warning of impending rainfall. That situational awareness allows water managers to adjust dams, river protections, sewerage systems and other critical infrastructures to cope with the hydrological challenges. Tokyo Metropolitan Government's (TMG) sewerage division is already doing this, using advanced radar and monitoring technologies, to manage its 16 million meters of pipes that move 2.2 million cubic metres of water per day.[15] TMG's use of advanced radars and other technologies can also be viewed in videos (in Japanese) produced by TMG and TV Asahi, and released between June 11 and 15 of 2018.[16]

Figure 3: Japan's Topography

Source: MLIT 2007.[17]

Figure 3 portrays the topographical reasons Japan's National Resilience focuses on such challenges. Note also that Japan receives double the global average of rainfall, in increasingly concentrated bursts. Fully 70% of the country is mountainous, and nowhere in Japan is more than 150 kilometres from the sea. In consequence, Japan's rivers are very steep and prone to flood. Moreover, 75% of the country's assets and 50% of the population are

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crowded onto 10% of the land surface, largely flood plains close to the sea.[18] So smart networking of critical infrastructures is literally a matter of life and death, livelihoods, and other key aspects of human security.

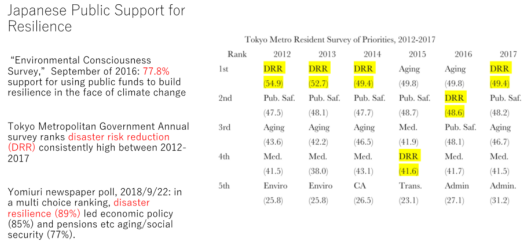

Figure 4: Japan's Public Support for Resilience

Source: Author's translations

The evidence also indicates that Japan's National Resilience initiative is powerfully supported by public opinion. Figure 4 notes, for example, that Japan's authoritative "Environmental Consciousness Survey," released in September of 2016, shows that the country's strongest level of consensus for anything related to energy and the environment is the 77.8% support for using public funds to build resilience in the face of climate change.[19]Also, as we see in this table, the Tokyo Metropolitan Government's annual surveys of residents' opinions shows that disaster risk reduction (DRR) is frequently the top item of concern.[20] And the Yomiuri newspaper confirmed this support in an opinion poll released on September 24, 2018. The poll showed that (in a multi-choice ranking) disaster resilience was the top priority (89%), beating out economic policy (85%) and policies relating to aging and social security (77%).[21]

I would also note that the "Environmental Consciousness Survey" also showed that there is 68.1% support for using ODA to build resilience in developingcountries.[22]

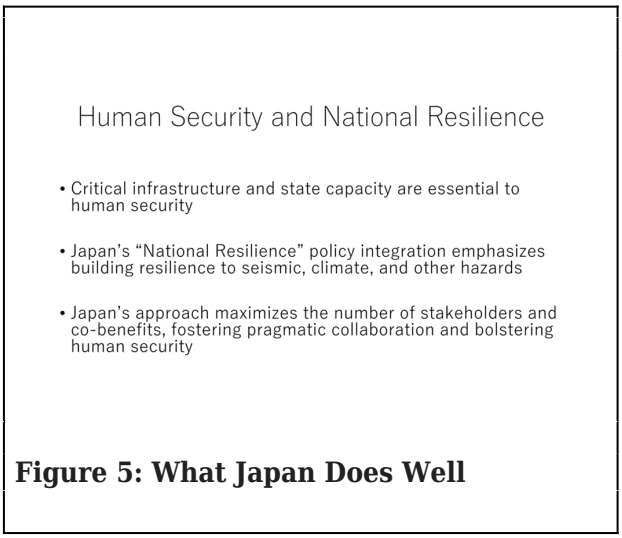

Figure 5: What Japan Does Well

As noted in the introduction, the IPCC AR5 report on human security identifies "Critical infrastructure and state capacity" as a major concern. It is especially worried about hydrologic threats, through intense rain, drought, sea-level rise, and other hazards. Japan is increasingly good at linking the soft and hard infrastructures of resilience, through inclusive planning and networking critical infrastructures.

In fact, Japan's National Resilience institutionalizes the Sendai Framework. The Framework stresses the need for "prior investment," so as to build resilience in the face of multiple hazards and reduce their impact. It also argues for "mainstreaming disaster risk reduction," through an inclusive, whole of government approach that makes coping with hazards a priority in all planning initiatives. The Sendai Framework calls for "the full engagement of all State institutions of an executive and legislative nature at national and local levels and a clear articulation of responsibilities across public and private stakeholders, including business and academia, to ensure mutual outreach, partnership, complementarity in roles and accountability

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and follow-up."[23] Japan's National Resilience is increasingly implementing that pro-active integration of hard and soft infrastructures.

Japan's "National Resilience" is hardly perfect, which is why it is annually updated and revised. But as we have argued here, it is publicly supported, focused, responsive, collaborative, well-funded, and serves to unite innovative capacity on collective problems. National Resilience uses the very real threat of natural disasters and other hazards to reshape energy, environmental, urban, fiscal and related policy regimes. And we have seen that National Resilience has already led to broad collaboration among government agencies, the private sector and civil society. This collaboration is clear from the diverse involvement of NPOs, disaster professionals, local governments, business associations and other stakeholders in drafting the national and local resilience plans. It is also evident in the composition of the 19 working groups that compile sectoral studies (on green infrastructure, fire prevention, landslide countermeasures, underground infrastructure mapping, and other items) within the Association for Resilience Japan.[24]

Most countries face, or will confront, Japan's sobering challenges on disaster risks, energy self-sufficiency, demographics, and scarce fiscal resources. So the Japanese case offers valuable lessons for how collaborative governance and smart technology can maximize the effective use of constrained fiscal, material, human and other resources, as well as time.

Andrew DeWit is Professor in the School of Economic Policy Studies at Rikkyo University and an *Asia-Pacific Journal* editor. His publications include "Japanese Smart Cities and Communities: Integrating Technological and Institutional Innovation for Society 5.0," in *Smart Cities for Technological and Social Innovation*, Elsevier (Hyung Min Kim, Soheil Sabri and Anthony Kent, eds.) forthcoming 2020 (with Brendan Barrett and Masaru Yarime); "Japan's (re)integration of energy in industrial policy," in *Critical Issues in Contemporary Japan, 2nd Edition*, Routledge (Jeff Kingston, ed.) 2019; "Energy," in *Routledge Handbook of Contemporary Japan*, Routledge (Hiroko Takeda and Mark Williams, eds.) forthcoming January 2020.

Notes

[1] The Intergovernmental Panel on Climate Change's Fifth Assessment Report (AR5) is available here

[2] See Adger, Neil W and Juan M. Pulhin, et al. (2014). "Human Security," in *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*

[3] An overview of the United Nation's Office for Disaster Risk Reduction (UNISDR) Sendai Framework is available here

[4] On this, see DeWit, Andrew (2017) "Japan's Energy Crisis and Policy Integration," Rikkyo Economic Research, July

[5] Japan Cabinet Secretariat (nd) "Building National Resilience"

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[6] An overview of some of the agencies and commissions is available (in Japanese) here
[7] The central government's National Resilience plans for 2014-2018 are available (in Japanese) here
[8] Links to Japan's subnational National Resilience plans are available (in Japanese) here
[9] See (in Japanese) the budgets and their expenditure categories here
[10] The 2014-2019 National Resilience budgets are available (in Japanese) here
[11] On this, see McKirdy, Euan (2018) "Japan's summer of deadly disasters: Earthquakes, floods, typhoons and heat," September 8, 2018
[12] A summary of the FY 2019 proposed tax reductions and exemptions is available (in Japanese) here
[13] Japanese defence spending, whose 1% of GDP level is low relative to the US (3.1%) and EU countries (1.3%), gets overwhelming media attention, whereas its resilience investments are either overlooked or derided as pork barrel public works in international media and websites.
[14] See (in Japanese) Kashiwagi Takao (2018) *Super-Smart Energy Society 5.0*: here
[15] See (in Japanese) TMG (2017) "Tokyo's Sewerages," Tokyo Metropolitan Government, November, p. 4
[16] The link for the videos is available here
[17] See (in Japanese) MLIT (2007) "Looking at Dam Projects," Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan
[18] On this, see DeWit, Andrew (2017) Japan's Energy Crisis and Policy Integration," Rikkyo Economic Research, July:
[19] See the chart (in Japanese) on p. 20 of the report here
[20] The Tokyo Metropolitan Government annual poll results are summarized (in Japanese) here
[21] See (in Japanese) "3rd Election as LDP President," *Yomiuri Shimbun*, September 24, 2018, p. 14.
[22] See the chart (in Japanese) on p. 20 of the report here
[23] See United Nation's Office for Disaster Risk Reduction (2015), "Sendai Framework for Disaster Risk Reduction 2015-2030," p. 13::
[24] The diverse membership of the Association's 19 working groups, together with reports and other details (such as meeting schedules), can be confirmed (in Japanese) here

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