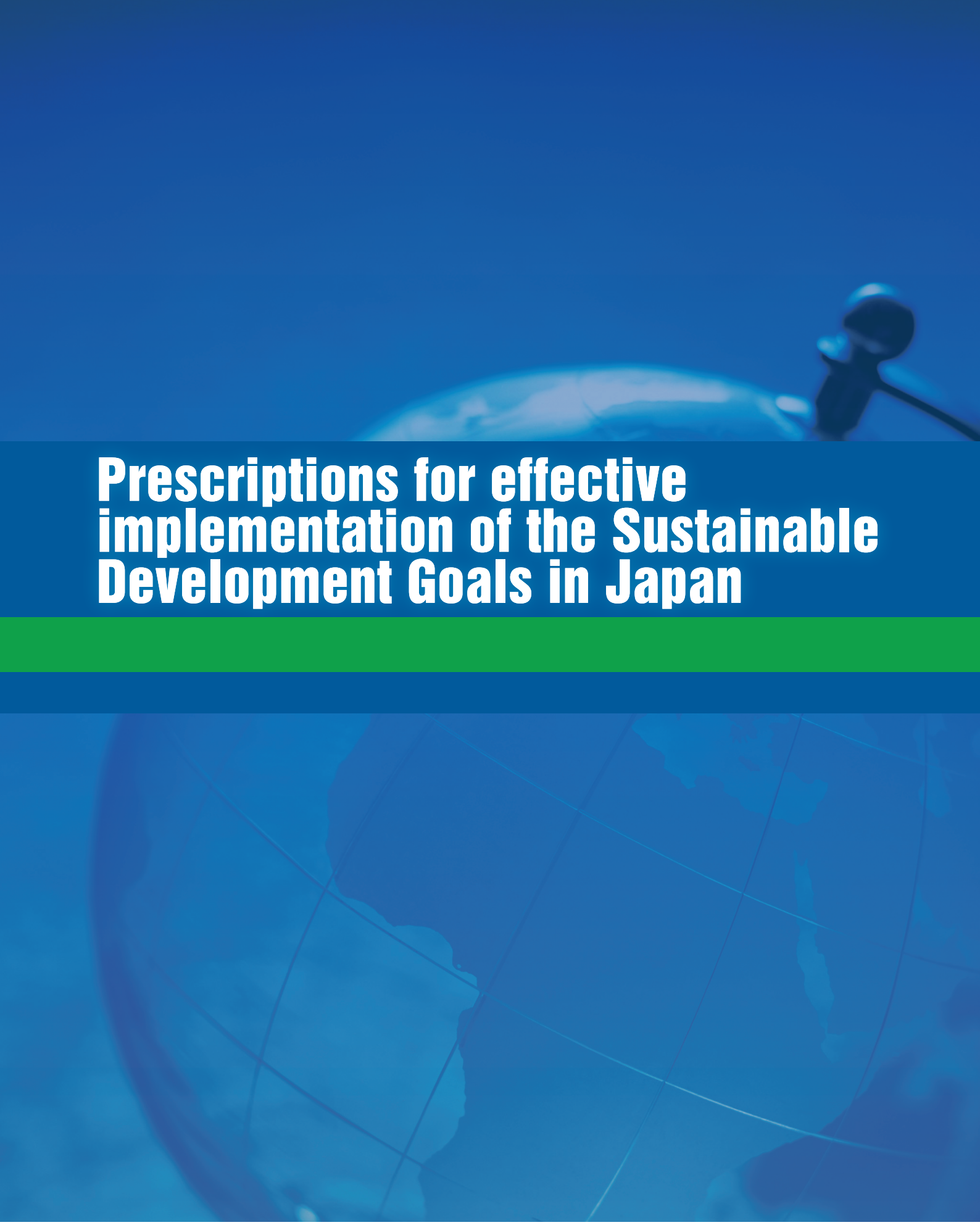


Prescriptions for effective implementation of the Sustainable Development Goals in Japan

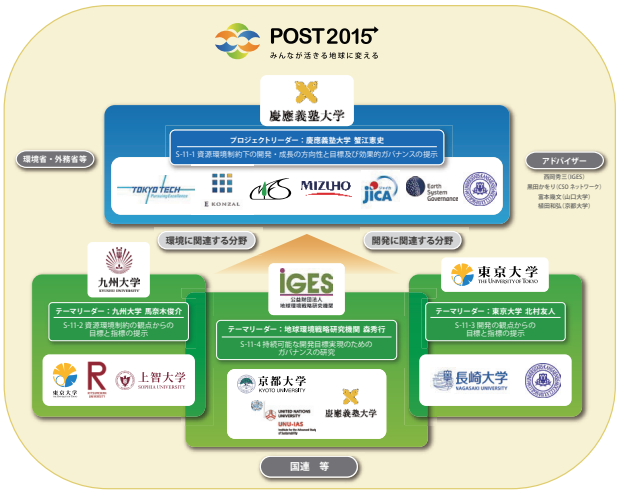
POST2015
Project On Sustainability Transformation beyond 2015

Project On Sustainability Transformation beyond 2015
http://www.post2015.jp/en/

Preface

S-11 POST2015: Project On Sustainability Transformation beyond 2015

With the expiration of the Millennium Development Goals (MDGs) at the end of 2015, a heated discussion on the direction of the post-2015 development agenda and the Sustainable Development Goals (SDGs) has been going on for years within the international community. The project aims to contribute to this debate by conducting research from various perspectives, in order to make an intellectual contribution to the achievement of sustainable society. “POST2015: Project On Sustainability Transformation beyond 2015” is a three-year project that started in April 2013, and implemented with support from the Environment Research and Technology Development Fund (ERTDF), Ministry of the Environment, Japan.



Message from the Project Leader

In September 2015, the UN General Assembly adopted the post-2015 development agenda titled “Transforming our world: the 2030 Agenda for Sustainable Development”, with 17 Sustainable Development Goals (SDGs) and their associated 169 targets to be accomplished by 2030.

The SDGs aim to help define the future global development framework that follows the Millennium Development Goals (MDGs), which included eight goals starting with halving poverty by 2015. While enormous progress has been made since the MGDs were adopted, there are some unfulfilled targets and goals that are addressed through the SDGs.

Our planet has gone through various changes over the last 15 years. Poverty is no longer considered as purely an economic problem, and we have learned that it has to be addressed in the context of environmental and social problems as well. Climate change is one of the issues that has complexity. The frequent occurrence of natural disasters hits the poorest and most vulnerable, making it even more difficult for them to get out of poverty. Moreover, climate change could also affect the patterns of food production, which would cause further concerns for the already vulnerable regions’ food security. To eradicate poverty we must also address social problems, as the poorest will not be able to benefit from any GDP growth unless measures are taken to reduce the social disparities. We need to tackle the three dimensions of sustainable development (economic, environmental and social) in a comprehensive manner so that we can achieve a prosperous world where nobody is left behind.

One of the most significant features of the SDGs compared to the MDGs is their absolute inclusiveness. Indeed, this is why each UN member state needs to establish its own targets and methods for implementation adapted to its needs and situations, in addition to the global targets set by the UN. Indeed, the SDGs need to be “prescribed” for each country and region, so that they could effectively contribute to the overall implementation of SDGs, globally, regionally, and nationally.

Our team is hereby issuing a list of “prescriptions” for Japan’s implementation of the SDGs. It is our attempt to illustrate the methods to address the challenges currently facing Japan within the context of the SDGs, based on the results of our three-year research work on sustainability and how to achieve the sustainability in society. This report offers some insights as to what should be done to address Japan’s domestic problems while contributing to implementation of the SDGs on a global scale. Our recommendations are to address the need to fill in existing gap between the global goals and the current policies in Japan. By “translating” global goals and targets into the national context, this prescription is trying to make Japan’s domestic policies adjusting to the global standards.

Japan has in fact already various policies related to the SDGs. However, some may not necessarily have long-term policy-goals towards 2030. Moreover, the country has yet to address various other SDGs-related issues. There are also numerous emerging problems that we need to address in the years to come. Now that we have global goals and targets, Japan needs to define its role and responsibilities in fulfilling them. Further discussion should be continued across the country in the coming years, in order to establish a clearer set of goals which includes numerical targets (here we use “**X**” to indicate such targets, for example, **X**%, **X** persons, etc.”, instead of precise numerical targets). The SDGs will serve as guideposts for our future discussion, and approaches for these discussion are included in the section of “Governance” of this document.

We should also be aware of the risks of side-effects of any “prescription”. For instance, whereas addressing food security is one of the most essential elements of the SDGs, it could also contribute to an increase of CO_2 emission as a “side-effect”, unless there are simultaneous efforts to enhance the use of renewable energy. In this regard, the SDGs could serve as a sort of “checklist” for overall policy implementation.

The set of “prescriptions” presented here is by no means an absolute list. There is certainly plenty of room for improvements in our recommendations, and there could be even more effective sets of recommendations for implementation of the SDGs in Japan. We sincerely hope that the publication of this report will provoke constructive discussions in various fora.

S-11 (POST2015) Project Leader
Professor Norichika Kanie
Keio University

Prescriptions for effective implementation of the Sustainable Development Goals in Japan

Prescriptions for thematic areas

Poverty & Disparity

Prescription 1.1 Eradicate poverty and social disparity

Targets in Japan

A. Reduce the relative poverty rate (especially among children) to **X**% or less by 2030.
B. Decrease the number of part-time workers to less than 1.24 million by 2020 from 2.17 million in 2003 (Note 6), while aiming to reduce it to **X** by the year 2030.
C. Provide equal pay for equal work by 2030, regardless of age, disability and gender (SDG8.5).

Targets for global efforts

a. Eradicate extreme poverty (defined as earning less than USD 1.25 a day) worldwide by 2030.
b. Make substantial contributions to international efforts to establish appropriate policy frameworks based on development strategies aimed at eradication of poverty and enhancement of gender equality at national, regional and global levels, that would ultimately promote investment for the eradication of poverty.
c. By 2020, contribute to global strategies for the enhancement of youth employment. Implement labour-related international agreements of the International Labour Organisation (ILO).

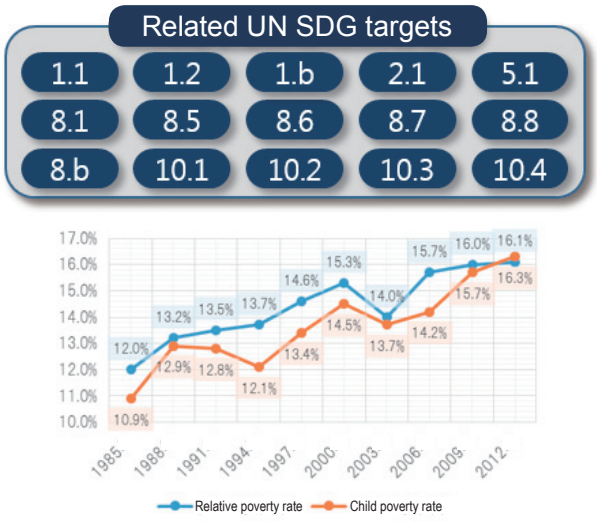


Figure 1.1-1 Relative poverty rates and child poverty rates in Japan

Source: Author's own elaboration based on data from "Comprehensive Survey of Living Conditions: 2014", Ministry of Health, Labour and Welfare (2014)

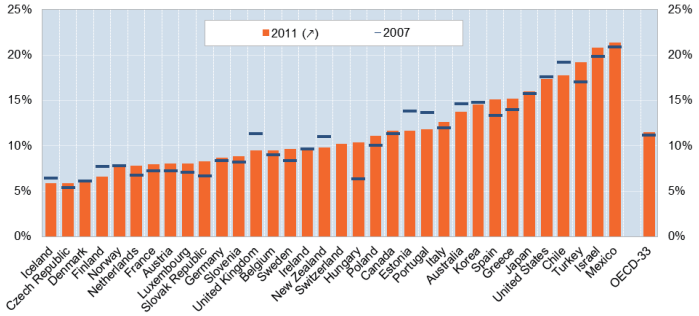


Figure 1.1-2 Relative poverty rates of OECD countries (2007 and 2011)

Source: OECD (2014) "Income Inequality Update"

Current situation and its implication for the prescription

The MDGs set the target of halving the proportion of people whose income is less than USD 1.25 a day by 2015, which was successfully met. The number of the people living under extreme poverty has been significantly reduced from 1.9 billion (1990) to 836 million (2015).

Whereas extreme poverty is not necessarily a wide-spread social problem in Japan, so-called "relative poverty" has become one of the most important problems in recent years. Japan's relative poverty rate, the proportion of people with net income below a defined threshold set by the OECD (poverty line*) was 16.1% in 2012, and is likely to increase in coming years (Figure 1.1-1). The figure is significantly higher than the average of OECD countries (Figure 1.1-2).

One factor causing such a striking income gap in society is the diversification of employment patterns. The number of the people who have low-paying and/or irregular employment has been increasing significantly in recent years. Figure 1.1-3 indicates the apparent increase in the proportion of people who have irregular employment (indicated with red dots) in the whole working population (excluding executive positions), which reached 36.7% in 2013. Moreover, the proportion of female workers with irregular employment is significantly higher than that of male counterparts.

Figure 1.1-4 shows the numbers of part-time workers in recent years. It indicates that while the number itself has not shown any significant change, the proportion of the people in the 15-34 age group has been increasing.

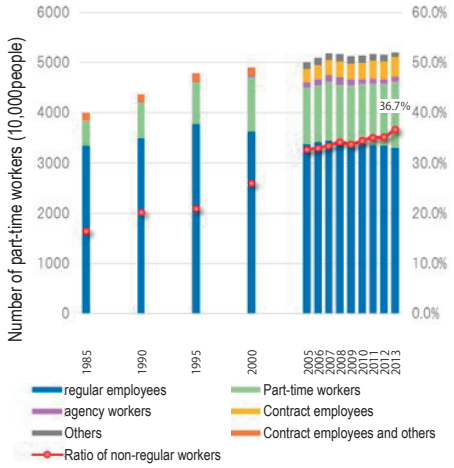


Figure 1.1-3 Number of employees in different groups

Source: Author's own elaboration based on data from "Report on Work-life Balance 2014", Cabinet Office (2015)

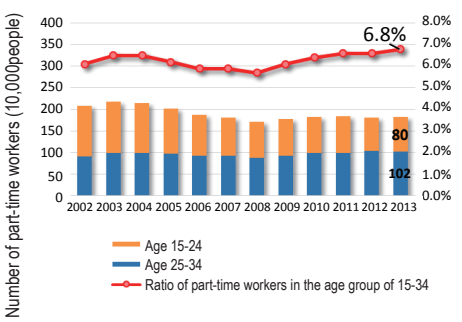


Figure 1.1-4 Number of part-time workers

Source: Author's own elaboration based on data from "Annual Report on Work-life Balance 2014", Cabinet Office (2015)

Poverty & Disparity

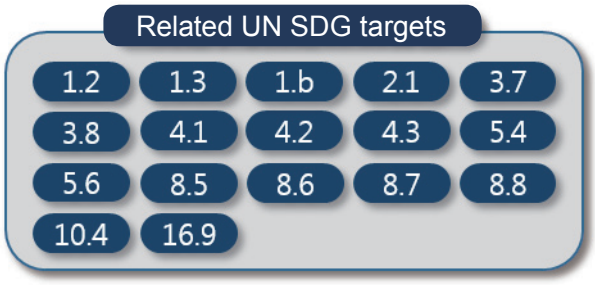
Prescription 1.2 Address problems caused by socio-economic disparity

Targets in Japan

A. Address socio-economic factors that are obstructing couples from starting families by 2030.
B. Establish sufficient child care facilities by 2018 which will contribute to the work-life balance of young families (Note 3).
C. Increase the proportion of women returning to their jobs after their first child birth from the current figure of 38% to 55% by 2020 (Note 6), and aim to increase it to **X**% by 2030.
D. Reduce the child poverty rate to **X**% or less by 2030.

Targets for global efforts

a. Contribute to global efforts to establish social security systems to include the poor and most vulnerable.
b. Contribute to global efforts of establishing reproductive and sexual health care systems accessible by the entire population by 2030.
c. Contribute to the promotion of equality worldwide by providing governmental efforts to introduce social security systems.
d. Ensure legal identity for each individual worldwide by 2030.
e. Address child labour problems (including the use of child soldiers) by 2025.



Current situation and its implication for the prescription

The population of Japan has been decreasing in recent years (Figure 1.2-1), and is expected to decrease by approximately 10 million from 2010 to 2030. As for the proportion of each age group, whereas the elderly population (65 years old and over) is expected to increase from 23% to 31%, the working age population (15-64 years old) is expected to decrease from 63% to 58%. The trend is likely to continue for the foreseeable future, and we need to take various measures by 2030 in order to slow down the process. Moreover, aging of the population is particularly significant in rural areas. The social gap between the urban and rural areas with regard to this problem must be addressed as a matter of urgency.

One of the factors that is significantly contributing to the population decrease in the country is its declining birth rate. It is certainly partly due to the change of our lifestyles. However, we should be aware that social-economic problems are also playing their part in this phenomenon. According to a survey conducted by the National Institute of Population and Social Security Research in 2010, the average number of children couples would ideally like to have is 2.42, but the actual number of children they are planning to have is around 2.07, mostly due to the high cost of child rearing and education (Figure 1.2-2).

The government announced in 2008 the "new zero wait listed children strategy", declaring that it would provide enough child care facilities so that there would be no waiting lists for services, and that everyone who wished to continue working after child birth would be able to do so. The strategy also includes concrete numerical targets to be fulfilled in the coming 10 years. The proportion of children under the age of three who can benefit from childcare services is supposed to rise to 38% from the current figure of 20%, whereas childcare for children six to nine years old is supposed to be raised from 19% to 60% by 2018.

Child poverty is steadily worsening in Japan, as is clearly indicated in Figure 1.1-1. This is a serious problem in that it could deprive children of the opportunity for equal education and consequently trap them in a cycle of poverty. Japan's Act to Promote the Eradication of Child Poverty entered into force in January 2014, in order to "promote equal opportunity for education for all children so that they would be able to develop their abilities to their full potential, regardless of their financial backgrounds". Further legal measures were taken regarding this matter in August 2014, although no specific numerical targets were included.

The UK in 2010 established the "Child Poverty Act 2010", which includes measureable targets to be fulfilled by 2020, and the government has been closely observing progress. Japan could learn from the UK's efforts, and should establish more specific targets in order to tackle the issues more effectively.

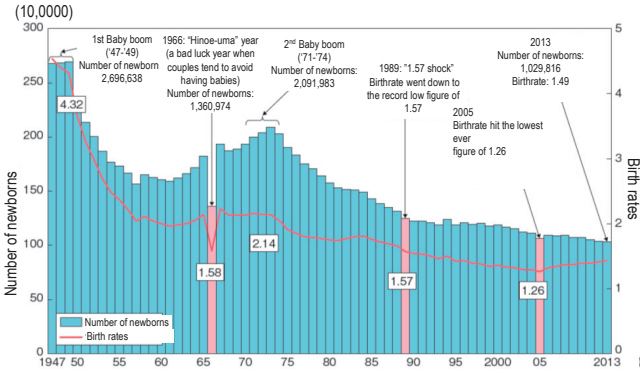


Figure 1.2-1 Birth rates and the numbers of newborns in Japan

Source: Author's own elaboration based on data from "White Paper on measures against declining birth rate: 2015", Cabinet Office (2015)

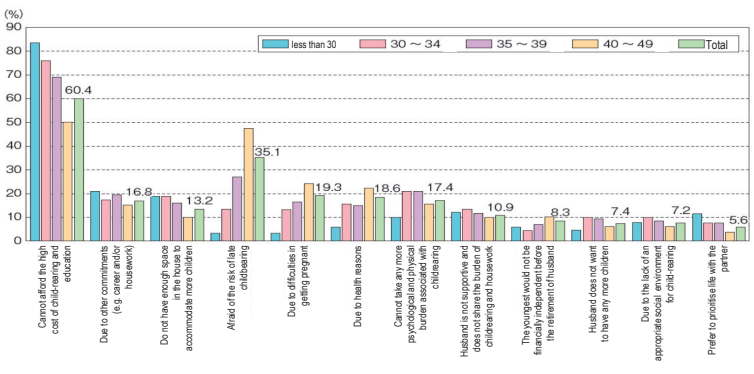


Figure 1.2-2: Reasons for not having the ideal number of children in different age groups of women

Source: Author's own elaboration based on data from "White Paper on measures against declining birth rate: 2015", Cabinet Office (2015)

Targets for issues related to poverty and social disparity			Related UN SDGs
Prescription 1.1:Eradicate poverty and disparity	A (D)	Reduce the relative poverty rate (especially among children) to **X**% or less by 2030.	
	B (D)	Decrease the number of part-time workers to less than 1.24 million by 2020 from 2.17 million in 2003 (Note 6), while aiming to reduce it to **X** by the year 2030.	
	C (D)	Provide equal pay for equal work by 2030, regardless of age, disability and gender(SDG 8.5).	
	a (G)	Eradicate extreme poverty (defined as earning less than USD 1.25 a day) worldwide by 2030.	
	b (G)	Make substantial contributions to international efforts to establish appropriate policy frameworks based on development strategies aimed at eradication of poverty and enhancement of gender equality at national, regional and global levels, that would ultimately promote investment for the eradication of poverty.	
	c (G)	By 2020, contribute to global strategies for the enhancement of youth employment. Implement labour-related international agreements of the International Labour Organisation (ILO).	
Prescription 1.2: Address problems caused by socio-economic disparity	A (D)	Address socio-economic factors that are obstructing couples from starting families by 2030.	
	B (D)	Establish sufficient child care facilities by 2018 which will contribute to the work-life balance of young families (Note 3).	
	C (D)	Increase the ratio of women returning to their jobs after their first child birth from the current figure of 38% to 55% by 2020 (Note 6), and aim to increase it to **X**% by 2030.	
	D (D)	Reduce the child poverty rate up to **X**% or less by 2030.	
	a (G)	Contribute to global efforts to establish social security systems to include the poor and most vulnerable.	
	b (G)	Contribute to global efforts of establishing reproductive and sexual health care systems accessible by the entire population by 2030.	
	c (G)	Contribute to the promotion of equality worldwide by providing governmental efforts to introduce social security systems.	
	d (G)	Ensure legal identity for each individual worldwide by 2030.	
	e (G)	Address child labour problems (including the use of child soldiers) by 2025.	

D=Domestic Targets, G=Contribution to Global Targets

Notes

1. National Institute of Population and Social Security Research (2012)「日本の将来推計人口（平成24年1月推計）」(“Japan’s population decrease: statistics and future prospects (estimate taken in January 2012)”) http://www.ipss.go.jp/syoushika/tohkei/newest04/sh2401top.html
2. Cabinet Office (2015)『平成27年版少子化対策白書』(“White Paper on measures against declining birth rate: 2015”) http://www8.cao.go.jp/shoushi/shoushika/whitepaper/
3. Ministry of Health, Labour and Welfare (2008)「『「新待機児童ゼロ作戦』について（概要）」(“Introduction of new zero wait listed children strategy (summary)”) http://www.mhlw.go.jp/houdou/2008/02/dl/h0227-1a.pdf
4. Ministry of Health, Labour and Welfare (2015)「保育所入所待機児童数（平成26年10月）」(“The number of children on waiting lists for childcare services”) http://www.mhlw.go.jp/file/04-Houdouhappyou-11907000-Koyoukintoujidoukateikyoku-Hoikuka/0000078425.pdf
5. Cabinet Office,「子供・子育て支援新制度関連基礎データ」(“Basic facts: new childcare support system”) http://www8.cao.go.jp/shoushi/shinseido/outline/#toukei
6. Cabinet Office,「仕事と生活の調和推進のための行動指針」(“Guideline for work-life balance”) http://wwwa.cao.go.jp/wlb/government/20barrier_html/20html/indicator.html
7. Cabinet Office (2015)「仕事と生活の調和（ワーク・ライフ・バランス）レポート2014」(“Annual Report on Work-life Balance 2014”) http://wwwa.cao.go.jp/wlb/government/top/hyouka/report-14/zentai.html
8. United Nations (2015)“The Millennium Development Goals Report 2015” http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf
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10. Cabinet Office (2014)「子どもの貧困対策の推進に関する法律の施行について」(“Introduction of Child Poverty Act”) http://www8.cao.go.jp/kodomonohinkon/pdf/hinkon_law_tsuuchi.pdf
11. OECD (2010)“OECD Factbook 2010: Economic, Environmental and Social Statistics” http://www.oecd-ilibrary.org/economics/oecd-factbook-2010_factbook-2010-en
12. OECD (2014)“Income Inequality Update” http://www.oecd.org/els/soc/OECD2014-Income-Inequality-Update.pdf

(NB：All websites retrieved in December 2015)

Food

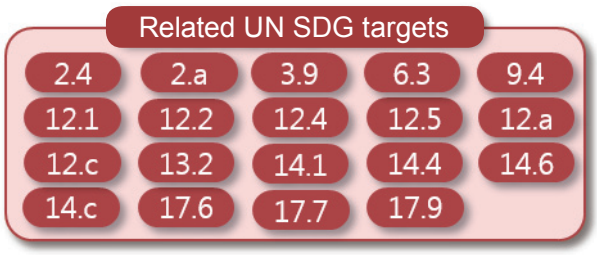
Prescription 2.1 Reduce environmental impacts caused by food production

Targets in Japan

A. Reduce the use of chemical fertilisers and pesticides per hectare to below X% by 2030.
B. Increase the number of certified "eco-farmers" to X by 2030.
C. Increase organic farming's share of farmland to at least 1.0% by 2018 (Note 10), and to X% by 2030.
D. Reduce the amount of antibiotics used for growth promotion in the animal husbandry sector by X% by 2030.
E. Reduce greenhouse gas emissions from the agricultural sector by X% by 2030.
F. Promote scientific management plans aimed at restoring marine resources to maximum sustainable yield levels depending on the biological characteristics of each resource.

Targets for global efforts

a. Contribute to the prevention of air, water, and land pollution in developing countries through technology transfers of resource-efficient agriculture with lower environmental impacts, infrastructure development, and capacity-building.



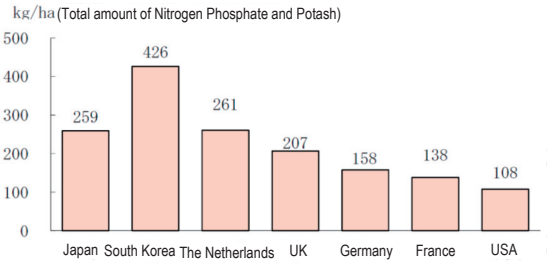


Figure 2.1-1 Chemical fertiliser use per hectare

Source: Author's own elaboration based on data from "Facilitation of eco-friendly farming", Ministry of Agriculture, Forestry and Fisheries (2015)

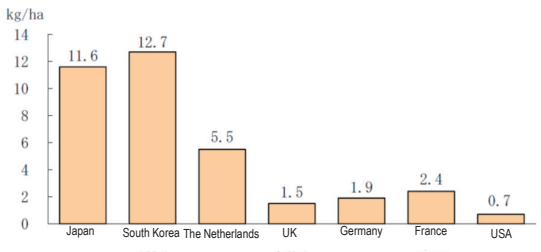


Figure 2.1-2 Fertiliser use per hectare

Source: Author's own elaboration based on data from "Facilitation of eco-friendly farming", Ministry of Agriculture, Forestry and Fisheries (2015)

Current situation and its implication for the prescription

In Japan, farmers tend to overuse fertilisers, reportedly leaving excess nutrients in fields. This is undesirable not only in terms of economic efficiency, but also in terms of environmental protection, due to the fact that it could cause water pollution and nitrous oxide emissions, which will contribute to global warming. It is indeed possible to reduce the effects on the environment without decreasing yields per hectare by using an appropriate amount of fertiliser. In fact, the amount of the fertiliser used in the EU has decreased steadily from 1990 onwards, while yield per hectare has been increasing (Figures 2-1.1, 2-1.2). The amount of fertiliser used in Japan is larger than in European countries, and further efforts should be made to significantly decrease its use.

In this regard, eco-friendly farming has been actively promoted in Japan. One such effort is the establishment of the "eco-farmer" certification system, which recognizes environmentally-conscious farmers who have made the effort to reduce the use of chemical fertilisers and to maintain the quality of their farmland. While the number of "eco-farmers" was rising after the system began, it has been decreasing in recent years due to the reasons such as the rising average age of farmers and farmers not renewing their certification (Figure 2.1-3).

Organic farming has been actively promoted from 2006 onwards. Currently only 0.4% of Japan's farmland is used for organic farming, and the government has set the target of increasing this to 1.0% by 2018.

The livestock industry also has issues. Antibiotics added to animal feed to promote growth is said to promote antibiotic-resistant bacteria. While regulations control the use and amount of antibiotics depending on livestock type and growth stage, the EU has completely banned the use of antibiotics as growth promoters in animal feed. Japan should do the same continue to strive for safe food production in Japan.

With regard to fishery resources, it is essential to determine the appropriate amount of fish catch based on constant monitoring of available resources. In this regard, the United Nations Convention on the Law of the Sea states as follows: "taking into account the best scientific evidence available to it, ensure through proper conservation and management measures that the maintenance of the living resources in the exclusive economic zone is not endangered by over-exploitation" (Note 11). Nevertheless, it is not always easy to accurately determine the maximum sustainable yield due to limited data availability. It is crucial to continue improving assessment methods while enhancing the use of available scientific data in order to achieve sustainable use of fishery resources.

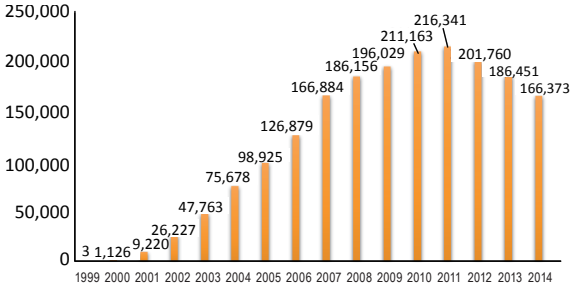


Figure 2.1-3 Certified "eco-farmers"

Source: Ministry of Agriculture, Forestry and Fisheries (2015) "Facilitation of eco-friendly farming"

Food

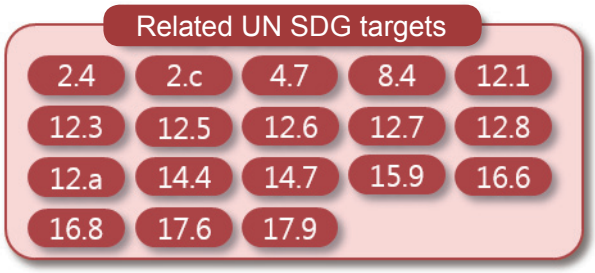
Prescription 2.2 Provide access to sustainability information on agricultural products

Targets in Japan

A. By 2030, establish assessment and labelling systems for a range of information about food (health, safety, origin, environmental impact, economic impact, social impact, etc.) so that anyone can choose highly sustainable food.
B. Promote food literacy about sustainability-related aspects of food by providing relevant information.
C. By 2030, reduce food loss per capita by 50% or **X**% at both the retail and consumer levels.

Targets for global efforts

a. Provide support to developing countries to enhance scientific and technical capacity to shift toward sustainable production and consumption patterns.
b. Provide support for governments, local authorities, and companies to incorporate sustainability information into their plans and regular reports, etc.
c. Contribute to global efforts to eliminate exploitation in food production by promoting fair trade.



Current situation and its implication for the prescription

There are various sorts of food labelling in Japan, based on the Food Sanitation Act, JAS Act and Health Promotion Act, through which consumers are offered a range of information on various aspects relating to food (i.e., health, hygiene and safety). However, this is not the case regarding the information about environmental impacts from its production, processing and distribution processes. Moreover, certain information about the responsibility for compliance of manufacturers (e.g., unfair labour conditions for their workers) is also not easily accessible. Thus, those consumers who wish to make a conscious choice based on sustainability–related factors are currently left without enough information.

In order to be able to provide such information, it is necessary for all the parties involved in food production, distribution, and consumption, to cooperate with each other. Moreover, cooperation with parties abroad is also necessary, considering the fact that most of the food we consume is imported in one way or another. One can easily assume that a substantial amount of time and effort would be needed to establish such networks and collect enough information about all sorts of food we consume on a daily basis.

Thus, we should first aim to establish evaluation systems on these aspects, and recommend some manufacturers to use them to certify that their products are up to the standard of their sustainability-conscious customers. This will enable consumers to make an informed choice regarding sustainability, which will contribute to establishing a sustainable society.

On the other hand, Japan currently throws away 17 million tonnes of food and drink every year, 5 million to 8 million tons of this "food loss" is estimated to be edible, and that amount is about twice the amount of the food provided through foreign aid to developing countries (4 million tonnes: Ministry of Agriculture, Forestry and Fisheries 2013) (Figure 2-2.1) .The SDGs declare target 12.3 being to halve food loss per capita at the retail and consumer levels. Japan should set an even higher goal of reducing food loss to less than half the current amount.

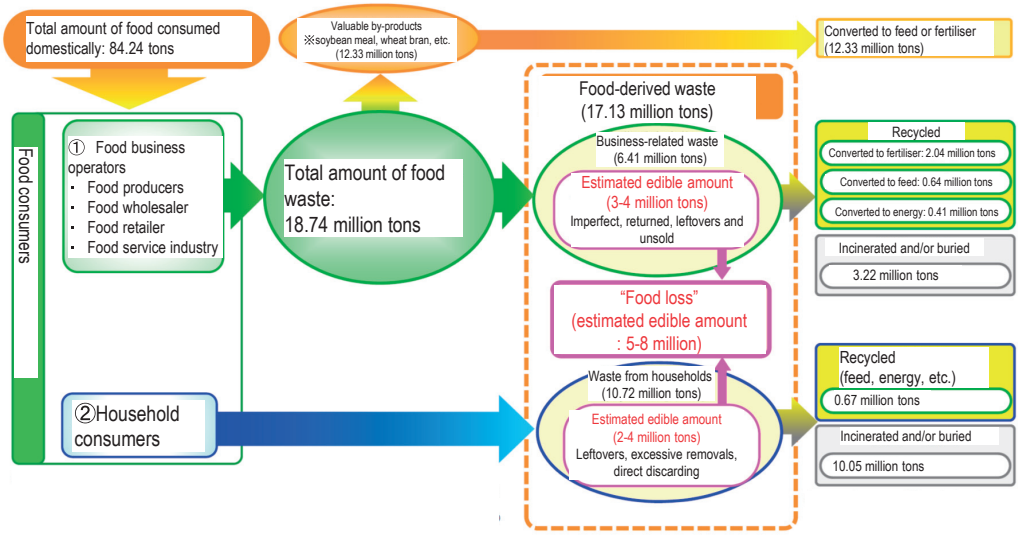


Figure 2.2-1 Food loss in Japan
Source: Author's own elaboration based on data from "Addressing food loss problem in Japan", Ministry of Agriculture, Forestry and Fisheries (2013)

Food

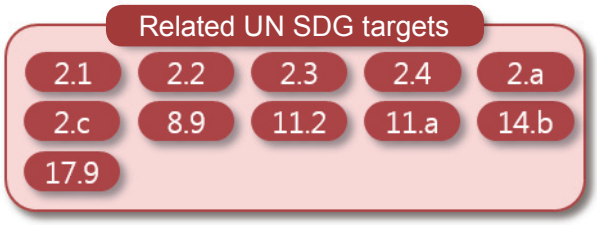
Prescription 2.3 Secure a stable food supply and revitalise local communities

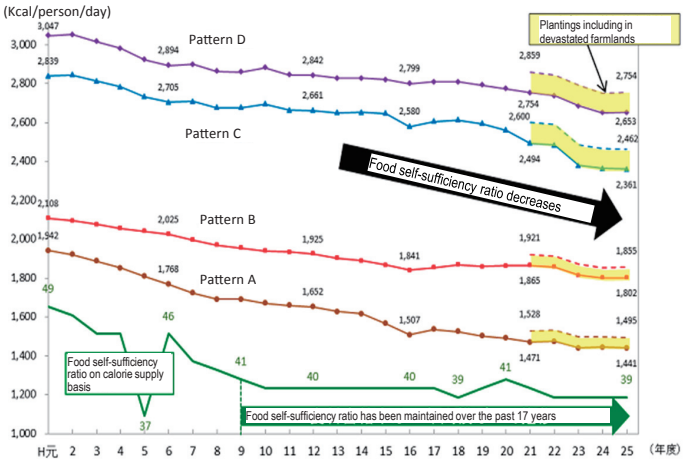
Targets in Japan

A. Boost food self-sufficiency ratio to 50% on calorie supply basis and 70% on a production value basis by 2020. Further efforts should be made to achieve even higher targets by 2030.
B. By 2030, develop food supply capability to secure stable food supply of **X** kcal/person per day, in line with current consumption patterns.
C. Secure a stable food supply for the population by efforts that include cooperative relations with countries in the region relating to food imports.
D. Increase the competitiveness of domestic agricultural products, thereby revitalising local communities.
E. By 2030, establish means so that the entire population can easily access food sustainably.

Targets for global efforts

a. Contribute to raising agricultural and fisheries productivity and eradicating hunger through international cooperation, including technology transfer in agriculture and fisheries, building infrastructure for transport and stockpiling, and supporting capacity-building, etc.





Pattern A: Focusing on the maximisation of the amount of calories available per unit, by concentrating on the production of major cereals (rice, wheat, soybean) while taking nutritional balance into account
Pattern B: Focusing on the maximisation of the amount of calories available per unit, by concentrating on the production of major cereals (rice, wheat, soybean)
Pattern C: Focusing on the production of potatoes for the sake of maximisation of the calories available per unit, while taking nutritional balance into account
Pattern D: Focusing on the production of potatoes for the sake of maximisation of the calories available per unit

Table 2.3-1 Food self-sufficiency ratio in Japan

Source: Author's own elaboration based on data from "Japan's food sufficiency", Ministry of Agriculture, Forestry and Fisheries

Current situation and its implication for the prescription

Japan is highly dependant on food imports and not necessarily well-prepared for unforeseen circumstances that could cut off imports. It is essential from the viewpoint of sustainability to establish and maintain systems that would guarantee a stable supply of food in various situations. The food self-sufficiency ratio and food supply capability could serve as indicators to measure the capacity of such systems. The food self-sufficiency ratio is defined as the proportion of domestic consumption met from domestic production.

The Ministry of Agriculture, Forestry and Fisheries (MAFF) declared in its "Basic Programmes for Foods, Agriculture and Rural Areas" that they would aim to achieve a food self-sufficiency ratio up to 50% on calorie supply basis and to 70% on a production value basis by 2020. Further efforts should be made to achieve even higher targets by 2030.

Food Supply Capability is the indicator proposed by the MAFF, which is defined as the country's "potential productivity" of food. This indicator reveals four patterns illustrated in Figure 2.3-1, which indicates that while Japan's food self-sufficiency rate has not shown any significant change, the food supply capability has been gradually decreasing. Among the four patterns shown in the table, the patterns A and B (based on rice, soy beans, and wheat, which are closest to the current Japanese diet) would not satisfy the estimated energy requirement (2,147 kcal/person/day).

Another food-related problem in Japan in recent years is access to food, especially among elderly. This is partly due to the closure of smaller grocery stores in rural areas and the increase of large-scale commercial facilities in suburban areas instead. According to a survey conducted by MAFF, 79% of local authorities indicated that they are aware of the need to improve such situations and establish easier access to food in their regions (Figure 2.3-2).

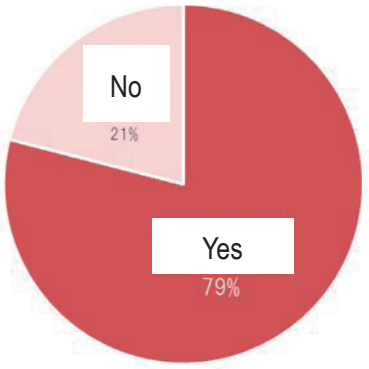


Table 2.3-2 Access to food: "Do you feel the need for the specific measures to be taken to ensure easier access to food for the locals?"

Source: Author's own elaboration based on data from "Annual Report on Japanese Agriculture 2014", Ministry of Agriculture, Forestry and Fisheries (2014)

Food

Prescription 2.4 Adapt to climate change and preserve seeds and genetic resources

Targets in Japan

A. Regularly review food production systems adapted to climate change (e.g., changing varieties planted, improving soil quality).

Targets for global efforts

a. Promote resilient agriculture by ensuring the conservation of ecosystems, enhancing the capacity to adapt to climate change and deal with natural disasters such as droughts and floods, and improving soil quality.

b. Contribute to the maintenance of genetic diversity of seeds, cultivated plants, domestic animals, livestock and their wild relatives by establishing seed banks and plant banks.

c. Provide support for developing countries to incorporate adaptation measures to climate change into national and local planning.

Related UN SDG targets

1.5 2.4 2.5 2.a 2.c 13.1 13.2 13.3 15.6 17.7 17.9

Current situation and its implication for the prescription

The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), published in 2013 and 2014, concluded that warming of the climate system is unequivocal. The level of impact of climate change on food supplies varies by region, but generally speaking, the production of major cereals (including wheat, rice, and corn) is expected to be affected negatively, and the impacts are expected to become more severe with time (Figure 2.4-1).

Japan is highly dependent on food imports, which means the country is vulnerable to changes in global food production patterns. Japan should make a significant contribution to global efforts toward climate change adaptation, in order to secure stable food supplies worldwide.

One of the most important elements in our fight against climate change is the conservation of genetic resources. Native species in various regions are believed to posses genetic resources that would enable them to adapt to various climatic conditions but 75% of the genes of the world's crops have already been lost, according to FAO reports. Moreover, among 8,300 species in the livestock sector worldwide, 8% are already extinct, while 22% are at risk of extinction.

The genetic resources of various organisms have not been adequately studied. Japan should therefore make a significant contribution toward cooperative efforts at various levels (global, regional, national and local) to maintain valuable genetic resources, such as through the establishment of gene banks and seed banks.

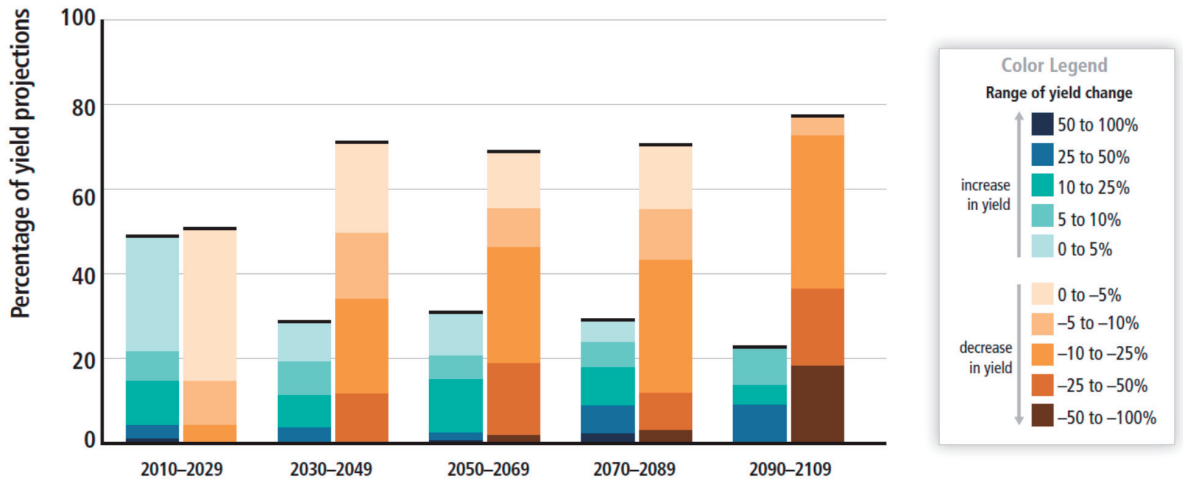


Figure 2.4-1 Projected changes in productivity due to climate change

Source: IPCC (2014) "Climate Change 2014: Synthesis Report"

Targets for food-related issues			Related UN SDGs
Prescription 2.1: Reduce environmental impacts caused by food production	A (D)	Reduce the use of chemical fertiliser and pesticide per hectare to below **X**% by 2030.	
	B (D)	Increase the number of certified “eco-Farmers” up to **X** by 2030.	
	C (D)	Increase organic farming’s share of farmland to at least 1.0% by 2018, and up to **X**% by 2030.	
	D (D)	Reduce the amount of antibiotics used for growth promotion in the animal husbandry sector by **X**% by 2030.	
	E (D)	Reduce greenhouse gas emissions from the agricultural sector by **X**% by 2030.	
	F (D)	Promote scientific management plans aimed at restoring marine resources to maximum sustainable yield levels depending on the biological characteristics of each resource.	
	a (G)	Contribute to the prevention of air, water, and land pollution in developing countries through technology transfers of resource-efficient agriculture with lower environmental impacts, infrastructure development, and capacity-building.	
Prescription 2.2: Provide access to sustainability information on agricultural products	A (D)	By 2030, establish assessment and labelling systems for a range of information about food (health, safety, origin, environmental impact, economic impact, social impact, etc.) so that anyone can choose highly sustainable food.	
	B (D)	Promote food literacy about sustainability-related of food by providing relevant information.	
	C (D)	By 2030, reduce food loss per capita by 50% or **X**% both at the retail and consumer levels.	
	a (G)	Provide support to developing countries to enhance scientific and technical capacity to shift toward sustainable production and consumption patterns.	
	b (G)	Provide support for governments, local authorities, and companies to incorporate sustainability information into their plans and regular reports, etc.	
	c (G)	Contribute to the global efforts to eliminate exploitation in food production by promoting fair trade.	
Prescription 2.3: Secure a stable food supply and revitalise local communities	A (D)	Boost food self-sufficiency ratio to 50% on calorie supply basis and 70% on a production value basis by 2020. Further efforts should be made to achieve even higher target by 2030.	
	B (D)	By 2030, develop food supply capability to secure stable food supply of **X** kcal/person per day, in line with the current consumption patterns.	
	C (D)	Secure a stable food supply for the population by efforts that include cooperative relations with countries in the region relating food imports.	
	D (D)	Increase the competitiveness of domestic agricultural products, thereby revitalising local communities.	
	E (D)	By 2030, establish means so that the entire population can easily access food sustainably.	
	a (G)	Contribute to raising agricultural and fisheries productivity and eradicating hunger through international cooperation, including technology transfer in agriculture and fisheries, building infrastructure for transport and stockpiling, and supporting capacity-building, etc.	
Prescription 2.4: Adapt to climate change and preserve seeds and genetic resources	A (D)	Regularly review food production systems adapted to climate change (e.g., changing varieties planted, improving soil quality).	
	a (G)	Promote resilient agriculture by ensuing the conservation of ecosystems, enhancing the capacity to adapt to climate change and deal with natural disasters such as draughts and floods, and improving soil quality.	
	b (G)	Contribute to the maintenance of genetic diversity of seeds, cultivated plants, domestic animals, livestock and their wide relatives by establishing seed banks and plant banks.	
	c (D)	Provide support for developing countries to incorporate adaptation measures to climate change into national and local planning.	

D=Domestic Targets, G=Contribution to Global Targets

Notes

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9. Ministry of Agriculture, Forestry and Fisheries (2014)『平成25年度 食料・農業・農村白書』(“Annual Report on Japanese Agriculture 2014”) http://www.maff.go.jp/j/wpaper/w_maff/h25/index.html
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13. IPCC (2014)“Climate Change 2014: Synthesis Report” https://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full.pdf

(NB：All websites retrieved in December 2015)

Health

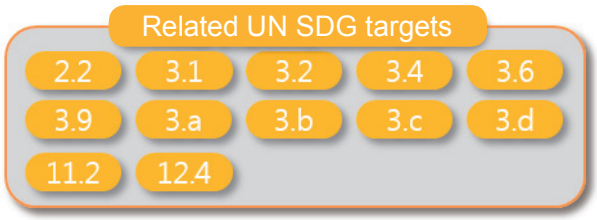
Prescription 3.1 Promote long and healthy lives

Targets in Japan

A. Extend healthy life expectancy by 1 year (Note 3) by 2020, and an additional **X** years by 2030.
B. Reduce the number of metabolic syndrome sufferers by 25% by 2020, from 2008 (Note 3), and an additional **X**% by 2030.
C. By 2020, increase to 80% the ratio of having regular medical check-ups (Note 3), and to **X**% by 2030.
D. By 2030, aim to fully implement the WHO Framework Convention on Tobacco Control.

Targets for global efforts

a. Contribute to global efforts to eradicate all forms of malnutrition by 2030.
b. Contribute to global targets to reduce mortality rates of pregnant women, newborns and children under the age of five.
c. Contribute to global efforts to reduce the number of traffic accident casualties.
d. Contribute to a reduction in the number of pollution-related illness sufferers and victims by utilising Japan's environmental technologies.
e. By 2030, contribute to the reduction of premature deaths from non-communicable diseases (NCD).
f. In particular, provide support for capacity-building relating to early warning of health risks, risk mitigation, and risk management.



Current situation and its implication for the prescription

Healthy life expectancy (HLE) is defined as the number of years a person might expect to live in a 'healthy' state. Whereas Japan tops the global life expectancy league (79.94 years for men, and 86.41 years for women in 2012), its people also enjoy the longest HLE in the world. Health is one of the most important factors for anyone to live a happy life (Figure 3.1-1).

Extending HLE is essential for the entire society as well, in that it significantly contributes to the reduction of social welfare costs, including medical and elderly care. Social welfare spending in Japan has steady increased over the years (Figure 3.1-2), and is expected to increase even further to adapt to the aging population. Currently, around 40% of social welfare costs is covered by national debt, leaving the burden to future generations. This situation does not promote inter-generational equity.

It was in this context that the "Japan Revitalisation Strategy" was approved by the Cabinet in 2013, emphasising the need to take action to reduce social welfare costs, through such measure as extending HLE by more than one year by 2020, reducing the number of metabolic syndrome sufferers by 25% by 2020 (from 2008), and encouraging regular health check-ups. The Ministry of Health, Labour and Welfare has also emphasised the need to extend HLF and narrow the "health gap" in its 2012 strategy, entitled "Health Japan 21 (Second Term)", which includes detailed goals and targets for the promotion of a healthy society in the next decade.

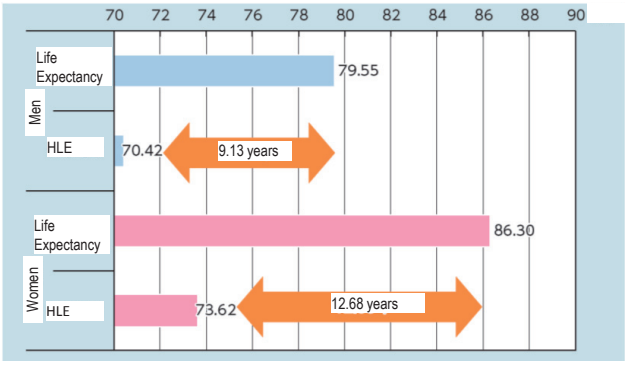
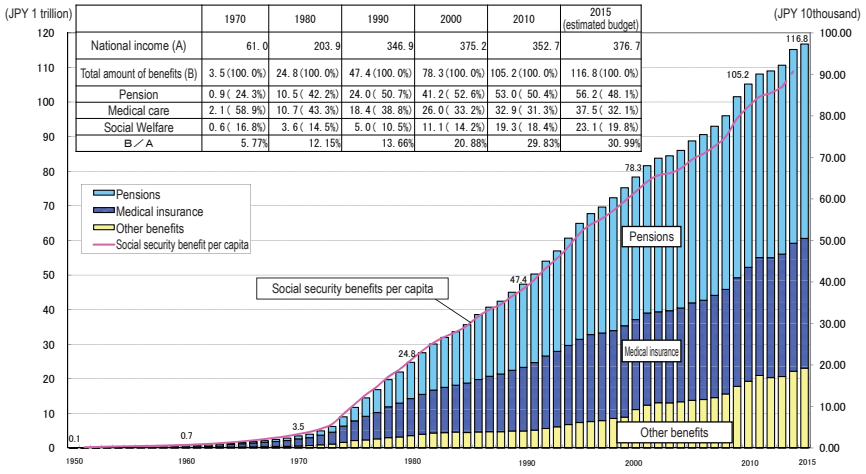


Figure 3.1-1 Average life expectancy and HLE in Japan

Source: Author's own elaboration based on data from "Annual Health, Labour and Welfare Report 2014", Ministry of Health, Labour and Welfare (2014)



	1970	1980	1990	2000	2010	2015 (estimated budget)
National income (A)	61.0	203.9	346.9	375.2	352.7	376.7
Total amount of benefits (B)	3.5 (100.0%)	24.8 (100.0%)	47.4 (100.0%)	78.3 (100.0%)	105.2 (100.0%)	116.8 (100.0%)
Pension	0.9 (24.3%)	10.5 (42.2%)	24.0 (50.7%)	41.2 (52.6%)	53.0 (50.4%)	56.2 (48.1%)
Medical care	2.1 (58.9%)	10.7 (43.3%)	18.4 (38.8%)	26.0 (33.2%)	32.9 (31.3%)	37.5 (32.1%)
Social Welfare	0.6 (16.8%)	3.6 (14.5%)	5.0 (10.5%)	11.1 (14.2%)	19.3 (18.4%)	23.1 (19.8%)
B／A	5.77%	12.15%	13.66%	20.88%	29.83%	30.99%

Figure 3.1-2 Social welfare cost in Japan by year

Source: Author's own elaboration based on data from "Integrated reform of the social security and tax systems", Ministry of Health, Labour and Welfare

Health

Prescription 3.2 Address mental health problems and drug addictions

Targets in Japan

A. By 2030, reduce the number of suicides per 100,000 by X%.
B. By 2030, reduce the number of deaths from overwork to less than X persons.
C. Promote efforts to prevent and cure addiction to alcohol and drugs.

Targets for global efforts

a. Promote global efforts to prevent and cure addiction to alcohol and drugs.

Related UN SDG targets

3.5 8.5

Current situation and its implication for the prescription

Maintaining good mental health is crucial to appreciate a long and healthy life. Anyone can develop a mental illness, and no one is immune to mental health problems. Taking a holistic approach, including appropriate exercise, well-balanced nutrition and good rest to recover from physical and psychological fatigue of everyday life, is particularly of importance to improve any mental health problems.

The number of suicides in Japan has hovered around 20,000 to 35,000 a year over the last few decades (Figure 3.2-1). While there are various factors that drive people to commit suicide, including health problems and financial problems, substantial number of suicides are said to be caused by depression (Figure 3.2-2).

Under the circumstances, it is of critical importance to address the matter in a comprehensive manner as the society as a whole. Moreover, while death from overwork is one of the most serious problems among the country's working population, around 800 workers claim compensation for the health problems (cerebral or heart diseases) caused by overwork. Moreover, the number of employees who claim compensation related to mental health problems has been increasing steadily, reaching the record high figure of 1456 in 2014 (Figure 3.2-3). We should address various forms of harassment in workplaces, including power harassment and sexual harassment, academic harassment at schools and universities, and also bullying at schools.

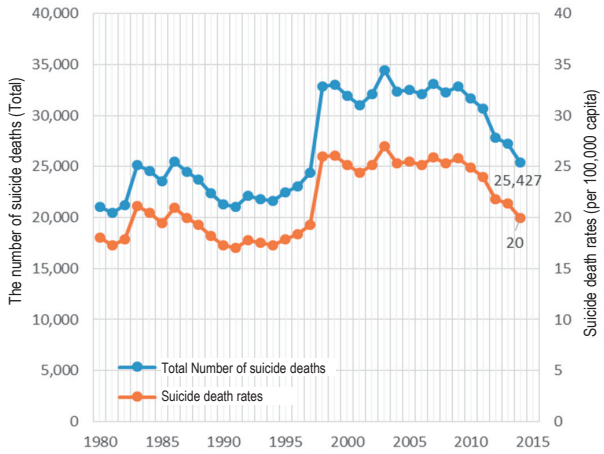


Figure 3.2-1 Suicides (national total and per 100,000) (1980-2015)

Source: Author's own elaboration based on data from "White paper on Suicide Prevention in Japan", Cabinet Office (2014 and 2015)

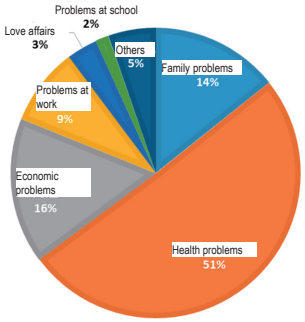


Figure 3.2-2 Causes of suicide (2014)

Source: Author's own elaboration based on date from "Suicide Statistics", Cabinet Office

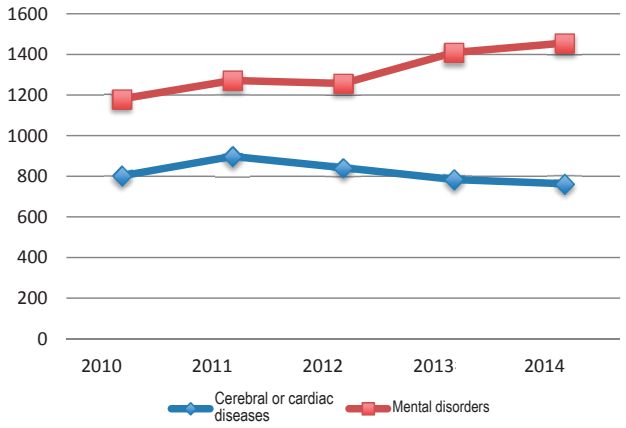


Figure 3.2-3 Number of employee compensation claims (2010-2014)

Source: Author's own elaboration based on data from "Number of death from over work and other work-related accidents in 2014", Ministry of Health, Labour and Welfare (2014)

Health

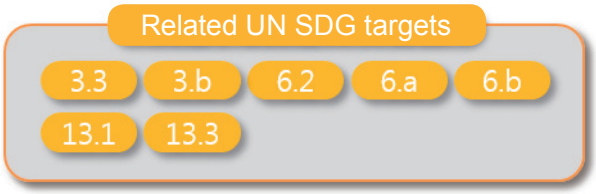
Prescription 3.3 Prevent and control communicable diseases

Targets in Japan

A. By 2030, eradicate communicable diseases including AIDS, tuberculosis, malaria, and tropical diseases from Japan.
B. By 2030, strengthen responses (vaccination, development of emergency medical systems, etc.) to new communicable diseases, and prevent their occurrence and spread.
C. By 2030, conduct continuous assessments of the risk of infectious diseases considering the long-term impacts of climate change and other factors, and establish/update the necessary guidelines.

Targets for global efforts

a. By 2030, make significant contributions to global efforts to end the epidemics of AIDS, tuberculosis, malaria, and tropical diseases, and combat hepatitis, waterborne diseases, and other communicable diseases.



Current situation and its implication for the prescription

Infectious diseases occur when microbes invade and infect the body, causing disease. SDG Target 3.3 declares to end the epidemics of three major infectious diseases, namely AIDS, tuberculosis and malaria, and neglected tropical diseases, and combating hepatitis, water-borne diseases and other communicable diseases.

An estimated 36.9 million people worldwide were reportedly living with HIV in 2014. Between 1.9 million and 2.2 million were new cases of HIV infection in 2014, a significant decrease from 3.81 million in 2000. While there is currently no cure or effective vaccine to deal with the diseases, advancement of treatment regimen have made it possible to slow down progression of the disease.

There were 16,903 HIV patients and 7,658 AIDS suffers in Japan at the end of 2014. The number has been steadily increasing in recent years, more than 1,000 new HIV carriers and more than 400 new AIDS patients reported annually. The country must make its utmost effort to the prevent further spread of these diseases (Figure 3.3-1).

Tuberculosis is currently killing around 1.5 million people around the world every year. It was the biggest killer in Japan until the 1950s, but the mortality rate from this disease has dropped from around 146.4 per 100,000 then to 1.7 in 2013. Also, total morbidity from the disease has dropped from 698.4 per 100,000 in 1951 to 16.1 in 2013. The country's efforts to fight tuberculosis have significantly improved the overall situation. However, the fact remains that 56 people are infected by tuberculosis each day across the country, among which six people lose their lives even today.

With regard to malaria, around 198 million people were infected across the world in 2013, among which over 580,000 people lost their lives. The situation, however, has improved significantly compared to 2000. In Japan, indigenous malaria disappeared more than half a century ago, and there have been no cases of domestic infection reported, presumably due to the change of the living conditions of mosquitoes, changes in people's lifestyles and residential structure in the country. We should further continue our efforts to end the three major infectious diseases within and around the country.

In recent years, Japan has faced emerging infectious diseases such as the Middle East Respiratory Syndrome (MERS), Ebola hemorrhagic fever, avian influenza, and new strains of pandemic influenza. In August 2014, the Ministry of Health, Labour and Welfare of Japan confirmed the first domestic infection of dengue fever in nearly 70 years. The viruses of some of tropical diseases including dengue fever are primarily transmitted by particular kinds of mosquitoes that live widely across the country.

It is important to consider the impacts global warming on mosquito-borne diseases, as they are known to rapidly become epidemic under favourable environmental conditions. We should therefore be aware of the future potential of epidemics of infectious diseases, including malaria, dengue fever, and Japanese encephalitis (Table 3.3-2).

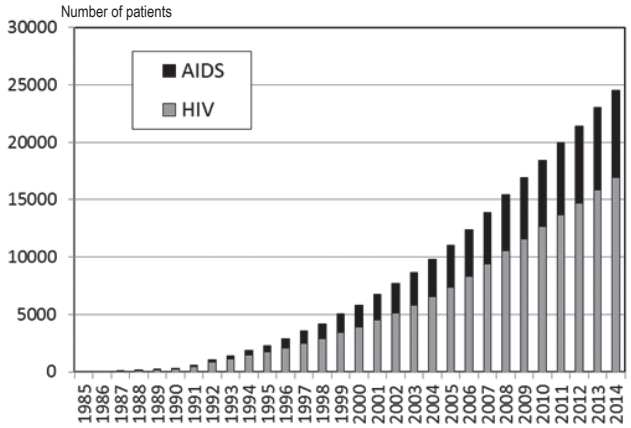


Figure 3.3-1 Total HIV and AIDS patients in Japan

Source: Ministry of Health, Labour and Welfare (2015) "HIV and AIDS in Japan 2014"

1. Global warming will increase the number of mosquitoes, causing the increased population density of mosquitoes in residential areas.
2. Warming climate will contribute to increase the number of mosquitoes (including their eggs and larvae) surviving winter, leading to increases in the number of mosquitoes in subsequent years.
3. The number of mosquitoes surviving winter in the larval stage will increase as standing water in urban areas will not freeze.
4. Significant increase in average temperature during summer in urban areas could cause rapid epidemics of mosquito-borne diseases.
5. As the habit of wearing short-sleeved shirts and shorts becomes more common during hot summer months, people become more prone to mosquito-borne diseases.

Table 3.3-2: Potential effects of global warming on the status of animal-borne diseases in Japan

Source: Author's own elaboration based on data from "Global warming and its effects on infectious diseases", Ministry of the Environment (2007)

Health

Prescription 3.4 Establish equal access to quality medical and elderly care services

Targets in Japan

A. By 2030, provide the entire population with equal access to quality health care services. By 2025, increase the number of nursing care workers to 2.48 million (Note 21), and to **X** people by 2030.
B. By 2030, provide the entire population with safe, inexpensive and sustainable transport systems.
C. Recognise and value unpaid care including elderly care and housework through social welfare systems.

Targets for global efforts

a. Provide support for global efforts in establishing social security systems for the poorest and most vulnerable in developing countries.
b. Promote equitable societies by providing support to establish effective social welfare policies.
c. Make a significant contributions to the achievement of Universal Health Coverage (UHC).

Related UN SDG targets

1.3 3.8 5.4 10.4 11.2

Current situation and its implication for the prescription

The aging of the population will inevitably lead to an increased financial burden on health care services. How to provide the population with quality health care services in a sustainable manner in the coming years is one of the most pressing issues currently facing Japan. Moreover, regional gaps should be addressed urgently, including access to health care services and the supply of human and financial resources for health care in rural areas(Figure 3.4-1).

In this regard, maintaining the appropriate number of skilled health workers is of critical importance. The Ministry of Health, Labour and Welfare has estimated that an additional 2.37 to 2.49 million nursing care workers will be needed in 2025, potentially causing a shortage of 300,000 care workers (Figure 3.4-2). While we urgently need to take action to avoid such a scenario, it will not be an easy task in the face of a decline in Japan's working-age population. Finally, we should also be aware of the welfare of vulnerable people in society, including women, children, persons with disabilities and the elderly, and provide appropriate social infrastructure to effectively serve their needs. In this regard, we should aim to build truly barrier-free environments in our society that are accessible to everyone and comfortable for all, including the vulnerable.

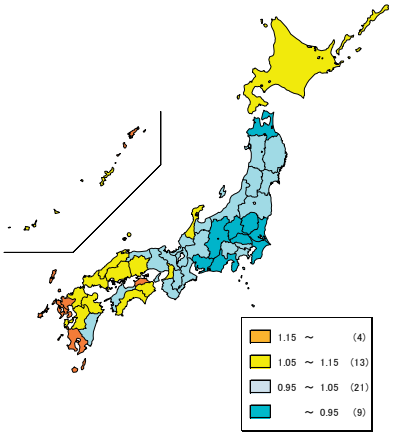


Figure 3.4-1 Disparity of medical expenditure, by region

Source: Ministry of Health, Labour and Welfare (2015) "Analysis of regional differences of medical expenses"

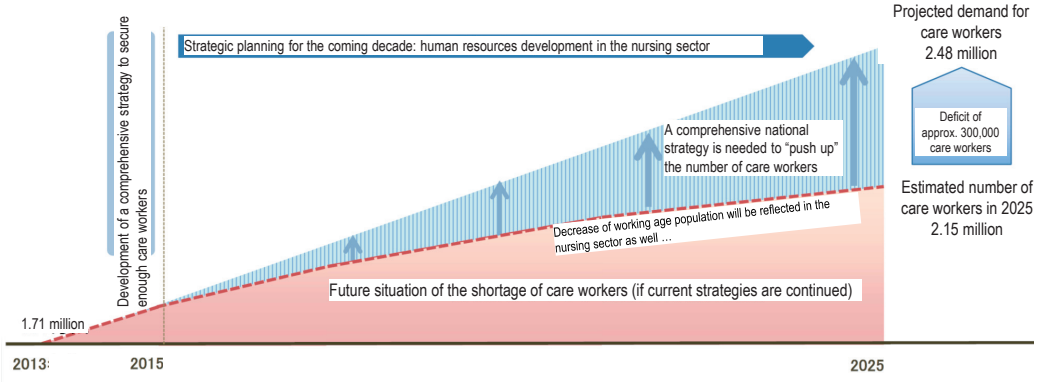


Figure 3.4-2 Estimated (red) and desirable (blue) numbers of nursing care workers by year

Source: Author's own elaboration based on data from "Results of the projections of the demand for elderly care practitioners (provisional figure)", Working team on the projections of supply and demand for elderly care practitioners (2015)

Targets for health-related issues			Related UN SDGs
Prescription 3.1: Promote long and healthy lives	A (D)	Extend healthy life expectancy by 1 year by 2020 and an additional **X** years by 2030.	
	B (D)	Reduce the number of metabolic syndrome sufferers by 25% by 2020, from 2008 (Note 3), and an additional **X**% by 2030.	
	C (D)	By 2020, increase to 80% the ratio of having regular medical check-ups, and to **X**% by 2030.	
	D (D)	By 2030, aim to fully implement WHO Framework Convention on Tobacco Control.	
	a (G)	Contribute to global efforts to end all forms of malnutrition by 2030.	
	b (G)	Contribute to global targets to reduce mortality rates of pregnant women, newborns and children under the age of five.	
	c (G)	Contribute to the global efforts to reduce the number of traffic accident casualties.	
	d (G)	Contribute to a reduction in the number of pollution-related illness sufferers and victims by utilising Japan's environmental technologies.	
	e (G)	By 2030, contribute to the reduction of premature deaths from non-communicable diseases (NCD).	
	f (G)	In particular, provide support for capacity-building relating to early warning of health risks, risk mitigation, and risk management.	
Prescription 3.2: Address mental health problems and drug addictions	A (D)	By 2030, reduce the number of suicides per 100,000 by **X**%.	
	B (D)	By 2030, reduce the number of deaths from overwork to less than **X** persons.	
	C (D)	Promote efforts to prevent and cure addiction to alcohol and drugs.	
	a (G)	Promote global efforts to prevent and cure addiction to alcohol and drugs.	
Prescription 3.3: Prevent and control communicable diseases	A (D)	By 2030, eradicate communicable diseases including AIDS, tuberculosis, malaria and tropical diseases from Japan.	
	B (D)	By 2030, strengthen responses (vaccination, development of emergency medical systems, etc.) to new communicable diseases, and prevent their occurrence and spread.	
	C (D)	By 2030, conduct continuous assessment of the risk of infectious diseases considering the long-term climate impacts of climate change and other factors, and establish necessary guidelines.	
	a (G)	By 2030, make significant contributions to global efforts to end the epidemics of AIDS, tuberculosis, malaria, and tropical diseases, and combat hepatitis, waterborne diseases, and other communicable diseases.	
Prescription 3.4: Establish equal access to quality medical and elderly care services	A (D)	By 2030, provide the entire population with equal access to quality health care services. By 2025, increase the number of nursing care workers to 2.48 million, and to **X** people by 2030.	
	B (D)	By 2030, provide the entire population with safe, inexpensive and sustainable transport systems.	
	C (D)	Recognise and value unpaid care including elderly care and housework through social welfare systems.	
	a (G)	Provide support for global efforts in establishing social security systems for the poorest and most vulnerable in developing countries.	
	b (G)	Promote equitable societies by providing support to establish effective social welfare policies.	
	c (G)	Make a significant contribution to the achievement of Universal Health Coverage (UHC).	

D=Domestic Targets, G=Contribution to Global Targets

Notes

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Education

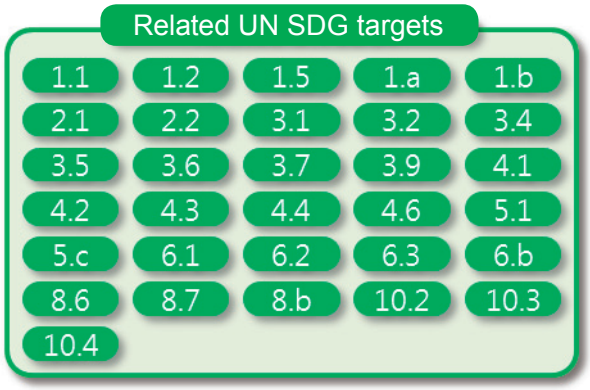
Prescription 4.1 Promote equal access to quality education and vocational training

Targets in Japan

A. By 2020, provide free early care and education for children of pre-school age (3-5 years). Particular attention should be paid to the diverse needs of children of various backgrounds. Ongoing debate on lowering the compulsory school age to five should be continued.
B. By year **X**, prior to 2030, provide free high school education (including private schools).
C. By 2030, increase public expenditures on higher education to 1.0% of GDP.
D. By 2030, increase public expenditures on education to **X**% of GDP.

Targets for global efforts

a. Further enhance efforts to improve education in developing countries through various measures (e.g., constructing schools, training teachers, improving teaching materials and curriculum, strengthening ties between authorities and local communities).
b. Provide support for informal literacy education in countries where illiteracy rates are relatively high.
c. Further enhance support to developing countries and countries affected by conflicts, by providing vocational training and technical education, in close cooperation with industrial sectors in those countries.



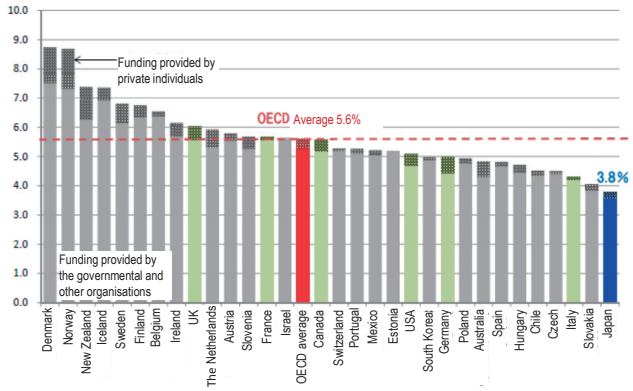


Figure 4.1-1 Expenditure on educational institutions in OECD countries as a percentage of GDP (2011)

Source: Author's own elaboration based on data from OECD (2014) "Education at a Glance 2014", quoted in Ministry of Education, Culture, Sports, Science and Technology (2015) "Public administration and finance of education in Japan"

Current situation and its implication for the prescription

Education is a means for developing skills that will be required in achieving sustainable society. It would therefore be of critical importance to ensure equal opportunities for education and vocational training for all throughout one's lifetime, regardless of age, disability, gender, and financial situation. However, a deepening of socio-economic disparities in Japan has created a social gap in access to quality education.

One factor contributing to such a situation is the country's low level of public expenditures on education. Japan's public spending on education amounted to just 3.8% of GDP in 2011, the fifth consecutive year Japan ranked as the least generous spender on education among 32 of the 34 OECD members for which data were available, and in contrast to the OECD average of 5.6% as of 2014 (Figure 4.1-1).

This situation results in a heavy economic burden imposed on students and their families. For instance, 55% of expenditures on pre-school education in Japan was paid by individuals, while the OECD average was 18.7%. Regarding spending for higher education, the percentages were 66% and 31%, respectively (Figure 4.1-2).

The high cost of formal education being borne by households in Japan is a barrier for equal educational opportunities for all, especially when it comes to higher education. Moreover, it is also one of the biggest factors contributing to Japan's declining birth rate.

If education is actually contributing to a widening of the socio-economic gap, rather than promoting fairness and equality in society, it could be counterproductive for the sake of achieving sustainable society where a variety of skills is required. Moreover, the widening of the gap between the rich and poor will inevitably cause a variety of social problems.

It was in this context that the Ministry of Education, Culture, Sports, Science and Technology formulated in 2013 the basic policy aimed at providing free childcare and education to pre-school aged children (3-5 years) by 2020. Japan should stick to this target and continue its efforts to achieve the goal by then.

Free high school education is currently provided only at state schools, and those families with an annual income of less than JPY 9.1 million still suffer from the heavy financial burden of tuition fees for their children to attend private schools. Japan should encourage the introduction of free education at private schools as well. Moreover, ongoing efforts to increase public expenditures on higher education from the current 0.5% of GDP to 1.0% , which is the average figure of other OECD countries.

Currently around 58 million school-aged children around the world are not benefitting from primary education due to various reasons, including poverty and conflicts. More than half are girls. Opportunities for secondary education are also limited in these regions, and so are opportunities for vocational training and technical education that would lead to employment and entrepreneurship. The lack of education is causing higher unemployment rates among younger generations in developing countries. This situation could potentially lead to social unrest in those countries. Japan should further enhance its efforts to improve access to education and training in developing countries, in close cooperation with other donor countries and relevant organisations.

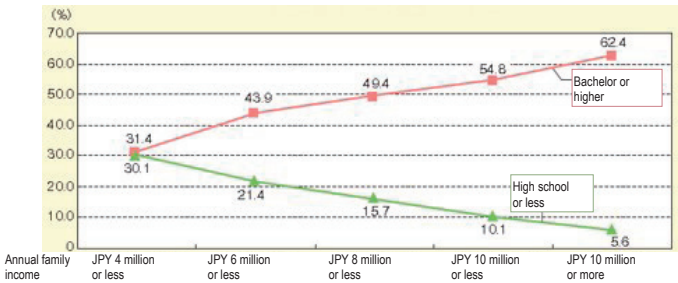


Figure 4.1-2 Educational choice and family income

Source: Author's own elaboration based on data from "2010 White Paper on Education, Culture, Sports, Science and Technology", Ministry of Education, Culture, Sports, Science and Technology (2010)

Education

Prescription 4.2 Promote Education for Sustainable Development (ESD)

Targets in Japan

A. By 2030, promote civic literacy in the entire population through ESD, thereby enhancing the people's understanding of sustainable development and lifestyles, human rights, gender equality, respect for peace and global citizenship, and cultural diversity.
B. Promote environments where people of all ages can appreciate the opportunity to learn about sustainable development throughout their lives.
C. Promote education on disaster risk prevention and risk management through ESD within and around school.

Targets for global efforts

a. Provide leadership and facilitation to promote the Global Action Programme (GAP) on Education for Sustainable Development.
b. Provide leadership and facilitation to promote the development of ESD monitoring mechanisms and indicators.

Related UN SDG targets

1.5	1.a	2.3	2.4	3.4
3.5	3.6	3.7	3.9	3.d
4.7	5.1	5.2	5.3	5.4
5.5	5.6	6.2	6.3	6.a
6.b	8.4	10.2	11.3	11.4
11.5	11.b	12.1	12.2	12.3
12.5	12.6	12.8	12.a	13.1
13.2	13.3	14.3	14.5	15.4
15.9	15.c	16.1	16.2	17.9
17.17	17.19			

Current situation and its implication for the prescription

Our planet is currently faced with various problems, including environmental problems, food security, natural resources and energy security, various new and conventional security problems, and human rights violation, many of which are intertwining with each other. It is therefore essential for the entire population to take the necessary actions to address those various problems for the sake of achievement of sustainable society, while fully recognising the indivisible nature of these problems.

Education has an important role to play in this regard by developing 'civic literacy' among the people, thereby raising their awareness towards globally important issues, such as the protection of the natural environment and the promotion of social justice, including addressing generational gaps within societies.

It was in this context that the concept of ESD (Education for Sustainable Development) was introduced. ESD is a new approach to education aimed at developing capacities of students to critically reflect those global problems needed to be addressed for the achievement of sustainable society, and question our current systems and behaviours, thereby enhancing the transformation of the society in a holistic manner (Figure 4.2-1).

In recognition of the importance of ESD, the UN General Assembly declared 2005-2014 the "UN Decade of Education for Sustainable Development" (DESD). UNESCO has been leading the Decade, and has developed an International Implementation Scheme for the Decade. The 2014 UNESCO World Conference on Education for Sustainable Development (ESD) was held in November 2014 in Nagoya, Japan. The Conference resulted in Aichi-Nagoya Declaration, calling for urgent action to mainstream ESD and include ESD in the post-2015 development agenda. The declaration called on all nations to implement the Global Action Programme on ESD (GAP) to move the ESD agenda forward.

Japan should steadily implement the GAP and related policies included in Aichi-Nagoya Declaration, thereby raising awareness of the people regarding sustainable society. It is also of importance for Japan to enhance the concept of ESD in disseminating knowledge about disaster prevention and disaster risk mitigation among the entire population.

Also, Japan should take a leading role in implementing the GAP and development of ESD monitoring mechanisms and indicators, as one of the advocates of ESD.

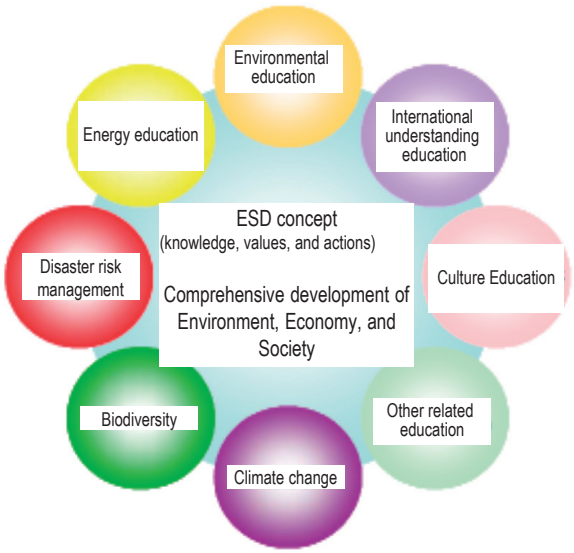


Figure 4.2-1 ESD: Holistic approach to education

Source: Author's own elaboration based on data from "ESD (Education for Sustainable Development)", Ministry of Education, Culture, Sports, Science and Technology

Education

Prescription 4.3 Promote inclusive education

Targets in Japan

A. By 2030, develop efficient mechanisms and institutions where children and youths with a disability are guaranteed access to quality education, thereby ensuring their financial independence after completing education.

B. Promote favourable environments for inclusive education by increasing the number of teachers and staff members, as well as that of school counsellors and social workers.

C. Establish flexible and supportive systems in which foreign or stateless children would not be deprived of their rights for education.

Targets for global efforts

a. Raise awareness of citizens regarding global refugee problems, thereby preparing local communities to accept more refugees, while providing long-term support to refugees.

b. Provide support to developing countries in introducing inclusive education of various forms, depending on the needs and circumstances of each individual country.

Related UN SDG targets

1.4 4.5 4.a 8.6 10.2 10.3 10.7

Current situation and its implication for the prescription

Sustainable society is a space where all the members live in harmony, based on mutual respect on their diversities, including age, gender, disability, culture, race, origins, religions, and socio-economical status. Achievement of an inclusive and equitable society has been recognised as one of the top priorities for Japan and its government. From the viewpoint of inclusive education, it would be essential to develop environments where all students can study in one classroom and community, regardless of their strengths or weaknesses in any areas, including disabilities. At the same time, schools and teachers should be able to provide education services to the pupils and students with specific needs.

Inclusive education is an approach that provides all pupils and students with equal opportunities to receive primary and secondary education in one classroom, regardless of their disabilities, while ensuring "[r]easonable accommodation of the individual's requirements is provided" as was stated in Article 24 of the "UN Convention on the Rights of Persons with Disabilities" adopted at the 61st UN General Assembly in 2006. Japan ratified the Convention in 2014, and is well aware of the crucial importance of promotion of inclusive education.

In Japan, special education for the pupils and students is available not only at special support education schools but also in special support education classes for the handicapped attending ordinary elementary and secondary schools. However, currently the support provided to disabled pupils and students is less than enough, due to the lack of the supply of qualified teachers and necessary facilities. Moreover, further support should be provided to disabled students after completion of their education in finding suitable jobs (Figure 4.3-1).

In order to achieve a harmonious society in Japan, we should also provide further support for the education of children with foreign origins, who are increasing in number in recent years. Last but not least, Japan should start seriously considering accepting more refugees, as Japan currently accepts a significantly lower number of them compared to other developed nations. Japan should also make further efforts to promote refugees' and immigrants' social integration by raising awareness among citizens and enhancing the development of related political institutions and systems.

According to a report published by the Ministry of Justice, the number of foreign nationals residing in Japan has reached 2,086,603 in 2014, among which 41,187 are children 18 years old or under. The majority of those children are likely to remain in Japan in the years to come, making them an integral part of the communities with whom local residents should be working harmoniously to build sustainable society. The "Convention on the Rights of the Child" guarantees the rights of children with foreign origins to equally receive education in the country of residence. Free primary and secondary education is provided to the children of foreign nationals residing in Japan. Having said that, we should also be aware that those children with diverse backgrounds might need special educational support, including Japanese language lessons. Currently the support available to those children is hardly enough (Figure 4.3-2), and the government and the local authorities should promptly take the necessary actions to achieve a truly inclusive society in Japan in the years to come.

The number of students attending special support education schools has increased by 30% over the last decade. There has been particularly sharp increase in the number of high school students.

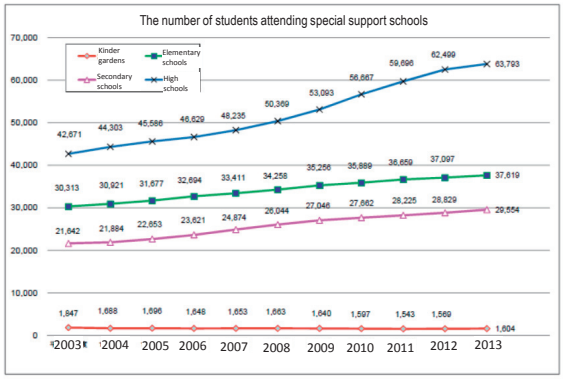


Figure 4.3-1
Number of special support education schools and their students

Source: Author's own elaboration based on data from "Special education in Japan: Present situation and future challenges", Ministry of Education, Culture, Sports, Science and Technology (2014)

Figure 4.3-2 Concerns and issues children of foreign origin tend to face at school

Source: Author's own elaboration based on data from "Problems children with foreign origin tend to face at schools in Japan", Benesse Educational Research and Development Institute (BERD) (2014)

Education

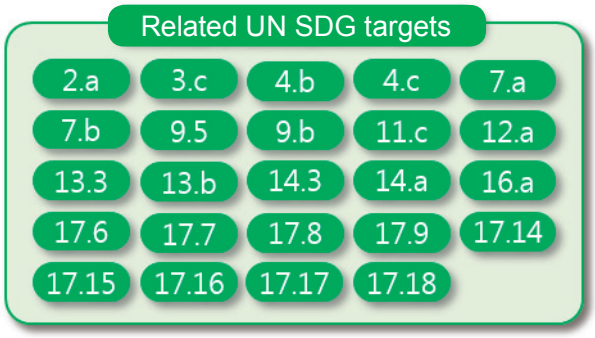
Prescription 4.4 Promote international collaboration in research and higher education

Targets in Japan

A. Foster quality teaching at higher education institutions in Japan, thereby enhancing their international competitiveness, so students can benefit from Japan's research and technical capabilities necessary for solving global problems.

Targets for global efforts

a. Further enhance scholarship programmes for students from developing countries. Provide further support to improve the quality of research and higher education in developing countries.
b. Promote research and education on global issues in developing countries by further enhancing support.
c. Enhance Japan's involvement in international research programmes and make a significant contribution to addressing global problems.



Current situation and its implication for the prescription

As globalisation has been further advancing today, so is the gravity of global problems, including global warming and pandemics. Due to the truly transnational nature of these problems, any single actor—nation or region—is incapable of dealing with them alone. International cooperation is without doubt essential in dealing with global problems.

We are living in the time of history when knowledge and technology have become sources of sustainable growth, making the role of higher education institutions and research institutions even more important in addressing these problems.

Higher education institutions and research institutes in Japan should further enhance their contribution to human resource development in developing countries, while sharing knowledge and experiences with them, thereby enhancing cooperation with them in finding effective solutions of a variety of global problems.

In this regard, it would be of importance to further enhance Japan's scholarship programme for over sea students, particularly those from developing countries, where Japan can make a significant contribution in addressing various problems, such as environment and energy, pandemics, aging of society, through Japan's technological strengths and practical experience.

Furthermore, the cooperation between higher education institutions in Japan and developing countries should be enhanced, as well as cooperation between the private sectors on both sides, thereby establishing and enhancing a sustainable platform for effective human resource and educational and research cooperation involving industry, academia, and governmental sectors. In other words, Japan should enhance collaboration with developing countries in research and education to address global problems, rather than merely providing educational and technical supports.

The Japan Science and Technology Agency (JST) and Japan International Cooperation Agency (JICA) have launched a programme called "Science and Technology Research Partnership for Sustainable Development (SATREPS)" in which research institutions in Japan and developing countries are collaborating in enhancing research related to global problems. Japan should further enhance its involvement in various international research programmes, such as the "Future Earth" programme on global sustainability, and make a significant contribution in addressing global problems through its advanced technologies.

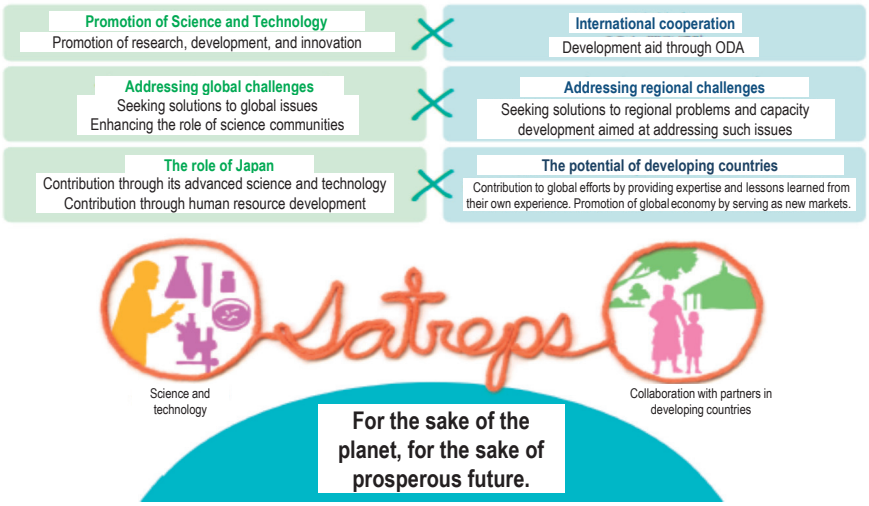


Figure 4.4-1 Addressing global problems: Concepts and methods (SATREPS)

Source: Author's own elaboration based on data from "SATREPS 2014", Japan Science and Technology Agency (2014)

Targets for education-related issues			Related UN SDGs
Prescription 4.1: Promote equal access to quality education and vocational training	A (D)	By 2020, provide free early care and education to children of pre-school age (3-5 years). Particular attention should be paid to the diverse needs of children of various backgrounds. Ongoing debate on lowering the compulsory school age to five should be continued.	
	B (D)	By year **X**, prior to 2030, provide free high school education (including private schools).	
	C (D)	By 2030, increase public expenditures on higher educational to 1.0% of GDP.	
	D (D)	By 2030, increase public expenditures on education to **X**% of GDP.	
	a (G)	Further enhance efforts to improve education in developing countries through various measures (e.g., constructing schools, training teachers, improving teaching materials and curriculum, strengthening ties between authorities and local communities).	
	b (G)	Provide support for informal literacy education in countries where illiteracy rates are relatively high.	
	c (G)	Further enhance support to developing countries and countries affected by conflicts, by providing vocational training and technical education, in close cooperation with industrial sectors in those countries.	
Prescription 4.2: Promote Education for Sustainable Development (ESD)	A (D)	By 2030, promote civic literacy in the entire population through ESD, thereby enhancing the people's understanding of sustainable development and lifestyles, human rights, gender equality, respect for peace and global citizenship, and cultural diversity.	
	B (D)	Promote environments where people of all ages can appreciate the opportunities to learn about sustainable development.	
	C (D)	Promote education on disaster risk prevention and risk management through ESD within and around school.	
	a (G)	Provide leadership and facilitation to promote the Global Action Programme (GAP) on Education for Sustainable Development.	
	b (G)	Provide leadership and facilitation to promote the development of ESD monitoring mechanisms and indicators.	
Prescription 4.3: Promote inclusive education	A (D)	By 2030, develop efficient mechanisms where children and youths with disability are guaranteed access to quality education, thereby ensuring their financial independence after completing education.	
	B (D)	Promote favourable environments for inclusive education by increasing the number of teachers and staff members, as well as that of school counsellors and social workers.	
	C (D)	Establish flexible and supportive systems in which foreign or stateless children would not be deprived of their rights for education.	
	a (G)	Raise awareness of citizens regarding global refugee problems thereby preparing local communities to accept more refugees, while providing long-term support to refugees.	
	b (G)	Provide support to developing countries in introducing inclusive education of various forms, depending on the needs and circumstances of each individual country.	
Prescription 4.4: Promote international collaboration in research and higher education	A (D)	Foster quality teaching at higher education institutions in Japan, thereby enhancing their international competitiveness, so students can benefit from Japan's research and technical capabilities necessary for solving global problems.	
	a (G)	Further enhance scholarship programmes for students from developing countries. Provide further support to improve the quality of research and higher education in developing countries.	
	b (G)	Promote research and education on global issues in developing countries by further enhancing support.	
	c (G)	Enhance Japan's involvement in international research programmes and make a significant contribution to addressing global problems.	

D=Domestic Targets, G=Contribution to Global Targets

Notes

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(NB : All websites retrieved in December 2015)

Gender

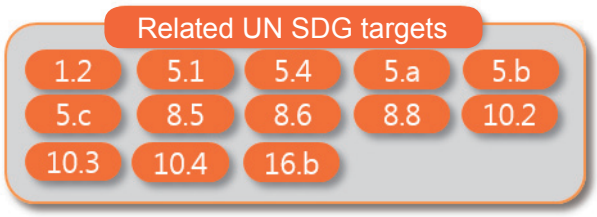
Prescription 5.1 Address gender-inequality in employment opportunities and wages

Targets in Japan

A. By 2020, increase to 73% the employment rate of women 25–44 years of age (Note 12), and to **X**% by 2030.
B. By 2020, increase to 55% the ratio of women who continue working after the birth of their first child (Note 12), and to **X**% by 2030.
C. By 2020, increase to13% the rate of male employees who take parental leave (Note 12), and to **X**% by 2030.
D. By 2017, provide all parents access to childcare (Note 12).
E. Recognise and value unpaid care and household work, through social welfare systems.
F. By 2030, encourage men to share the burden of housework and childcare so that their partners/wives do not spend more than **X** times what men spend on those tasks.
G. By 2030, achieve equal pay for equal work, and eliminate gender-based wage disparities.
H. By 2020, reduce by 10–50% the ratio of employees who work 60 hours or more per week (Note 13).

Targets for global efforts

a. Protect labour rights for all, especially for the vulnerable, including immigrant workers and female employees, and promote safe and comfortable working conditions.
b. Recognise and value unpaid care and household work, through social welfare systems.



Current situation and its implication for the prescription

Sustainable growth ultimately depends on the contribution of each individual in society, and is of utmost importance to mobilise all available human resources. This is especially the case with Japan, where the population is bound to decrease in the coming years. From the viewpoint of sustainability, prospective demographic changes will pose significant challenges to the country.

Nevertheless, Japan has one of the highest labour market gender gaps among the advanced economies. According to figures published by the Cabinet Office in 2014, for males the labour force participation rate in working age population (15 years and over) was 70.4%, and for women, 49.2% (Figure 5.1-1). Around 29.08 million women are thus not in labour force, about 65% of the entire non-labour force population of the country. While 3.03 million women are actively seeking employment, the rest are not seeking jobs, either for personal and/or other reasons (e.g., family responsibility, health issues, and study) or labour market-related reasons. "Childbirth and childcare" tops among other reasons (34.6%), followed by a market-oriented reason ("lack of prospects for appropriate employment": 30.1%), "health reasons" (13.0%), and "elderly care and nursing" (5.8%), indicating that family responsibility, especially pregnancy and childcare responsibility that follows, are major barriers for women's long-term careers (Figure 5.1-2).

The "Japan Revitalization Strategy" approved by Cabinet in 2013 set the target of increasing the female employment rate of 25–44 years of age to 73% from 68% (2012), and increase the ratio of female employees returning to their jobs after birth of their first child to 55% from 38% (2010) by 2020. Moreover, it declared that ratio of male employees who take parental leave should be raised from 2.63% (2011) to 13% by 2020. It also claims that access to childcare should be guaranteed to all parents by 2017.

According to an OECD survey, Japanese women spend 299 minutes per day on unpaid labour such as housework and childcare, while men spend 62 minutes. The gender disparity in the sharing of domestic work in Japan is indeed significant compared to other OECD countries (Figure 5.1-3). Moreover, the Global Gender Gap Index (GGGI) indicate that Japanese women earn 40% less than men, illustrating a serious gender disparity in wages as well. While the difference is partly due to the fact that the percentage of female workers in non-regular employment is significantly higher than that of men, it has also been pointed out that women are paid more than 30% less than their male counterparts, indicating that the principle of "equal pay for equal work" is not necessarily practiced in Japan.

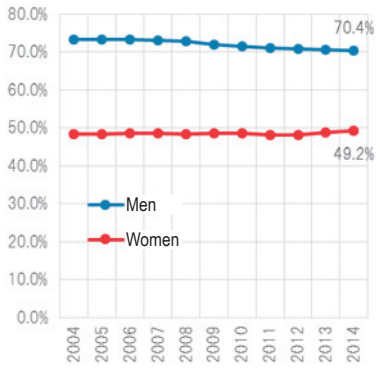


Figure 5.1-1 Labour force participation rate

Source: Author's own elaboration based on data from "Labour Force Survey", Statistics Bureau, Ministry of Internal Affairs and Communications (2015)

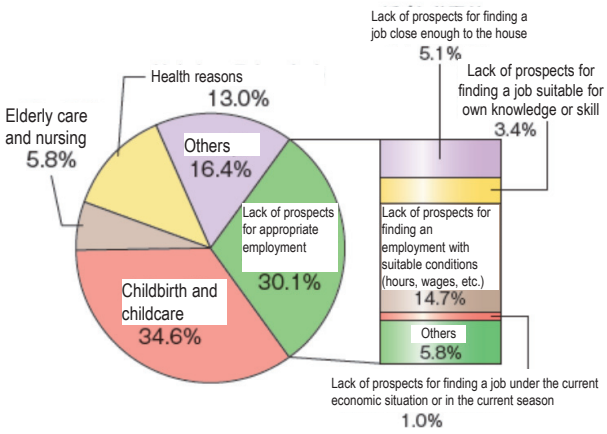


Figure 5.1-2 Female non-labour force population by reasons

Source: Author's own elaboration based on data from "White Paper on Gender Equality 2015", Cabinet Office (2015)

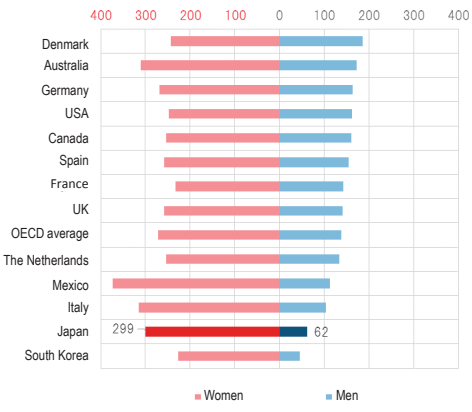


Figure 5.1-3 Minutes spent on domestic work

Source: Author's own elaboration based on data from "Balancing paid work, unpaid work and leisure", OECD

Gender

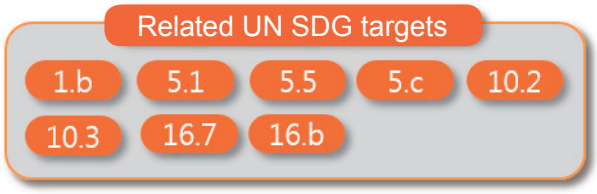
Prescription 5.2 Promote women's leadership in society

Targets in Japan

A. By 2020, raise to 30% women's share of leadership positions in businesses and other areas, and to **X**% by 2030 (Note 3).
B. Introduce measures for human resources development aimed at achieving gender equality in workplaces.

Targets for global efforts

a. Ensure equal opportunities for both genders to participate in decision-making processes of various areas of society.



Current situation and its implication for the prescription

World Economic Forum has been publishing Global Gender Gap Index (GGGI) which illustrates the countries' gender equality level regarding education, economy, health and politics since 2006 (indicated on a scale of 0 to 1). The "Global Gender Gap Report 2014" ranked Japan 104th out of 142 countries, with significant gender disparities in political participation (Figure 5.2-1).

A Cabinet Office study reported the ratio of female parliamentarians at 9.5% in the House of Representatives, and 15.7 % in the House of Councilors, significantly lower than most other countries. Moreover, nearly 40% of municipal councils in Japan do not have even one female councilor. These figures suggest that the participation of women in political processes is a crucial issue.

In 2005, the government issued a second Basic Plan for Gender Equality with the goal of "increasing the share of women in leadership positions* to at least 30% by 2020 in all fields of society." Various efforts are being undertaken to expand women's participation in policy and decision-making processes in all fields of society ever since.

Whereas the overall share of women in "leadership positions" has been gradually increasing since the introduction of the "Basic Plan" in various fields, women's participation is still far from enough. Japan should indeed further enhance its efforts to meet the target by 2020 (Figure 5.2-2).

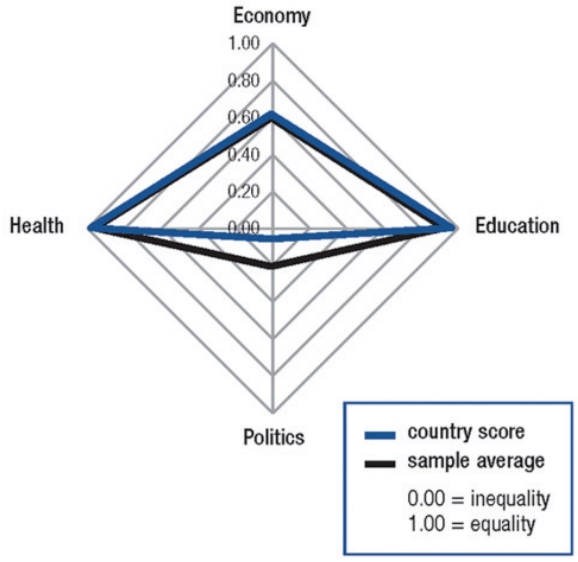


Figure 5.2-1 GGGI: scores of Japan (blue) and average scores (black)

Source: World Economic Forum (2014) "The Global Gender Gap Report 2014"

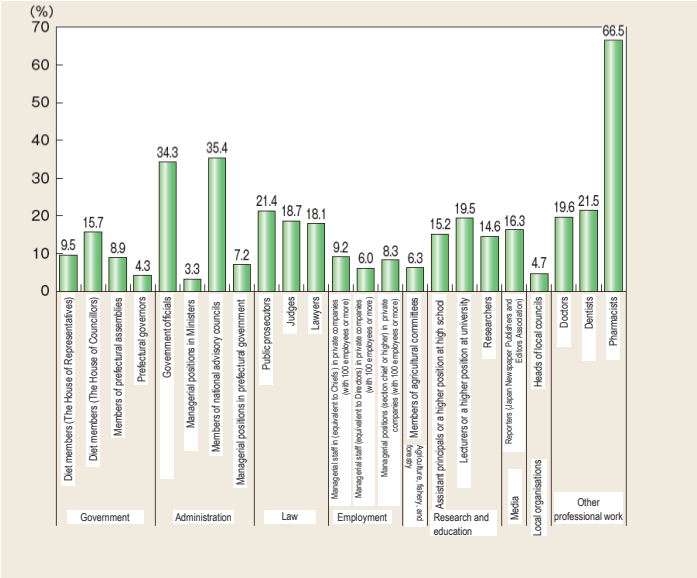


Figure 5.2-2 Proportion of women in "leadership positions" in various fields of society

Source: Author's own elaboration based on data from "White Paper on Gender Equality 2015", Cabinet Office (2015)

*Note: "Leadership positions" include (1) elected parliamentarians and councillors, (2) persons whose titles are equivalent to or higher than section-manager in private corporations or other bodies, and (3) persons who engage in highly professional jobs in specialized or technical professions. (Gender Equality Planning and Coordination Council, 2007).

Gender

Prescription 5.3 End all forms of Gender-Based Violence and promote human rights

Targets in Japan

A. End all forms of Gender-Based Violence (GBV).
B. By year **X**, in all prefectures, establish Gender Equality Centres that explicitly declare their ability to provide support to victims of GBV (Note 8).
C. By 2030, increase to **X** the number of Violence Counselling and Support Centres in municipalities.
D. By year **X**, establish appropriate training systems for professionals dealing with GBV, including police, doctors, nurses, lawyers, counsellors, and teachers.

Targets for global efforts

a. Make a significant contribution to global efforts to end all forms of discrimination against women and girls throughout the world.
b. End all forms of GBV, including human trafficking and sexual exploitation and other forms of exploitation. End all forms of violence in public and private spaces.

Related UN SDG targets

5.1 5.2 5.3 5.c 16.1
16.2 16.3 16.6 16.b

Current situation and its implication for the prescription

Gender-based violence (GBV) could happen in any sort of relationships between men and women, ranging from sexual harassment at workplaces and other public spaces, stalking by former partners or strangers, to domestic violence against spouses and partners. GBV undermines not only the safety but also the dignity, overall health status, and human rights of individuals who experience it. While GBV against men does exist, women account for the overwhelming majority of the victims of domestic violence. The number of arrests of husbands for violence against their wives has increased sharply over the past few years (Figure 5.3-1). The number of reported cases of rape has been in decline over the years. However, this might not necessarily mean that actual occurrences of rape are decreasing. A survey by the Cabinet Office revealed that 6.5% of women had experienced forced sexual intercourse by men, but 67.5% of them said that they did not report the incidents to anyone (Figure 5.3-2).

GBV affects not only the safety and dignity of individuals but also the public health, economic stability, and security of societies and nations. A study by the European Institute for Gender Equality (2014) on the economic costs of GBV in the UK revealed that the economic cost of GBV between intimate partners was around EUR 15.4 billion (of which GBV against women accounted for EUR 13.7 billion), and the total economic cost of GBV was EUR 32.6 billion (of which GBV against women accounted for EUR 28.4 billion).

Japan's Cabinet approved its third Basic Plan for Gender Equality in December 2010, which called for the establishment of Gender Equality Centres in all prefectures by 2015, where residents can receive confidential consultation about the effects of GBV, and an increase the number of Violence Counselling and Support Centres from 21 (2010) to 100 (2015), where victims can receive professional support regarding violence by their spouses.

A recent report by the Gender Equality Bureau of the Cabinet Office revealed that only 22 prefectures are equipped with Gender Equality Centres that explicitly declare their ability to provide support to the victims of GBV. The governmental efforts have not produced adequate results so far, and further efforts require urgent attention.

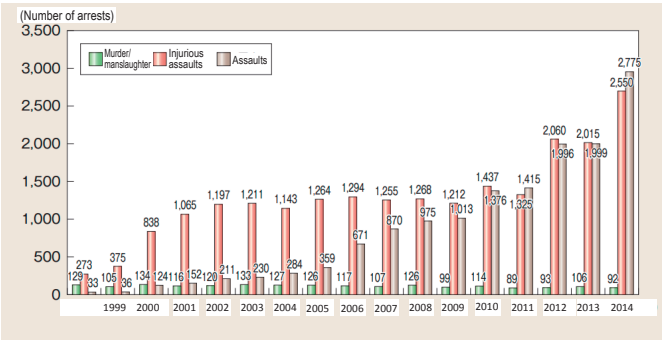


Figure 5.3-1 Number of men arrested for domestic violence

Source: Author's own elaboration based on data from "White Paper on Gender Equality 2015", Cabinet Office (2015)

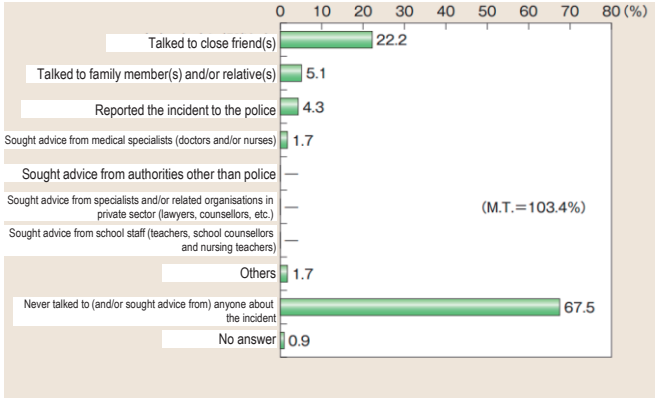


Figure 5.3-2 GBV victims and their reactions

Source: Author's own elaboration based on data from "White Paper on Gender Equality 2015", Cabinet Office (2015)

Targets for issues related to gender equality			Related UN SDGs
Prescription 5.1: Address gender - inequality in employment opportunities and wages	A (D)	By 2020, increase to 73% the employment rate of women 25-44 years of age (Note 12), and to **X**% by 2030.	
	B (D)	By 2020, increase to 55% the ration of women who continue working after the birth of their first child, and to **X**% by 2030.	
	C (D)	By 2020, increase to 13% the rate of male employees who take parental leave (Note 12) and to **X**% by 2030.	
	D (D)	By 2017, provide all parents with access to childcare (Note 12).	
	E (D)	Recognise and value unpaid care and housework, through social welfare systems.	
	F (D)	By 2030, encourage men to share the burden of housework and childcare so that their partners/wives do not spend more than **X** times that men spend on those tasks.	
	G (D)	By 2030, achieve equal pay for equal work, and eliminate gender-based wage disparities.	
	H (D)	By 2020, reduce by 10-50% the ratio of employees who work 60 hours or more per week (Note 13).	
	a (G)	Protect labour rights for all, especially for the vulnerable, including immigrant workers and female employees, and promote safe and comfortable working conditions.	
	b (G)	Recognise and value unpaid care and housework, through social welfare systems.	
Prescription 5.2: Promote women's leadership in society	A (D)	By 2020, raise to 30% women's share of leadership positions in businesses and other areas, and to **X**% by 2030 (Note 3).	
	B (D)	Introduce measures for human resources development aimed at achieving gender equality in workplaces.	
	a (G)	Ensure equal opportunities for both genders to participate in decision-making processes of various areas of society.	
Prescription 5.3: End all forms of Gender-Based Violence and promote human rights	A (D)	End all forms of Gender-Based Violence (GBV).	
	B (D)	By year **X**, in all prefectures, establish Gender Equality Centres that explicitly declare their ability to provide support to victims of GBV (Note 8).	
	C (D)	By 2030, increase to **X** the number of Violence Counselling and Support Centres in municipalities.	
	D (D)	By year **X**, establish appropriate training systems for professionals dealing with GBV, including police, doctors, nurses, lawyers, counsellors, and teachers.	
	a (G)	Make a significant contribution to global efforts to end all forms of discrimination against women and girls throughout the world.	
	b (G)	End all forms of GBV, including human trafficking and sexual exploitation and other forms of exploitation. End all forms of violence in public and private spaces.	

D=Domestic Targets, G=Contribution to Global Targets

Notes

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13. Cabinet Office,「仕事と生活の調和推進のための行動指針」(“Work-Life Balance Action Plans”)
http://wwwa.cao.go.jp/wlb/government/20barrier_html/20html/indicator.html

(NB：All websites retrieved in December 2015)

Water

Prescription 6.1 Address water-related risks

Targets in Japan

A. By 2030, reduce the number of deaths and victims from natural disasters to less than X per 100,000 people.
B. Establish the necessary infrastructure to ensure access to water in emergency situations such as large-scale disasters and droughts.
C. By 2030, collect data and review adaptation measures for risks posed by climate change.

Targets for global efforts

a. Provide technical support through technology transfers related to disaster risk prevention and management. Support human resources development and institution-building to help address water-related disasters.
b. Contribute to global efforts for disaster risk reduction (DRR) by developing early warning systems.
c. By 2030, contribute to global efforts to protect the vulnerable from floods, and significantly reduce the number of victims.

Related UN SDG targets

1.5 2.4 6.5 6.a 11.5
11.b 13.1 13.2 13.3 14.3

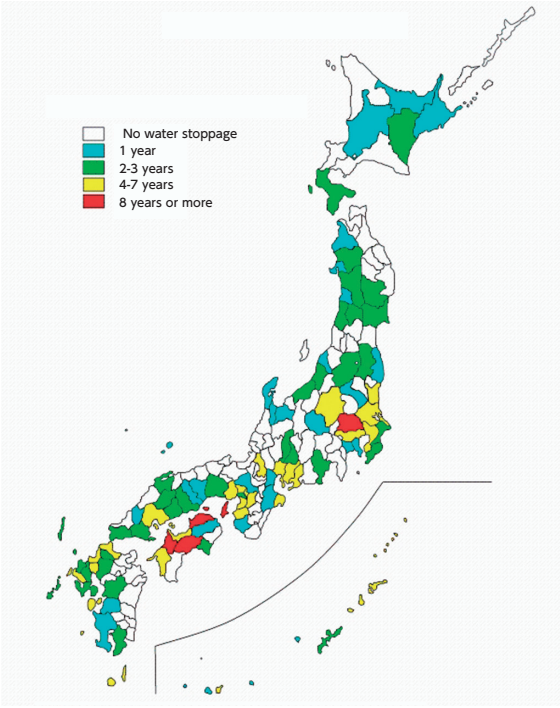


Figure 6.1-1
Water supply status (water stoppages and cutoffs) of past 30 years

Source: Author's own elaboration based on data from "Occurrence of Drought: 1983-2012 ", Ministry of Land, Infrastructure, Transport and Tourism

Current situation and its implication for the prescription

According to statistics from the Fire and Disaster Management Agency, more than 18,000 people lost their lives in Japan from 2000 to 2013 due to natural disasters, and more than 3,000 people were reported missing. The financial damage caused by natural disasters during this period was estimated as JPY 13 trillion. Damage caused by floods, tsunamis, storm surges, heavy rains, and landslides is particularly significant. We need to properly address such phenomena, especially since the frequency of such disasters is increasing due to climate change.

The Sendai Framework for Disaster Risk Reduction 2015-2030 was adopted at the Third UN World Conference on Disaster Risk Reduction, held in Sendai in March 2015, which declared the goal to substantially reduce global disaster mortality by 2030, with the aim of lowering the average global mortality per 100,000 in the period 2020–2030 compared to 2005–2015. Japan should, however, set even more ambitious targets to reduce the number of victims from 2020 to 2030, as victims from 2005 to 2015 were much higher in number than other countries. This is because the figure includes victims of the Great East Japan Earthquake in 2011.

More than 97% of Japanese population is served by a water supply and blessed with relatively easy access to safe drinking water at a reasonable cost. However, natural disasters in recent years, including the Great East Japan Earthquake, as well as heavy rains, and typhoons, have caused significant damage to the water supply infrastructure, causing water shortages for relatively long periods in disaster-hit regions. Such events demonstrate Japan's grave need, from the perspective of sustainability, to be fully prepared for emergency situations in order to maintain water supplies to all the people (Figure 6.1-1).

Climate change could also change precipitation patterns, causing unexpected droughts or floods in some regions (Figure 6.1-2, Figure 6.1-3). Whereas we need to be prepared for these changes, it is highly unpredictable as to how and to what extent they could affect different regions. We should constantly review our adaptation strategies to climate change, not only from the viewpoint of infrastructures but also that of human resources, based on the data collected in each region.

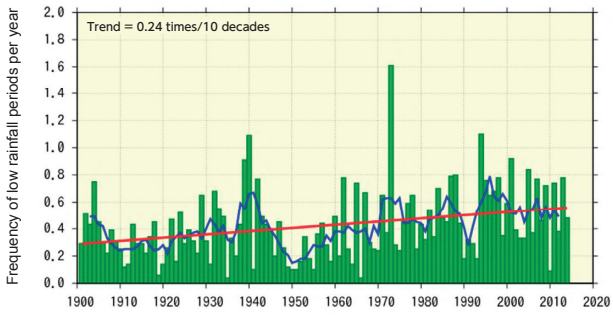


Figure 6.1-2 Frequency of low rainfall periods

Source: Author's own elaboration based on data from "Climate change monitoring report 2014", Japan Meteorological Agency (2015)

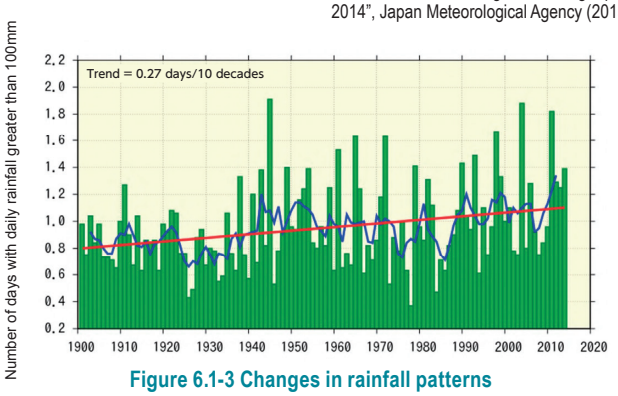


Figure 6.1-3 Changes in rainfall patterns

Source: Author's own elaboration based on data from "Climate change monitoring report 2014", Japan Meteorological Agency (2015)

Water

Prescription 6.2 Maintain sound water cycles and improve water quality

Targets in Japan

A. By 2018, increase to 78% the share of forests with favourable soil conditions for water-holding capacity (Note 11), and to **X**% by 2030.
B. By 2030, optimise the water cycle in urban areas and eliminate the problem of land subsidence.
C. By 2030, establish regional committees around all class A rivers in Japan, for local residents and experts to discuss issue including efficient water use, flood control and environment, in a comprehensive manner.
D. By 2020, increase the ratio achieving environmental quality standards (**X**% for rivers, **X**% for marine areas, **X**% for lakes).

Targets for global efforts

a. Contribute to global water conservation efforts through such measures as supporting implementation of sustainable forest management.
b. Support global efforts to enhance integrated water resource management by 2030.
c. Contribute to global efforts to significantly reduce by 2030 the number of deaths and patients from illnesses caused by contaminated water, through technology transfers, infrastructure support, and human resources development.
d. By 2025, prevent marine pollution from human activities on land, including marine sediments and eutrophication.

Related UN SDG targets

6.2 6.3 6.4 6.5 6.6
11.3 14.1 14.2 15.2 15.b

Current situation and its implication for the prescription

Many watershed areas in Japan face challenges in properly maintaining and managing forests due to a declining and/or aging population. Should this situation continue, the percentage of forests with water-holding soil is estimated to decline to 56% in the coming five years from current figure of 74%. The Nationwide Forest Improvement and Conservation Operation Plan adopted in 2014 set the target of increasing the ratio of such forests from 74% to 78%. Japan should continue efforts to further improve the figure by 2030.

Urban areas also face various challenges, such as decreased river flows, urban flooding, and groundwater depletion, caused by decreased infiltration and groundwater recharge associated with changes in water use and the advance of urbanisation. Moreover, some areas are affected by land subsidence, although the situation has been improving in recent years (Figure 6.2-1). Land subsidence is irreversible, as the land surface will not return to its original level even if groundwater levels start to recover. Meanwhile, rapid recovery of groundwater levels, as a result of regulating groundwater pumping, has caused damage to underground structures in some regions. Japan needs integrated responses to these issues based on data collected over the years, aiming for appropriate groundwater use.

It is of critical importance to involve local residents and other actors affected by water-related problems in discussion about maintaining sound water cycles.

Water quality in Japan is evaluated by environmental standards from the perspective of the living environment and health. While most standards in health category are being met across Japan, those in the living environment category have a low achievement rate, especially the water quality of lakes (Figure 6.2-2). Although improving water quality in lakes and closed water areas is not easy and will require long-term commitment, we should maintain our efforts to improve overall water quality across the country in all fields for the sake of achieving sustainable society.

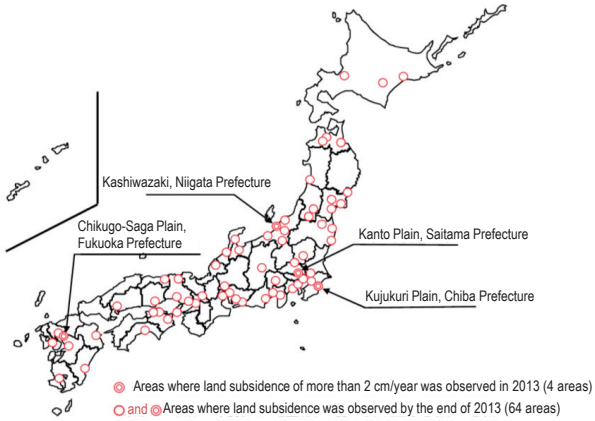


Figure 6.2-1 Land subsidence in Japan

Source: Author's own elaboration based on data from "Japan's land subsidence hazard profile 2014", Ministry of the Environment (2014)

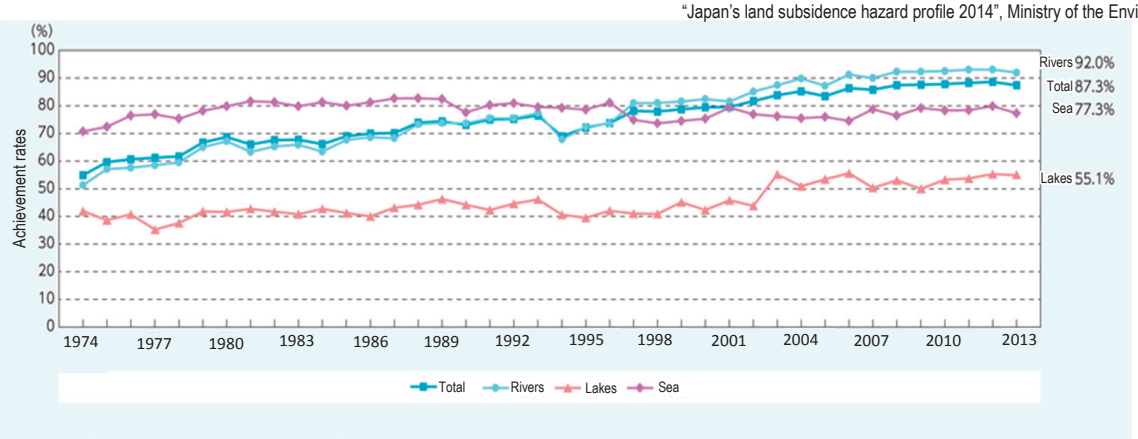


Figure 6.2-2 Rate of achievement of environmental standards

Source: Author's own elaboration based on data from "Annual Report on the Environment, the Sound Material-Cycle Society and Biodiversity", Ministry of the Environment (2015)

Water

Prescription 6.3 Promote water literacy

Targets in Japan

A. By 2030, raise the awareness level about water sources and drainage to more than X%.
B. Promote environmental education starting with water as an introductory theme. Publish supplementary educational materials.
C. By 2030, increase by X% the number of citizens participating in water quality monitoring, and train X "citizen scientists" knowledgeable about the local water environment and ecosystems.
D. By 2030, improve citizens' literacy levels about water-related disasters.

Targets for global efforts

a. Support the involvement of local communities in initiatives to improve water quality and sanitation.
b. Support activities to raise awareness about sustainable development and lifestyles in harmony with nature, and by 2030 establish access to information for all regarding these matters.
c. Support developing countries' efforts to enhance their scientific and technical capabilities to achieve sustainable patterns of production and consumption.

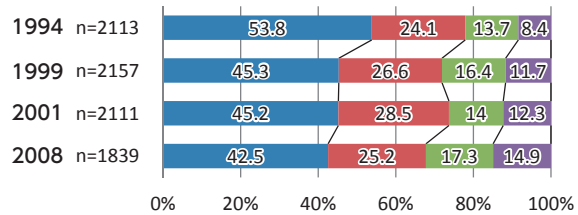
Related UN SDG targets

4.7 6.b 12.1 12.2 12.6
12.7 12.8 12.a 17.17 17.19

Q: Do you know where your water comes from?

- Yes (Specific locations mentioned)
- Yes, to a certain extent (general locations, i.e. rivers and/or lakes)
- No, not so much
- No, not at all

Results by year



As the year goes by, overall water literacy of the entire population has shown decreasing trend.

Current situation and its implication for the prescription

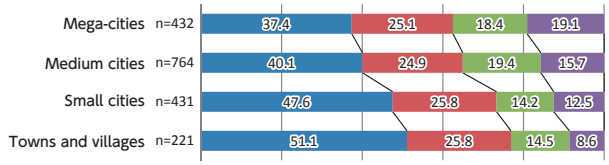
A Cabinet Office survey in 2008 found that about 42.5% of the population was aware of the sources of tap water, indicating a decrease in awareness in recent years (Figure 6.3-1).

The residents of metropolitan areas demonstrated a lower level of awareness, while younger generations were generally less aware. Proper water literacy, including knowledge about the origins of tap water and destination of wastewater helps people to understand the need to protect water resources, thereby promoting integrated management of water resources. Moreover, water literacy provides opportunities to reflect on the appropriate relationships between people and the natural environment.

Various initiatives have been taken by citizens across the country in recent years, including monitoring tests of local water resources, in the hope of raising awareness of the entire community regarding their surrounding environment. More than 76,000 citizens, including both adults and children, participated during the past 11 years, monitoring a total of 58,000 sites. As the number of citizens knowledgeable about their local water environment and ecosystems increases, these activities will become an integral part of local activities, leading to more sustainable communities.

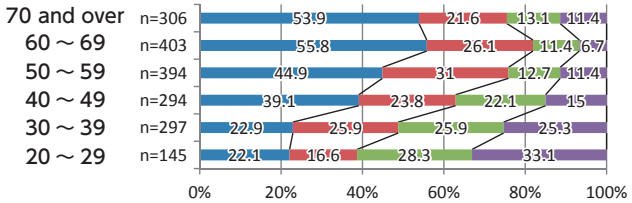
Among initiatives for education on water resources, the World Water Monitoring Challenge (WWMC) is an international education and outreach programme aimed at building public awareness and involvement in protecting water resources around the world. Citizens conduct monitoring tests, an activity that improves participants' levels of water literacy, but the programme goes even further by encouraging participation in more formal citizen monitoring efforts.

Results by size of cities (2008)



Residents of mage-cities tend to know less about their water sources, due to complicated water supply systems in their area of residence.

Results by age group



Younger generations who have never used other sources of water than water pipes (i.e. well water etc.) tend to have lower awareness about water sources.

Figure 6.3-1 Awareness of water resources

Source: Author's own elaboration based on data from "The 17th Meeting, Reference material 08-2", National Land Council (2014)

Water

Prescription 6.4 Contribute to global efforts to address water problems around the world

Targets for global efforts

a. By 2030, make a significant contribution to global efforts to ensure access to safe and affordable drinking water and appropriate sanitation.
b. To achieve that target, Japan should provide more than **X**% of international official development assistance spent on water and sanitation.
c. Provide further technical support and contribute to human resources development in developing countries, based on Japan's experience, advanced technologies, and knowledge about water-related disasters.

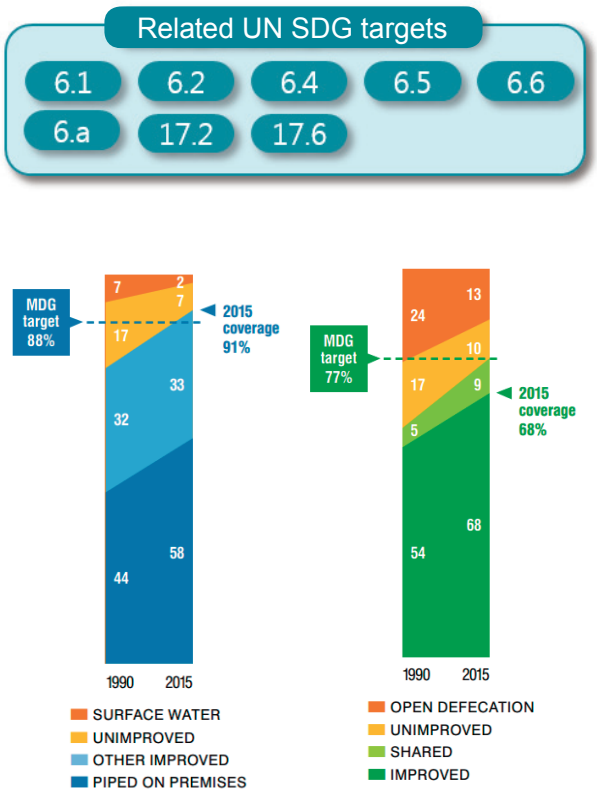


Figure 6.4-1 Achievement of Millennium Development Goals : Water and sanitation

Source: UNICEF, WHO (2015)
"Progress on Sanitation and Drinking Water 2015 update and MDG Assessment"

Current situation and its implication for the prescription

The Millennium Development Goals set the goal of halving by 2015 the number of people who do not have sustainable access to safe drinking water and sanitation facilities. The world managed to achieve the goal for safe drinking water by 2010. Currently more than 90% of the global population has access to safe drinking water, but ensuring access to sanitation facilities turned out to be more difficult task. Currently 2.4 billion people do not yet have access to sanitation facilities (Figure 6.4-1).

Japan has made significant contributions in addressing water problems around the world. Although figures for 2013 (Figure 6.4-2) indicate some decrease in the share of Official Development Assistance (ODA) provided (blue dots) by Japan for water and sanitation (17%), Japan remains the world's largest donor in this sector.

Japan is highly dependent on imported food, and consequently on "invisible" water imports. Large quantities of water are consumed to produce the food on which the Japanese subsist. The implication is that Japan is using large quantities of water abroad. This hypothetical quantity of consumed water is called "virtual water". Because Japan's imports large quantities of food, the quantity of this virtual water is also significant. The amount of virtual water imported in 2005 is estimated at 80 billion m³, equivalent to Japan's domestic annual water usage (Figure 6.4-3).

Thus, Japan depends on foreign sources for much of its water, and bears a large responsibility to address the global water crisis.

Japan has various advantages in addressing the water crisis, including not only advanced technologies needed for clean water supplies and sanitation, but also expertise in dealing with water-related disasters based on experience. Japan should further enhance its efforts and promote discussions in various international fora regarding global targets on water and sanitation, water resources management, and climate change.

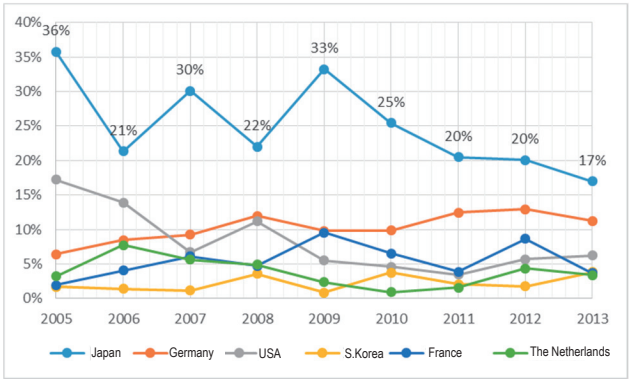


Figure 6.4-2 ODA spent on water and sanitation

Source: Author's own elaboration based on data from OECD. Stat.

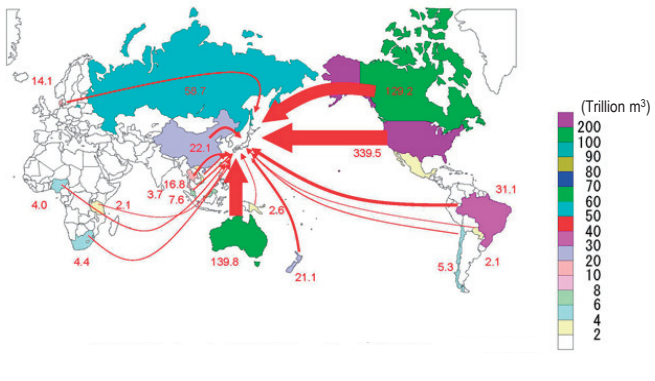


Figure 6.4-3 Amount of virtual water imports (2005)

Source: Author's own elaboration based on data from "Virtual Water", Ministry of the Environment

Targets for water-related issues			Related UN SDGs
Prescription 6.1: Address water-related risks	A (D)	By 2030, reduce the number of deaths and victims of natural disasters to less than **X** per 100,000 people.	
	B (D)	Establish the necessary infrastructures to ensure access to water in emergency situations such as large-scale disasters and droughts.	
	C (D)	By 2030, collect data and review adaptation measures for risks posed by climate change.	
	a (G)	Provide technical support through technology transfers related to disaster risk prevention and management. Support human resources development and institution-building to help address water-related disasters.	
	b (G)	Contribute to global efforts for disaster risk reduction (DRR) by developing early warning systems.	
	c (G)	Contribute to global efforts to protect the vulnerable from floods, and significantly reduce the number of victims.	
Prescription 6.2: Maintain sound water cycles and improve water quality	A (D)	By 2018, increase to 78% the share of forests with favourable soil conditions for water-holding capacity and to **X**% by 2030.	
	B (D)	By 2030, optimise water cycle in urban areas and eliminate the problems of land subsidence.	
	C (D)	By 2030, establish regional committees around all class A rivers in Japan, for local residents and experts to discuss issue including efficient water use, flood control and environment, in a comprehensive manner.	
	D (D)	By 2020, increase the ratio achieving environmental quality standards (**X**% for rivers, **X**% for marine areas, **X**% for lakes).	
	a (G)	Contribute to global water conservation efforts through such measures as supporting implementation of sustainable forest management.	
	b (G)	Support global efforts to enhance integrated water resource management by 2030.	
	c (G)	Contribute to global efforts to significantly reduce by 2030 the number of deaths and patients from illnesses caused by contaminated water, through technology transfers, infrastructure support, and human resources development.	
	d (G)	By 2025, prevent marine pollution from human activities on land, including marine sediments and eutrophication.	
Prescription 6.3: Promote water literacy	A (D)	By 2030, raise the awareness level about water sources and drainage to more than **X**%.	
	B (D)	Promote environmental education starting with water, as an introductory theme. Publish supplementary educational materials.	
	C (D)	By 2030, increase by **X**% the number of citizens participating in water quality monitoring, and train **X** "citizen scientists" knowledgeable about the local water environment and ecosystems.	
	D (D)	By 2030, improve citizens' literacy levels about water-related disasters.	
	a (G)	Support the involvement of local communities in initiatives to improve water quality and sanitation.	
	b (G)	Support activities to raise awareness about sustainable development and lifestyles in harmony with nature, and by 2030 establish access to information for all regarding these matters.	
	c (G)	Support developing countries' efforts to enhance their scientific and technical capabilities to achieve sustainable patterns of production and consumption.	
Prescription 6.4: Contribute to global efforts to address water problems around the world	a (G)	By 2030, make a significant contribution to global efforts to ensure access to safe and affordable drinking water and appropriate sanitation.	
	b (G)	To achieve that target, Japan should provide more than **X**% of international official development assistance spent on water and sanitation.	
	c (G)	Provide further technical support and contribute to human resources development in developing countries, based on Japan's experience, advanced technologies, and knowledge about water-related disasters.	

D=Domestic Targets, G=Contribution to Global Targets

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(NB：All websites retrieved in December 2015)

Resources & Energy

Prescription 7.1 Improve energy efficiency

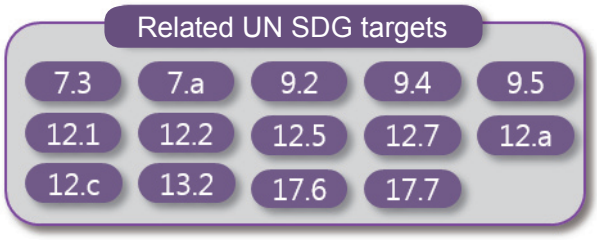
Targets in Japan

A. By 2030, increase primary energy efficiency rate by more than **X**%/year, to contribute to the global target of doubling the global rate of improvement in energy efficiency (SDG 7.3).

B. Promote development and dissemination of energy-efficient technologies to significantly reduce greenhouse gas emissions.

Targets for global efforts

a. Make a significant contribution to global efforts to improve energy efficiency.



Current situation and its implication for the prescription

SDG 7.3 declares that the international community should "By 2030, double the global rate of improvement in energy efficiency". ("Energy efficiency" here refers to primary energy consumption per unit of GDP.) The target is based on the "Sustainable Energy for All" (SE4ALL) initiative launched by UN Secretary-General Ban Ki -moon in September 2011. Whereas energy efficiency has improved by 1.3% per year from 1990 to 2010, the SDGs aim to further improve it by 2.6% per year, doubling the current rate in 2030 (Figure 7.1-1).

Figure 7.1-1 indicates primary energy consumption per unit of GDP from 1990 to 2010. While Japan achieved the highest level of energy efficiency in the world until the mid-nineties, energy efficiency of other countries has also improved significantly. Japan's energy efficiency improvement rate has remained around 0.3% during the same years (Figure 7.1-2).

The government has thus established a more ambitious plan for Japan's energy-related policies, with higher targets for energy efficiency improvement rate. For instance, the Ministry of Economy, Trade and Industry published the "Long-term Energy Supply and Demand Outlook" in July 2015 , indicating the prospect of achieving 1.7% in annual economic growth to 2030, while decreasing energy consumption during the same period through energy-saving schemes. This would lead to an annual energy efficiency improvement rate of about 2.4%. Moreover, the then National Strategy Office announced in 2012 an improvement rate of primary energy efficiency in different scenarios for energy and environment, each of which indicated an annual improvement rate of 2.0–2.3%.

Japan should make additional concrete commitments to actively contribute to the fulfilment of SDG 7.3 by 2030, while enhancing the comprehensive and integrated approaches indicated above.

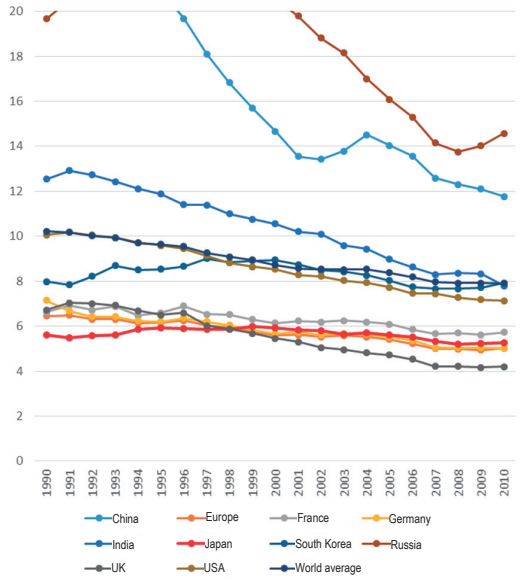


Figure 7.1-1 Primary energy consumption per unit GDP (PPP)

Source: Author's own elaboration based on data from "World Development Indicators", The World Bank

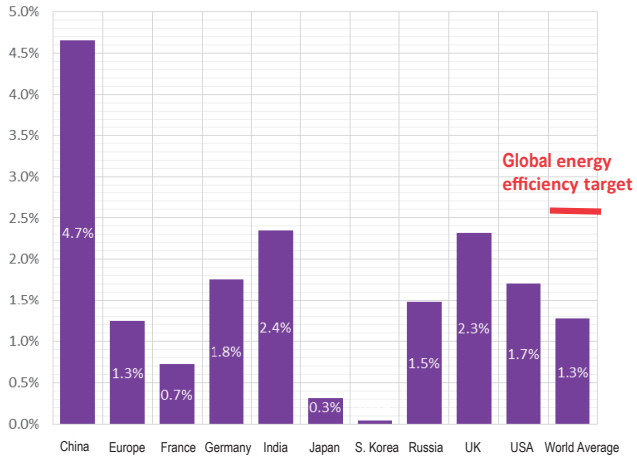


Figure 7.1-2 Energy efficiency improvement rates (1990-2010)

Source: Author's own elaboration based on data from "World Development Indicators", The World Bank

Resources & Energy

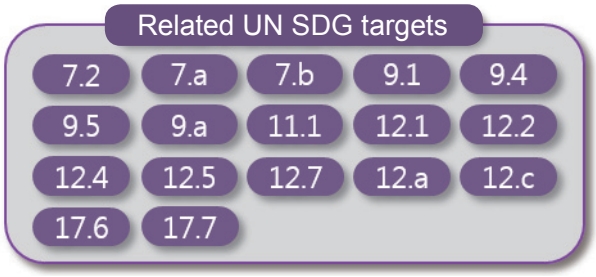
Prescription 7.2 Promote use and production of renewable energy

Targets in Japan

A. Increase the share of renewable energy in Japan's primary energy and final energy up to X% by 2030.
B. Enhance R&D on renewable energy technologies and establish effective dissemination programmes and facilities required for sustainable supply of renewable energy.

Targets for global efforts

a. Contribute global efforts to promote the use of renewable energy through technology transfer and technical cooperation with other parties and nations.
b. Support developing countries' effort to improve the access to renewable energy.



Current situation and its implication for the prescription

SDG 7.2 states the target to "By 2030, increase substantially the share of renewable energy in the global energy mix". While this target may not seem as concrete as other SDGs, the SE4ALL initiative mentioned in Prescription 7.1 has a clear target of doubling the global rate of improvement of renewable energy in total final energy consumption by 2030.

Japan introduced a feed-in tariff for renewable energy in 2011, which has been effectively enhancing the use of renewable energy. Nevertheless, renewable energy's share of total primary energy consumption in Japan remained at about 7% in 2013 (Figure 7.2-1).

So far, the Japanese government has yet to set up a clear set of targets regarding its renewable energy consumption. The Ministry of Economy, Trade and Industry published a report "Long-term Energy Supply and Demand Outlook" in 2015, indicating that the share of renewable energy in total primary energy consumption is expected to increase to about 13–14% by 2030. A Ministry of the Environment report published in 2015 revealed prospects for the share of renewable energy to increase to 14–21% in the coming years. Another scenario by the government's Energy and Environment Committee in 2012 projected the share of renewable energy increasing to about 15–24%.

Renewable energy sources are of critical importance for achieving sustainable society in Japan, not only because they emit little or no greenhouse gases, they could also enhance the nation's level of energy self-sufficiency.

In this regard, investment into R&D for renewable energy resources and the establishment of effective programmes to promote the technologies should be further enhanced, in order to achieve the figures projected by several ministries for the share of renewable energy used in various sectors.

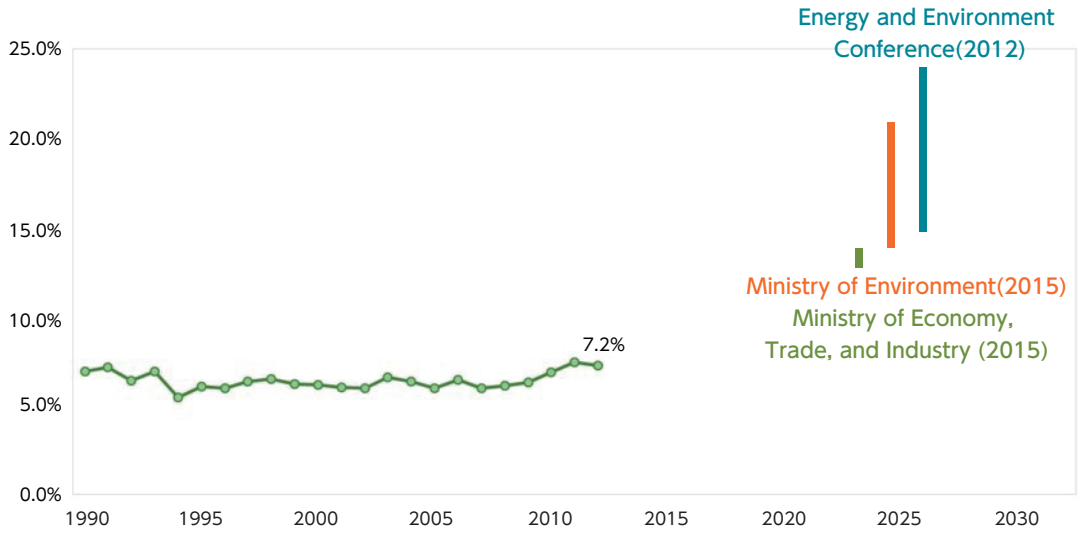


Figure 7.2-1 Ratio of renewable energy in primary energy supply and target ratios by various authorities

Source: Author's own elaboration based on data from "Japan's Energy White Paper 2015", Agency for Natural Resources and Energy (2015); "Long-Term Energy Supply-Demand Outlook", Ministry of Economy, Trade and Industry (2015); "Report on the potential of spread of renewable energy and decentraised energy in 2050", Ministry of the Environment (2015); "Choices for energy and environment: scenarios of detailed data", National Policy Unit (2012)

Resources & Energy

Prescription 7.3 Improve energy literacy and promote energy autonomy

Targets in Japan

A. Continue to make improvements in electrical supply systems so that by 2020, consumers are able to exercise more choice of electricity source.

B. Respect more local autonomy in the construction and operation of energy-related facilities.

Targets for global efforts

a. Support developing countries' efforts to promote energy autonomy through involvement of various actors, by establishing public institutions with higher transparency and human resources development in related sectors.

Related UN SDG targets

7.1 9.4 9.5 11.3 12.6
12.7 12.8 16.6 16.7 17.9
17.15 17.16 17.17 17.18

Current situation and its implication for the prescription

The participation of citizens and local residents in decision making processes is essential when developing sustainable energy systems, while considering the national socio-economic circumstances and the characteristics of different sources of energy.

Since the introduction of feed-in tariffs in Japan (enabling renewable energy producers to receive preferential rates and secure market to sell their energy), some local residents have taken the initiative and started renewable energy businesses in various parts of the country. Moreover, some local authorities and municipalities have enacted renewable energy regulations in their own jurisdictions. Residents have been actively exchanging and sharing experience and information, significantly boosting their level of energy literacy.

Another issue under discussion is sweeping regulatory reforms of Japan's energy systems. Japanese consumers currently face limited choices of energy resources. Their choice of energy utility depends on where they live. Under new plans, consumers will be able to freely choose their electricity supplier starting in 2016, and all power transmission networks will be equally accessible starting in 2020 (Figure 7.3-1). In preparation for more choice, citizens need to significantly improve their energy literacy, so that they can make the proper choices of energy resources. That is to say that they should be able to make their own decisions based not only on the cost of energy, but also on factors such as emissions of greenhouse gases, the generation and disposal of waste, the stability of supply, safety, and potential financial benefits for the local economy.

In a society whose residents have a high level of energy literacy, actors such as government authorities and private bodies will not be able to build energy-related facilities without the prior consent of local and regional residents. We are moving toward a new era in which initiatives and choices by citizens will be the key to ensure energy autonomy across the country.

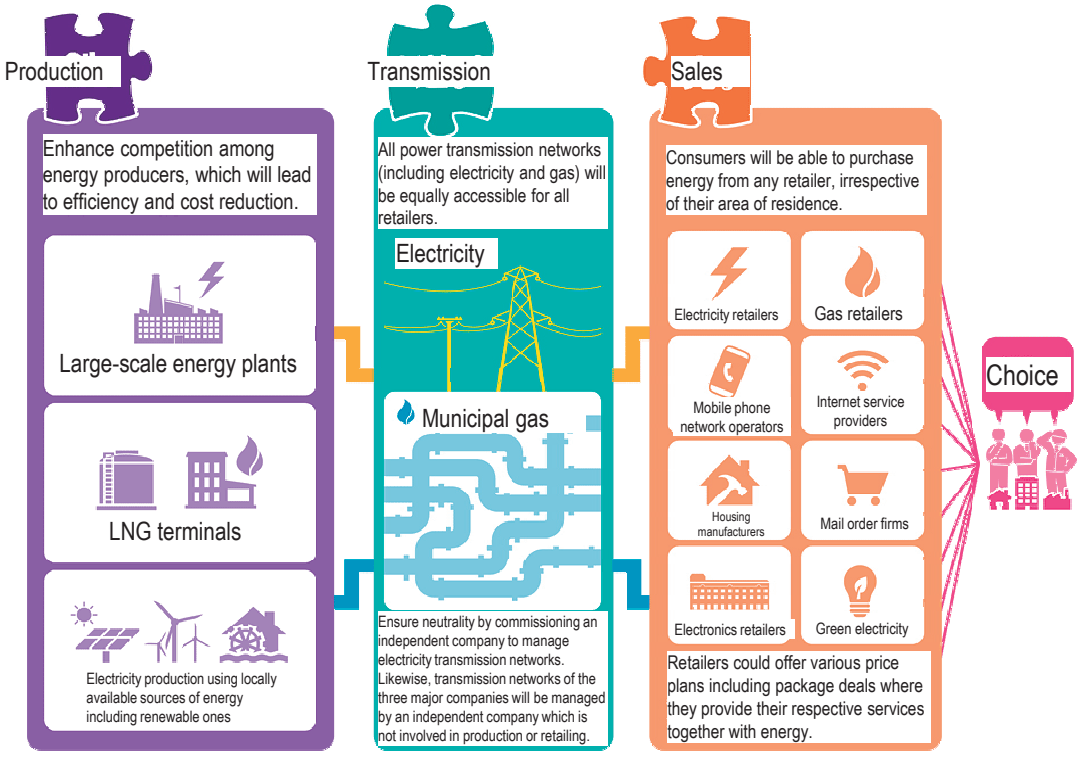


Figure 7.3-1 Integrated reforms of energy systems

Source: Author's own elaboration based on data from "On comprehensive reform of energy systems", Agency for Natural Resources and Energy

Resources & Energy

Prescription 7.4 Improve resource productivity

Targets in Japan

A. By 2020, increase resource productivity to JPY 460,000 /ton, and to JPY X/ton by 2030.
B. By 2020, increase the recycling rate to 17%, and to X% by 2030.
C. By 2020, reduce final disposal volume to 17 million tons, and to X tons by 2030.
D. Take initiative in implementation of the "10-year framework programmes on sustainable consumption and production patterns" (10YFP).

Targets for global efforts

a. Create a recycling-based society on a global scale, through the regional 3R Forum in Asia, and support for Japanese waste management and recycling industries overseas.
b. Enhance measures to prevent the spread of hazardous waste. Also, promote imports of efficient resources that are difficult to use properly in developing countries, and exports of recyclable resources whose domestic use is limited, on the condition that they will not cause environmental pollution.
c. By 2030, support improvements in infrastructure and industries in developing countries and boost their sustainability, through technology transfers and expanded us of industrial processes that improve resource efficiency and consider a cleaner environment.

Related UN SDG targets

8.4 9.4 11.6 12.1 12.2
12.3 12.4 12.5 12.6 12.7
12.a 12.c

Current situation and its implication for the prescription

3R (Reduce, Reuse and Recycle) initiatives in Japan have been relatively successful, as is illustrated in significant reductions of final disposal volume through such measures as the introduction of individual recycling laws. Efforts to achieve a recycling-based society has been strongly enhanced across the country in recent years.

Advanced use and supply of recyclable resources is likely to face intensified constraints around the world, as observed when global commodity prices rise. Meanwhile, various precious metals and rare metals are being disposed as waste in landfills.

The accident at Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Plant, resulting from the Great East Japan Earthquake on March 11, 2011, seriously damaged public confidence in the safety of nuclear power.

Meanwhile, the overall amount of waste worldwide has increased, partly due to economic and population growth in developing countries. Asia currently generates 40% of global waste, and in 2050 is expected to double its 2010 waste output.

Under these circumstances, it is essential for Japan to actively address material flow targets through various measures, such as increasing resource efficiency and productivity. It is in this context that the Japanese government in 2013 published its "3rd Fundamental Plan for Establishing a Sound Material-Cycle Society", which set targets to be achieved by the end of the fiscal year 2020 for three areas; resource productivity, recycling rate, and amount of final disposal (Figures 7.4-1, 7.4-2, 7.4-3).

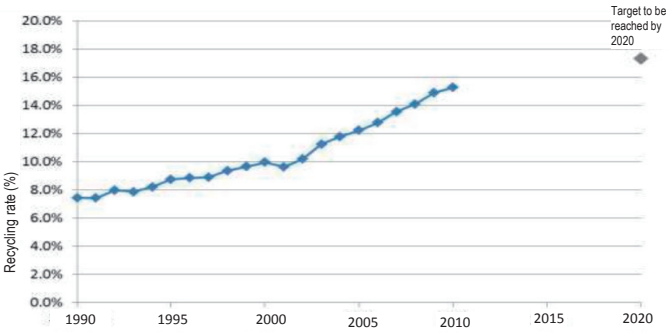


Figure 7.4-2 Recycling rate (trend and target)

Source: Author's own elaboration based on data from "The 3rd Fundamental Plan for Establishing a Sound Material-Cycle Society", Ministry of the Environment (2013)

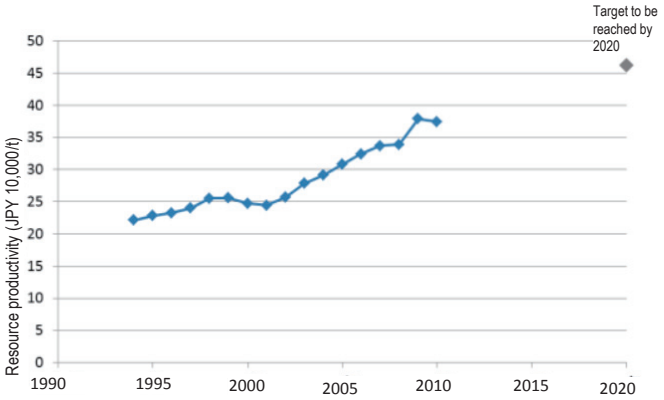


Figure 7.4-1 Resource productivity (trend and target)

Source: Author's own elaboration based on data from "The 3rd Fundamental Plan for Establishing a Sound Material-Cycle Society", Ministry of the Environment (2013)

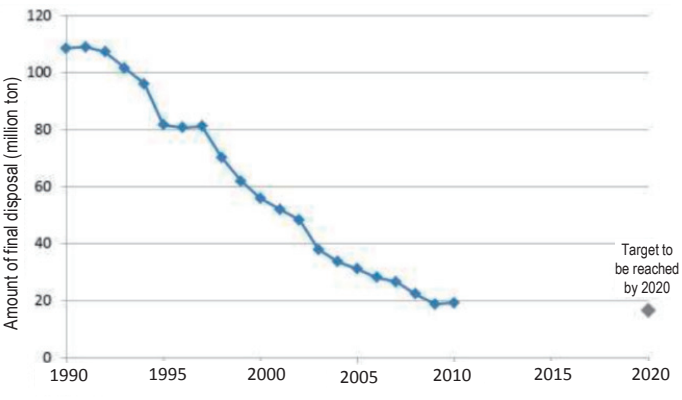


Figure 7.4-3 Amount of final disposal (trend and target)

Source: Author's own elaboration based on data from "The 3rd Fundamental Plan for Establishing a Sound Material-Cycle Society", Ministry of the Environment (2013)

Targets for issues resources and energy			Related UN SDGs
Prescription 7.1: Improve energy efficiency	A (D)	By 2030, increase primary energy efficiency rate by more than **X**%/year, to contribute to the global target of doubling the global rate of improvement in energy efficiency (SDG 7.3).	
	B (D)	Promote development and dissemination of energy-efficient technologies to significantly reduce greenhouse gas emissions.	
	a (G)	Make a significant contribution to global efforts to improve energy efficiency.	
Prescription 7.2: Promote use and production of renewable energy	A (D)	Increase the share of renewable energy in Japan's primary energy and final energy up to **X**% by 2030.	
	B (D)	Enhance R&D on renewable energy technologies and establish effective dissemination programmes and facilities required for sustainable supply of renewable energy.	
	a (G)	Contribute global efforts to promote the use of renewable energy through technology transfer and technical cooperation with other parties and nations.	
	b (G)	Support developing countries' efforts to improve the access to renewable energy.	
Prescription 7.3: Improve energy literacy and promote energy autonomy	A (D)	Continue to make improvements in electrical supply systems so that by 2020, consumers are able to exercise more choice of electricity source.	
	B (D)	Respect more local autonomy in the construction and operation of energy-related facilities.	
	a (G)	Support developing countries' efforts to promote energy autonomy through involvement of various actors, by establishing public institutions with higher transparency and human resources development in related sectors.	
Prescription 7.4: Improve resource productivity	A (D)	By 2020, increase resource productivity to JPY 460,000 /ton, and to JPY **X**/ton by 2030.	
	B (D)	By 2020, increase the recycling rate to 17%, and to **X**% by 2030.	
	C (D)	By 2020, reduce final disposal volume to 17 million tons, and to **X** tons by 2030.	
	D (D)	Take initiative in implementation of the "10-year framework programmes on sustainable consumption and production patterns" (10YFP).	
	a (G)	Create a recycling-based society on a global scale, through the regional 3R Forum in Asia, and support for Japanese waste management and recycling industries overseas.	
	b (G)	Enhance measures to prevent the spread of hazardous waste. Also, promote imports of efficient resources that are difficult to use properly in developing countries, and exports of recyclable resources whose domestic use is limited, on the condition that they will not cause environmental pollution.	
	c (G)	By 2030, support improvements in infrastructure and industries in developing countries and boost their sustainability, through technology transfers and expanded us of industrial processes that improve resource efficiency and consider a cleaner environment.	

D=Domestic Targets, G=Contribution to Global Targets

Notes

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(NB：All websites retrieved in December 2015)

Biodiversity

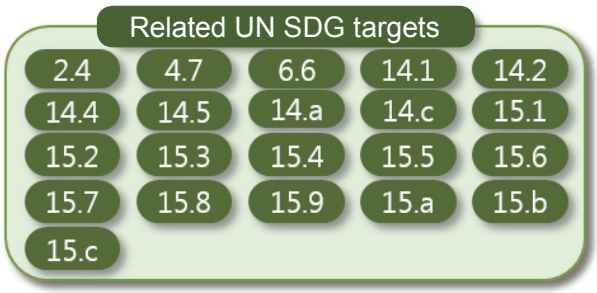
Prescription 8.1 Conserve biodiversity

Targets in Japan

A. Fully implement "The National Biodiversity Strategy of Japan 2012–2020" by the target year.
B. Prevent further invasion of alien species, and implement measures to greatly reduce their impacts on terrestrial and marine ecosystems.
C. Implement scientific management plans aimed at recovering marine resources up to maximum sustainable yield levels, defined by biological characteristics of the respective resources.

Targets for global efforts

a. By 2020, contribute to protection and recovery of ecosystems, and secure sustainable use of ecosystem services.
b. By 2020, urgently implement substantial measures to protect endangered species and prevent their extinction.
c. Promote equitable use of genetic resources and appropriate access to them based on international agreements.
d. Contribute to global efforts to stop poaching and illegal trade of endangered species.
e. Mobilise finance from various sources for conservation of biodiversity and ecosystems and their sustainable use.
f. By 2025, contribute to prevention of marine pollution of all forms, in particular those caused by land-based activities, including marine sediments and eutrophication.



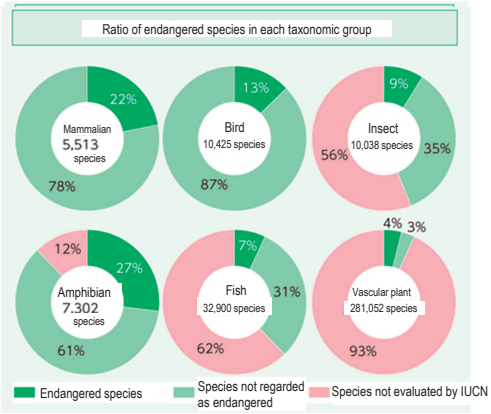


Figure 8.1-1 "Endangered species": Evaluation by IUCN

Source: Author's own elaboration based on data from "Annual Report on the Environment, the Sound Material-Cycle Society and Biodiversity in Japan 2015", Ministry of the Environment (2015)

Current situation and its implication for the prescription

An estimated 30 million living species live on our planet. The International Union for Conservation of Nature (IUCN) publishes a "Red List of Threatened Species" every year. According to the 2014 list, among 76,201 species evaluated, approximately 30% were considered "endangered" (Figure 8.1-1).

The UN Millennium Ecosystem Assessment conducted from 2001 to 2005 indicated that the extinction rate of species has significantly increased during the past several centuries due human activities, and that the rate of extinction could be 1,000 times the natural rate. The document further warned that the pace of extinction could increase another tenfold in the near future. It also pointed out that the deterioration of ecosystems has significantly affected the poor, making it even more difficult to achieve the MDGs. Addressing the problem of biodiversity is essential to achieve sustainable society, as changes in biodiversity affect the poor and vulnerable seriously.

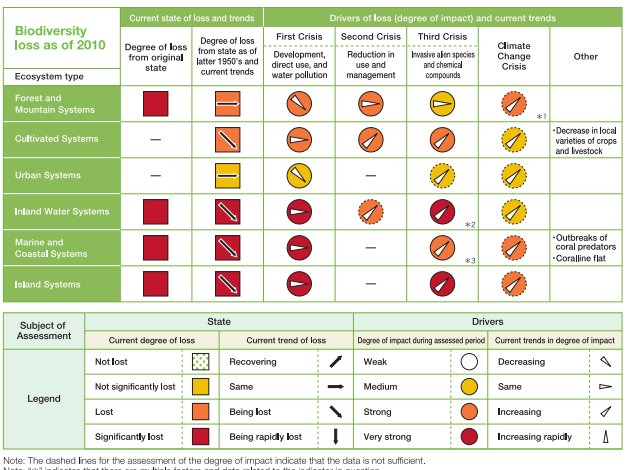
The 10th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 10) was held in 2010 in Nagoya, Aichi Prefecture, where "The Strategic Plan for Biodiversity 2011–2020" was adopted. The Strategic Plan was composed of five strategic objectives and 20 individual targets (Figure 8.1-2). Japan established the "Japan Biodiversity Fund " at the Secretariat of the Convention on Biological Diversity, with the key objective of supporting human resources development in developing countries. Moreover, Japan has made significant financial contributions to achieve the Aichi Biodiversity Targets, amounting to JPY 5 billion so far.

Japan has many endemic species and rich biota, with over 90,000 known species, and more than an estimated 300,000 species, considering unknown species. Decreasing biodiversity is, however, a serious problem for Japan as well. In 2010, the Ministry of Environment conducted a comprehensive evaluation on biodiversity in Japan, concluding that human activities have been affecting entire ecosystems, and that damage to ecosystems in inland waters, coastal and marine areas, and islands has been particularly significant (Figure 8.1-3).

The Ministry published the "National Biodiversity Strategy of Japan 2012-2020" in 2012, as a roadmap towards the achievement of the Aichi Targets. Japan needs to enhance its efforts towards the establishment of a sustainable society in harmony with nature, based on this roadmap.

Figure 8.1-2 "Strategic Plan 2011–2020": prospects and purposes

Source: Author's own elaboration based on data from Biodiversity Center of Japan, "Aichi Biodiversity Targets", Ministry of the Environment



Note: The dashed lines for the assessment of the degree of impact indicate that the data is not sufficient.
Note: "*" indicates that there are multiple factors and data related to the indicator in question, and that there are factors and data that exist which show trends that differ from the current assessments of the degrees, effects, and trends of overall loss
*1: The degree of impact on alpine systems has been and continues to be serious.
*2*3: While the problem of chemical compounds has been mitigated to some extent, the problem of invasive alien species is serious.

Figure 8.1-3 Damage to biodiversity in Japan

Source: "Overview of Japan Biodiversity Outlook", Ministry of the Environment (2010)

Targets for issues related to biodiversity			Related UN SDGs
Prescription 8.1: Conserve biodiversity	A (D)	Fully implement “The National Biodiversity Strategy of Japan 2012–2020” by the target year.	
	B (D)	Prevent further invasion of alien species, and implement measures to greatly reduce their impacts on terrestrial and marine ecosystems.	
	C (D)	Implement scientific management plans aimed at recovering marine resources up to maximum sustainable yield levels, defined by biological characteristics of the respective resources.	
	a (G)	By 2020, contribute to protection and recovery of ecosystems, and secure sustainable use of ecosystem services.	
	b (G)	By 2020, urgently implement substantial measures to protect endangered species and prevent their extinction.	
	c (G)	Promote equitable use of genetic resources and appropriate access to them based on international agreements.	
	d (G)	Contribute to global efforts to stop poaching and illegal trade of endangered species.	
	e (G)	Mobilise finance from various sources for conservation of biodiversity and ecosystems and their sustainable use.	
	f (G)	By 2025, contribute to prevention of marine pollution of all forms, in particular those caused by land-based activities, including marine sediments and eutrophication.	

D=Domestic Targets, G=Contribution to Global Targets

Notes

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(NB：All websites retrieved in December 2015)

Governance

Prescription 9.1 Establish institutions for implementation of the SDGs

Targets in Japan

A. Introduce an institution to ensure policy coherence regarding the implementation of the SDGs.
B. Provide necessary support to local governments for their implementation of the SDGs.
C. Establish a mechanism where further discussion with various stakeholders on these "Prescriptions" can be enhanced.
D. Promote partnerships across public and private sectors and secure the funding for effective policy implementation.
E. Establish indicators to monitor implementation of policies indicated in these "Prescriptions".

Targets for global efforts

a. Provide support to developing countries in their implementation of the SDGs, including institution-building and statistical capacity building.
b. Take the initiative in implementation of the SDGs at both global and regional levels, as well as follow-up and review processes.
c. Disseminate Japan's expertise and technologies to support implementation of the SDGs.

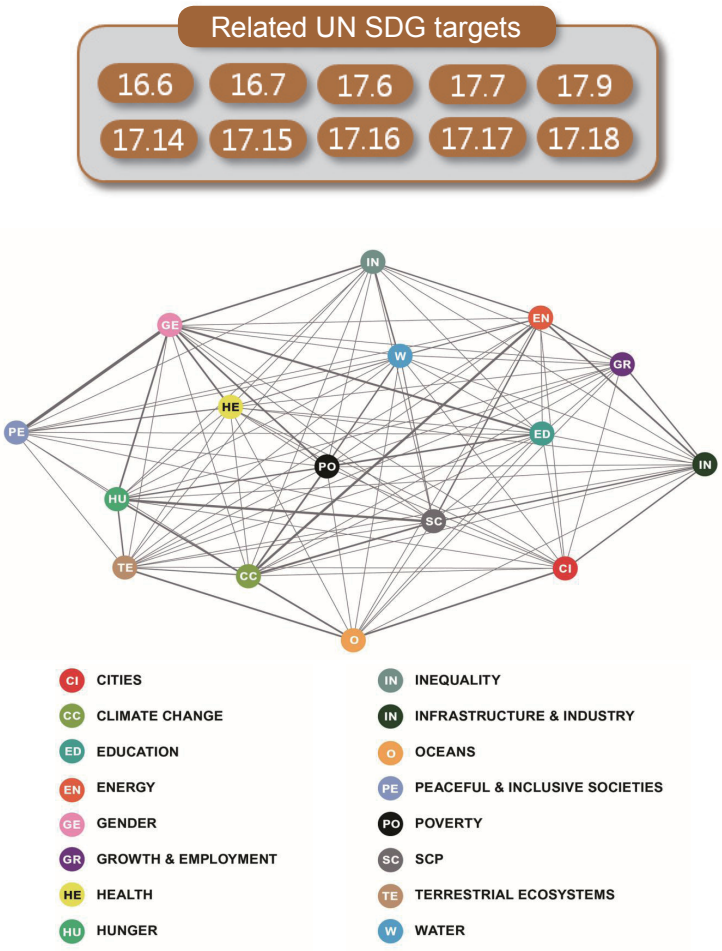

Figure 9.1-1 Links among SDGs through their targets

Source: UN (2015b) "Global Sustainable Development Report 2015"

Current situation and its implication for the prescription

The "2030 Agenda for Sustainable Development" states that targets are defined as aspirational and global, with each government setting its own national targets guided by the global level of ambition but taking into account national circumstances, and that each government is expected to decide how these aspirational and global targets should be incorporated in national planning processes, policies and strategies (paragraph 55).

The SDGs take an integral approach to the three aspects of sustainable development, namely environment, economy and society, due to their indivisible nature (Figure 9.1-1). Governments are thus expected to promote balanced policies for implementation of the SDGs at the national level. Ministries and agencies dealing with matters related to sustainable development will have to ensure the consistency of various domestic policies. In this regard, France has established the Ministry of Ecology, Sustainable Development and Energy, which is responsible for various SDG-related matters, Similarly, Malta has established a Ministry for Sustainable Development, Environment and Climate Change, and Luxembourg has established a Ministry for Sustainable Development and Infrastructure. In contrast, Japan does not have a similar ministry or agency that could deal with various matters related to policies for integrated implementation of the SDGs. It would seem desirable to establish a ministry or agency to guide the implementation of the SDGs in Japan in a comprehensive manner, or some type of coordinating structure that will manage the overall implementation of the SDGs. Moreover, the establishment of a process to enhance public dialogue about related issues would certainly help effective national implementation.

On the other hand, it is important to recognise that local areas face diverse problems and challenges, so national targets decided by the central government might not always be relevant for them. The government should therefore support local governments and residents by raising awareness about the SDGs, and enhancing discussion on appropriate policies in each region. These can be expected to be anchored to historical and cultural backgrounds of regional activities related to sustainable development as well as regional strengths and uniqueness.

Effective implementation of the SDGs both at national and local levels will inevitably require a comprehensive approach. The SDGs in target 17.16 states the need for adopting a multi-stakeholder approach and enhancing global partnership, involving governments, civil societies, private sectors, UN agencies and other existing mechanisms, taking full advantage of their knowledge and expertise, such as technologies and financial resources, while also mobilising available resources. The importance of global partnership has been repeatedly emphasised at related international fora, including the World Summit on Sustainable Development held in 2002 (Johannesburg Summit) and Rio+20. While nobody would deny the importance of enhanced partnership involving various actors, a challenge for such partnerships is to enhance its effectiveness in implementing policies, while ensuring transparency. We should promote our efforts to address those matters to further enhance global partnership, so that it could promote effective implementation of the SDGs.

In September 2015, UN Department of Economic and Social Affairs (DESA) launched "Partnerships for SDGs", an online platform aimed at sharing information on multi-stakeholder initiatives for the SDGs. The platform contains about 1,920 initiatives for 17 targets as of December 2015.

Alongside mobilisation of necessary resources through global networks, it is also essential to review and monitor the implementation processes of the SDGs. Regarding the indicators, the SDGs in paragraph 75 states that "[g]oals and targets will be followed-up and reviewed using a set of global indicators" and that "[t]hese will be complemented by indicators at the regional and national levels". Whereas the 2030 Agenda briefly touches upon methods of review and monitoring of the implementation processes of the SDGs, we have yet to identify its detailed framework. Japan should make a significant contribution in this global process, while establishing a system to review its own national implementation process.

Governance

Prescription 9.2 Mobilise finances for implementation of the SDGs

Targets in Japan

A. Secure budgets for implementation of the SDGs that require cross-sectoral policies.

B. Enhance multi-sector partnerships, thereby promoting business, investment, innovation, and the necessary financial resources.

Targets for global efforts

a. Provide support to developing countries for their implementation of the SDGs.

b. Enhance multi-sector partnerships, thereby promoting business, investment, innovation, and mobilisation of finances.

c. Enhance multilateral and bilateral financial support aimed at implementation of the SDGs and their follow-up and review.

d. Achieve the target of 0.7% of ODA/GNI to developing countries and 0.15 to 0.20% of ODA/GNI to LDCs (SDG17.2).

Related UN SDG targets

17.1 17.2 17.3 17.16 17.17

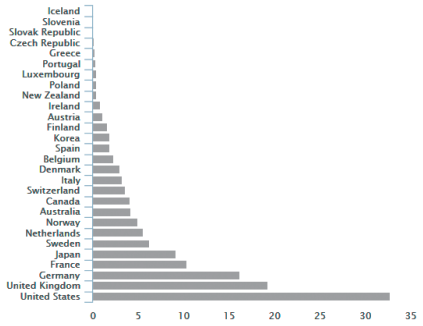

Figure 9.2-2 ODA - USD billion (2014)

Source: OECD, "Official Development Assistance 2014"

Figure 9.2-3 ODA as per cent of GNI: DAC members (2014)

Source: OECD, "Official Development Assistance 2014"

Current situation and its implication for the prescription

Many of the issue areas require cross-sectoral approaches for implementing the SDGs. For instance, a declining birth rate is caused by the combination of several factors, including economic factors (e.g., educational expenses) and social factors (e.g., lack of childcare facilities, resulting in women's untimely retirement after childbirth). Similarly, the lack of appropriate job opportunities for persons with disabilities after they completed their education is a problem caused by multiple factors. As such, flexible financing approaches are indeed essential to achieve sustainable society by securing cross-sectoral budgets is also of critical importance.

Implementation of the SDGs requires enhanced partnerships between the governmental sector, civil society and the private sector, thereby utilising the expertise, technologies and financial resources controlled by each actor, while also mobilising other potential resources. With regard to financing from the private sector, governments have introduced Private Finance Initiatives (PFI) where the private sector's financial and technological capabilities are utilised in construction and maintenance of public facilities, an approach that has improved the efficiency of public services. The number of PFI projects has been increasing, and approximately JPY 4 trillion was spent in the 2014 fiscal year (Figure 9-2-1). The PFI approach is different from that of SDGs in that it is aimed at providing cost-effective public services. Nevertheless, a similar approach is potentially useful for the effective implementation of the SDGs, because the finance of private actors are as important as that of the public sector. The financial resources of the private sector are valuable not only for national implementation of SDGs, but also global implementation through investment in social welfare systems such as education and health, and enhancement of business activities in LDCs.

Japan has increased its official development assistance (ODA) since the 1970s, and was the world's largest donor country from 1989 to 2000. The country's ODA budget has declined over the last two decades due to its severe economic and fiscal situation. Japan currently ranks fifth among the donor countries (Figure 9.2-2). On the other hand, the United Kingdom and France have gradually increased their ODA budgets since 2000, even after the global financial crisis in 2008. In terms of ODA/GNI (Gross National Income) ratios, Japan's ODA as a share of GNI was 0.19% in 2013, ranking 18th among 23 member countries of OECD's Development Assistance Committee (DAC) (Figure 9.2-3). Japan should further enhance its development aid efforts, thereby contributing to global partnerships. While addressing global problems indicated in the SDGs, including poverty and climate change, through various methods, increasing the ODA budget remains of vital importance to the least developed countries (LDCs) that are most dependant on external assistance. It will also contribute to the maintenance of international peace and security by addressing the root causes of conflicts and terrorism. While ODA now accounts for just 7% of total international resource flows into developing countries, it plays as vital a role as ever, in that it is the main international public resource that can be explicitly dedicated to poverty reduction. On the other hand, foreign direct investment (FDI) is playing a significant role in countries with higher incomes. Japan should encourage greater FDI flows to its development aid recipient countries, by providing the necessary support and incentives to Japan's private sector.

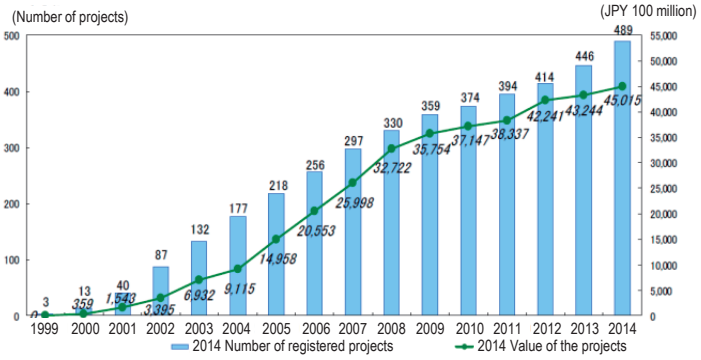

Figure 9.2-1 Number and value of PFI projects

Source: Author's own elaboration based on data from "Current status of PFI", Cabinet Office (2015)

Targets for issues related to governance			Related UN SDGs
Prescription 9.1: Establish institutions for implementation of the SDGs	A (D)	Introduce an institution to ensure policy coherence regarding the implementation of the SDGs.	
	B (D)	Provide necessary support to local governments for their implementation of the SDGs.	
	C (D)	Establish a mechanism where further discussion with various stakeholders on these “Prescriptions” can be enhanced.	
	D (D)	Promote partnerships across public and private sectors and secure the funding for effective policy implementation.	
	E (D)	Establish indicators to monitor implementation of policies indicated in these “Prescriptions”.	
	a (G)	Provide support to developing countries in their implementation of the SDGs, including institution-building and statistical capacity building.	
	b (G)	Take the initiative in implementation of the SDGs at both global and regional levels, as well as follow-up and review processes.	
	c (G)	Disseminate Japan’s expertise and technologies to support implementation of the SDGs.	
Prescription 9.2: Mobilise finances for implementation of the SDGs	A (D)	Secure budgets for implementation of the SDGs that require cross-sectoral policies.	
	B (D)	Enhance multi-sector partnerships, thereby promoting business, investment, innovation, and the necessary financial resources.	
	a (G)	Provide support to developing countries for their implementation of the SDGs.	
	b (G)	Enhance multi-sector partnerships, thereby promoting business, investment, innovation, and mobilisation of finances.	
	c (G)	Enhance multilateral and bilateral financial support aimed at implementation of the SDGs and their follow-up and review.	
	d (G)	Achieve the target of 0.7% of ODA/GNI to developing countries and 0.15 to 0.20% of ODA/GNI to LDCs (SDG17.2).	

D=Domestic Targets, G=Contribution to Global Targets

Notes

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(NB : All websites retrieved in December 2015)

List of prescriptions containing an “X”

Some of the prescriptions include the variable “X” as the target (“X%”, “X people”, etc.) instead of precise numbers. This could be because of the absence of medium-term national policies or plans to 2030, or because the government has yet to define the country’s relevant targets, taking global trends into account. The following section contains the list of such targets that will require further discussion taking into account Japan’s roles and responsibilities, after which appropriate targets should be decided. Prescriptions on “governance” could serve as useful guidelines for how to proceed with future discussion on the matter.

Prescription number		
1.1	A	Reduce the relative poverty rate (especially among children) to X % or less by 2030.
	B	Decrease the number of part-time workers to less than 1.24 million by 2020 from 2.17 million in 2003, while aiming to reduce it to X by the year 2030.
1.2	C	Increase the propotion of women returning to their jobs after their first child birth from the current figure of 38% to 55% by 2020, and aim to increase it to X% by 2030.
	D	Reduce the child poverty rate up to X% or less by 2030.
2.1	A	Reduce the use of chemical fertiliser and pesticide per hectare to below X% by 2030.
	B	Increase the number of certified “eco-Farmers” to X by 2030.
	C	Increase organic farming’s share of farmland to at least 1.0% by 2018, and to X% by 2030.
	D	Reduce the amount of antibiotics used for growth promotion in the animal husbandry sector by X% by 2030.
	E	Reduce greenhouse gas emissions from the agricultural sector by X% by 2030.
2.2	C	By 2030, reduce food loss per capita by 50% or X% at both the retail and consumer levels.
2.3	B	By 2030, develop food supply capability to secure stable food supply of X kcal/person per day, in line with the current consumption patterns.
3.1	A	Extend healthy life expectancy by 1 year by 2020 and an additional X years by 2030.
	B	Reduce the number of metabolic syndrome sufferers by 25% by 2020, from 2008, and an additional X% by 2030.
	C	By 2020, increase to 80% the ratio of having regular medical check-ups, and to X% by 2030.
3.2	A	By 2030, reduce the number of suicides per 100,000 by X%.
	B	By 2030, reduce the number of deaths from overwork to less than X persons.
3.4	A	By 2030, provide the entire population with equal access to quality health care services. By 2025, increase the number of nursing care workers to 2.48 million, and to X people by 2030.
4.1	B	By year X, prior to 2030, provide free high school education (including private schools).
	D	By 2030, increase public expenditures on education to X% of GDP.
5.1	A	By 2020, icrease to 73% the employment rate of women 25-44 years of age, and to X% by 2030.
	B	By 2020, increase to 55% the ratio of women continue working after the birth of their first child, and to X% by 2030.
	C	By 2020, increase to 13% the rate of male employees who take parental leave, and to X% by 2030.
	F	By 2030, encourage men to share the burden of housework and childcare so that their partners/wives do not spend more than X times what men spend on those tasks.
5.2	A	By 2020, raise to 30% women‘s share of leadership positions in businesses and other areas, and to X% by 2030.
5.3	B	By year X, in all prefectures, establish Gender Equality Centres that explicitly declare their ability to provide support to victims of GBV.
	C	By 2030, increase to X the number of Violence Counselling and Support Centres in municipalities.
	D	By year X, establish appropriate training systems for professionals dealing with GBV, including police, doctors, nurses, lawyers, counsellors, and teachers.
6.1	A	By 2030, reduce the number of deaths and victims from natural disasters to less than X per 100,000 people.
6.2	A	By 2018, increase to 78% the share of forests with favourable soil conditions for water-holding capacity, and to X% by 2030.
	D	By 2020, increase the ratio achieving environmental quality standards (X% for rivers, X% for marine areas, X% for lakes).
6.3	A	By 2030, raise the awareness level about water sources and drainage to more than X%.
	C	By 2030, increase by X% the number of citizens participating in water quality monitoring, and train X “citizen scientists” knowledgeable about the local water environment and ecosystems.
6.4	b	To achieve that target, Japan should provide more than X% of international official development assistance spent on water and sanitation.
7.1	A	By 2030, increase primary energy efficiency rate by more than X%/year, to contribute to the global target of doubling the global rate of improvement in energy efficiency (SDG 7.3).
7.2	A	Increase the share of renewable energy in Japan’s primary energy and final energy up to X% by 2030.
7.4	A	By 2020, increase resource productivity to JPY 460,000/ton, and to JPY X/ton by 2030.
	B	By 2020, increase the recycling rate to 17%, and to X% by 2030.
	C	By 2020, reduce final disposal volume to 17 million tons, and to X tons by 2030.

Sustainable Development Goals (SDGs): goals and targets

Goal 1. End poverty in all its forms everywhere

1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day

1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable

1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance

1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

1.a Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions

1.b Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round

2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons

2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment

2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality

2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed

2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries

2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round

2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

Goal 3. Ensure healthy lives and promote well-being for all at all ages

3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births

3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000

live births

3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being

3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol

3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents

3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes

3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all

3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate

3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all

3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States

3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes

4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education

4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university

4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations

4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy

4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries

4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

Goal 5. Achieve gender equality and empower all women and girls

5.1 End all forms of discrimination against all women and girls everywhere

5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation
5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate
5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life
5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences
5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws
5.b Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women
5.c Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels

Goal 6. Ensure availability and sustainable management of water and sanitation for all

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies
6.b Support and strengthen the participation of local communities in improving water and sanitation management

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

7.1 By 2030, ensure universal access to affordable, reliable and modern energy services
7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
7.3 By 2030, double the global rate of improvement in energy efficiency
7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology
7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries
8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including

through a focus on high-value added and labour-intensive sectors

8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services

8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead

8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value

8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training

8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms

8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment

8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products

8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all

8.a Increase Aid for Trade support for developing countries, in particular least developed countries, including through the Enhanced Integrated Framework for Trade-Related Technical Assistance to Least Developed Countries

8.b By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries

9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets

9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending

9.a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States

9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities

9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020

Goal 10. Reduce inequality within and among countries

10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average

10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status

10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard

10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality

10.5 Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations

10.6 Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions

10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies

10.a Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements

10.b Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programmes

10.c By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage

11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels

11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

Goal 12. Ensure sustainable consumption and production patterns

12.1 Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries

12.2 By 2030, achieve the sustainable management and efficient use of natural resources

12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses

12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities

12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production

12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products

12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities

Goal 13. Take urgent action to combat climate change and its impacts*

13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

13.2 Integrate climate change measures into national policies, strategies and planning

13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

13.a Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible

13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities

* Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans

14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics

14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information

14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation [1]

14.7 By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism

14.a Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries

14.b Provide access for small-scale artisanal fishers to marine resources and markets

14.c Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of "The Future We Want"

[1] Taking into account ongoing World Trade Organization negotiations, the Doha Development Agenda and the Hong Kong ministerial mandate.

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world

15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development

15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed

15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products

15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species

15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems

15.b Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation

15.c Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

16.1 Significantly reduce all forms of violence and related death rates everywhere

16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children

16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all

16.4 By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime

16.5 Substantially reduce corruption and bribery in all their forms

16.6 Develop effective, accountable and transparent institutions at all levels

16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels

16.8 Broaden and strengthen the participation of developing countries in the institutions of global governance

16.9 By 2030, provide legal identity for all, including birth registration

16.10 Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements

16.a Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime

16.b Promote and enforce non-discriminatory laws and policies for sustainable development

Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

Finance

17.1 Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection

17.2 Developed countries to implement fully their official development assistance commitments, including the commitment

by many developed countries to achieve the target of 0.7 per cent of ODA/GNI to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries

17.3 Mobilize additional financial resources for developing countries from multiple sources

17.4 Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress

17.5 Adopt and implement investment promotion regimes for least developed countries

Technology

17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism

17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed

17.8 Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology

Capacity-building

17.9 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation

Trade

17.10 Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda

17.11 Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020

17.12 Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access

Systemic issues

Policy and institutional coherence

17.13 Enhance global macroeconomic stability, including through policy coordination and policy coherence

17.14 Enhance policy coherence for sustainable development

17.15 Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development

Multi-stakeholder partnerships

17.16 Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries

17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships

Data, monitoring and accountability

17.18 By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts

17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

(United Nations Resolution A/RES/70/1 *Transforming our world: the 2030 Agenda for Sustainable Development*)

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