Development of the Local SDGs Platform for information sharing to contribute to achieving the SDGs

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Abstract. Think Globally, Act Locally: Working toward the Sustainable Development Goals (SDGs) at the local level while taking global trends into accounts is key to transforming our world. Many cities and communities are now incorporating the SDGs into their visions, strategies, policies and measures. The current situation surrounding the SDGs is shifting from the understanding phase to the practice and follow-up phase. Cities and communities working toward the SDGs are expected to conduct Voluntary Local Reviews and to share their experiences worldwide. The paper introduces an outline and the development methodology of an online “Local SDGs Platform” that enables stakeholders to register, search and share their efforts and best practices toward achieving the SDGs. Platform users can understand the actual situation of cities and communities using local SDG indicators, which were specifically developed to reflect the local context in Japan. Although the platform and local SDG indicators were initially developed for Japan, the framework and its development methodology are universally applicable and relevant in any region or country. Effective utilization of the platform together with local SDG indicators is expected to support connecting stakeholders, understanding their actual local situations and sharing information, which will lead to achievement of the SDGs.

1. Introduction

“Transforming our world: the 2030 Agenda for Sustainable Development” [1] was unanimously adopted at the United Nations Sustainable Development Summit in September 2015. At the core of the 2030 Agenda are the Sustainable Development Goals (SDGs), which comprise 17 goals as an aspirational vision for the future and 169 targets as concrete achievements to be fulfilled. Approximately 230 indicators have been proposed for measuring progress toward the achievement of these goals and targets [2].

1.1. Necessity of implementing SDGs at the local level

Many forward-looking cities and communities around the world are now making efforts based on the idea of “Think Globally, Act Locally” in order to contribute to achieving the SDGs and to gain various benefits as they work toward the SDGs at the local level. The SDGs provide a fresh panoramic view of familiar communities and allow each city and community to newly recognize its distinctive characteristics and local identity. Thus, the SDGs support cities and communities in discovering their potential relative strengths and in strengthening the branding of communities to make them more attractive. Utilizing the goals, targets and indicators of the SDGs in an integrated manner will also
support cities and communities in considering and implementing integrated community development plans and measures. The effects of economic, social and environmental policies were once considered to have trade-off relationships in the past. However, the SDGs require the integration of these policies as the three pillars of sustainability, emphasizing their indivisibility and integrated nature. These integrated policies and measures are expected to bring multiple widely shared benefits to their communities if they are handled and coordinated effectively. The SDGs are sometimes referred to as universal language for sustainable development and can be used as a bond to connect various stakeholders in different sectors and regions. The promotion of partnerships using the SDGs and the matching of people and communities who require supports with people and communities who can provide solutions will contributing to solving regional problems through the creation of innovation. These are just a few examples of benefits of tackling the SDGs at the local level [3][4][5].

1.2. Local SDGs

The SDGs are the result of long-standing discussions in the international community and are applicable to all regions and countries. However, some targets appear to be more focused on developing regions and countries while others appear to be more focused on developed regions and countries. Therefore, “localization” (or “internalization”) of the SDGs is essential for effective use of the SDGs as a driving force to transform our cities and communities into more sustainable form [6], which in turn will lead to transformation of our world. This paper describes localized SDGs (i.e., deliverables of localizing SDGs to reflect local context) as local SDGs. The 2030 Agenda contains the following statements about localizing the SDGs [1].

“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.” (paragraph No. 55 of the 2030 Agenda)

“The Goals and targets will be followed up and reviewed using a set of global indicators. These will be complemented by indicators at the regional and national levels which will be developed by Member States, ...” (paragraph No. 75 of the 2030 Agenda)

Figure 1 shows the framework for implementing the SDGs at the local level. The SDGs as stated in the 2030 Agenda are shown in the top layer of the figure. The middle layer shows SDG initiatives at the national level. The government of Japan established the country’s SDGs Implementation Guiding Principles in December 2016 and revised them in December 2019. Many other countries around the world are also setting their own SDG initiatives. This is the localization from the global level to the national level. The bottom layer of the figure illustrates SDG projects in cities and communities which contribute to solving local problems in association with the national government’s policies. This is localization from the national level to the local level. Local SDGs can be further categorized into two types: obligatory and comprehensive (type 1) and self-motivated and selective (type 2). In project type 1 (obligatory and comprehensive), the SDGs are promoted under the responsibility of local governments in response to the national government’s policies. Each national ministry implements relevant measures according to its mission. Once measures are formulated by ministries, implementation directions for respective SDGs in accordance with the formulated measures are likely to be provided to local governments. In project type 2 (self-motivated and selective), SDGs are promoted by each local government in accordance with community-specific conditions. Many of the goals, targets and indicators of the SDGs can be useful for planning unique local measures. It is effective for local governments to select, from among many SDG items, those that are relevant and applicable to their situations, and to make their own original plans using the SDGs as a new starting point. Local SDGs that are self-motivated and selective can be regarded as a “true” local SDGs in a narrow sense.
The development of local SDGs will be difficult and tough work. Local SDGs should be indivisible and integrated as there are many networks, synergies and trade-off relationship among the 17 goals [7] [8]. Local SDGs should foster an inclusive society to ensure that “no one is left behind” which is a key point of the SDGs. Many local stakeholders must be involved and their opinions should be reflected when formulating the local SDGs. Local SDGs should also include a long-term vision toward 2030 and beyond for future generations. Local targets should be considered to clarify future tasks and local indicators should be developed to monitor, follow-up and review local initiatives toward the achievement of local SDGs. Carrying out this difficult work will strengthen partnerships among local stakeholders, provide opportunities to reflect on their familiar communities and foster the strengthening of local identity, leading to the development of indivisible, integrated and inclusive measures to transform today’s cities and communities into sustainable ones.

1.3. SDG Goal 11 and the other 16 goals
The SDGs were formulated from various viewpoints of the aspects necessary for creating a sustainable world. Only Goal 11 “Sustainable Cities and Communities” (in full, “Make cities and human settlements inclusive, safe, resilient and sustainable”), with its 10 specific targets, depicts a concrete spatial image, which distinguishes it from the other 16 goals. Goal 11 can be regarded as being the most closely associated with local initiatives. Goal 11 cannot be fulfilled without the participation of local stakeholders. However, their roles and responsibilities are not limited only to the scope of Goal 11. Goal 11 is deeply linked with many of the other goals. Local stakeholders and their local activities can be the key to the other 16 goals as well.

Against a backdrop of rapid urbanization around the world, the inclusion of urban issues as one of the SDGs encourages a holistic approach to the creation of sustainable cities, thereby aiming to accelerate the promotion of other SDGs as well. Figure 2 shows the relationship between Goal 11 and the other 16 goals of the SDGs.
1.4. Objectives of developing the Local SDGs Platform

The current situation surrounding the SDGs is shifting from the understanding phase to the practice and follow-up phase. Many local SDG initiatives are now under way. The OECD project called “A Territorial Approach to the SDGs” [9] and the “SDGs FutureCity” initiative in Japan [10] are just a couple examples of these local SDG initiatives. This study aims to develop an online “Local SDGs Platform” that enables stakeholders to register, search and share their initiatives, efforts and best practices in order to connect stakeholders and to support and strengthen their initiatives by providing and sharing information toward achieving the SDGs.

2. Methodology

2.1. Structure of the Local SDGs Platform

The paper describes the methodology for developing the local SDGs platform for the case of Japan, but the framework of the platform and its development methodology are universally applicable and relevant in any region or country.

The structure of the platform was considered first. An interview survey was conducted with potential platform users, namely, several local governmental officers working in the “SDGs FutureCity” initiative who were selected by the Japanese government in order to understand what kind of information is required. The survey revealed that the following information and features were required for working toward the SDGs at the local level.

Required information and features for the Local SDG Platform:

1) Statistical data to understand the current situation of their own cities and communities
2) A database on visions, strategies, policies and measures incorporating SDGs
3) Examples of practices for local SDG initiatives
4) A support tool for Voluntary Local Reviews (VLRs)

An appropriate set of local SDG indicators must be developed to visualize and make apparent of the actual situation of cities and communities. The procedure for developing local SDG indicators is explained in the next section.
2.2. Development of local SDG indicators
The procedure for developing local SDG indicators is shown in figure 3. First, all 232 indicators proposed by United Nations Department of Economic and Social Affairs Statistics Division [2] were carefully reviewed from the perspective of applicability at the city and community levels. Then, those indicators were re-reviewed from the perspective of applicability to the national context of Japan. Indicators for applicability at the local level in Japan were then identified. Non-applicable indicators were then slightly modified while retaining their essence so that they could be applied at the local level in Japan. Some original local indicators for certain SDG goals were also added to monitor the efforts and progress of Japanese cities and communities even though they are not directly described in targets of the global SDGs. Experience in developing indicators for cities and communities in view of the SDGs in the past was fully utilized in this stage of indicator development [11].

![Figure 3. Procedure of developing local SDG indicators.](image)

2.3. Local SDG database development
Japan has 47 prefectures (local government units serving wide areas) and approximately 1750 municipalities (cities, special wards, towns and villages) as of 2020. Public statistical data for all Japanese prefectures and municipalities were extracted and collected from statistics of every Japanese national ministry and agency and stored in the developed local SDGs database. Indicator values are calculated for each selected prefecture or municipality after related data are extracted from the database.

A database of visions, strategies, policies and measures incorporating the SDGs as well as examples of practices for local SDG initiatives was developed after a survey of all local government websites from Hokkaido in the northernmost part to Kyushu in the southernmost part of Japan.

2.4. Development of the Local SDGs Platform
The online “Local SDGs Platform” that enables stakeholders to register, search and share their efforts and best practices toward achieving the SDGs was developed after the development of local SDG
indicators and local SDGs databases. The platform enables assessment of a selected prefecture or municipality by calculating scores varying from 0 points (worst in Japan) to 100 points (best in Japan) based on the indicator values. The platform uses a simple geographic information system (GIS) so that the users can easily select their prefectures and municipalities of interest. The platform also generates radar charts that show the balance among 17 goals of the SDGs. Users of the platform can also search for which prefectures and municipalities have their visions, strategies, policies and measures incorporating SDGs as well as examples of practices regarding local SDG initiatives.

3. Results and discussion

3.1. Result of developing local SDG indicators

The study found that only 5% of global SDG indicators proposed by United Nations Statistics Division could be used without modification at the local level in Japan. There were many indicators that did not suit the actual situation in Japan because they were made with developing countries in mind. There were many indicators that were created with the developed countries in mind but could not be used because data were not available. However, approximately 50% of global SDG indicators could be used after localization.

Several local SDG indicators were created for a single global SDG indicator in some cases. For example, the following local SDG indicators were created for global SDG indicator 11.6.2 [Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)]: (1) annual mean value of fine particulate matter (PM 2.5); (2) number of days with daytime 1-hour photochemical oxidant (Ox) concentrations exceeding 0.12 ppm; (3) annual mean nitrogen oxide (NOx) value (ppm); (4) annual mean value of sulfur dioxide (SO₂) (ppm); (5) environmental standards attainment rate for PM2.5 concentration; and (6) environmental standards attainment rate for suspended particulate matter concentration.

Although not mentioned in the targets of the global SDGs, some indicators have been added to suit the situation in Japan. In total, approximately 200 local SDG indicators were developed as shown in figure 4.

![Figure 4. Result of developing local SDG indicators.](image_url)
3.2. Operation of the developed Local SDGs Platform
The user interface of the Local SDGs Platform and an example of its operation is shown in figure 5. Raw indicator values and calculated scores are shown in a generated table under the map. Scores ranging 0 to 100 points enable users in understanding their current situation in comparison with other prefecture and municipalities nationwide.

![User interface and operation image of Local SDGs Platform](https://local-sdgs.jp/?lang=en_us).

4. Conclusions and future challenges
The paper presented an overview and the development methodology for the Local SDGs Platform specifically developed to support local stakeholders in sharing information and to foster local SDG initiatives contributing to the achievement of the SDGs. Approximately 50% of global SDG indicators were able to be localized and a total of around 200 local indicators were created, which enable visualization of the current situation of cities and communities (prefectures and municipalities). Currently, similar initiatives can be found around the world. One such example is the SDG Portal (https://sdg-portal.de/) jointly provided by German Association of Cities and Bertelsmann Foundation [12]. These efforts will encourage local stakeholders and foster local SDG initiatives which will ultimately contributes to the achievement of the SDGs globally.
However, some challenges remain. Still 50% of global SDG indicators were found to be difficult to use at the local level, at least in the Japanese context. This percentage would be even higher in places where national public statistical databases are not well established. Previous research has revealed that less than half of the SDG targets are assessable even at the national level where data can be more easily collected than at the local level [13]. A lack of high-resolution data is one of the biggest challenges to be overcome in order to efficiently work toward achievement of the SDGs.

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