

## 1 Who Develops the Indicators?

It is our hope that resident groups, non-profit organizations (NPOs), and interested businesses, rather than experts, will be the ones who develop human security indicators and put them to use. The method suggested here is to uncover problems as the figures are investigated, rather than to identify problems right away. The three areas of Life, Livelihood, and Dignity are also inclusive rather than discrete. In this regard, the development of indicators may be done by a coalition of several organizations, rather than individual organizations working on specific issues.

The local indicators described in this book focused on a specific prefecture, and the municipalities within that prefecture served as the basic units to visualize the issues. This level of indicators will be of more interest to organizations which are based in a particular region than to national NPOs. In particular, they would be appropriate for a program that works toward the realization of the SDGs at the local level. This is because these indicators are, above all, a multifaceted measure of the fundamental objective of the SDGs, which is to create a society where “no one is left behind.”

It should not be only private organizations which take on the role of developing human security indicators. Local governments and organizations associated with them could also take the initiative in developing indicators. However, because these indicators aim to provide an honest picture of areas where municipalities are not doing enough, they may work better as a means for residents to evaluate their policies. The development of indicators by local governments (as a form of self-assessment) is welcome, but it would be preferable for the residents themselves to participate as the main players in the process and strengthen their ability to raise their voices

and express their opinions (see [Table 4-1](#) “The eight-rung ladder of citizen participation in public decision-making” in Chapter 4).

We hope that resident groups, NPOs, and local governments will take the initiative to “localize” Human Security Indicators in this way. However, another avenue is to develop indicators as part of classes at universities (or high schools and junior high schools). It would be of great value to try to develop indicators in schools, so that the young people who will lead their communities in the future can become familiar with the issues facing their local areas.

Most of the statistical data on which the indicators are based can be obtained online. Given the widespread use of personal computers and the internet today, it should be fairly easy to select indicators and download the relevant data, although some tasks, such as creating maps, normalizing data, and plotting graphs, may require a certain level of computer skills (including basic knowledge of spreadsheet software).

However, this is not of great concern, and those who are struggling can ask someone to help. Thanks to recent changes in the curriculum set by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), high school students now learn how to read and process statistical data and digital maps in mandatory classes, such as Information<sup>1</sup> and General Geography. The calculations used to create the Human Security Indicators are not particularly complex, involving only addition, subtraction, multiplication, and division, rather than any advanced functions (although the extent to which they are studied in the classroom depends on the school, and there may be differences between science and humanities courses). If you are interested in the indicators but are not very good at information technology, try asking a young person close to you for advice. With tablet PCs being used

<sup>1</sup> A course on “Information” is mandatory for all high school students. The course aims to help students acquire the knowledge and skills to use information and IT effectively to discover and solve problems. Some level of computer programming is also included.

in elementary schools these days, I think it would be a good idea to engage in intergenerational dialogue through the development of indicators.

## 2 How To Develop Indicators

For more information on the concept of indicators, see the previous chapters of this book, and for an introduction to the development of the indicators in this book, see “Create Human Security Indicators for Your Own Town!” in the opening chapter. Here, I would like to outline a few points that may help in developing specific indicators.

### (1) Collect Statistical Data

Statistics for individual municipalities are available on the websites of their respective prefectures. Alternatively, municipal-level data may be available from national government statistics websites. There may also be useful information on sites compiled by third parties, but be aware that they may not be up to date. It is important to collect the most recent figures possible.

Sometimes, data that has not been published may be obtained through a freedom of information request. Since it is impossible to make policies with the participation of local residents if they are not aware of current problems, the government should make all statistical information public, unless there is a specific reason not to. Of course, information that would violate personal privacy should not be made public. In the case of municipal-level data containing small numbers from which individuals can be identified, we can avoid this by aggregating the data over a five-year period, processing it on a per 1,000 population basis (i.e., as a rate), or combining it with data from other municipalities. Furthermore, it may be worthwhile to look for reliable statistics from sources other than public institutions.

In some cases, data may not be available at the municipal level, but is available for aggregated areas which group several municipalities together (for example, the jurisdictions of welfare offices or education bureaus). The results of public opinion polls, which reveal the subjective views of residents, may also be made public on a regional or similar basis. In such cases, data from the area to which the municipality belongs can be used, or data from

neighboring towns with similar conditions can be used. It would also be good to make active use of data and big data from non-public institutions, if available.

When measuring the quality of local government policies, the indicator team can develop evaluation criteria and “score” the policy documents based on a uniform standard. With the Miyagi Model, the current status of municipalities’ Comprehensive Plans (Chapter 4) and gender equality efforts (Chapter 12, 12-1) were evaluated in this way. The members of the Indicator Team assessed these plans and gave their own scores, and the average score was used as the data point for each municipality.

### (2) Find Data on Subjective Views

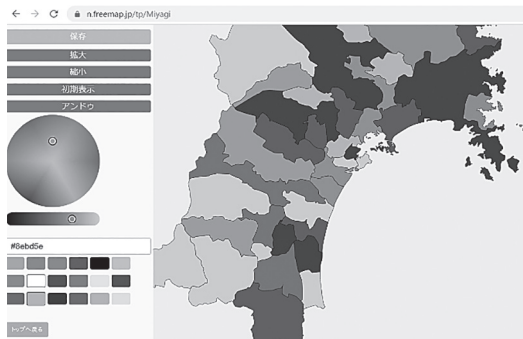
Public opinion polls and questionnaire surveys conducted by prefectures may be available. However, these are often administered for larger regions rather than by municipality. You may wish to assess whether they can be used as part of Dignity Indicators or as indicators of something else. For the Miyagi Model, we were able to conduct a survey at the municipal level with the cooperation of Miyagi Co-op (Chapter 3, 3-5). Miyagi Prefecture’s “Survey of Citizens’ Attitudes” also provided valuable data (broken down into seven zones, rather than by municipality). When used as an indicator, local data can be used in conjunction with data from the larger area or zone to which the municipality belongs. Another qualitative approach, which can’t be calculated as an indicator but could be explored, would be to conduct in-depth interviews to gauge the thoughts and feelings of people in major locations outside of prefectural capitals.

### (3) Create Maps

Blank maps of municipalities can be printed from the website of Japan’s Geospatial Information Authority. Although it may be hard work to create statistical maps for all indicators, presenting some of the main indicators using color shading makes them easier to understand. There are various types of GIS (Geographic Information System) software, but a free, easy-to-use option available in Japan (as of the date of publication) is *Hakuchizu NuriNuri* (<https://n.freemap.jp/st/list.html>) (Figure 5-1).

Rather than using different colors, it is easier to discern different shades of the same color. In addition, all colors

Figure 5-1: Example of shading on a blank map



have their unique codes, so noting them down will make it easier to update the maps later, using the same colors. Depending on how high or low the value in question is, using about five shades will make the maps more legible.

#### (4) Normalize the Data

Let us assume that average life expectancy is distributed between 78 and 81 years, and that per capita income is distributed between 2.4 million yen and 3.8 million yen in different municipalities. Since these two sets of data are different, they cannot be compared, added together, or averaged. To make this possible, a calculation called normalization is performed. Using the range of the values as the denominator and the difference between the data point in question and the minimum (or maximum) value as the numerator, you ensure that the information is distributed between 1 and 0 (see Chapter 3, 3-4).

To do this for the indicators, we can use the formula (**value for the municipality in question - least favorable value of all municipalities**) / (**most favorable value - least favorable value of all municipalities**). This can be done on a calculator but that can be hard work, so it may be better to perform all the calculations simultaneously using an Excel spreadsheet. Figure 5-2 shows life expectancy (the higher the value, the better) and Figure 5-3 shows the unemployment rate (the lower the value, the better) for fictitious municipalities. The formula bar at the top contains the formula. For the unemployment rate, the value is positive because both the numerator and denominator are negative.

Here, “good” or “bad” mean that there are fewer or more problems to be addressed, but in practice it is

Figure 5-2: Normalization of life expectancy

	A	B	C	D
1	Average life expectancy at birth			
2	Town A	86.6	0.182	
3	Town B	87.3	0.818	
4	Town C	87.5	1.000	
5	Town D	86.4	0.000	
6	Town E	86.9	0.455	
7				
8				
9				

Figure 5-3: Normalization of unemployment rate

	A	B	C	D
1	Unemployment rate			
2	Town A	2.5	0.750	
3	Town B	2.2	1.000	
4	Town C	2.9	0.417	
5	Town D	3.4	0.000	
6	Town E	3.1	0.250	
7				
8				
9				

sometimes difficult to find a clear linkage between an indicator and the magnitude of the problem, so the data should be viewed within the context of the issue or the area concerned.

#### (5) Life, Livelihood, Dignity, and Overall Indices

Once all indicators have been normalized, the Life Index, Livelihood Index, and Dignity Index can be calculated by averaging the normalized values for each area. These can then be averaged to give an Overall Index. This process is basically the same as that used by UNDP (United Nations Development Programme) to calculate the Human Development Index.

#### (6) Create Radar Charts

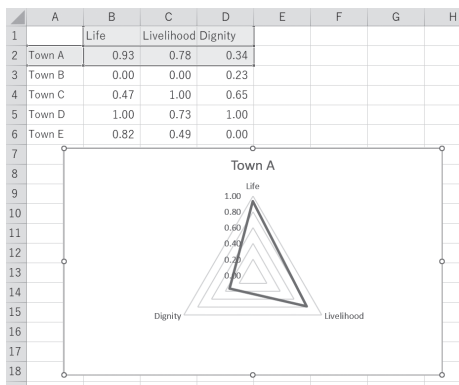
Finally, create radar charts for each municipality or selected region. Select a range of data in Excel, then go to Insert > Chart > All Charts > Radar. For the Miyagi Model, the Life, Livelihood, and Dignity Indices are combined with subjective data on Self-fulfillment and Connectivity

to produce a pentagon. **Figure 5-4** shows an example where it was not possible to obtain subjective data. For this fictitious Town A, the Life Index is high, but the Livelihood Index is rather low, and the Dignity Index is very low. The triangles are different for each of the municipalities, and when placed side by side, their strengths and weaknesses should be apparent at a glance.

When there are a large number of municipalities, the team may, at its discretion, select examples of municipalities that it particularly wishes to compare, and use them as material for further investigation (e.g., municipalities that represent urban, suburban, coastal, and mountainous areas).

In terms of how the data is presented, the rankings of municipalities may attract a lot of attention, but the radar charts are more important. This is because they provide a clear, qualitative look at the strengths and weaknesses of each municipality.

**Figure 5-4: Radar chart**



### 3 How to Present and Disseminate Indicators

Once the indicators take shape, it would be helpful to publish them on the websites of resident groups and NPOs so that anyone can view them freely. Although it has become common to publish results online, it is difficult to abandon the idea of printing pamphlets and other paper documents. It might be a good idea to distribute them to relevant agencies or to review them together at meetings. Of course, they could also be made available for downloading as a PDF to enable widespread access.

Rather than just showing the results as numbers, the significance of the results lies in interpreting what they show and drawing up proposals in response. As the proposals are drawn up based on data, they should be very persuasive. It would be excellent to see resident groups and NPOs meet and share the indicators, discuss them together, and come up with proposals for local governments and citizens.

Once the details are roughly finalized, meetings should be held to present the indicators and proposals. For the Miyagi Model, we held an event titled “How to Achieve a Miyagi Prefecture Where No One Is Left Behind? Interim Presentation of Human Security Indicators for Miyagi Prefecture” at the Sendai International Center on March 23, 2021. Due to COVID-19, the event was a hybrid of in-person attendance and online participation via Zoom. Many interested parties took part and engaged in lively discussions (**Figure 5-5**).

**Figure 5-5: Presentation of the Miyagi Model**



### 4 How to Utilize Indicators

So, now that an original set of indicators has been completed and published, how can they be put to further use? From this point forward, it seems better to leave it to you, the reader, to make specific suggestions, rather than the authors of this book.

Nevertheless, I would like to share a few comments in closing. It would be a waste to present the indicators and proposals and leave it at that, so it is our hope that the teams who develop the indicators will take the lead in using them as the basis for creating networks of local resident groups and NPOs. In this way, they can be an important

starting point for closer communication between citizens and local government officials. For the Miyagi Model, the Indicator Team visited the Miyagi Prefectural Government and several municipalities to exchange ideas, both before and after the completion of the indicators. The indicators also attracted interest at the Miyagi Prefectural Assembly. Specifically, we approached the city of Kesenuma, which was found to have a particularly large number of issues relating to women and children. This led to the launch of a project called “Building a Kesenuma Where No One Is Left Behind” in cooperation with the city government and local businesses (Chapter 12, 12-4).

Furthermore, it would also be interesting to exchange opinions on a wider regional or national level by comparing different sets of indicators (Kazuko Tsurumi, known for her theory of endogenous development, called for an “exchange of models”). An organization called the Japan Civil Society Network on SDGs (SDGs Japan), which brings together civil society groups working on the SDGs, has been established, and discussions on indicators led by “regional units” have begun as well.

The prefectural-level Human Security Indicators are described in detail in the sister volume of this book, *SDGs and Japan*, but a comparison between that volume and the Miyagi Model in this book shows that the content has changed considerably, including the way the indicators are selected. Regarding further applications, we have some suggestions on how to develop indicators, such as to balance Life, Livelihood, and Dignity; emphasize the new area of dignity; and break indicators down to the municipal level as much as possible. But we would also like to see indicators developed spontaneously in line with the realities of individual communities. It is our hope that the indicators will evolve independently in this way, and that there will be more opportunities for those involved to share a wide variety of indicators developed in other places, and to learn from each other.

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