

# **Information Collection Survey on School Lunches and “Shokuiku (Food and Nutrition Education)”**

## **Final Report**

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**Japan International Cooperation Agency (JICA)**

**Koei Research & Consulting Inc.**

**Sanyu Consultants**

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Nutrition Education)”  
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## Abbreviations

|           |                                                                             |
|-----------|-----------------------------------------------------------------------------|
| ABIM      | Angkatan Belia Islam Malaysia                                               |
| ASEAN     | Association of Southeast Asian Nations                                      |
| BAS       | Bureau of Agricultural Statistics                                           |
| BFP       | Breakfast Feeding Program                                                   |
| BMI       | Body Mass Index                                                             |
| BMP       | Bantuan Makan Prasekolah                                                    |
| DHS       | Demographic and Health Surveys                                              |
| DOST-FNRI | Department of Science and Technology-Food and Nutrition Research Institute  |
| EMIS      | Education Management Information System                                     |
| FAO       | Food and Agricultural Organization of the United Nations                    |
| FOP       | Front of Pack                                                               |
| FSCC      | Cabinet Committee on National Food Security Policy                          |
| GDP       | Gross Domestic Product                                                      |
| GFSI      | Global Food Security Index                                                  |
| GHI       | Global Hunger Index                                                         |
| HCK       | Healthy Central Kitchen                                                     |
| HGSFP     | Home-grown School Feeding Programme                                         |
| HMIS      | Health Management Information System                                        |
| HiTS      | Program Hidangan Berkhasiat di Sekolah                                      |
| JAIN      | Jabatan Agama Islam Negeri                                                  |
| JAKIM     | Jabatan Kemajuan Islam Malaysia                                             |
| JICA      | Japan International Cooperation Agency                                      |
| KEMAS     | Jabatan Kemajuan Masyarakat                                                 |
| KSSR      | Kurikulum Standard Sekolah Rendah                                           |
| LFBSM     | Local Food-based School Meal Program                                        |
| MAFI      | Ministry of Agriculture and Food Industry                                   |
| MAPEH     | Music, Art, Physical Education, Health                                      |
| MICS      | Multiple Indicator Cluster Surveys                                          |
| MTD       | Maktab tentera Diraja                                                       |
| MoAC      | Ministry of Agriculture and Cooperatives                                    |
| NAFMIP    | National Agriculture and Fisheries Modernization and Industrialization Plan |
| NCDs      | Noncommunicable Diseases                                                    |
| NGO       | Non-governmental Organization                                               |
| NHMS      | National Health and Morbidity Survey                                        |
| NIN       | National Institute of Nutrition                                             |
| NPANM     | National Plan of Action for Nutrition of Malaysia                           |
| NSPPF     | National Social Protection Policy Framework                                 |
| NSS       | Nutrition Surveillance System                                               |
| OBEC      | Office of the Basic Education Commission                                    |
| PNG       | Papua New Guinea                                                            |
| PRDP      | Philippine Rural Development Project                                        |
| PSS       | Program Susu Sekolah                                                        |
| PTA       | Parent-Teacher Association                                                  |
| PhilFSIS  | Philippine Food Security Information System                                 |
| RKM       | Rekod Kesihatan Murid                                                       |
| RMT       | Rancangan Makanan Tambahan                                                  |
| RSE       | Relative Absolute Error                                                     |
| SBFP      | School-based Feeding Program                                                |
| SD        | Standard Deviation                                                          |
| SDGs      | Sustainable Development Goals                                               |
| SLP       | National School Lunch Feeding Program                                       |
| SMP       | National School Milk Program                                                |
| UHT       | Ultra High Temperature                                                      |
| UNESCO    | United Nations Educational Scientific and Cultural Organization             |
| UNICEF    | United Nations Children's Fund                                              |

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|      |                                         |
|------|-----------------------------------------|
| USDA | United States Department of Agriculture |
| WASH | Water, Sanitation, and Hygiene          |
| WFP  | World Food Programme                    |
| WHO  | World Health Organization               |

## Chapter.1 SURVEY OVERVIEW

### 1.1 Survey Objectives

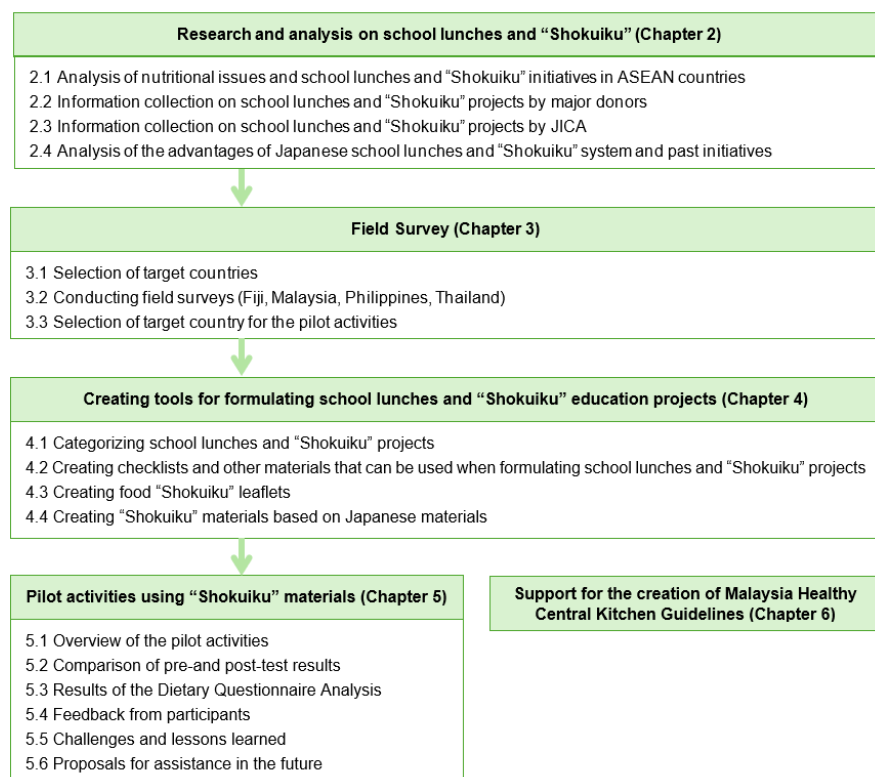
In the Association of Southeast Asian Nations (ASEAN) and Pacific Island Countries (PICs), overweight and diet-related non-communicable diseases (NCDs) have become serious nutritional issues due to recent changes in lifestyle and eating habits. Concurrently, malnutrition problems such as stunting and wasting exist in the present-day. In consequence, an increasing number of countries are suffering from the double burden of malnutrition.

Various initiatives are being made to improve nutrition, such as the "Japanese school lunches" and "Shokuiku (Food and Nutrition Education)". Through the years, both methods have contributed to improving children's nutrition and establishing healthy eating habits. As a result, these methods have gained recognition as effective strategies.

On the other hand, ASEAN countries and PICs have different socio-economic levels, resulting in varied nutritional issues. To address these differences, the "Information collection survey on school lunches and "Shokuiku"" (hereinafter referred to as the Survey) was conducted. The survey aimed to organize cases, categorize activities, utilize the experience of "Japanese school lunches and food and nutrition education", and propose tailored initiatives based on the needs of each country.

### 1.2 Survey Items

The survey items are shown in Figure 1-1.



Source: Prepared by the Survey Team

Figure 1-1 Survey and Work Items in this Survey

## 1.3 Target Countries for the Survey

### 1.3.1 Target Countries for the Desk Review

This survey analyzed nutritional issues, school lunches, and “Sokuiku” initiatives in 20 countries – including the nine ASEAN countries and 11 PICs shown in Table 1-1.

Table 1-1 Target Countries for the Survey

|                             |                                                                                                                                                                   |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9 ASEAN countries:          | 1) Indonesia, 2) Cambodia, 3) Thailand, 4) Philippines, 5) Brunei, 6) Viet Nam, 7) Malaysia, 8) Laos, 9) Timor-Leste                                              |
| 11 Pacific Island countries | 10) Kiribati, 11) Samoa, 12) Solomon Islands, 13) Tuvalu, 14) Tonga, 15) Vanuatu, 16) Papua New Guinea, 17) Palau, 18) Fiji, 19) Marshall Islands, 20) Micronesia |

Source: Prepared by the Survey Team

### 1.3.2 Target Countries for the Field Survey

From the 20 target countries shown in Table 1-1, the four countries of Malaysia, Fiji, Thailand, and the Philippines were selected as the target countries for the field survey based on the following two perspectives: 1) they are countries with different economic situations and nutritional issues, and 2) they are countries where the government's commitment to measures against overnutrition is high and cooperation can be expected in implementing pilot activities. The reasons for selecting the four target countries are further expounded in Table 1-2.

Table 1-2 Reasons for Selecting the Four Target Countries for the Field Survey

|                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  Fiji            | The adult obesity rate in Fiji is relatively low compared with the PICs where the obesity rate is extremely high. However, urgent measures are needed to address overnutrition. The government shows a strong commitment in tackling the issue, as the country has the most advanced laws and guidelines on preventing overnutrition among Pacific countries.                                                                                                                                |
|  Malaysia        | Both the adult obesity rate and the diabetes incidence rate are the highest among ASEAN countries, thus, urgent measures are needed to address overnutrition.<br><br>The government has shown a strong commitment in addressing the issue, as the country has advanced laws and guidelines on preventing overnutrition.                                                                                                                                                                      |
|  The Philippines | The adult obesity rate is average and the diabetes incidence rate is low among ASEAN countries. Compared with the neighboring countries, the problem of overnutrition is not a serious concern, however malnutrition in children is a significant issue. Due to the high poverty rates and widespread food insecurity, many people find it difficult to eat a nutritionally balanced diet. The development of laws and guidelines regarding measures against overnutrition is very advanced. |
|  Thailand        | Both the adult obesity rate and diabetes incidence rate rank high among ASEAN countries. Although it is ranked as an upper middle-income country in terms of GDP per capita, a growing income disparity has led to increasing concerns about food security. The country has an advanced development of laws and guidelines on preventing overnutrition.                                                                                                                                      |

Source: Prepared by the Survey Team

## 1.4 Target Age for the Survey

For school lunches, the survey targets were preschool to elementary students, while for “Shokuiku”, the survey targets were elementary school students and their parents.

## Chapter.2

## RESEARCH AND ANALYSIS ON SCHOOL LUNCHES AND “SHOKUIKU”

### 2.1 Analysis of Nutritional Issues, School Lunches and “Shokuiku” Initiatives in ASEAN and Pacific Island Countries

#### 2.1.1 Methods

In the analysis of nutrition-related issues involving school lunches and “*Shokuiku*” initiatives in ASEAN countries and PICs, information on the following eight items was collected and organized. The analysis was conducted through a desk survey. Specifically, data and information were collected from a wide range of sources, including various databases, country-specific policies and guidelines, and reports from government agencies and United Nations (UN) organizations.

- (1) Nutrition indicators of undernutrition, overweight, and obesity (with a focus on preschool children and school-aged children)
- (2) Food security
- (3) Laws and regulations, national strategies, systems, and action plans related to school lunches and “*Shokuiku*”
- (4) Positioning of school lunches and “*Shokuiku*” in health policy
- (5) Outline of the education system and the positioning of school lunches and “*Shokuiku*” in education policy
- (6) Creation of healthy eating environment for preschool children and school-aged children
- (7) Materials for “*Shokuiku*”
- (8) Statistics and databases for monitoring and evaluating the health and nutritional status of preschool children and school-aged children

#### 2.1.2 General Overview

The 20 countries covered by the desk survey are divided into nine ASEAN countries<sup>1</sup> and 11 Pacific Island countries (PICs).

The countries included in the survey are diverse, with significant variations in population size, economy, land area, religion, and language. Indonesia has the largest population of approximately 270 million, while Tuvalu has the smallest with approximately 11,000 (see Table 2-1). In terms of land area, Indonesia is the largest, measuring approximately 1.92 million km<sup>2</sup> (about five times the size of Japan), while Tuvalu has the smallest area of 26 km<sup>2</sup> (roughly the same size as Shinagawa Ward, Tokyo). This disparity in size highlights the differences of the surveyed nations, even if considering population and land area alone.

Regarding economic conditions, Brunei is classified as a high-income country according to the World Bank’s income classification (July 2023). Eight countries, including Indonesia, are classified as middle-income and high-income countries, while 11 countries, including Cambodia, are classified as low-income and middle-income countries (Table 2-2). In terms of public health expenditures as a percentage of gross domestic product (GDP), five ASEAN countries and two PICs allocate funding below the average for the respective income groups. Similarly, regarding public spending on education as a percentage of GDP, six ASEAN countries and two PICs fall below the average for their income group. Among the countries for which both data sets are available, both public health

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<sup>1</sup> Timor-Leste is an observer country

and education expenditures are above average for each income category in Viet Nam, Timor-Leste, the Marshall Islands, Samoa, and the Solomon Islands.

Table 2-1 Demographics of the Countries Surveyed

|                       | Country           | Total population<br>(thousands) | Population under<br>18 years old<br>(thousands) | Population under<br>5 years old<br>(thousands) | Population<br>growth rate (%) | Total fertility<br>(live births per<br>woman) | Share of urban<br>population (%) | Life expectancy<br>at birth (years) |
|-----------------------|-------------------|---------------------------------|-------------------------------------------------|------------------------------------------------|-------------------------------|-----------------------------------------------|----------------------------------|-------------------------------------|
|                       |                   | 2021                            | 2021                                            | 2021                                           | 2000–20                       | 2021                                          | 2021                             | 2021                                |
| A<br>S<br>E<br>A<br>N | Brunei Darussalam | 445                             | 119                                             | 32                                             | 1.3                           | 1.8                                           | 79                               | 75                                  |
|                       | Cambodia          | 16,589                          | 5,756                                           | 1,613                                          | 1.4                           | 2.3                                           | 25                               | 70                                  |
|                       | Indonesia         | 273,753                         | 83,188                                          | 22,414                                         | 1.1                           | 2.2                                           | 57                               | 68                                  |
|                       | Lao PDR           | 7,425                           | 2,739                                           | 790                                            | 1.4                           | 2.5                                           | 37                               | 68                                  |
|                       | Malaysia          | 33,574                          | 9,311                                           | 2,572                                          | 1.8                           | 1.8                                           | 78                               | 75                                  |
|                       | Philippines       | 113,880                         | 41,441                                          | 11,923                                         | 1.7                           | 2.7                                           | 48                               | 69                                  |
|                       | Thailand          | 71,601                          | 13,764                                          | 3,379                                          | 0.6                           | 1.3                                           | 52                               | 79                                  |
|                       | Viet Nam          | 97,468                          | 26,183                                          | 7,368                                          | 1.0                           | 1.9                                           | 38                               | 74                                  |
|                       | Timor-Leste       | 1,321                           | 562                                             | 157                                            | 1.9                           | 3.1                                           | 32                               | 68                                  |
| P<br>I<br>C           | Fiji              | 925                             | 316                                             | 90                                             | 0.5                           | 2.5                                           | 58                               | 67                                  |
|                       | Kiribati          | 129                             | 53                                              | 17                                             | 1.7                           | 3.3                                           | 56                               | 67                                  |
|                       | Marshall Islands  | 42                              | 16                                              | 4                                              | -1.1                          | 2.7                                           | 78                               | 65                                  |
|                       | Micronesia        | 113                             | 42                                              | 11                                             | 0.0                           | 2.7                                           | 23                               | 71                                  |
|                       | Palau             | 18                              | 5                                               | 1                                              | -0.4                          | 2.4                                           | 81                               | 66                                  |
|                       | Papua New Guinea  | 9,949                           | 4,057                                           | 1,207                                          | 2.7                           | 3.2                                           | 13                               | 65                                  |
|                       | Samoa             | 219                             | 96                                              | 29                                             | 0.7                           | 3.9                                           | 18                               | 73                                  |
|                       | Solomon Islands   | 708                             | 323                                             | 101                                            | 2.3                           | 4.0                                           | 25                               | 70                                  |
|                       | Tonga             | 106                             | 44                                              | 12                                             | 0.1                           | 3.2                                           | 23                               | 71                                  |
|                       | Tuvalu            | 11                              | 4                                               | 1                                              | 0.7                           | 3.2                                           | 65                               | 65                                  |
|                       | Vanuatu           | 319                             | 145                                             | 45                                             | 2.3                           | 3.7                                           | 26                               | 70                                  |

Source: [2]

Table 2-2 Economic Indicators of the Countries Surveyed

|                       | Country             | World Bank<br>Classifications by<br>income level | GDP per capita<br>(current US\$) | Government expenditure<br>on health<br>(% of GDP) | Government expenditure<br>on education<br>(% of GDP) |
|-----------------------|---------------------|--------------------------------------------------|----------------------------------|---------------------------------------------------|------------------------------------------------------|
|                       |                     | July 2023                                        | 2022                             | 2020                                              | 2020                                                 |
| A<br>S<br>E<br>A<br>N | Brunei Darussalam   | High Income                                      | 37,152                           | 2.25                                              | n.d.                                                 |
|                       | Cambodia            | Lower-middle Income                              | 1,787                            | 2.08                                              | 3.13                                                 |
|                       | Indonesia           | Upper-middle Income                              | 4,788                            | 1.88                                              | 3.49                                                 |
|                       | Lao PDR             | Lower-middle Income                              | 2,088                            | 1.15                                              | 2.30                                                 |
|                       | Malaysia            | Upper-middle Income                              | 11,972                           | 2.18                                              | 3.92                                                 |
|                       | Philippines         | Lower-middle Income                              | 3,499                            | 2.28                                              | 3.73                                                 |
|                       | Thailand            | Upper-middle Income                              | 6,909                            | 3.07                                              | 3.15                                                 |
|                       | Viet Nam            | Lower-middle Income                              | 4,164                            | 2.11                                              | 4.11                                                 |
|                       | Timor-Leste         | Lower-middle Income                              | 2,358                            | 5.45                                              | 4.15                                                 |
| P<br>I<br>C           | Fiji                | Upper-middle Income                              | 5,317                            | 2.57                                              | 5.68                                                 |
|                       | Kiribati            | Lower-middle Income                              | 1,702                            | 9.29                                              | n.d.                                                 |
|                       | Marshall Islands    | Upper-middle Income                              | 6,728                            | 6.34                                              | 13.63                                                |
|                       | Micronesia          | Lower-middle Income                              | 3,741                            | 2.79                                              | n.d.                                                 |
|                       | Palau               | Upper-middle Income                              | 12,084*                          | 13.51                                             | n.d.                                                 |
|                       | Papua New Guinea    | Lower-middle Income                              | 3,020                            | 1.72                                              | 1.35                                                 |
|                       | Samoa               | Lower-middle Income                              | 3,743                            | 3.86                                              | 4.81                                                 |
|                       | Solomon Islands     | Lower-middle Income                              | 2,203                            | 3.60                                              | 12.75                                                |
|                       | Tonga               | Upper-middle Income                              | 4,426*                           | 3.04                                              | 6.52                                                 |
|                       | Tuvalu              | Upper-middle Income                              | 5,335                            | 18.09                                             | n.d.                                                 |
|                       | Vanuatu             | Lower-middle Income                              | 3,010                            | 2.61                                              | 2.24                                                 |
|                       | High Income         |                                                  | Note* 2021                       | 9.21                                              | 5.17                                                 |
|                       | Upper-middle Income |                                                  |                                  | 3.47                                              | 4.10                                                 |
|                       | Lower-middle Income |                                                  |                                  | 1.53                                              | 3.92                                                 |
|                       | World               |                                                  |                                  | 6.91                                              | 4.33                                                 |

Legend: Countries below average by income category

Source: [3], [4]

## 2.2.3 Nutritional Status

### (1) Nutrition Indicators

Table 2-3 through Table 2-6 present nutrition-related indicators for the 20 countries surveyed.

#### 1) Child and Maternal Mortality, Nutritional Status of Women

Among the countries surveyed, there has been a consistent increase in child mortality rates since 1990. However, Brunei and Fiji have demonstrated a decline in under-five mortality rates between 2000 to 2021. Regarding maternal mortality rate, while all surveyed countries report figures below the global average of 223 deaths, majority exceed the East Asia and Pacific regional<sup>2</sup> average of 74 deaths (see red highlighted sections in Table 2-3).

Table 2-3 Child and Maternal Mortality, Nutritional Status of Women

| Country               | Child Mortality and Maternal Mortality |      |      |                                          |                       |      |                    | Nutritional Status of Women      |                               |                                               |
|-----------------------|----------------------------------------|------|------|------------------------------------------|-----------------------|------|--------------------|----------------------------------|-------------------------------|-----------------------------------------------|
|                       | Under-five mortality rate              |      |      |                                          | Infant mortality rate |      | Maternal mortality | Underweight*<br>18+ years<br>(%) | Anaemia<br>15–49 years<br>(%) | Anaemia in<br>Pregnancy<br>15–49 years<br>(%) |
|                       | 1990                                   | 2000 | 2021 | Annual rate of<br>reduction<br>2000-2021 | 1990                  | 2021 | 2020               | 2016                             | 2019                          | 2019                                          |
| Brunei Darussalam     | 13                                     | 10   | 11   | -0.5                                     | 10                    | 10   | 44                 | 6                                | 17                            | 23                                            |
| Cambodia              | 116                                    | 106  | 25   | 6.9                                      | 85                    | 21   | 218                | 14                               | 47                            | 52                                            |
| Indonesia             | 84                                     | 52   | 22   | 4.1                                      | 62                    | 19   | 173                | 13                               | 31                            | 44                                            |
| Lao PDR               | 154                                    | 107  | 43   | 4.4                                      | 106                   | 34   | 132                | 11                               | 40                            | 47                                            |
| Malaysia              | 17                                     | 10   | 8    | 1.4                                      | 14                    | 6    | 21                 | 7                                | 32                            | 31                                            |
| Philippines           | 57                                     | 38   | 26   | 1.8                                      | 40                    | 20   | 78                 | 14                               | 12                            | 26                                            |
| Thailand              | 37                                     | 22   | 8    | 4.6                                      | 30                    | 7    | 29                 | 8                                | 24                            | 32                                            |
| Viet Nam              | 52                                     | 30   | 21   | 1.8                                      | 37                    | 16   | 124                | 18                               | 21                            | 28                                            |
| Timor-Leste           | 176                                    | 111  | 51   | 3.8                                      | 132                   | 43   | 204                | 18                               | 30                            | 38                                            |
| Fiji                  | 29                                     | 23   | 28   | -1.0                                     | 24                    | 23   | 38                 | 2                                | 32                            | 41                                            |
| Kiribati              | 92                                     | 68   | 48   | 1.6                                      | 67                    | 38   | 76                 | 1                                | 33                            | 42                                            |
| Marshall Islands      | 47                                     | 42   | 30   | 1.7                                      | 38                    | 25   | -                  | 1                                | 31                            | 39                                            |
| Micronesia            | 49                                     | 38   | 25   | 2.1                                      | 39                    | 21   | 74                 | 1                                | 25                            | 35                                            |
| Palau                 | 35                                     | 28   | 16   | 2.7                                      | 30                    | 15   | -                  | 1                                | 29                            | 34                                            |
| Papua New Guinea      | 85                                     | 71   | 43   | 2.4                                      | 62                    | 34   | 192                | 3                                | 34                            | 44                                            |
| Samoa                 | 30                                     | 21   | 17   | 1.1                                      | 25                    | 14   | 59                 | 1                                | 27                            | 39                                            |
| Solomon Islands       | 38                                     | 31   | 19   | 2.3                                      | 31                    | 16   | 122                | 2                                | 38                            | 49                                            |
| Tonga                 | 22                                     | 17   | 11   | 2.0                                      | 19                    | 10   | 126                | <1                               | 29                            | 37                                            |
| Tuvalu                | 53                                     | 42   | 21   | 3.3                                      | 41                    | 18   | -                  | 1                                | 28                            | 34                                            |
| Vanuatu               | 36                                     | 29   | 23   | 1.0                                      | 30                    | 20   | 94                 | 2                                | 29                            | 28                                            |
| East Asia and Pacific | 57                                     | 39   | 15   | 4.7                                      | 44                    | 12   | 74                 | 8                                | 19                            | 26                                            |
| World                 | 93                                     | 76   | 38   | 3.3                                      | 65                    | 28   | 223                | 9                                | 30                            | 37                                            |

Note:\* Underweight BMI <18.5kg/m<sup>2</sup>

Legend: Countries above global average (for maternal mortality rate, above regional average)

Source: [2], [5]

With regard to the nutritional status of women, being underweight (ages 18+) is prevalent in many ASEAN countries. Anemia (ages 15–49 years) is higher than the global average of 30% in 20 countries, half of which are ASEAN countries. According to the World Health Organization (WHO) classification, Cambodia and Lao PDR have anemia prevalence rates of 40% or higher, which corresponds to a serious public health challenge.

Among pregnant women aged 15–49 years, ten countries have anemia prevalence that exceeded the global average of 37% (see highlighted in red in Table 2-3). Among these, seven countries meet the WHO threshold for a serious public health challenge with anemia prevalence of 40% or higher.

<sup>2</sup> Regional Classification of the United Nations Children's Fund (UNICEF)

## 2) Nutritional Status of Newborns, Preschool, and School-Aged Children

Six of the countries surveyed had stunting rates of 30% or more (see highlighted in red in Table 2-4) for children under five years of age, a very high level in terms of public health in the WHO classification<sup>3</sup>. The levels are particularly high in Timor-Leste (49%) and Papua New Guinea (48%). Five other countries, including Malaysia, report high stunting rates exceeding 20%.

According to the WHO classification<sup>4</sup>, none of the surveyed countries exhibited very high levels of both wasting and overweight ( $\geq 15\%$ ). However, four countries, including Cambodia, exhibited high levels of wasting, while Indonesia and Tonga reported high levels of overweight ( $\geq 10\%$ ) (see highlighted in orange in Table 2-4).

Regarding anemia prevalence, six countries face a severe public health challenge with rates of 40% or more, while 13 countries, excluding the Philippines, fall into the moderate public health challenge category ( $\geq 20\%$ ) (see highlighted in orange in Table 2-4).

The percentage of overweight and obesity among school-aged children is higher in PICs than in ASEAN countries.

Table 2-4 Nutritional Status of Newborns, Preschool, and School-Aged Children

| Country           | Preschool-aged children (0–4 years of age) |             |                   |                                |                                    |             | School-aged children (5–19 years of age) |                          |
|-------------------|--------------------------------------------|-------------|-------------------|--------------------------------|------------------------------------|-------------|------------------------------------------|--------------------------|
|                   | Low birthweight (%)                        | Stunted (%) | Wasted Severe (%) | Wasted moderate and severe (%) | Overweight moderate and severe (%) | Anaemia (%) | Thinness (%)                             | Overweight and Obese (%) |
|                   | 2015                                       | 2020        | 2015-22           | 2015-22                        | 2020                               | 2019        | 2016                                     | 2016                     |
| Brunei Darussalam | 11                                         | 13          | <1                | 3                              | 9                                  | 20.0        | 6                                        | 27                       |
| Cambodia          | 12                                         | 30          | 2                 | 10                             | 2                                  | 49.0        | 11                                       | 11                       |
| Indonesia         | 10                                         | 32          | 4                 | 10                             | 11                                 | 38.4        | 10                                       | 15                       |
| Lao PDR           | 17                                         | 30          | 3                 | 9                              | 3                                  | 41.4        | 9                                        | 14                       |
| Malaysia          | 11                                         | 21          | 4                 | 10                             | 6                                  | 24.6        | 7                                        | 26                       |
| Philippines       | 20                                         | 29          | 1                 | 6                              | 4                                  | 13.5        | 10                                       | 13                       |
| Thailand          | 11                                         | 12          | 3                 | 8                              | 9                                  | 24.9        | 8                                        | 22                       |
| Viet Nam          | 8                                          | 22          | 1                 | 5                              | 6                                  | 22.9        | 14                                       | 10                       |
| Timor-Leste       | –                                          | 49          | 1                 | 8                              | 3                                  | 46.3        | 11                                       | 13                       |
| Fiji              | –                                          | 7           | 1                 | 5                              | 5                                  | 39.9        | 4                                        | 34                       |
| Kiribati          | –                                          | 15          | 1                 | 4                              | 2                                  | 49.4        | <1                                       | 55                       |
| Marshall Islands  | –                                          | 32          | 1                 | 4                              | 4                                  | 39.5        | <1                                       | 59                       |
| Micronesia        | –                                          | –           | –                 | –                              | –                                  | 36.7        | <1                                       | 51                       |
| Palau             | –                                          | –           | –                 | –                              | –                                  | 33.5        | <1                                       | 64                       |
| Papua New Guinea  | –                                          | 48          | 6                 | 14                             | 9                                  | 46.7        | 1                                        | 32                       |
| Samoa             | –                                          | 7           | 1                 | 3                              | 7                                  | 35.5        | <1                                       | 53                       |
| Solomon Islands   | –                                          | 29          | 4                 | 8                              | 4                                  | 38.1        | 1                                        | 23                       |
| Tonga             | –                                          | 3           | <1                | 1                              | 13                                 | 34.0        | <1                                       | 58                       |
| Tuvalu            | –                                          | 10          | 1                 | 3                              | 6                                  | 41.9        | <1                                       | 58                       |
| Vanuatu           | 11                                         | 29          | 1                 | 5                              | 5                                  | 31.0        | 2                                        | 31                       |

Note Low birthweight: Percentage of infants weighing less than 2,500 grams at birth.

Stunting (moderate and severe): Percentage of children aged 0–59 months who are below minus two standard deviations from median height-for-age of the WHO Child Growth Standards.

Wasting (moderate and severe): Percentage of children aged 0–59 months who are below minus two standard deviations from median weight-for-height of the WHO Child Growth Standards.

Wasting (severe): Percentage of children aged 0–59 months who are below minus three standard deviations from median weight-for-height of the WHO Child Growth Standards.

Overweight (moderate and severe): Percentage of children aged 0–59 months who are above two standard deviations from median weight-for-height of the WHO Child Growth Standards (includes severe overweight).

Thinness (school age children): Percentage of children aged 5–19 years with BMI < -2 SD of the median according to the WHO growth reference for school-age children and adolescents.

Source: [2] [5]

<sup>3</sup> WHO classifies public health significance as “very high” when the percentage of stunting is 30% or more and “high” when the percentage is 20% to 30%. For wasting and overweight, 15% or more was classified as “very high” and 10% to 15% as “high” (WHO, stunting, wasting, overweight and underweight, <https://apps.who.int/nutrition/landscape/help.aspx?menu=0&helpid=391&lang=EN>, accessed July 1, 2023).

<sup>4</sup> *ibid.*

### 3) Breastfeeding and Infant and Young Child Feeding

The status of breastfeeding and infant (6-23 months) diet in the countries surveyed is shown in Table 2-5.

The breastfeeding situation in the target countries is relatively good in Indonesia, Papua New Guinea, and the Solomon Islands. The WHO international nutrition target of “50% or more of infants fully breastfed in the first six months” is met in 9 out of the 17 countries with data (see the green highlighted sections in Table 2-5).

The PICs face more challenges than the ASEAN countries in meeting the Minimum Dietary Diversity, Minimum Meal Frequency, and Minimum Acceptable Diet in infant and young child-feeding.

Table 2-5 Breastfeeding and Infant and Young Child-Feeding

|                       | Country           | Early initiation of breastfeeding (%) | Exclusive breastfeeding (<6 months) (%) | Continued breastfeeding (12–23 months) (%) | Minimum dietary diversity (6–23 months) (%) | Minimum meal frequency (6–23 months) (%) | Minimum acceptable diet (6–23 months) (%) |
|-----------------------|-------------------|---------------------------------------|-----------------------------------------|--------------------------------------------|---------------------------------------------|------------------------------------------|-------------------------------------------|
|                       |                   | 2015-21                               | 2015-21                                 | 2015-21                                    | 2015-21                                     | 2015-21                                  | 2015-21                                   |
| A<br>S<br>E<br>A<br>N | Brunei Darussalam | –                                     | –                                       | –                                          | –                                           | –                                        | –                                         |
|                       | Cambodia          | 53.8                                  | 51.2                                    | 58.0                                       | 50.5                                        | 71.7                                     | 30.3                                      |
|                       | Indonesia         | 58.2                                  | 50.7                                    | 67.3                                       | 53.9                                        | 71.1                                     | 40.0                                      |
|                       | Lao PDR           | 50.1                                  | 44.4                                    | 42.8                                       | 35.7                                        | 68.6                                     | 25.9                                      |
|                       | Malaysia          | –                                     | 40.3                                    | –                                          | –                                           | –                                        | –                                         |
|                       | Philippines       | 56.9                                  | 54.9                                    | 59.6                                       | 53.5                                        | –                                        | –                                         |
|                       | Thailand          | 34.0                                  | 14.0                                    | 19.1                                       | 69.2                                        | 86.3                                     | 61.0                                      |
|                       | Viet Nam          | 23.5                                  | 45.4                                    | 43.9                                       | 55.7                                        | 77.0                                     | 45.7                                      |
|                       | Timor-Leste       | 46.9                                  | 65.0                                    | 49.1                                       | 39.8                                        | 55.9                                     | 25.5                                      |
| P<br>I<br>C           | Fiji              | 63.3                                  | 42.9                                    | 45.8                                       | 59.2                                        | 69.2                                     | 41.0                                      |
|                       | Kiribati          | 45.6                                  | 63.6                                    | 61.2                                       | 9.3                                         | 74.1                                     | 8.3                                       |
|                       | Marshall Islands  | 60.8                                  | 43.1                                    | 35.5                                       | 34.1                                        | 49.7                                     | 14.8                                      |
|                       | Micronesia        | –                                     | –                                       | –                                          | –                                           | –                                        | –                                         |
|                       | Palau             | –                                     | –                                       | –                                          | –                                           | –                                        | –                                         |
|                       | Papua New Guinea  | 54.8                                  | 59.7                                    | 78.9                                       | 32.2                                        | 43.9                                     | 17.9                                      |
|                       | Samoa             | 53.0                                  | 51.7                                    | 49.8                                       | 20.0                                        | 45.8                                     | 12.0                                      |
|                       | Solomon Islands   | 78.9                                  | 76.2                                    | 71.4                                       | –                                           | –                                        | –                                         |
|                       | Tonga             | 38.5                                  | 39.6                                    | 34.9                                       | 53.5                                        | 48.6                                     | 27.0                                      |
|                       | Tuvalu            | 39.2                                  | 43.8                                    | 28.8                                       | 29.3                                        | –                                        | 17.6                                      |
|                       | Vanuatu           | 85.4                                  | 72.6                                    | 57.9                                       | –                                           | –                                        | –                                         |
|                       | World             | 47                                    | 48                                      | 65                                         | 31                                          | 50                                       | 18                                        |

Note: Early initiation of breastfeeding: Percentage of children born in the last 24 months who were put to the breast within one hour of birth.

Exclusive breastfeeding: Percentage of infants 0-5 months of age who were fed exclusively with breastmilk during the previous day.

Continued breastfeeding: Percentage of children 12-23 months of age who were fed with breastmilk during the previous day.

Minimum Diet Diversity: Percentage of children 6-23 months of age who received foods from at least 5 out of 8 defined food groups during the previous day.

Minimum Meal Frequency: Percentage of children 6-23 months of age who received solid, semi-solid, or soft foods the minimum number of times or more during the previous day.

Minimum Acceptable Diet: Percentage of children 6-23 months of age who received a minimum acceptable diet during the previous day.

Legend: Countries below the world average

Source: [2]

#### 4) Risk Factors for Noncommunicable Diseases (NCDs) in Adults

Timor-Leste has the lowest percentage of deaths due to noncommunicable diseases (NCDs) at 53%, while Brunei and Fiji have the highest at 85%.

Obesity rates are significantly higher in PICs than in ASEAN countries. In all of the PICs, the percentage of obese women is higher than that of obese men.

In the case of alcohol consumption, Laos has the highest rate per capita among ASEAN countries. Other ASEAN countries have rates that exceed the global average, while the ASEAN countries with significant Muslim populations have lower rates of alcohol consumption. In addition, all PICs have rates that are below the global average.

The salt intake levels in ASEAN countries exceed those observed in PICs. Samoa demonstrates the lowest salt intake among the target countries, with an average of 5 grams per day. However, this still does not meet the WHO recommendation of less than 5 grams per day.

Overall, the prevalence of diabetes is higher in PICs, with particularly high rates in Marshall (23%), Kiribati (22.1%), and Tuvalu (20.3%). The rates in the said countries are also high when compared globally, with Marshall having the seventh highest rate in the world (global average is 9.8%). Among ASEAN countries, Malaysia has a prominently high rate at 19%.

Table 2-6 Risk Factor Status of NCDs in Adults

|                       | Country           | Percentage of total deaths due to NCDs (%) | Obesity (aged 18+) |           |             | Physical inactivity (aged 18+) (%) | Total alcohol consumption per capita (15+ years of age) (liters) | Prevalence of tobacco use (aged 15+) (%) | Mean population salt intake (aged 25+) (g/day) | Prevalence of hypertension (aged 30-79) (%) | Diabetes prevalence (aged 20-79) (%) |
|-----------------------|-------------------|--------------------------------------------|--------------------|-----------|-------------|------------------------------------|------------------------------------------------------------------|------------------------------------------|------------------------------------------------|---------------------------------------------|--------------------------------------|
|                       |                   |                                            | Total (%)          | Males (%) | Females (%) |                                    |                                                                  |                                          |                                                |                                             |                                      |
|                       |                   |                                            | 2016               | 2016      | 2016        |                                    |                                                                  |                                          |                                                |                                             |                                      |
| A<br>S<br>E<br>A<br>N | Brunei Darussalam | 85                                         | 14                 | 13        | 16          | 27                                 | 0.4                                                              | 16                                       | 11                                             | 46                                          | 11.1                                 |
|                       | Cambodia          | 68                                         | 4                  | 3         | 5           | 11                                 | 8.5                                                              | 22                                       | 10                                             | 26                                          | 7.3                                  |
|                       | Indonesia         | 76                                         | 7                  | 5         | 9           | 23                                 | 0.1                                                              | 37                                       | 10                                             | 40                                          | 10.6                                 |
|                       | Lao PDR           | 65                                         | 5                  | 4         | 7           | 18                                 | 11.5                                                             | 33                                       | 10                                             | 29                                          | 6.2                                  |
|                       | Malaysia          | 73                                         | 16                 | 13        | 18          | 39                                 | 0.8                                                              | 23                                       | 10                                             | 41                                          | 19.0                                 |
|                       | Philippines       | 70                                         | 6                  | 5         | 8           | 40                                 | 6.2                                                              | 23                                       | 10                                             | 34                                          | 7.1                                  |
|                       | Thailand          | 77                                         | 10                 | 7         | 13          | 25                                 | 7.9                                                              | 23                                       | 11                                             | 29                                          | 9.7                                  |
|                       | Viet Nam          | 81                                         | 2                  | 2         | 3           | 25                                 | 9.3                                                              | 25                                       | 10                                             | 30                                          | 6.1                                  |
|                       | Timor-Leste       | 53                                         | 4                  | 3         | 5           | 18                                 | 0.4                                                              | 40                                       | 10                                             | 35                                          | 8.6                                  |
| P<br>I<br>C           | Fiji              | 85                                         | 30                 | 25        | 35          | 17                                 | 3.5                                                              | 23                                       | 7                                              | 39                                          | 17.7                                 |
|                       | Kiribati          | 73                                         | 46                 | 42        | 50          | 40                                 | 0.8                                                              | 42                                       | 7                                              | 42                                          | 22.1                                 |
|                       | Marshall Islands  | n.d.                                       | 53                 | 48        | 57          | 44                                 | n.d.                                                             | 28                                       | 7                                              | 32                                          | 23.0                                 |
|                       | Micronesia        | 79                                         | 46                 | 40        | 52          | 37                                 | 2.1                                                              | n.d.                                     | 7                                              | 33                                          | 15.6                                 |
|                       | Palau             | n.d.                                       | 55                 | 52        | 59          | 41                                 | n.d.                                                             | 18                                       | 8                                              | 44                                          | 17.0                                 |
|                       | Papua New Guinea  | 62                                         | 21                 | 17        | 26          | 15                                 | 1.7                                                              | 40                                       | 7                                              | 28                                          | 16.7                                 |
|                       | Samoa             | 82                                         | 47                 | 40        | 55          | 13                                 | 2.4                                                              | 28                                       | 5                                              | 38                                          | 9.2                                  |
|                       | Solomon Islands   | 67                                         | 23                 | 18        | 27          | 18                                 | 1.6                                                              | 37                                       | 7                                              | 30                                          | 19.8                                 |
|                       | Tonga             | 79                                         | 48                 | 41        | 55          | 17                                 | 0.4                                                              | 31                                       | 7                                              | 43                                          | 15.0                                 |
|                       | Tuvalu            | n.d.                                       | 52                 | 47        | 56          | 27                                 | 1.3                                                              | 36                                       | 7                                              | 50                                          | 20.3                                 |
|                       | Vanuatu           | 74                                         | 25                 | 20        | 30          | 8                                  | 1.9                                                              | 18                                       | 7                                              | 40                                          | 15.6                                 |
|                       | World             | 74                                         | 39                 | 39        | 39          | 28                                 | 5                                                                | 23                                       | 11                                             | 33                                          | 9.8                                  |

Source: [6], [4]

## **(2) Nutritional Status of Preschool Children and School-aged Children**

Data on the nutritional status of preschool children and school-age children in the surveyed countries was collected and analyzed based on the 2022 Global Nutrition Report and other sources. The overall results are summarized below.

### **1) Nutritional Status of Children under 5 Years Old**

Papua New Guinea (PNG) has the highest prevalence of stunting, with a rate of 49.5%. In particular, a large disparity exists between regions, with 36.4% in urban areas and 51.2% in rural areas. Timor-Leste follows, with a stunting rate of 46.7%, ranking as the fourth highest in the world, followed by Indonesia with 30.8%, exceeding the Asian regional average of 21.8%. Cambodia, on the other hand, shows an improving trend from 49.0% in 2000 to 21.9% in recent years.

With regard to wasting, PNG had the highest rate at 14.1%, followed by Indonesia at 10.2%, and Cambodia at 9.6%. While anemia remains a serious public health concern in several countries, with Kiribati reporting the most severe at 49.4%, followed by Cambodia (49.0%), PNG (46.7%), and Timor-Leste (46.3%).

### **2) Nutritional Status of School-aged (5-19 years) Children**

Overweight and obesity are particularly serious in PICs such as Tonga, Kiribati, and Palau. The situation is most serious in Tonga where the overweight rate is 76.2% for boys and 83.3% for girls, while the obesity rate reaches 45.5% for boys and 57.9% for girls. A common characteristic of these countries is that overweight and obesity rates tend to be higher among girls. In addition, the percentage of overweight and obesity has increased significantly in many countries between 2000 and 2016, with projections for 2019 indicating an upward trend.

Conversely, the problem of underweight remains a concern in ASEAN countries such as Cambodia, Indonesia, and Viet Nam. However, even in these countries, the prevalence of overweight and obesity is rising, particularly in urban areas. This contributes to the ongoing challenge of double burden of malnutrition, where both undernutrition and overnutrition coexist.

### **3) Regional Trends**

Disparities in nutritional status exist between urban and rural areas. In Vanuatu, the stunting rate was notably higher in rural areas (31.9%) compared with urban areas (19.3%). A similar trend is seen in Timor-Leste, where stunting affects 52.8% in rural areas compared with 35.7% in urban areas. On the other hand, overweight tends to be higher in urban areas: 11.0% in urban areas compared with 10.8% in rural areas in Thailand; and 15.3% in urban areas compared with 13.2% in rural areas in Malaysia.

### **4) Trends Over Time**

An analysis of the changes in nutritional status over time reveals improvements in stunting among children under five in at least seven of the 20 countries surveyed. Notably, Cambodia has seen a decline in stunting from 49.0% in 2000 to 21.9% in 2021-22, while Viet Nam's rates decreased from 43.2% in 2000 to 19.6% in 2020. Similar improvements have been observed in Tonga, Indonesia, Laos, Timor-Leste, and Tuvalu. Conversely, concerns have been raised regarding the increasing prevalence of overweight and obesity among school-age children. This trend, particularly pronounced in PICs, is projected to worsen further in the coming years.

## 2.2.4 Food Security

### (1) Indicators for Food Security

In the surveyed ASEAN countries (with the exception of Brunei, for which data were not available), the prevalence rate of undernourishment is improving. However, in the PICs such as Fiji, Samoa, Solomon Islands, and Vanuatu, the trend in undernourishment is worsening. Among the countries surveyed, Timor-Leste and Papua New Guinea have high undernourishment prevalence rates (Table 2-7).

With regard to the prevalence of food insecurity, progress has been inconsistent across the countries with available data. While some countries have shown improvement, others experience stagnation, and some deterioration. Among the countries surveyed, the prevalence of food insecurity is particularly high in Cambodia. For Thailand, the prevalence of severe food insecurity increased from 4.2% in 2004-06 to 10.5% in 2019-20, with a significant increase in the prevalence of moderate or severe food insecurity (Table 2-7). For Thailand, the prevalence of severe food insecurity increased from 4.2% in 2004-06 to 10.5% in 2019-20, with a significant rise in the prevalence of moderate or severe food insecurity. Thailand shows particular vulnerability in food access in the northeastern and southern regions, with the coronavirus disease 2019 (COVID-19) pandemic being cited as a factor that threatened food access, especially in the rural areas [7].

Table 2-7 Food Security Indicators

| Country/Region                                   | Number of undernourished people (millions) |         | Prevalence of undernourished in the total population (%) |         | Prevalence of severe food insecurity in the total population (%) |         | Prevalence of moderate or severe food insecurity in the total population (%) |         |
|--------------------------------------------------|--------------------------------------------|---------|----------------------------------------------------------|---------|------------------------------------------------------------------|---------|------------------------------------------------------------------------------|---------|
|                                                  | 2004-06                                    | 2019-21 | 2004-06                                                  | 2019-21 | 2004-06                                                          | 2019-21 | 2004-06                                                                      | 2019-21 |
| ASEAN                                            | 95.4                                       | 39.4    | 17.0                                                     | 5.9     | 2.4                                                              | 3.4     | 15.9                                                                         | 18.8    |
| Brunei Darussalam                                | n.a.                                       | n.a.    | n.a.                                                     | n.a.    | n.a.                                                             | n.a.    | n.a.                                                                         | n.a.    |
| Cambodia                                         | 2.3                                        | 1.0     | 17.0                                                     | 6.3     | 16.9                                                             | 15.1    | 48.9                                                                         | 50.0    |
| Indonesia                                        | 43.5                                       | 17.7    | 19.2                                                     | 6.5     | 0.7                                                              | 0.7     | 6.0                                                                          | 6.0     |
| Lao PDR                                          | 1.3                                        | 0.4     | 22.4                                                     | 5.1     | n.a.                                                             | 8.3     | n.a.                                                                         | 31.8    |
| Malaysia                                         | 0.8                                        | n.r.    | 3.2                                                      | 2.5     | 7.8                                                              | 6.3     | 17.4                                                                         | 15.4    |
| Philippines                                      | 12.4                                       | 5.7     | 14.4                                                     | 5.2     | n.a.                                                             | 4.8     | n.a.                                                                         | 43.8    |
| Thailand                                         | 7.8                                        | 6.2     | 11.9                                                     | 8.8     | 4.2                                                              | 10.5    | 15.1                                                                         | 33.8    |
| Viet Nam                                         | 13.0                                       | 5.6     | 15.5                                                     | 5.7     | n.a.                                                             | 0.6     | n.a.                                                                         | 7.6     |
| Timor-Leste                                      | 0.3                                        | 0.3     | 32.2                                                     | 26.2    | n.a.                                                             | n.a.    | n.a.                                                                         | n.a.    |
| Oceania<br>(excluding Australia and New Zealand) | 2.0                                        | 2.2     | 20.9                                                     | 18.0    | n.a.                                                             | n.a.    | n.a.                                                                         | n.a.    |
| Fiji                                             | <0.1                                       | <0.1    | 3.7                                                      | 5.7     | n.a.                                                             | 4.2     | n.a.                                                                         | 19.3    |
| Kiribati                                         | <0.1                                       | <0.1    | 5.3                                                      | 4.2     | n.a.                                                             | 8.0     | n.a.                                                                         | 41.0    |
| Marshall Islands                                 | n.a.                                       | n.a.    | n.a.                                                     | n.a.    | n.a.                                                             | n.a.    | n.a.                                                                         | n.a.    |
| Micronesia                                       | n.a.                                       | n.a.    | n.a.                                                     | n.a.    | n.a.                                                             | n.a.    | n.a.                                                                         | n.a.    |
| Palau                                            | n.a.                                       | n.a.    | n.a.                                                     | n.a.    | n.a.                                                             | n.a.    | n.a.                                                                         | n.a.    |
| Papua New Guinea                                 | 1.8                                        | 1.9     | 27.4                                                     | 21.6    | n.a.                                                             | n.a.    | n.a.                                                                         | n.a.    |
| Samoa                                            | <0.1                                       | <0.1    | 3.4                                                      | 4.4     | n.a.                                                             | 3.4     | n.a.                                                                         | 23.6    |
| Solomon Islands                                  | <0.1                                       | 0.1     | 12.5                                                     | 18.1    | n.a.                                                             | n.a.    | n.a.                                                                         | n.a.    |
| Tonga                                            | n.a.                                       | n.a.    | n.a.                                                     | n.a.    | n.a.                                                             | 6.0     | n.a.                                                                         | 23.2    |
| Tuvalu                                           | n.a.                                       | n.a.    | n.a.                                                     | n.a.    | n.a.                                                             | n.a.    | n.a.                                                                         | n.a.    |
| Vanuatu                                          | <0.1                                       | <0.1    | 6.9                                                      | 11.9    | n.a.                                                             | 2.4     | n.a.                                                                         | 23.3    |

Source: [8]

## (2) Food Security Policies

Table 2-8 presents an overview of national policies and strategies on food security across the surveyed countries. Since food security is an important multi-sectoral policy issue in each country, national policies and strategies are developed and approved by inter-ministerial task forces, cabinet, and national-level committees.

Table 2-8 National Policies and Strategies on Food Security

| Country           | National Policies and Strategies                                                                                                 | Ministries and Agencies                                                                                                                     |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Brunei Darussalam | Strategic Plan 2016-2020 - Department of Agriculture and Agri-Food                                                               | Department of Agriculture and Agri-Food, Ministry of Primary Resources and Tourism                                                          |
| Cambodia          | Second National Strategy for Food Security and Nutrition 2019-2023                                                               | Council for Agricultural and Rural Development                                                                                              |
| Indonesia         | The National Plan of Action for Food and Nutrition 2011-2015                                                                     | National Development Planning Agency                                                                                                        |
|                   | Strategic Plan of the Indonesian Ministry of Agriculture 2020-2024                                                               | Ministry of Agriculture                                                                                                                     |
|                   | Agricultural Development Master Strategy 2015-2045                                                                               | Ministry of Agriculture                                                                                                                     |
| Lao PDR           | 9th Five - Year National Socio-Economic Development Plan 2021-2025                                                               | Government of Lao PDR                                                                                                                       |
|                   | Agriculture Development Strategy to 2025 and Vision to the Year 2030, 2015                                                       | Ministry of Agriculture and Forestry                                                                                                        |
| Malaysia          | National Agro-Food Policy 2021-2030 (DAN 2.0)                                                                                    | Ministry of Agriculture and Food Industries                                                                                                 |
|                   | National Food Security Policy Action Plan 2021-2025                                                                              | Ministry of Agriculture and Food Industries (approved by the National Food Security Council)                                                |
| Philippines       | National Food Policy 2020                                                                                                        | Inter-Agency Task Force on Zero Hunger                                                                                                      |
| Thailand          | Strategic Framework for Food Management in Thailand 2012-2016                                                                    | National Food Committee                                                                                                                     |
| Viet Nam          | Resolution on Ensuring National Food Security Until 2030                                                                         | Government's Resolution No. 34/NQ-CP dated March 25, 2021                                                                                   |
|                   | National Action Plan on Food Systems Transformation in Viet Nam towards Transparency, Responsibility, and Sustainability by 2030 | Prime Minister Decision 300/QD-TTg dated March 28, 2023                                                                                     |
| Timor-Leste       | National Food and Nutrition Security Policy 2017                                                                                 | Government of Timor-Leste                                                                                                                   |
|                   | Timor-Leste SDG 2 Consolidated National Plan for Nutrition and Food Security 2021                                                | Government of Timor-Leste                                                                                                                   |
| Fiji              | 5-Year & 20-Year National Development Plan 2017                                                                                  | Ministry of Economy                                                                                                                         |
|                   | Fiji 2020 Agriculture Sector Policy Agenda 2014                                                                                  | Ministry of Agriculture                                                                                                                     |
| Kiribati          | Kiribati Development Plan 2020-2023                                                                                              | Government of Kiribati                                                                                                                      |
|                   | Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management 2019-2028                                     | Government of Kiribati                                                                                                                      |
| Marshall Islands  | National Strategic Plan 2020-2030                                                                                                | Government of Marshall Islands                                                                                                              |
|                   | Food Security Policy 2013                                                                                                        | Mainly Ministry of Natural Resources and Commerce (formerly Ministry of Resources and Development)                                          |
| Micronesia        | Strategic Development Plan 2004-2023                                                                                             | Government of Micronesia                                                                                                                    |
|                   | Agriculture Policy 2012-2016                                                                                                     | Ministry of Resources and Development                                                                                                       |
| Palau             | National Master Development Plan 2020                                                                                            | Government of Palau                                                                                                                         |
|                   | Achieving Resilient Agriculture and Aquaculture: A National Policy for Strengthening Food Security in Palau 2015                 | Government of Palau (supported by Pacific Adaptation to Climate Change)                                                                     |
| PNG               | National Food Security Policy 2018-2027                                                                                          | Department of Agriculture and Livestock                                                                                                     |
| Samoa             | Samoa 2040                                                                                                                       | Government of Samoa                                                                                                                         |
|                   | Samoa Food Systems Pathway 2030                                                                                                  | Ministry of Agriculture and Fisheries                                                                                                       |
|                   | Agriculture Sector Plan 2016-2020                                                                                                | Ministry of Agriculture and Fisheries                                                                                                       |
|                   | Samoa National Food and Nutrition Policy & Plan of Action 2021-2026                                                              | Ministry of Health                                                                                                                          |
| Solomon Islands   | National Food Security, Food Safety and Nutrition Policy 2019-2023                                                               | Ministry of Health and Medical Services, Ministry of Agriculture and Livestock Development, Ministry of Fisheries and Marine Resources, and |

| Country | National Policies and Strategies                               | Ministries and Agencies                                                                                                     |
|---------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
|         |                                                                | Ministry of Education and Human Resources Development                                                                       |
| Tonga   | Tongan Strategic Development Framework 2015–2025               | Ministry of Finance and National Planning                                                                                   |
|         | Tonga Agriculture Sector Plan 2015–2020                        | Ministry of Agriculture and Food, Forests and Fisheries                                                                     |
|         | Tonga Fisheries Sector Plan 2016–2024                          | Government of Tonga                                                                                                         |
| Tuvalu  | National Strategy for Sustainable Development 2016 to 2020     | Government of Tuvalu                                                                                                        |
|         | Tuvalu National Agriculture Sector Plan, 2016-2023             | Government of Tuvalu                                                                                                        |
| Vanuatu | National Sustainable Development Plan 2016-2030 - VANUATU 2030 | Government of Vanuatu                                                                                                       |
|         | National ‘Gudfala Kakae’ Policy 2017- 2030                     | Government of Vanuatu                                                                                                       |
|         | Agriculture Sector Policy 2015-2030                            | Ministry of Agriculture, Livestock, Forestry, Fisheries, and Biosecurity, and Department of Agriculture & Rural Development |

## 2.2.5 Laws and Regulations, National Policies and Strategies, Systems, and Action Plans Related to School Lunch and “Shokuiku”

### (1) Laws and Regulations, National Policies and Strategies, Action Plans, and Guidelines

The surveyed countries’ laws, national policies and strategies, and guidelines related to school lunches and “Shokuiku” are presented in Table 2-9. In relation to the status of legislation, only a limited number of countries have enacted comprehensive legislation, such as the National Feeding Act in the Philippines. Most countries are mainly addressing the issue at the policy or guidelines level. A characteristic trend can be observed in the strengthening of school lunch and “Shokuiku” policies as part of national responses to NCDs. In particular, obesity prevention and formation of healthy eating habits is pronounced in the PICs. In addition, regulations on food safety and hygiene management have been formulated in Indonesia and Viet Nam, reflecting efforts to improve the quality of school lunches.

On the other hand, challenges are also evident. In particular, many PICs lack comprehensive laws and policies. In countries such as Papua New Guinea and Solomon Islands, school lunch programs are mentioned in the policies, but in reality, it is difficult to implement school lunch programs due to lack of resources.

Table 2-9 Laws, Regulations, National Policies and Strategies Related to School Lunches and Food and Nutrition Education

| Country           | Laws, Regulations, National Policies, and Strategies                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Brunei Darussalam | <ul style="list-style-type: none"> <li>Guidelines on the Sale and Serving of Healthy Foods and Beverages in Schools 2017</li> <li>National Nutrition and Physical Activity Guidelines for Child Care Centres</li> </ul>                                                                                                                                                                                                                                                         |
| Cambodia          | <ul style="list-style-type: none"> <li>School Health Policy 2006</li> <li>Second National Strategy for Food Security and Nutrition 2019-2023</li> </ul>                                                                                                                                                                                                                                                                                                                         |
| Indonesia         | <ul style="list-style-type: none"> <li>National Plan of Action for Food and Nutrition 2011-2015</li> <li>Indonesian Ministry of Health Decree No. 942/MENKES/ SK/VII/2003 on Guidelines for Food Hygiene and Sanitation</li> <li>Indonesian Ministry of Health Decree No. 1429/MENKES/SK/XII/2006 on Guidelines for a Healthy School Environment including the school canteen</li> <li>School Children’s Snack Food Guidelines for Achieving Balanced Nutrition 2013</li> </ul> |
| Lao PDR           | <ul style="list-style-type: none"> <li>National Plan of Action for Nutrition 2021-2025</li> <li>Policy for Promoting School Lunches 2014</li> <li>School Meal Cookbook</li> <li>Young Child Feeding Manual</li> </ul>                                                                                                                                                                                                                                                           |
| Malaysia          | <ul style="list-style-type: none"> <li>National Agrofood Policy, 2021-2030</li> <li>National Nutrition Action Plan 2016-2025 (NPANM III)</li> <li>Nutritious School Meal Programme (HiTS) Implementation Guidelines, 2019</li> <li>Malaysia Dietary Guidelines (2020), Malaysia Food Ingredients Database, Malaysia Food Pyramid (2020)</li> </ul>                                                                                                                              |

| Country          | Laws, Regulations, National Policies, and Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Philippines      | <ul style="list-style-type: none"> <li>• Republic Act No. 11037 : An Act Institutionalizing a National Feeding Program for Undemourished Children in Public Day Care, Kindergarten and Elementary Schools to Combat Hunger and Undernutrition among Filipino Children and Appropriating Funds Therefor (National Feeding Act)</li> <li>• DepEd Order No. 039, s. 2017 : Operational Guidelines on the Implementation of School-based Feeding Program for School Years 2017-2022</li> <li>• Republic Act No. 10410 : An Act Recognizing the Age from Zero (0) to Eight (8) Years as the First Crucial Stage of Educational Development and Strengthening the Early Childhood Care and Development System (ECCD System) Appropriating Funds therefor and for Other Purposes (Early Years Act)</li> <li>• The Philippine Plan of Action for Nutrition (PPAN) 2017-2022</li> </ul>                                                                                                                                                                                                                                                                                       |
| Thailand         | <ul style="list-style-type: none"> <li>• National Food Commission Act 2008</li> <li>• School Lunch Program Fund for Primary School Act 1992</li> <li>• National Plan of Action for Nutrition 2019-2023</li> <li>• Food-based dietary guidelines for Thai 1998</li> <li>• Food-based dietary guidelines for infants and young children in Thailand 2010</li> <li>• Guidelines for School Lunch Management 2016</li> <li>• Food preparation guidelines -Water care and good health in early childhood development centers according to the National Early Childhood Development Center Standards 2019</li> <li>• Guidelines for the Implementation of School Meals for School-Age Children 2018</li> <li>• Thai Food Composition Database 1978</li> <li>• Dietary Reference Intake for Thais 2020</li> </ul>                                                                                                                                                                                                                                                                                                                                                           |
| Viet Nam         | <ul style="list-style-type: none"> <li>• Law on Food Safety 2010</li> <li>• Project to ensure reasonable nutrition and increase physical activities for children, pupils and students to improve their health and prevent cancer, cardiovascular disease, diabetes, chronic obstructive pulmonary disease and asthma in the 2018-2025 period” (Prime Minister Decision No. 41/QĐ-TTg dated 8 January 2019)</li> <li>• On the application of urgent measures to ensure food hygiene and safety (Prime Minister’ s Directive No. 06/2007/CT-TTg dated 27 March 2007)</li> <li>• About the guide to health insurance for students (Joint Circular No. 40/1998/TTLT-BGDDT-BYT dated 18 July 1998 of the Ministry of Education and Training and the Ministry of Health)</li> <li>• Guidelines for food hygiene and safety assurance in educational institutions (Joint Circular No. 08/2008/TTLT-BYT-BGDDT dated 8 July 2008 of the Ministry of Health and the Ministry of Education and Training)</li> <li>• National Nutrition Strategy for the 2021 - 2030 period with a Vision toward 2045 (Prime Minister’ s Decision No. 02/QĐ-TTg dated 5 January 2022)</li> </ul> |
| Timor-Leste      | <ul style="list-style-type: none"> <li>• Organizational Structure of the Ministry of Education, Youth, and Sports of Timor-Leste (Decreto - Lei N.º 13 /2019)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Fiji             | <ul style="list-style-type: none"> <li>• Education Act Cap 262</li> <li>• Public Health Act</li> <li>• Food Safety Act</li> <li>• Child Welfare Act</li> <li>• Fiji School Health Policy 2016</li> <li>• Wellness Policy</li> <li>• National Food and Nutrition Policy for Schools</li> <li>• School Canteen Guidelines</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Kiribati         | <ul style="list-style-type: none"> <li>• Food Safety Act 2006</li> <li>• Food Regulations and Standards, 2014</li> <li>• Nutrition Policy and Plan of Action, 1997</li> <li>• School Food Policy, 2013</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Marshall Islands | <ul style="list-style-type: none"> <li>• Marshall Islands Public School System Act 2013</li> <li>• Republic of the Marshall Islands Food Security Policy 2013</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Micronesia       | <ul style="list-style-type: none"> <li>• Pohnpei Education Act of 1999 (Note: Each state government is responsible for the design and implementation of any school feeding programs. Status of states other than Pohnpei is unknown.)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Palau            | <ul style="list-style-type: none"> <li>• School Handbook 2010</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| PNG              | <ul style="list-style-type: none"> <li>• National Nutrition Policy 2016-2026</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Samoa            | <ul style="list-style-type: none"> <li>• Samoa National Food and Nutrition Policy &amp; Plan of Action 2021-2026</li> <li>• Minimum Service Standards for Primary and Secondary Schools in Samoa 2016</li> <li>• School Nutrition Standards 2012</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Solomon Islands  | <ul style="list-style-type: none"> <li>• National Food Security, Food Safety and Nutrition Policy 2019-2023</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Tonga            | <ul style="list-style-type: none"> <li>• Tongan Plan of Action for Nutrition 1995</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Tuvalu           | <ul style="list-style-type: none"> <li>• Food Safety Act 2006</li> <li>• Tuvalu’s National Food and Nutrition Policy 1996</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Vanuatu          | <ul style="list-style-type: none"> <li>• Food (Control) Act 1993 (Cap. 228)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Country | Laws, Regulations, National Policies, and Strategies                                                                                                                                                                                                             |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | <ul style="list-style-type: none"> <li>National 'Gudfala Kakae' (Healthy Food) Policy 2017- 2030</li> <li>Vanuatu Nutrition Policy and Strategic Plan 2016-2020</li> <li>Sweet Drink Policy 2014</li> <li>Healthy Vanuatu School Food Guidelines 2013</li> </ul> |

## (2) Implementation of School Lunches

The following is an overview of school lunches in preschool and primary education in the surveyed countries.

### 1) Brunei Darussalam

The school meal/feeding programs under the Ministry of Education are listed in Table 2-10. Program Harapan and Anak Harapan, launched in 2018, is a program that provides school lunches to students in 41 of the most disadvantaged primary schools in the country [9].

Table 2-10 Overview of School Meals in Brunei (2021)

|                                               |                                                                                                                                                                                                                              |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead Agency                                   | Ministry of Education                                                                                                                                                                                                        |
| School Meal Program                           | <ul style="list-style-type: none"> <li>School Feeding Program – Snack</li> <li>School Feeding Program – Lunch</li> <li>School Feeding Program – Hostel (Boarding) Meal*</li> <li>Program Harapan and Anak Harapan</li> </ul> |
| Number of Children Receiving School Meals     | 2,473 (preschool), 28,943 (primary school)                                                                                                                                                                                   |
| Percentage of Children Receiving School Meals | 37.5% (primary and secondary school)                                                                                                                                                                                         |
| Total Budget                                  | Unknown                                                                                                                                                                                                                      |
| Budget Source                                 | Unknown                                                                                                                                                                                                                      |

Note: \* Currently only secondary school students in the boarding schools  
Source: [10]

### 2) Cambodia

An overview of school meals in Cambodia is presented in Table 2-11. School meal programs in Cambodia began in 1999. In 2014, with support from the United Nations World Food Program (WFP), the Home-grown School Feeding Program was launched by the Ministry of Education, Youth and Sport.

Table 2-11 Overview of School Meals in Cambodia (2020-2021)

|                                               |                                                                                                                                 |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Lead Agency                                   | Ministry of Education, Youth and Sport                                                                                          |
| School Meal Program                           | <ul style="list-style-type: none"> <li>Home-grown School Feeding Program</li> <li>Traditional School Feeding Program</li> </ul> |
| Number of Children Receiving School Meals     | 16,904 (preschool), 260,977 (primary school)                                                                                    |
| Percentage of Children Receiving School Meals | 12.7% (primary school)                                                                                                          |
| Total Budget                                  | USD 7,233,478                                                                                                                   |
| Budget Source                                 | Government 30%, International donors 59%, Private sector 11%                                                                    |

Source: [11]

### 3) Indonesia

Table 2-12 provides an overview of school meals in Indonesia as of 2017-2018.

Table 2-12 Overview of School Meals in Indonesia (2017-2018)

|             |                                                |
|-------------|------------------------------------------------|
| Lead Agency | Ministry of Education and Culture <sup>5</sup> |
|-------------|------------------------------------------------|

<sup>5</sup> In April 2021, the Ministry of Education and Culture and the Ministry of Research and Technology were merged and renamed into the Ministry of Education, Culture, Research, and Technology.

|                                               |                                     |
|-----------------------------------------------|-------------------------------------|
| School Meal Program                           | Program Gizi Anak Sekolah: PROGAS   |
| Number of Children Receiving School Meals     | 100,136                             |
| Percentage of Children Receiving School Meals | 0.2% (primary and secondary school) |
| Total Budget                                  | USD 16,307,378                      |
| Budget Source                                 | Government 100%                     |

Source: [12]

#### 4) Lao PDR

School feeding in Laos was initiated in 2002 through the WFP's School Feeding Program. This was followed in 2010 by the government-led National School Meals Program, funded by the World Bank. Following the Policy for Promoting School Lunches in 2014, WFP has shifted its focus from implementing school feeding programs to building government and community capacity, and school feeding programs are being handed over to the government [13]. Other school feeding programs include the Learning and Engaging All in Primary School (LEAPS) II Program (2016-2021) supported by the United States Department of Agriculture and implemented by the Catholic Relief Services (CRS) [14]<sup>6</sup>. An overview of school feeding in Laos is provided in Table 2-13.

Table 2-13 Overview of School Meals in Lao PDR (2021)

|                                               |                                                                                                                                                                                     |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead Agency                                   | Ministry of Education and Sports                                                                                                                                                    |
| School Meal Program                           | <ul style="list-style-type: none"> <li>National School Meals Program</li> <li>WFP School Feeding Program</li> <li>Learning and Engaging All in Primary School (LEAPS) II</li> </ul> |
| Number of Children Receiving School Meals     | 26,986 (preschool), 156,543 (primary school)                                                                                                                                        |
| Percentage of Children Receiving School Meals | 21.8% (primary school)                                                                                                                                                              |
| Total Budget                                  | USD 6,755,199                                                                                                                                                                       |
| Budget Source                                 | Government 42%, International donors 58%                                                                                                                                            |

Source: [15]

#### 5) Malaysia

An overview of school meals in Malaysia is shown in Table 2-14. In terms of school meals, the following programs are being implemented: (1) the Preschool Meal Assistance (BMP) for public kindergartens and nursery schools in preschool education, (2) the Additional School Meal Program (RMT) for children from poor families attending public elementary schools in primary education, and (3) the Nutritious School Meal Program (HiTS) under the initiative of the Ministry of Health.

Table 2-14 Overview of School Meals in Malaysia (2020)

|                                               |                                                                                                                                                                                                                        |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead Agency                                   | Ministry of Education                                                                                                                                                                                                  |
| School Meal Program*                          | <ul style="list-style-type: none"> <li>Pre-school Meal Assistance</li> <li>Additional School Meal Program (RMT) (primary education level)</li> <li>Boarding School Meal Program (secondary education level)</li> </ul> |
| Number of Children Receiving School Meals     | 215,641 (preschool), 473,679 (primary school)                                                                                                                                                                          |
| Percentage of Children Receiving School Meals | 15% (primary and secondary school)                                                                                                                                                                                     |
| Total Budget                                  | USD 335,756,371                                                                                                                                                                                                        |
| Budget Source                                 | Government 100%                                                                                                                                                                                                        |

Note: \*Nutritious School Meal Programme (HiTS) is not included in this table.

Source: [16]

#### 6) Philippines

Table 2-15 provides an overview of the School-based Feeding Program (SBFP) in primary education and the Supplementary Feeding Program (SFP, Table 2-16) in preschool education in the Philippines. The two programs have different lead ministries and implementing agencies, and there is no coordination between the programs. The

<sup>6</sup> LEAPS III (2021-2026) is currently underway.

SBFP, which was launched in 1997 [17], is implemented by the Department of Education in partnership with various organizations. The Supplemental Feeding Program (SFP), on the other hand, is primarily administered by the Department of Social Welfare and Development. Malnourished children are provided with milk as an addition to their school lunch.

Table 2-15 Overview of School-based Feeding Program (SBFP) in the Philippines

|                                               |                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead Agency                                   | Department of Education                                                                                                                                                                                                                                                                                           |
| Target                                        | <ul style="list-style-type: none"> <li>Kindergarten (K) through sixth grade children identified as severely wasting/wasting (WHO criteria)</li> <li>Confirm eligibility by measuring weight and height at the beginning of the school year. Then, measure/confirm again at the end of the school year.</li> </ul> |
| Number of Days per Year                       | 120 days per year                                                                                                                                                                                                                                                                                                 |
| Cost                                          | 20 pesos/meal/person (breakdown: 18 pesos = food cost, 2 pesos = operating cost)<br>*Provision of cooked meals + milk (irregular)                                                                                                                                                                                 |
| Number of Children Receiving School Meals     | 3,526,589 (primary school)                                                                                                                                                                                                                                                                                        |
| Percentage of Children Receiving School Meals | 31% (primary school)                                                                                                                                                                                                                                                                                              |
| Total Budget                                  | USD 122,758,120                                                                                                                                                                                                                                                                                                   |
| Budget Source                                 | Government 100%                                                                                                                                                                                                                                                                                                   |

Source: [18] and Field Survey Results (August 2023)

Table 2-16 Overview of Supplementary Feeding Program (SFP) in the Philippines

|                                           |                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead Agency                               | Department of Social Welfare and Development                                                                                                                                                                                                                                                                                                   |
| Target                                    | <ul style="list-style-type: none"> <li>All children (2-5 years old) attending preschools</li> <li>Confirm eligibility by measuring weight and height at the beginning of the school year. Then take an interim measurement on the 60<sup>th</sup> day and a final measurement at the end of the school year (120<sup>th</sup> day).</li> </ul> |
| Number of Days per Year                   | 120 days per year                                                                                                                                                                                                                                                                                                                              |
| Cost                                      | <ul style="list-style-type: none"> <li>21 pesos/meal/person (cooked meal: rice, meat/fish and vegetables)</li> <li>Malnourished children receive 21 pesos/meal/person plus milk (raw milk) with every meal</li> </ul>                                                                                                                          |
| Budget                                    | Approx. 5 billion pesos/year                                                                                                                                                                                                                                                                                                                   |
| Number of Children Receiving School Meals | Approx. 1.9 million children covered (milk coverage: approx. 240,000) (2022/23)                                                                                                                                                                                                                                                                |

Source: Field Survey Results (August 2023)

## 7) Thailand

In Thailand, the National School Lunch Feeding Program (SLP) and the National School Milk Program (SMP) are implemented as school feeding programs to provide lunches for children at the primary level.

Table 2-17 Overview of School Meals in Thailand (2021)

|                                               |                                                                                                                                 |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Lead Agency                                   | 1) Office of the Basic Education Commission (OBEC), Ministry of Education<br>2) Ministry of Agriculture and Cooperatives (MoAC) |
| School Meal Program                           | 1) National School Lunch Feeding Program (SLP)<br>2) National School Milk Program (SMP)                                         |
| Number of Children Receiving School Meals     | 875,960 (preschool); 3,063,142 (primary school)                                                                                 |
| Percentage of Children Receiving School Meals | 31% (primary and secondary schools)                                                                                             |
| Total Budget                                  | USD 1,045,111,21                                                                                                                |
| Budget Source                                 | Government 100%                                                                                                                 |

Source : [19]

## 8) Viet Nam

Table 2-18 presents an overview of school meals in Viet Nam in 2017-2018. The School Meal Program covers preschool and primary education, with some parents contributing to meal costs either fully or partially, or give in-kind donations [20].

The provision of school meals was mainly left to the discretion of local authorities and individual schools. However, it was strengthened as a national policy following the “project to ensure reasonable nutrition and increase physical activities for children, pupils, and students to improve their health and prevent cancer, cardiovascular disease, diabetes, chronic obstructive pulmonary disease, and asthma in the 2018-2025 period” (Prime Minister Decision No. 41/QĐ-TTg dated 8 January 2019) and is currently being implemented nationwide. Statistics and other information on the implementation of school meals are not published [21].

Table 2-18 Overview of School Meals in Viet Nam (2017-2018)

|                                               |                                                                                                                                                                                               |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead Agency                                   | Ministry of Education and Training, Ministry of Health                                                                                                                                        |
| School Meal Program                           | School Meal Program                                                                                                                                                                           |
| Number of Children Receiving School Meals     | n.d.                                                                                                                                                                                          |
| Percentage of Children Receiving School Meals | n.d.                                                                                                                                                                                          |
| Total Budget                                  | n.d.                                                                                                                                                                                          |
| Budget Source                                 | Government, international donors, private sector, etc.                                                                                                                                        |
| Infrastructure                                | All schools have electricity. Piped water, clean water and latrines are available in most of the schools, flush toilets and dedicated eating spaces/cafeterias are available in some schools. |

Source: [20]

## 9) Timor-Leste

In Timor-Leste, school feeding programs are implemented at the preschool and primary education levels. WFP helped launch the school feeding program in 2005. Later, in 2011, the Ministry of Education, Youth and Sport took over the responsibility for the program. In turn, a dedicated school feeding department managed the National School Meal Program [22]. From 2019 to 2023, a school feeding program under the United States Department of Agriculture-funded program HATUTAN (*Hahán ne'ebé Atu Fó Tulun ho Nutrisaun no Edukasaun*, Continuation and Support of Food for Nutrition and Education) is being implemented in 440 schools [23].

## 10) Fiji

Until 2018, Fiji had meal provision programs in place at the preschool and basic education levels, funded entirely by the government. But as of 2018, only 9% of children received school meals (children in primary and secondary education). The Free Fruit Program in pre-primary education started in 2015 and continued voluntarily in some pre-primary and elementary schools, as of September 2023. The Free Milk Program was initiated in 2016 for first grade elementary school students, with milk and cookies distributed to children in the morning or during breaks. However, the program was discontinued due to the large number of leftovers and waste by children who were not accustomed to eating milk and cookies [24]<sup>7</sup>. The Ministry of Education, Heritage, and Arts has stated that as of 2020, it is difficult to secure a budget to provide lunch for all children [25]. Meanwhile, teachers have reported cases of children coming to school without any lunch because their parents are unable to prepare for them, raising this as a social problem [26].

## 11) Kiribati

According to a survey by the Global Child Nutrition Foundation (GCNF), there are no reports on the implementation of school meals at the preschool or primary level [27].

<sup>7</sup> Interviews during field survey (September 29-October 13, 2023)

## **12) Marshall Islands**

In Marshall Islands, a school lunch program was launched in 2016 for 15 public schools (including kindergartens, primary schools, high schools, and special needs schools). The program provided school meals three days a week – Mondays, Wednesdays, and Fridays [28]. The annual report of the Ministry of Education, Sports and Training (2017-2018) states that in kindergartens, the government supports three meals per week, with parents supplementing the remaining two meals [29].

## **13) Micronesia**

In its “Education Sector Strategic Development Plan 2020-2024,” the Department of Education has included the implementation of a school lunch program in all primary schools by the end of 2023 [30]. However, no information is available on the progress of the school lunch program in primary schools.

As of December 2020, school lunches (meals or snacks) were provided to children attending early childhood education classes in three of the four states, with the exception of Chuuk, using United States (US) government education grants allocated to each state [31].

## **14) Palau**

In Palau, free school lunches are provided to students in public primary (grades 1-8) and secondary (grades 9-12) education, with a 100% provision rate, especially in primary education [32] [33]. The Food Service Program of the Ministry of Education plans, manages, and operates the school lunch program [34].

## **15) Papua New Guinea**

As of 2022, PNG does not have a national school lunch program. Children in primary school either bring their own meals from home or purchase them from local community food vendors who prepare and sell meals and snacks on school grounds [35].

## **16) Samoa**

In a survey of school feeding programs conducted by GCNF from July 2021 to March 2022, the Samoan government indicated that it does not have a school feeding program<sup>8</sup> [36]. It was reported that many children eat food purchased from the school cafeteria (canteens) and surrounding stores [37].

## **17) Solomon Islands**

In a survey of school feeding programs conducted by GCNF from July 2021 to March 2022, the Solomon government indicated that it does not have a school feeding program<sup>9</sup> [36]. A lack of resources is reported as the main barrier to implementing a school feeding policy [38].

## **18) Tonga**

According to a survey of school feeding programs conducted by GCNF from July 2021 to March 2022, the Government of Tonga indicated that it does not have a school feeding program<sup>10</sup> [36].

## **19) Tuvalu**

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<sup>8</sup> School feeding programs here may take any of the following forms: 1) a school feeding program that is managed and/or administered by the national government using national resources; 2) a large-scale feeding program that is managed by a non-governmental entity, but in coordination with the national government; 3) a large school feeding program that is managed and/or administered by regional or local governments using government resources; 4) any large school feeding program that does not involve government but reaches a substantial proportion of students in the country, or cover a substantial geography.

<sup>9</sup> Ibid.

<sup>10</sup> Ibid.

In a survey of school lunch programs conducted by GCNF between July 2021 and March 2022, the Tuvalu government indicated that it does not have a school feeding program<sup>11</sup> [36]. The primary reason cited for the absence of a school lunch program in Tuvalu is that school ends between 12:00 p.m. and 1:00 p.m., thus, children eat lunch at home after school [39].

## **20) Vanuatu**

Vanuatu does not have a national school feeding program. However, various school feeding initiatives are implemented across the country based on community capacity, local needs, and support from international organizations such as WHO and UNICEF [40].

### **(3) Implementation of “Shokuiku”**

An overview of “*Shokuiku*” in preschool and primary education in the countries surveyed are as follows:

#### **1) Brunei Darussalam**

In primary school, health and nutrition are taught in “science” classes. Specifically, students begin learning about their bodies from first to third grade. Healthy food topics are covered in second grade and in greater detail in fourth grade [41]. In addition to Science classes, an increasing number of schools are incorporating health-related programs outside of the curriculum [41].

#### **2) Cambodia**

In 2016, the Ministry of Education, Youth and Sport adopted a new curriculum framework: “Curriculum Framework of General Education and Technical Education 2016-2025”. Prior this, health subjects were integrated with the related subjects of social studies, biology, and moral and civics, but with the introduction of the new curriculum, they are now independent subjects that meet for one hour per week from grade one to grade twelve [42] [43]. Starting in 2025, health subjects will be introduced into the school curriculum and nutrition education will be a part of this program [44].

#### **3) Indonesia**

“*Shokuiku*” in primary education is supposed to be implemented in the school feeding program (PRPGAS) along with hygiene education, deworming, and school gardens. According to the WFP report, the Ministry of Education and Culture provided “*Shokuiku*” materials to schools participating in the school feeding program. However, the absence of nutrition education materials in the primary school curriculum resulted in teachers lacking the necessary skills to effectively implement “*Shokuiku*”. Furthermore, “*Shokuiku*” is frequently regarded as an additional activity outside of teachers’ standard responsibilities. Addressing these challenges will require integrating “*Shokuiku*” materials into the primary school curriculum and enhancing the quality of nutrition education through training for teachers [45].

#### **4) Lao PDR**

The Education and Sports Sector Development Plan 2021-2025 of the Ministry of Education and Sports does not include nutrition education in schools. Furthermore, the Ministry’s website does not publish the curriculum for preschool and primary education, and there is very little information on the implementation of “*Shokuiku*” in the country [46].

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<sup>11</sup> Ibid.

## **5) Malaysia**

In accordance with the strategies outlined in the National Nutrition Action Plan 2016-2025 (NPANM III), “*Shokuiku*” activities to promote healthy eating are being implemented. According to the Nutrition Division of the Ministry of Health, food and nutrition education in preschool education includes nutrition activities involving parents of students in kindergarten and preschool.

The Ministry of Health works closely with the Ministry of Education and other ministries to implement nutrition programs for daycare centers and kindergartens. Activities include reviewing menus, preparing healthy and safe meals, nutrition education, and providing technical guidance on nutrition-related activities such as monitoring nutritional status [47]. In 2011, primary schools introduced the “Health Education (Pendidikan Kesihatan)” as a mandatory subject in the National Standard Curriculum (KSSR). Nutrition and diet are included in “Health Education.” [48].

## **6) Philippines**

In the Philippines, the 2016 education reform added the subject MAPEH (Music, Art, Physical Education, Health) in the new curriculum, which requires nutrition content to be covered in Health classes. MAPEH is a mandatory course in the basic education curriculum from kindergarten through grade ten. The MAPEH curriculum is currently being revised and food and nutrition education will be implemented in the food literacy curriculum using health and physical education time (110 minutes per year/grade)<sup>12</sup>.

While in day care centers, food and nutrition education is part of the day care curriculum. It is implemented in accordance with the National Early Learning Curriculum developed by the Early Childhood Care and Development Council. Food and nutrition education includes the importance of eating nutritious foods, especially fruits and vegetables, the importance of brushing teeth, health and nutrition education, and the importance of washing hands before and after eating/cooking and playing<sup>13</sup>.

## **7) Thailand**

According to the preschool curriculum prepared by the Ministry of Education [49], it does not include nutrition education, such as lessons on nutrition and health, although it includes learning “how to eat” a healthy diet. On the other hand, the formal curriculum for primary education [50] includes food and nutrition education as part of “health (physical education)”.

In addition, age-appropriate food and nutrition education classes are incorporated into the National School Lunch Feeding Program (SLP), and school lunch management guidelines describe how to teach practical cooking and gardening skills to primary school children. However, the implementation of food and nutrition education classes incorporated in the SLP is only conducted by schools on a “voluntary” basis. Therefore, the actual status of the implementation of food and nutrition education is unclear as it is not described in reports and other documents published by the relevant ministries and agencies.

## **8) Viet Nam**

The mandatory primary education subject “Nature and Society” (corresponding to “Life Environmental Studies” in Japan) includes educational content related to nutrition and food. From the first to third grades, the content of “Nature and Society” is divided into three areas: Human and Health, Society, and Nature, with nutrition and food

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<sup>12</sup> Interviews during field survey in August 2023

<sup>13</sup> Ibid.

included in Human and Health [51]. In some cases, hands-on activities such as school vegetable gardens and cooking experiences are also implemented.

#### **9) Timor-Leste**

In March 2022, WHO, together with the Ministry of Health, the Ministry of Education, Youth and Sports, and WFP, launched the “Say No To 5S” project. This initiative targets starvation, soil-transmitted helminthiasis, skin diseases, smoking, and sugary/alcoholic drinks. The project focuses on reducing key risk factors such as malnutrition and other diseases through school feeding programs. In addition, the project includes plans to introduce and update health and nutrition topics in the school curriculum [52].

#### **10) Fiji**

In Fiji, “Healthy Living” is included as a compulsory subject in the education curriculum. The framework for nutrition education includes initiatives such as health-promoting schools and school vegetable gardens in primary education [53].

#### **11) Kiribati**

According to the Ministry of Education's syllabus, first and second grade students study nutrition and healthy eating habits in the “Community and Culture” subject and third through sixth grade students study nutrition and healthy eating habits in the “Healthy Living” subject. The Community and Culture curriculum consists of three subjects: Community, Health, and Environment. Matters related to nutrition, such as healthy food, are covered in “Health” [54]. The “Healthy Living” subject consists of three subjects: Health, Physical Education, and Morality. Children learn about food, healthy eating, food hygiene, etc., in the “Health” subject [55] [56].

#### **12) Marshall Islands**

In primary schools (grades 1-8), classes on nutrition are offered in the “Health” subject. In “Social” subjects, cooking methods and food culture are also included in the curriculum [57]. In addition, as one of the specific measures related to food and nutrition education with the aim of raising awareness of nutrition and dietary diversity [58], school vegetable gardens are implemented mainly by the Ministry of Education, Sports and Training and the Ministry of Natural Resources and Commerce.

#### **13) Micronesia**

In primary school, students learn about food supply in “social studies” and “science” classes and about food culture in “social studies” classes, but there are no classes on healthy eating or dietary habits [59]. Information on food and nutrition education in preschool education was not available.

#### **14) Palau**

The Ministry of Education has developed a “Health” curriculum for primary (grades 1-8) and secondary (grades 9-12) education. The “Health” curriculum covers nutrition and food-related issues. The curriculum is structured to provide students with various perspectives on food and nutrition education, ensuring a more comprehensive and age-appropriate learning experience [59].

#### **15) Papua New Guinea**

According to the syllabus and teacher's manuals posted on the Department of Education website<sup>14</sup>, nutrition and food are covered in the “Culture and Community” subject in pre-school education, in “Health” in the lower primary

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<sup>14</sup> <https://www.education.gov.pg/index.html>

grades (Grades 3-5), and in “Health-Physical Education” and “Making a Living<sup>15</sup>” in the upper primary grades (Grades 6-8).

## **16) Samoa**

The Ministry of Education, Sports and Culture publishes its curriculum for primary education (grades 1-8) on its website<sup>16</sup>. Nutrition classes are integrated into Health and Physical Education [60]. The website of the Ministry of Education, Sports and Culture does not list a curriculum for preschool education (preschool), and the implementation status of nutrition education in preschool education is unknown.

## **17) Solomon Islands**

In Solomon, it was reported that nutrition education is included in the primary education curriculum [61], however the actual situation could not be verified. On the other hand, it was confirmed that home-based continuing education materials (at the preschool level) based on the national curriculum include content on nutrition and food [62] [63]. It has also been reported that the Ministry of Education and Human Resource Development is actively integrating nutrition and food matters into the curriculum of various grade level subjects [38]. The Ministry has been implementing Health Promoting Schools (HPS) in collaboration with the Ministry of Health and Medical Services for many years. In addition, it works closely with the Ministry of Agriculture and Livestock to implement school vegetable garden programs [38].

## **18) Tonga**

While nutrition education is included in the primary education curriculum in Tonga [61], the actual curriculum could not be verified. On the other hand, initiatives related to healthy eating habits are in place, such as the *Mai e Nima* (Give me Five) project, which promote the consumption of at least five servings of vegetables and fruits per day for primary school students [64].

## **19) Tuvalu**

In the Tuvalu government's statement at the School Meals Coalition's plenary session “School Meals Powering Food System Transformation” during the July 2023 UN Food System Summit (UNFSS+2), school education on nutrition and healthy eating is emphasized. The statement highlighted that Tuvalu is already implementing nutrition education programs with development partners and aims to expand these programs to schools. Plans include incorporating cooking classes using local ingredients into the curriculum to help students learn the importance of making healthy food choices and preparing nutritious meals [65].

## **20) Vanuatu**

The Ministry of Health and the Ministry of Education are jointly promoting Health Promoting Schools. Under this initiative, schools are mandated to develop individualized school health policies focused on reducing obesity and improving nutritious options in school cafeterias. The Ministry of Agriculture is also helping schools gain access to nutritious food options through the Farm to School project (first introduced in Vanua Lava Island in 2019) and homemade school meals initiatives aimed at improving access to vegetables, fish, and eggs in school meal programs [40].

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<sup>15</sup> In Making a Living, students will learn the skills necessary for living in three main subjects: Crops and Livestock; Business Environment and Practices; and Basic Technology. Home Management is included in basic skills, where students learn about cooking, food hygiene, and other topics.

<sup>16</sup> <https://www.mesc.gov.ws/education/primary-curriculum-statements/>

## 2.2.6 Positioning of School Lunches and “Shokuiku” in National Health Policies and Strategies

Table 2-19 provides the overview of how school lunches and food and nutrition education are integrated in national health policies and strategic plans, NCD prevention policies, and health promotion policies across the surveyed countries. While each country acknowledged schools as an important venue for the formation of healthy eating habits, there are significant differences in the stages and methods of specific policy implementation. There is a strong tendency to position school lunches and “Shokuiku” in NCD prevention and management, while national health strategies and plans tend to include fewer specifics. In particular, policies related to the regulation and restriction of unhealthy food and beverages are common.

Table 2-19 Positioning of School Lunches and “Shokuiku” in National Health Policies and Strategies

| Documents                                                                                                         | Description of School Lunch and “Shokuiku”                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Brunei Darussalam</b>                                                                                       |                                                                                                                                                                          |
| Ministry of Health Strategic Plan 2019-2023                                                                       | None                                                                                                                                                                     |
| Brunei Darussalam Multisectoral Action Plan for the Prevention and Control of Noncommunicable Diseases 2021-2025  | Priority activities include regulation of food procurement and catering policies in public institutions [66].                                                            |
| <b>2. Cambodia</b>                                                                                                |                                                                                                                                                                          |
| Health Strategic Plan 2016-2020                                                                                   | None                                                                                                                                                                     |
| National Multisectoral Action Plan for the Prevention and Control of Noncommunicable Diseases 2018-2027           | The importance of maintaining a school environment free of unhealthy food and drinks is stated, with the promotion of healthy eating in schools set as an activity [67]. |
| <b>3. Indonesia</b>                                                                                               |                                                                                                                                                                          |
| Ministry of Health Strategic Plan 2020-2024                                                                       | None                                                                                                                                                                     |
| National Strategic Action Plan for the Prevention and Control of Noncommunicable Diseases 2016-2019               | None                                                                                                                                                                     |
| <b>4. Lao PDR</b>                                                                                                 |                                                                                                                                                                          |
| Health Sector Reform Strategy and Framework till 2025                                                             | None                                                                                                                                                                     |
| National Multisectoral Action Plan for the Prevention and Control of Noncommunicable Diseases 2014-2020           | Provides for the promotion of healthy eating habits in schools [68].                                                                                                     |
| <b>5. Malaysia</b>                                                                                                |                                                                                                                                                                          |
| Pelan Strategik Kementerian Kesihatan Malaysia 2016-2020                                                          | It is stated that the MyBFF@school program <sup>17</sup> and other programs will be promoted in cooperation with the Ministry of Education.                              |
| Ministry of Health Malaysia Plan of Action 2016-2020                                                              | KEMAS Kindergartens’ “Kitchen Garden” project includes incorporating elements of nutrition for preschool children, etc.                                                  |
| National Strategic Plan for Noncommunicable Disease 2016-2025                                                     | None                                                                                                                                                                     |
| <b>6. The Philippines</b>                                                                                         |                                                                                                                                                                          |
| Health Sector Strategy for 2023-2028                                                                              | None                                                                                                                                                                     |
| National Policy on Strengthening the Prevention and Control of Chronic Lifestyle Related Noncommunicable Diseases | None                                                                                                                                                                     |
| <b>7. Thailand</b>                                                                                                |                                                                                                                                                                          |
| Twenty-Year National Strategic Plan for Public Health 2017-2036                                                   | Sanitation and safety standards for school milk are mentioned, but no further reference to school lunches or “Shokuiku” [69].                                            |
| 5-Year National NCDs Prevention and Control Plan 2017-2021                                                        | None                                                                                                                                                                     |

<sup>17</sup> MyBFF@school program is an intervention study for overweight and obese children and students (9-16 years old). Primary and secondary schools in the central region of Peninsular Malaysia were randomly assigned to either intervention or control schools through a systematic random sampling method. Selected intervention schools receive the MyBFF@school program consisting of physical activity, nutrition, and psychology modules, while control schools follow the standard national school curriculum (U.S. National Library of Medicine, My Body is Fit and Fabulous at School Phase II, 2019, <https://classic.clinicaltrials.gov/ct2/show/NCT04155255>, accessed July 1, 2023)

| Documents                                                                                                                                                                                                                                                                            | Description of School Lunch and “Shokuiku”                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>8. Viet Nam</b>                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| On Enhancement of Citizens’ Health Protection, Improvement, and Care in New Situation (Resolution No.20-NQ/TW dated 25 October 2017)                                                                                                                                                 | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Plan - Protection, Care and Improvement of People’s Health to 2025 (Decision No.788/QĐ-BYT dated 13 February 2023 of the Minister of Health)                                                                                                                                         | The program states that it will provide “education on behavioral change regarding proper nutrition, limiting unhealthy food, developing school menus and providing nutritious meals, regular monitoring of nutritional status, and age-appropriate health checks.” However, there are no specific goals or other targets set.                                                                                                                                                                                            |
| National Strategy for Preventing and Controlling Cancers, Cardiovascular Disease, Diabetes, Chronic Obstructive Pulmonary Disease, Bronchial Asthma and Other Noncommunicable Diseases during the 2015 – 2025 Period (Prime Minister’s Decision No. 376 /QĐ-TTg dated 20 March 2015) | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| National Plan for Prevention and Control of Noncommunicable Diseases (NCDs) and Mental Disorders for the Period of 2022-2025 (Prime Minister’s Decision No. 155/QĐ-TTg dated 29 January 2022)                                                                                        | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>9. Timor-Leste</b>                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| National Health Sector Strategic Plan 2011-2030                                                                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>• “Percentage of schools with school gardens for nutrition education and school meals” is listed as an indicator.</li> <li>• It also states that “Education on nutrition and food security will be developed and integrated into the school curriculum” [70].</li> </ul>                                                                                                                                                                                                          |
| Multisectoral Action Plan for the Prevention and Control of Noncommunicable Diseases in Timor-Leste 2018–2021                                                                                                                                                                        | <ul style="list-style-type: none"> <li>• Schools are considered important as places to create a healthy environment, but there is no specific mention of school lunches and “Shokuiku” [71].</li> </ul>                                                                                                                                                                                                                                                                                                                  |
| National Health Sector Nutrition Strategic Plan 2022-2026                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>• The goal is for school-age children to acquire proper nutritional knowledge.</li> <li>• It includes the development of standards and dissemination of guidelines for the procurement and provision of healthy food in kindergartens, daycare centers, and elementary school, and the development of advocacy guidelines for relevant ministries to implement nutrition promotion strategies such as integrating nutrition education into the school curriculum [72].</li> </ul> |
| <b>10. Fiji</b>                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Strategic Plan 2020-2025                                                                                                                                                                                                                                                             | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Noncommunicable Diseases Strategic Plan 2015 - 2019                                                                                                                                                                                                                                  | Strategies include the introduction of gardening into the primary school curriculum, the introduction of restrictions on vending permits around schools, and the implementation of school purchasing guidelines. [73].                                                                                                                                                                                                                                                                                                   |
| <b>11. Kiribati</b>                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Kiribati National Health Strategic Plan 2016-2019                                                                                                                                                                                                                                    | Percentage of kindergartens with a School Food Policy as one of the indicators [74].                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Noncommunicable Disease Prevention and Control Strategic Priorities 2020-2023                                                                                                                                                                                                        | Comprehensive school curriculum development for nutrition education in primary and secondary schools included [75].                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>12. Marshall Islands</b>                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Three Year Rolling Strategic Plan 2017-2019                                                                                                                                                                                                                                          | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| NCD Crisis Response Plan 2013-2018                                                                                                                                                                                                                                                   | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>13. Micronesia</b>                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Strategic Development Plan 2004-2023                                                                                                                                                                                                                                                 | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| National Strategic Plan of Action for the Prevention and Control of Noncommunicable Diseases in the Federated States of Micronesia 2019-2024                                                                                                                                         | <ul style="list-style-type: none"> <li>• In the area of nutrition, activities include the promotion of school health policy (School Nutrition and Physical Activity Guidelines). It states that it promotes healthy eating habits among children in schools.</li> </ul>                                                                                                                                                                                                                                                  |
| <b>14. Palau</b>                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Ministry of Health Strategic Plan 2014-2018                                                                                                                                                                                                                                          | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Documents                                                                                                  | Description of School Lunch and “Shokuiku”                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Noncommunicable Disease Prevention and Control Strategic Plan of Action 2015-2020                          | <ul style="list-style-type: none"> <li>It states that it will promote a national school policy requiring the provision of healthy meals in all public and private schools. It also states that it will support the expansion of school garden initiatives [76].</li> </ul>                                                                                        |
| <b>15. PNG</b>                                                                                             |                                                                                                                                                                                                                                                                                                                                                                   |
| National Health Plan 2021-2030                                                                             | <ul style="list-style-type: none"> <li>There is a description of health activities, including nutrition in schools, but no description of school lunches [77].</li> </ul>                                                                                                                                                                                         |
| National Multisectoral Strategic Plan for the Prevention and Control of Noncommunicable Diseases 2015-2020 | <ul style="list-style-type: none"> <li>It describes the development of a healthy eating program [78].</li> </ul>                                                                                                                                                                                                                                                  |
| <b>16. Samoa</b>                                                                                           |                                                                                                                                                                                                                                                                                                                                                                   |
| Health Sector Plan 2019/20 - 2029/30                                                                       | None                                                                                                                                                                                                                                                                                                                                                              |
| National Noncommunicable Disease Control Policy 2018 – 2023                                                | <ul style="list-style-type: none"> <li>It states that school health programs, including nutrition, are to be developed and implemented within the key strategic area of health promotion, advocacy, and risk reduction [79].</li> </ul>                                                                                                                           |
| <b>17. Solomon Islands</b>                                                                                 |                                                                                                                                                                                                                                                                                                                                                                   |
| National Health Strategic Plan 2016-2020 <sup>18</sup>                                                     | None                                                                                                                                                                                                                                                                                                                                                              |
| Multi-sectoral National Noncommunicable Disease Strategic Plan 2019-2023                                   | <ul style="list-style-type: none"> <li>Incorporating healthy lifestyle education (including nutrition) into the school curriculum is mentioned.</li> <li>There is no mention of school lunches, although screening of school cafeteria (canteens) menus is highlighted, with the goal to replace unhealthy food and drinks with healthy options. [80].</li> </ul> |
| <b>18. Tonga</b>                                                                                           |                                                                                                                                                                                                                                                                                                                                                                   |
| Ministry of Health National Strategic Plan 2015-2020                                                       | None                                                                                                                                                                                                                                                                                                                                                              |
| Tonga National Strategy for the Prevention and Control of Noncommunicable Diseases 2021-2025               | None                                                                                                                                                                                                                                                                                                                                                              |
| <b>19. Tuvalu</b>                                                                                          |                                                                                                                                                                                                                                                                                                                                                                   |
| Health Reform Strategy 2016-2019                                                                           | None                                                                                                                                                                                                                                                                                                                                                              |
| National Noncommunicable Diseases Strategic Plan 2017-2021                                                 | <ul style="list-style-type: none"> <li>One of its goals is to “increase public awareness of nutrition and healthy eating”.</li> <li>Specifically, the activity goals address the creation of school lunch policies, the implementation of home gardens, and the development of educational programs to help people make healthy choices [81].</li> </ul>          |
| Tuvalu Guidelines for a Healthy Diet and Lifestyle, 2021                                                   | None                                                                                                                                                                                                                                                                                                                                                              |
| <b>20. Vanuatu</b>                                                                                         |                                                                                                                                                                                                                                                                                                                                                                   |
| Healthy Sector Strategy 2021-2030                                                                          | None                                                                                                                                                                                                                                                                                                                                                              |
| Ministry of Health Corporate Plan 2022-2025                                                                | None                                                                                                                                                                                                                                                                                                                                                              |
| Vanuatu Noncommunicable Disease Policy and Strategic Plan 2021-2030                                        | <ul style="list-style-type: none"> <li>Provides support for compliance with policies regarding sugar-sweetened beverages in schools and school cafeteria (canteens) policies for a healthy eating-friendly school environment.</li> <li>It describes raising children’s awareness of the importance of a healthy diet [82].</li> </ul>                            |

<sup>18</sup> A successor, the National Health Strategic Plan 2022 -2031, has been published but the original could not be verified.

## 2.2.7 Overview of the Education System and the Positioning of School Lunches and “Shokuiku” in the National Education Policies and Strategies

### (1) Overview of the Education System

The status of preschool and primary education in the surveyed countries is shown in Table 2-20. The average gross enrollment rate for pre-primary education in the surveyed countries is 63%. Seven countries (Malaysia, Philippines, Viet Nam, Kiribati, Solomon Islands, Tuvalu, and Vanuatu) have a gross enrollment rate above 80%. On the other hand, eight countries have a gross enrollment rate of less than 50%, and Micronesia has a significantly low rate of 6%.

In terms of net enrollment in primary education, only Malaysia has achieved 100%. Compared with the ASEAN countries, PICs have generally lower net enrollment rates, with Solomon Islands at 67%, Marshall Islands at 73%, and Tuvalu at 76%. In most countries, the primary school age ranges from 6-11 years, with the exception of a few countries.

Table 2-20 Status of Preschool and Primary Education

|                       | Country           | Preprimary Education   |      | Primary Education |                  |      |                        |      |                      |
|-----------------------|-------------------|------------------------|------|-------------------|------------------|------|------------------------|------|----------------------|
|                       |                   | Gross enrollment ratio | Year | Age range         | Number of pupils | Year | Gross enrollment ratio | Year | Net enrollment ratio |
| A<br>S<br>E<br>A<br>N | Brunei Darussalam | 63%                    | 2020 | 6-11              | 39,649           | 2020 | 98%                    | 2020 | 93%                  |
|                       | Cambodia          | 34%                    | 2021 | 6-11              | 2,132,705        | 2021 | 103%                   | 2021 | 90%                  |
|                       | Indonesia         | 62%                    | 2018 | 7-12              | 25,203,372       | 2020 | 90%                    | 2020 | 93%                  |
|                       | Lao PDR           | 49%                    | 2021 | 6-10              | 756,191          | 2021 | 98%                    | 2021 | 91%                  |
|                       | Malaysia          | 87%                    | 2021 | 6-11              | 3,081,723        | 2020 | 104%                   | 2020 | 100%                 |
|                       | Philippines       | 90%                    | 2021 | 6-11              | 12,529,116       | 2021 | 92%                    | 2021 | 94%                  |
|                       | Thailand          | 74%                    | 2021 | 6-11              | 4,696,273        | 2021 | 100%                   | 2021 | 98%                  |
|                       | Viet Nam          | 92%                    | 2021 | 6-11              | 8,884,964        | 2021 | 118%                   | 2021 | 98%                  |
|                       | Timor-Leste       | 28%                    | 2020 | 6-11              | 203,273          | 2020 | 111%                   | 2020 | 92%                  |
| P<br>I<br>C           | Fiji              | 31%                    | 2021 | 6-11              | 118,951          | 2021 | 114%                   | 2021 | 97%                  |
|                       | Kiribati          | 89%                    | 2020 | 6-11              | 18,404           | 2020 | 108%                   | 2020 | 97%                  |
|                       | Marshall Islands  | 68%                    | 2021 | 6-11              | 6,452            | 2021 | 73%                    | 2021 | 73%                  |
|                       | Micronesia        | 6%                     | 2021 | 6-11              | 12,776           | 2021 | 90%                    | 2021 | 85%                  |
|                       | Palau             | 71%                    | 2020 | 6-11              | 1,564            | 2021 | 104%                   | 2021 | 95%                  |
|                       | Papua New Guinea  | 46%                    | 2018 | 7-12              | 1,394,208        | 2018 | 116%                   | 2018 | 74%                  |
|                       | Samoa             | 41%                    | 2021 | 5-10              | 35,400           | 2021 | 122%                   | 2021 | 94%                  |
|                       | Solomon Islands   | 93%                    | 2019 | 6-11              | 107,118          | 2019 | 104%                   | 2019 | 67%                  |
|                       | Tonga             | 48%                    | 2020 | 6-11              | 17,056           | 2020 | 115%                   | 2020 | 86%                  |
|                       | Tuvalu            | 86%                    | 2021 | 6-11              | 1,450            | 2021 | 92%                    | 2021 | 76%                  |
|                       | Vanuatu           | 103%                   | 2020 | 6-11              | 56,390           | 2020 | 122%                   | 2020 | 80%                  |

Source: [83], [4] etc.

## (2) Positioning of School Lunches and “Shokuiku” in National Education Policies and Strategies

Table 2-21 shows the situation in each of the countries surveyed regarding the status of school lunches and “Shokuiku” in national educational policies and strategies. Seven countries have specific references to school lunches and “Shokuiku” in preschool and primary education within their education policies: Cambodia, Lao PDR, Malaysia, the Philippines, Timor-Leste, Micronesia, and Vanuatu. Overall, school lunches are positioned as a means of increasing school enrollment and improving access to education in many countries, and are particularly emphasized as a measure to support economically disadvantaged children. In contrast, the other 13 countries do not mention school lunches or “Shokuiku” in preschool and primary education.

Table 2-21 Positioning of School Lunches and “Shokuiku” in National Education Policies and Strategies

| Country           | Education Policies and Strategies                                                                                                                                                                         | Description of School Lunch and “Shokuiku”                                                          |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Brunei Darussalam | • Ministry of Education Strategic Plan 2018-2022                                                                                                                                                          | No                                                                                                  |
| Cambodia          | • Education Strategic Plan 2019-2023                                                                                                                                                                      | <b>Yes (school lunches)</b>                                                                         |
| Indonesia         | • Law No. 20/2003 on the National Education System<br>• Ministry of Education and Culture Strategic Plan 2020-2024                                                                                        | No                                                                                                  |
| Lao PDR           | • Education and Sports Sector Development Plan 2021-2025                                                                                                                                                  | <b>Yes (school lunches, nutrition education)</b>                                                    |
| Malaysia          | • Malaysia Education Blueprint 2013-2025                                                                                                                                                                  | <b>Yes (school lunches)</b>                                                                         |
| Philippines       | • Governance of Basic Education Act of 2001, Republic Act No. 9155<br>• Basic Education Development Plan 2030                                                                                             | No<br><b>Yes (school lunches)</b>                                                                   |
| Thailand          | • The National Scheme of Education 2017-2036                                                                                                                                                              | No                                                                                                  |
| Viet Nam          | • Education Strategic Development Plan 2011-2020)                                                                                                                                                         | No                                                                                                  |
| Timor-Leste       | • Education Sector Plan 2020-2024                                                                                                                                                                         | <b>Yes (school lunches)</b>                                                                         |
| Fiji              | • Strategic Plan 2019-2023, Ministry of Education, Heritage and Arts                                                                                                                                      | No                                                                                                  |
| Kiribati          | • Kiribati Education Sector Strategic Plan for 2020-2023                                                                                                                                                  | No                                                                                                  |
| Marshall Islands  | • Education Sector Plan 2020-2023                                                                                                                                                                         | No                                                                                                  |
| Micronesia        | • Strategic Development Plan 2004-2023<br>• Education Sector Strategic Development Plan 2020-2024                                                                                                         | <b>Yes (school lunches for preschool)</b><br><b>Yes (school lunches)</b>                            |
| Palau             | • Education Master Plan 2017-2027                                                                                                                                                                         | No                                                                                                  |
| PNG               | • National Education Plan 2020-2029                                                                                                                                                                       | No                                                                                                  |
| Samoa             | • Education Sector Plan 2019-2024                                                                                                                                                                         | No                                                                                                  |
| Solomon Islands   | • Education Strategic Framework 2016-2030<br>• National Education Action Plan 2022-2026                                                                                                                   | No                                                                                                  |
| Tonga             | • Tonga Education Policy Framework 2004-2019                                                                                                                                                              | No                                                                                                  |
| Tuvalu            | • National Education Policy 2009<br>• Early Childhood Care and Education Policy 2007<br>• Tuvalu Education Sector Plan III 2016-2020                                                                      | No                                                                                                  |
| Vanuatu           | • Vanuatu 2030, The People’s Plan: National Sustainable Development Plan 2016 -2030<br>• Vanuatu Education and Training Sector Strategic Plan 2021-2030<br>• Vanuatu Primary School Head Teachers’ Manual | No<br><b>Yes (food environment improvement)</b><br><b>Yes (school lunches, nutrition education)</b> |

## 2.2.8 Creating a Healthy Food Environment (Food Marketing, Food Labeling, Taxation, and Regulatory Measures)

Table 2-22 presents an overview of legal frameworks, taxation policies, and regulatory measures implemented in the surveyed countries to promote a healthy food environment for preschool and school-age children. Among the target countries, Malaysia, Brunei, and Fiji are leading the way in their efforts to create a healthy food environment.

Table 2-22 Legal Framework, Taxation, and Regulatory Measures to Create a Healthy Food Environment

|                                       |                                                                               | ●           | Brunei | Cambodia | Indonesia | Laos | Malaysia | Philippines | Thailand | Viet Nam | Timor-Leste |
|---------------------------------------|-------------------------------------------------------------------------------|-------------|--------|----------|-----------|------|----------|-------------|----------|----------|-------------|
| Nutrition Labelling                   | Nutrition information panel (back-of-pack labelling)                          | 75%         | ●      | ×        | ●         | ×    | ●        | ●           | ●        | ●        | —           |
|                                       | Front-of-pack (FOP) labelling                                                 | 40%         | ●      | ×        | ●         | ×    | ●        | ●           | ●        | ×        | —           |
| Food Marketing                        | Regulation of marketing of foods and non-alcoholic beverages                  | 35%         | ●      | ×        | —         | ×    | ●        | ●           | —        | ×        | —           |
|                                       | Restrictions for health and nutrition claims on food labels                   | 50%         | ●      | ×        | —         | ×    | ●        | ●           | ●        | ●        | —           |
|                                       | Restrictions of TV marketing to children                                      | 15%         | ●      | —        | —         | —    | ●        | —           | —        | —        | —           |
|                                       | Restrictions on marketing in schools                                          | 25%         | ●      | —        | —         | —    | ●        | ●           | —        | —        | —           |
|                                       | Restrictions on selling unhealthy food and non-alcoholic beverages in schools | 25%         | ●      | —        | —         | —    | ●        | —           | ●        | —        | —           |
|                                       | Regulation of food marketing to children                                      | 25%         | ●      | ●        | —         | ×    | ●        | ●           | —        | ×        | —           |
| Micronutrient Fortification           | Salt iodization                                                               | 60%         | ●      | ●        | ●         | ●    | ●        | ●           | ●        | ●        | ×           |
|                                       | Fortification with iron                                                       | 45%         | ×      | ×        | ●         | ×    | ●        | ●           | —        | ●        | —           |
|                                       | Fortification with folic acid                                                 | 35%         | ×      | ×        | ●         | ×    | ●        | ×           | —        | ●        | —           |
| Financing Measures                    | Price control of or subsidies on healthy foods                                | 20%         | ×      | ×        | ×         | ×    | ×        | ×           | ×        | ×        | ×           |
|                                       | Taxation on foods high in fat, sugars or salt                                 | 40%         | ●      | ×        | ×         | ×    | ×        | ×           | ×        | ×        | ×           |
|                                       | Sugar-sweetened beverage (SSB) tax                                            | 65%         | ●      | ×        | ×         | ×    | ●        | ●           | ●        | ×        | ×           |
| Legend: ● Yes, ✕ No, — No information |                                                                               | Number of ● | 11     | 2        | 5         | 1    | 12       | 9           | 6        | 5        | 0           |

|                                       |                                                                               | Fiji | Kiribati | Marshall | Micronesia | Palau | PNG | Samoa | Solomon | Tonga | Tuvalu | Vanuatu |
|---------------------------------------|-------------------------------------------------------------------------------|------|----------|----------|------------|-------|-----|-------|---------|-------|--------|---------|
| Nutrition Labelling                   | Nutrition information panel (back-of-pack labelling)                          | ●    | —        | ●        | ●          | —     | ●   | ●     | ●       | ●     | ●      | ●       |
|                                       | Front-of-pack (FOP) labelling                                                 | ●    | ×        | ×        | ×          | ×     | ×   | ×     | ●       | ●     | ×      | ×       |
| Food Marketing                        | Regulation of marketing of foods and non-alcoholic beverages                  | ●    | ●        | ×        | ×          | ×     | ×   | ×     | ×       | ●     | ×      | ●       |
|                                       | Restrictions for health and nutrition claims on food labels                   | ●    | —        | ●        | ×          | —     | ×   | ●     | ●       | ×     | ●      | ×       |
|                                       | Restrictions of TV marketing to children                                      | —    | —        | —        | —          | —     | —   | —     | —       | —     | —      | ●       |
|                                       | Restrictions on marketing in schools                                          | —    | —        | —        | —          | —     | —   | —     | —       | ●     | —      | ●       |
|                                       | Restrictions on selling unhealthy food and non-alcoholic beverages in schools | —    | —        | —        | —          | —     | —   | ●     | —       | —     | —      | ●       |
|                                       | Regulation of food marketing to children                                      | ×    | ●        | ×        | ×          | ×     | ×   | ×     | ×       | ×     | ×      | ×       |
| Micronutrient Fortification           | Salt iodization                                                               | ●    | —        | ×        | ×          | —     | ●   | ●     | ●       | ×     | ×      | ×       |
|                                       | Fortification with iron                                                       | ●    | ●        | ×        | ×          | ×     | ●   | ●     | ●       | ×     | ×      | ×       |
|                                       | Fortification with folic acid                                                 | ●    | ●        | ×        | ×          | ×     | ●   | ×     | ●       | ×     | ×      | ×       |
| Financing Measures                    | Price control of or subsidies on healthy foods                                | ●    | ×        | ×        | ×          | ×     | ×   | ●     | ×       | ●     | ●      | ×       |
|                                       | Taxation on foods high in fat, sugars or salt                                 | ●    | ×        | ●        | ●          | ×     | ×   | ●     | ×       | ●     | ●      | ●       |
|                                       | Sugar-sweetened beverage (SSB) tax                                            | ●    | ●        | ●        | ●          | ×     | ×   | ●     | ●       | ●     | ●      | ●       |
| Legend: ● Yes, ✕ No, — No information |                                                                               | 10   | 5        | 4        | 3          | 0     | 4   | 8     | 7       | 7     | 5      | 7       |

Health and nutrition labelling regulations in food labelling have been implemented in half of the targeted countries, but other regulatory measures have not been introduced and fully implemented.

### ■ **Micronutrient Fortification**

Among the surveyed countries, 60% (12 countries) have policies for salt iodization, 45% (8 countries) for iron fortification, and 35% (6 countries) folic acid fortification. Five countries, namely: Malaysia, Viet Nam, Fiji, Papua New Guinea, and Solomon Islands have policies on salt iodization, iron fortification, and folic acid fortification.

### ■ **Taxation**

Among the surveyed countries, 65% (13 countries) have implemented a tax on sugar-sweetened beverages.

## 2.2.9 “Shokuiku” Materials

Although the situation varies from country to country, in many of the countries surveyed, a wide variety of “Shokuiku” materials ranging from posters and booklets to digital materials (videos, online games, etc.) have been developed by their ministries of health, nutrition-related organizations, and non-government organizations (NGOs). In particular, ASEAN countries such as Malaysia, the Philippines, and Indonesia (excluding Timor-Leste) are developing educational materials, which include not only textbooks but also infographics, animations, and online games that are designed to attract children’s interest.

In contrast, the development of “Shokuiku” materials remains limited in many PICs. In four countries (Timor-Leste, Micronesia, Palau, and Tuvalu), there was a lack of information on “Shokuiku” materials targeting preschool and primary school children. Similarly, in the Marshall Islands, Tonga, and Vanuatu, there was extremely limited information on “Shokuiku” materials targeting children at the preschool and primary levels, with most of the examples being materials developed with the support of international organizations and NGOs. The following is an overview of “Shokuiku” materials in 13 countries, excluding the seven countries where no or limited information was available.

### ■ **Brunei Darussalam**

In elementary school, students learn about nutrition and healthy eating in the subject of “Science”. In this subject, a list of digital teaching materials (e.g., YouTube videos) for grades 1-3 is available on the Ministry of Education’s website.

### ■ **Cambodia**

Health education will be introduced as a subject in school education from 2025, with nutrition education as one of its components. For this purpose, health textbooks are being developed. The Foundation for International Development/Relief (FIDR) has provided assistance in the development of these textbooks, with a focus on the nutrition unit, as well as the accompanying teacher’s manual [86].

### ■ **Indonesia**

“Shokuiku” materials produced by the Ministry of Education, Culture, Research, and Technology include a video material titled “Healthy Food, Healthy Body” [87] which is available on YouTube<sup>19</sup> from the Directorate General

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<sup>19</sup> <https://www.youtube.com/@PAUDPEDIA/about>

of Early Childhood Education. Another educational material produced by the Directorate General of Primary Education is the instructional handbook “Nutritional Balance and Healthy Cafeteria/Snacking in Primary Schools” [88], designed for teachers and school personnel.

#### ■ Lao PDR

The Ministry of Education and Sports website does not list any “*Shokuiku*” materials. While the website of the Scaling Up Nutrition Civil Society Alliance in Laos<sup>20</sup> lists various educational materials on “*Shokuiku*”. However, there is no information on the purpose or target audience of the materials.

#### ■ Malaysia

According to the Nutrition Division of the Ministry of Health, “*Shokuiku*” activities are conducted to promote healthy eating in accordance with the strategies outlined in the National Nutrition Action Plan 2016-2025 (NPANM III). A variety of “*Shokuiku*” materials have been created including brochures, posters, digestive aprons, and interactive games.

#### ■ Philippines

Filipino food plates, food pyramids, including posters and videos on 3G Foods were prepared and used as “*Shokuiku*” materials in elementary schools in Quezon City, Metro Manila (confirmed during the field survey in August 2023). In addition, the Department of Science and Technology-Food and Nutrition Research Institute (DOST-FNRI) produces and sells<sup>21</sup> a variety of “*Shokuiku*” materials, including posters, workbooks, flashcards, animations, games, videos, colouring books, and puzzles.

#### ■ Thailand

The School Lunch Project Fund Bureau, which manages the funds for the National School Lunch Feeding Program (SLP), has a variety of food and nutrition materials on its website [89]. Other nutrition education materials have been developed and produced by donors, universities, other research institutions, and NGOs [90].

#### ■ Viet Nam

“*Shokuiku*” is included in the national curriculum of the Ministry of Education and Training. In primary education, “*Shokuiku*” is covered in the “Nature and Society” class and textbooks based on the national curriculum that have been published. In addition, the website of the National Institute of Nutrition (NIN)<sup>22</sup> has “*Shokuiku*” materials, such as posters, which can be downloaded.

#### ■ Fiji

In elementary school, children learn about nutrition and food safety as part of their health education in the subject “Healthy Living.” In addition, there are several development donors and NGOs involved in child health in Fiji, and they have produced a “Nutrition Activity Book” as a nutrition-related educational material. The materials are freely available on the websites of the Ministry of Education, Heritage and Arts and the Ministry of Health and Medical Services [91].

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<sup>20</sup> <https://suncsalaos.org/>

<sup>21</sup> For example, a workbook costs 150 pesos (about 395 yen) and a coloring book 35 pesos (about 92 yen).

<sup>22</sup> <http://viendinhduong.vn/>

## ■ Kiribati

In Kiribati, the Ministry of Education provides nutrition and food education in pre-school and primary education. The Ministry's website includes instructional and poster materials designed for teachers.

## ■ Papua New Guinea

Nutrition and food education is provided in the subject "Culture and Community" in pre-school education and in "Health", "Health and Physical Education", and "Making a Living" in primary education. Syllabi and teacher's manuals are available on the website of the Department of Education<sup>23</sup>.

## ■ Samoa

"Nutrition Activity Book: Years 1-4" was developed in collaboration with the British High Commission in Tonga, the Food and Agriculture Organization of the United Nations (FAO), the Ministry of Education, Sports and Culture, and the Ministry of Health [92].

## ■ Solomon Islands

The Department of Education and Human Resources Development's website, Solomon Islands iResource<sup>24</sup>, provides syllabi and curricula, and educational resources to support continued learning at home and in other settings during COVID-19 outbreak.

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<sup>23</sup> <https://www.education.gov.pg/index.html>

<sup>24</sup> <https://www.iresource.gov.sb/>

## 2.2.10 Statistics and Databases for Monitoring and Evaluation

Information systems for nutrition are complex and the situation varies from country to country. There are multiple sources of data on the health and nutrition status of preschool children and school-age children, including sample household surveys such as the Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS), sector-specific information systems such as Health Management Information Systems (HMIS) and Education Management Information Systems (EMIS), as well as nutrition programs (e.g., vitamin A administration campaigns). The data collection methods vary, with different targets, frequencies, and methods of data collection. In addition, monitoring and evaluation of the health and nutritional status of preschool children and school-age children involves a variety of stakeholders, including the ministries of health, education, agriculture, and statistics.

Table 2-23 shows the implementation status of DHS and MICS in the surveyed countries. In five countries (Brunei, Malaysia, Marshall, Palau, and Solomon Islands), neither DHS nor MICS are implemented.

Table 2-23 Status of Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS)

|                       | Country           | DHS                                                         | Institution that conducted the most recent survey                                                         | MICS                                                 | Institution that conducted the most recent survey |
|-----------------------|-------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------|
| A<br>S<br>E<br>A<br>N | Brunei Darussalam | n.a.                                                        |                                                                                                           | n.a.                                                 |                                                   |
|                       | Cambodia          | 1998, 2000, 2005, 2010, 2014, 2021-22                       | National Institute of Statistics                                                                          | n.a.                                                 |                                                   |
|                       | Indonesia         | 1987, 1991, 1994, 1997, 2002-03, 2007, 2012, 2017, (2023)** | Badan Riset dan Inovasi Nasional<br>National Population and Family Planning Board<br>Statistics Indonesia | 1996, 2000, 2011*                                    | Statistics Indonesia                              |
|                       | Laos              | 2011-12 (MICS/DHS)                                          | Ministry of Health<br>Lao Statistics Bureau                                                               | 1996, 2000, 2006, 2011-12 (MICS/DHS), 2017, (2023)** | Lao Statistics Bureau                             |
|                       | Malaysia          | n.a.                                                        |                                                                                                           | n.a.                                                 |                                                   |
|                       | Philippines       | 1993, 1998, 2003, 2008, 2013, 2017, 2022                    | Philippines Statistics Authority                                                                          | 1996, 1999                                           | National Statistics Office                        |
|                       | Thailand          | n.a.                                                        |                                                                                                           | 2005-06, 2012-13, 2015-16, 2019, 2022                | National Statistical Office of Thailand           |
|                       | Vietnam           | 1997, 2002                                                  | General Statistical Office                                                                                | 1996, 2000, 2006, 2010-11, 2013-14, 2020-2021        | General Statistics Office                         |
|                       | Timor-Leste       | 2009-10, 2016                                               | General Directorate of Statistics                                                                         | n.a.                                                 |                                                   |
| P<br>I<br>C           | Fiji              | n.a.                                                        |                                                                                                           | 2021                                                 | Fiji Bureau of Statistics                         |
|                       | Kiribati          | n.a.                                                        |                                                                                                           | 2018-19, (2024)**                                    | Kiribati National Statistics Office               |
|                       | Marshall          | n.a.                                                        |                                                                                                           | n.a.                                                 |                                                   |
|                       | Micronesia        | n.a.                                                        |                                                                                                           | (2024)**                                             |                                                   |
|                       | Palau             | n.a.                                                        |                                                                                                           | n.a.                                                 |                                                   |
|                       | PNG               | 2016-18                                                     | National Statistical Office                                                                               | n.a.                                                 |                                                   |
|                       | Samoa             | 2009                                                        | Ministry of Health, Samoa Bureau of Statistics                                                            | 2019-20                                              | Samoa Bureau of Statistics                        |
|                       | Solomon Islands   | n.a.                                                        |                                                                                                           | n.a.                                                 |                                                   |
|                       | Tonga             | n.a.                                                        |                                                                                                           | 2019, (2024)**                                       | Tonga Statistics Department                       |
|                       | Tuvalu            | n.a.                                                        |                                                                                                           | 2019-20                                              | Tuvalu Central Statistics Division                |
|                       | Vanuatu           | n.a.                                                        |                                                                                                           | 2007-08, (2023)**                                    | Ministry of Health                                |

Note) \*Papua Selected Districts, West Papua Selected Districts, \*\*In progress or planned

Source: [93], [94]

In addition to the DHS and MICS shown in Table 2-23, Table 2-24 shows an overview of other nutrition and health surveys relevant to preschool children and school-age children.

Table 2-24 Nutrition and Health Surveys that Include Preschool Children and School-age Children

|                       | Country           | Survey Title                                                 | Implementing Agency*                                         | Year (latest) | Survey Targets                                                                                                             | Survey Contents                                                                                                                                                                                                                                                             |
|-----------------------|-------------------|--------------------------------------------------------------|--------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A<br>S<br>E<br>A<br>N | Brunei Darussalam | Global School-based Student Health Survey (GSHS)             | Ministry of Health                                           | 2019          | Students aged 13-17                                                                                                        | Eating behavior, hygiene, mental health, physical activity, etc.                                                                                                                                                                                                            |
|                       |                   | National Health and Nutritional Status Survey                | Ministry of Health                                           | 2014          | 5-75 years old                                                                                                             | Physical measurements, health status, diet, smoking, etc.                                                                                                                                                                                                                   |
|                       | Cambodia          | GSHS                                                         | Ministry of Health                                           | 2013          | Students aged 13-17                                                                                                        | Eating behavior, hygiene, mental health, physical activity, etc.                                                                                                                                                                                                            |
|                       | Indonesia         | GSHS                                                         | Badan Litbang Kesehatan                                      | 2015          | Students aged 13-17                                                                                                        | Ibid.                                                                                                                                                                                                                                                                       |
|                       |                   | National Basic Health Research Survey                        | Ministry of Health                                           | 2023          | All ages                                                                                                                   | Information on the health status, nutritional status, lifestyle and various factors related to health of the domestic population                                                                                                                                            |
|                       | Lao PDR           | Lao Social Indicator Survey                                  | Ministry of Health, Lao Statistics Bureau                    | 2022          | Mainly children under 5 and their mothers                                                                                  | Health/Nutrition, Population/Family Planning, HIV/AIDS, Domestic Violence, etc.                                                                                                                                                                                             |
|                       | Malaysia          | Malaysia School-Based Nutrition Survey 2012                  | Institute for Public Health                                  | 2012          | Students aged 10-17                                                                                                        | Dietary pattern, physical activity, nutritional status, frequency of food intake, food intake, etc.                                                                                                                                                                         |
|                       |                   | National Health & Morbidity Survey (NHMS)                    | Institute for Public Health                                  | 2022          | Varies for each year's survey topic (In the 2022 Maternal and Child Health Survey, children aged 0-5 and women aged 15-49) | (Maternal and Child Health Survey 2022) Care during pregnancy, during and after childbirth, reproductive health, vaccination, nutritional status, infant and young child nutrition practices, child development, child illness, child discipline, child oral health, anemia |
|                       | Philippines       | National Nutrition Survey/Expanded National Nutrition Survey | DOST-FNRI                                                    | 2021          | All ages                                                                                                                   | Physical measurements, health status, diet, socioeconomic status, food insecurity, participation in government programs, maternal health and nutrition, infant nutrition practices                                                                                          |
|                       |                   | GSHS                                                         | Department of Health                                         | 2019          | Students aged 13-17                                                                                                        | Eating behavior, hygiene, mental health, physical activity, etc.                                                                                                                                                                                                            |
|                       | Thailand          | GSHS                                                         | Ministry of Health                                           | 2021          | Students aged 13-17                                                                                                        | Ibid.                                                                                                                                                                                                                                                                       |
|                       | Viet Nam          | GSHS                                                         | Hanoi Medical University                                     | 2013          | Students aged 13-17                                                                                                        | Ibid.                                                                                                                                                                                                                                                                       |
|                       |                   | General Nutrition Survey                                     | National Institute of Nutrition                              | 2009-10       | Children under 5, mothers, adults                                                                                          | Nutritional status, food consumption, and food security of children under 5, mothers, and adults.                                                                                                                                                                           |
|                       | Timor-Leste       | GSHS                                                         | n.d.                                                         | 2015          | Students aged 13-17                                                                                                        | Eating behavior, hygiene, mental health, physical activity, etc.                                                                                                                                                                                                            |
|                       |                   | Timor-Leste Food and Nutrition Survey                        | Ministry of Health                                           | 2020          | Children under 5, women (15-49)                                                                                            | Physical measurements, reproductive health, vaccination, nutritional status, infant nutrition practices, etc.                                                                                                                                                               |
| P<br>I<br>C           | Fiji              | Fiji National Nutrition Survey                               | National Food and Nutrition Centre                           | 2014          | All ages                                                                                                                   | Nutritional status, dietary intake, NCD risk factor status, etc. for adults under age 2, under age 18, and over age 18                                                                                                                                                      |
|                       |                   | GSHS                                                         | n.d.                                                         | 2016          | Students aged 13-17                                                                                                        | Eating behavior, hygiene, mental health, physical activity, etc.                                                                                                                                                                                                            |
|                       | Kiribati          | GSHS                                                         | Ministry of Health & Medical Services                        | 2011          | Students aged 13-17                                                                                                        | Ibid.                                                                                                                                                                                                                                                                       |
|                       | Marshall Islands  | Integrated Child Health and Nutrition Survey 2017            | Ministry of Health and Human Services                        | 2017          | Children under 5 and mothers                                                                                               | Nutritional status of children, child disease status, water and sanitation, reproductive health, etc.                                                                                                                                                                       |
|                       | Micronesia        | n.d.                                                         |                                                              |               |                                                                                                                            |                                                                                                                                                                                                                                                                             |
|                       | Palau             | n.d.                                                         |                                                              |               |                                                                                                                            |                                                                                                                                                                                                                                                                             |
|                       | PNG               | National Nutrition Survey                                    | Ministry of Health                                           | 2005          | Children 6-59 months, women 15-45 years, men 15 years and older                                                            | Physical measurements, anemia, iron and vitamin A deficiency status, malaria and other parasites, etc.                                                                                                                                                                      |
|                       | Samoa             | GSHS                                                         | Ministry of Health                                           | 2017          | Students aged 13-17                                                                                                        | Eating behavior, hygiene, mental health, physical activity, etc.                                                                                                                                                                                                            |
|                       | Solomon Islands   | GSHS                                                         | Ministry of Education, Ministry of Health & Medical Services | 2011          | Students aged 13-17                                                                                                        | Ibid.                                                                                                                                                                                                                                                                       |
|                       | Tonga             | GSHS                                                         | Ministry of Health                                           | 2017          | Students aged 13-17                                                                                                        | Ibid.                                                                                                                                                                                                                                                                       |
|                       | Tuvalu            | GSHS                                                         | Ministry of Health                                           | 2013          | Students aged 13-17                                                                                                        | Ibid.                                                                                                                                                                                                                                                                       |
|                       | Vanuatu           | GSHS                                                         | Ministry of Health                                           | 2016          | Students aged 13-17                                                                                                        | Ibid.                                                                                                                                                                                                                                                                       |

Note\* The implementing agency for the Global School-based Student Health Survey (GSHS) is the agency listed in the contact information on the Fact Sheet.

Source: [95] etc.

## 2.2 Information Collection on School Lunches and “Shokuiku” Projects by Major Donors

### 2.2.1 Overview of School Lunches and “Shokuiku” Activities by Major Donors

#### (1) Overview of School Lunches and “Shokuiku” Activities by Major Donors

Major donors in the countries covered by the desk review of this study include the United Nations Children's Fund (UNICEF), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Food Program (WFP), and the World Bank. A summary of the activities of these UN agencies related to school lunches and “Shokuiku” is shown in Table 2-25.

FAO, UNESCO, UNICEF, WFP, and WHO issued a joint statement in support of the School Meals Coalition in 2021. Led by France and Finland, the School Meals Coalition has more than 60 member countries and aims to provide nutritious school lunches to all children by 2030. Among the countries covered in this study, like Thailand, Timor-Leste, the Philippines, and Cambodia are members of the School Meals Coalition.

Table 2-25 Overview of School Lunches and “Shokuiku” Activities by Major Donors

| Organization | Outline of Activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FAO          | It supports the school lunches and nutrition sector for school-aged children through policy and legal environment development, “Shokuiku”, healthy food environments and school lunches, and inclusive procurement and value chains. One model of support in the area of school lunches and “Shokuiku” is home-grown school feeding. This model, developed by FAO and promoted with WFP and International Fund for Agricultural Development (IFAD), links small-scale local farmers with school lunches to provide safe, diverse, and nutritious local food for school lunches.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| WFP          | It has supported school lunches and health initiatives for 60 years and has established school lunch programs. Home-grown school feeding is being implemented in 46 countries.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| UNICEF       | It collects and publishes nutrition data from various age groups, incorporates “Shokuiku” into the curriculum, develops guidelines for providing nutritious and safe school lunches, recommends fortified foods, promotes a healthy eating environment in and out of school, promotes healthy eating habits, and provides micronutrient supplements and deworming products.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| UNESCO       | It defines school health and nutrition as the core of education and published “Global Standards for Health Promoting Schools” with WHO and expressed support for the School Meals Coalition, but does not directly support school lunches or “Shokuiku”. It works together with FAO, WFP, and other international organizations to disseminate reports and data from these organizations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| World Bank   | Since the Millennium Development Goals (MDGs) were expected to be difficult to achieve, it worked with WFP to implement a school lunches program for the poor in order to increase access to quality education. In addition, it worked with WFP, the Partnership for Child Development, and the Bill and Melinda Gates Foundation to analyze and make reports on the implementation of effective school lunch programs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| WHO          | Recognizing that schools have an important role to play in helping children develop healthy eating habits and nutrition, it issues the report “Implementing School Food and Nutrition Policies: A Review of Contextual Factors”. It also published a report “Assessing the Existing Evidence Based on School Food and Nutrition Policies: A Scoping Review” which analyzed how school food and nutrition policies affect children's health status, and is involved in school food (including purchased items) and “Shokuiku” from the aspect of NCD prevention related to school health and eating habits. Other activities include the joint publication with UNICEF of a toolkit to protect children from the marketing of harmful foods, improving food hygiene, reducing salt use, providing micronutrients and other fortified foods, and encouraging campaigns to control NCDs related to eating habits.<br>The Nutrition-Friendly Schools Initiative (NFSI) has been launched as a model to support the school lunches and “Shokuiku” sector. It was developed in 2006 to create a framework for ensuring an integrated school-based program that addresses the double burden of malnutrition and to be the nutrition module of the Health Promoting School, which consists of the following five components; 1) school nutrition policy; 2) school community awareness and capacity building; 3) curriculum to promote nutrition and health; 4) school environment to maintain good nutrition; and 5) support for school nutrition and health services. |

Source: [61], [62], [63], [64], [65], [66]

## (2) Major Donors' Cooperation and Achievements on School Lunches and “Shokuiku”

6 shows examples of school lunch and “Shokuiku” cooperation by each of the above organizations. The two main agencies, FAO and WFP, are developing school lunch and “Shokuiku” projects that include home-grown school feeding approaches in countries around the world, including ASEAN countries.

Table 2-26 Major Examples of School Lunches and “Shokuiku” by Major Donors

| Organization | Major Project                                                                                                                     | Outline                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Input<br>(Correspondence<br>with Ten Cooperative<br>Menus <sup>25</sup> ) |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| FAO          | Nutrition Guidelines and Standards for Safeguarding School-children and Adolescents’ Right to Food                                | A project to improve the diet of students and support legal reform through healthy eating habits and provision of school lunches in all countries (pilot countries are Cambodia and Ghana) from 2020 to 2023. The following five outcomes are targeted for implementation. At the national level, 1) the development of nutrition guidelines and standards and complementary measures; 2) capacity strengthening to enable the development, implementation, evaluation, and revision of school meal nutrition guidelines. Globally, 3) effective methodologies and complementary tools for developing school meal nutrition guidelines are made available to target institutions in low- and middle-income countries; 4) dialogue on the need for and potential of system-based school meal nutrition guidelines is stimulated in low-income and middle-income countries; and 5) guidance will be prepared for low-income and middle-income countries to incorporate nutrition guidelines as a legal requirement to fulfill the right to food of children. | 1, 10                                                                     |
|              | Developing Capacity for Strengthening Food Security and Nutrition in Selected Countries of the Caucasus and Central Asia” Project | The program was implemented in Armenia, Kyrgyzstan, and Tajikistan. In Armenia, vegetables from school gardens were used in school lunches to increase their nutritional value, and surplus vegetables were sold at the market, with the profits used to fund equipment related to school lunches. In Kyrgyzstan, a model was developed whereby a regional logistics center for agricultural produce was established and collected, and 29 schools used the produce for school lunches. In Tajikistan, 20 schools were equipped with nurseries with drip irrigation systems and trained school staff and workers to grow vegetables in quantities that could be used for school lunches and sold in local communities.                                                                                                                                                                                                                                                                                                                                     | 5, 8, 9                                                                   |
|              | Strengthening School Feeding Programs in the Framework of the Zero Hunger Initiative in Latin America and the Caribbean 2025      | The program started in 2009 in 5 Latin American countries and gradually expanded to 17 countries in the region. The main activities are 1) sustainable schools (healthy and culturally appropriate school lunches, nutrition planning, student nutrition surveys, school vegetable gardens, kitchen and cafeteria improvements, and purchase of produce from home gardens for school lunches); 2) online courses on school lunches (involving “Shokuiku”, agriculture, and other professionals in school meal programs); 3) technical assistance for food and “Shokuiku” (on-the-job training, including using school vegetable gardens as a “Shokuiku” tool); 4) experience and skills sharing (sharing experiences and findings among participating countries); and 5) validation of direct purchases from home gardens for school lunches (survey and results sharing in 8 countries). This program was completed in 2018.                                                                                                                              | 5, 7, 8, 9, 10                                                            |
| WFP          | Home-grown School Feeding Programme in Cambodia                                                                                   | In Cambodia, the school lunch program began in 1999, and in 2014, WFP and the Cambodian Ministry of Education collaborated to launch a school lunch program with locally produced food. KOICA supports the program in three provinces from 2020 to 2024. In parallel, the United States Department of Agriculture (USDA) McGovern-Dole is funding the program for 522 schools in three provinces from 2022 to 2027. As of 2023, the WFP has 823 schools in the program, 522 of which are funded by the USDA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3, 5, 6, 7, 9, 10                                                         |
|              | Home-grown School Feeding Programme in Indonesia                                                                                  | Local Food-based School Meal Program (LFBSP) is conducted to 30,214 elementary school students in 153 schools in two states from 2012 to 2015. The program provided school lunches with vegetables from local farmers three times a week and aimed to improve nutritional status, learning outcomes, hygiene, and healthy habits. The program was then                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3, 7, 10                                                                  |

<sup>25</sup> It is based on “School lunches, the key to children’s growth and health” issued in 2021 by JICA. The contents of ten cooperation menus are: 1) Development of ‘DRIs in school lunches’; 2) Diet and nutrition teachers; 3) School lunches providers; 4) Hygiene management; 5) Food procurement; 6) Monitoring/ assessment; 7) ‘Shokuiku’ and fostering independence; 8) Private-sector partnership; 9) Promotion of community collaboration; and 10) Strengthening of administration to support school lunches.

| Organization | Major Project                                                           | Outline                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Input<br>(Correspondence<br>with Ten Cooperative<br>Menus <sup>25</sup> ) |
|--------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
|              |                                                                         | implemented as the National Nutrition Program for School Children, funded by the Indonesian government from 2016 to 2019, with the technical support of WFP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                           |
|              | Home-grown School Feeding Programme in Laos                             | WFP began its school lunches program in Laos in 2002. Contributions from the United States Department of Agriculture (USDA) to the program began in 2008, and those from McGovern-Dole began in 2015.<br>In 2013-2018, the program was implemented in Bangladesh, Cambodia, Laos, and Nepal as USDA McGovern-Dole Funded Food for Education Programmes in the Asia/Pacific Region. In Laos, the program provided morning snacks, lunch, home grown school feeding, literacy activities, and health and nutritional practices activities (including aquaculture pond construction) to 131,227 children.                                                                                                                                     | 5, 7, 9, 10                                                               |
|              | Home-grown School Feeding Programme in the Philippines                  | In 2022, a farm-to-school feeding pilot project was launched in cooperation with the local government (Bangsamoro Muslim Mindanao Autonomous Region (BARMM)) and WFP. One hundred children received school lunches made from locally produced raw materials and home-grown vegetables, and their parents took turns cooking.<br>The local government procures resources such as rice, vegetables, and chicken from local producers, and health workers and city dietitians assist in menu preparation. The project is funded by the French government and the United Nations World Food Programme Foundation.                                                                                                                              | 3, 5, 9                                                                   |
| UNICEF       | Social and Behavioral Change for Nutrition in East Asia and the Pacific | In collaboration with Rain Barrel Communications, this project presented social and behavioral change communication (SBCC) programs for nutrition to governments in Cambodia, Laos, and the Philippines, and developed a comprehensive curriculum and training package [67]. This package was also piloted in Cambodia and is now available for use in other countries. However, it is not intended for school children, but rather for the general public.                                                                                                                                                                                                                                                                                | 7                                                                         |
|              | “Fix My Food” Campaign                                                  | Youth awareness campaigns on the need to create healthier food environments in China, Cambodia, Micronesia, Fiji, Mongolia, Solomon Islands, Timor-Leste, and Viet Nam started in 2019. However, this is not an in-school campaign.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 7                                                                         |
| World Bank   | Scaling up School Feeding                                               | During the 2008 oil and food price crisis, WFP and the Global Partnership for Education collaborated to conduct school lunches and impact studies in nine countries (Bangladesh, Laos, Liberia, Haiti, Kenya, Togo, Nicaragua, Burundi, and Guinea-Bissau) from 2009 to 2012.<br>In Kenya, it supported the launch of the Home-grown School Meals program.<br>Funding was also provided for the implementation of school lunches as a social safety net in Burundi, Central Africa, Guinea-Bissau, Haiti, Liberia, Nicaragua, Senegal, and Togo.<br>In cooperation with WFP, technical assistance to governments for the development of school lunches systems was provided to Cambodia, Kenya, Malawi, Togo, Bangladesh, Laos, and Haiti. | 5, 9, 10                                                                  |

Source: [61], [68], [69], [70], [71], [72], [73], [74], [75], [76], [77], [78], [79], [80], [81], [82], [83], [84], [85]

## 1) Good Practices of School Lunches and “Shokuiku” Cooperation by Major Donors

Based on the above, the following details and inferred success factors are highlighted for projects that are considered exemplary.

### ■ Home-grown School Feeding Programme (HGSFP) in Cambodia (WFP)

As shown in , the school lunch program in Cambodia began in 1999, and in 2014, WFP and the Cambodian Ministry of Education, Youth and Sports (hereafter referred to as the Ministry of Education) collaborated to launch a school lunch program using locally produced food (HGSFP). From 2020 to 2024, the Korea International Cooperation Agency (KOICA) supported the program in three provinces. In parallel, the United States Department of Agriculture (USDA) McGovern-Dole is funding the program for 522 schools in three states from 2022 to 2027. As of 2023, the WFP has 823 schools in the program, 522 of which are funded by the USDA.

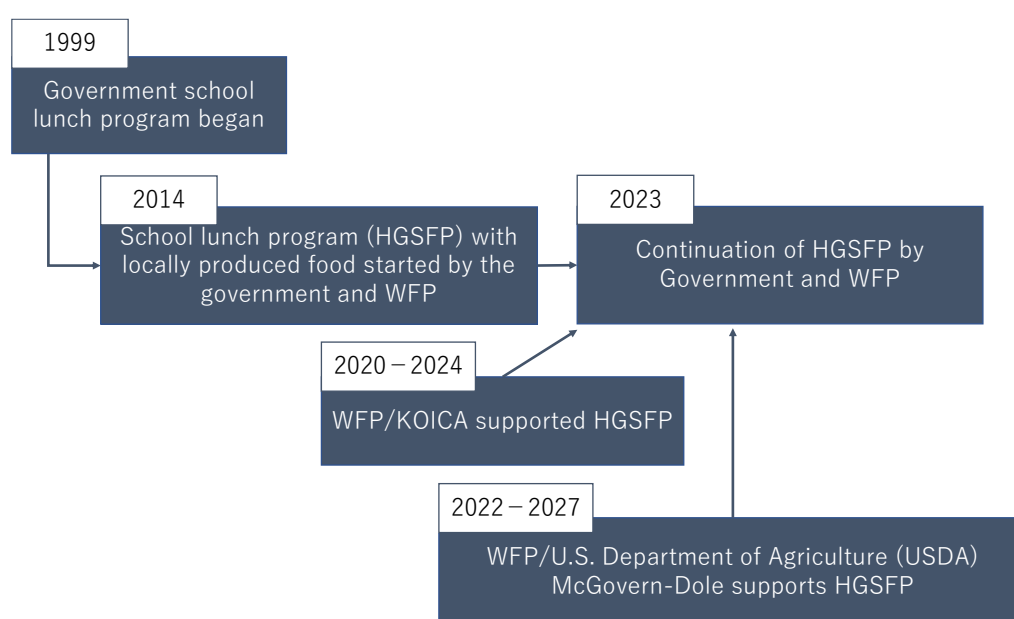


Figure 2-1 School Lunch Implementation in Cambodia

The HGSFP aims to improve the nutritional value of school lunches by utilizing locally grown food for school lunches while also improving good eating habits among children. The implementation and management of the program at the school level, including food procurement, cook selection, menu preparation, cooking, serving food to children, cooking equipment, and utilities [70] are the shared responsibility of schools, communities, and local governments.

The first outcome from the project is strengthening the administrative capacity for school meal implementation. With increased ownership of the Cambodian government, HGSFP is being implemented in 290 schools (26% of all schools in the country) under the national budget as a national program in 2020. Additionally, the remaining 823 schools supported by WFP are undergoing capacity building under the project until 2028 to facilitate their transition to full government implementation.

Furthermore, the program has been highly effective in promoting educational opportunities for children and stimulating the local agricultural economy through the provision of school lunches.

According to the 2023 mid-term evaluation report, 99.7% of the surveyed families indicated that their children consumed school lunches at school and benefit from the HGSFP. Additionally, staff and stakeholders also indicated that the provision of school lunch motivated parents to send their children to school, improved attendance rates, and reduced dropout rates [74]. Notably, although boys tended to drop out of school due to pressure from their families to participate in income-generating activities, this tendency was reported to have been reduced. In terms of elementary school enrollment, net enrollment rates fell in other regions during the COVID-19 period. However, they recovered in the three provinces where KOICA supported the implementation of HGSFP ().

Table 2-27 Changes of Net Enrollment Rates of Elementary Schools (%)

|             | Province A | Province B | Province C |
|-------------|------------|------------|------------|
| 2019-2020   | 90.5       | 90.3       | 97.6       |
| 2021 – 2022 | 94.4       | 96.8       | 99.3       |

Source: Developed by the Survey Team based on [74]

In addition, the positive impact of HGSFP in relation to children's health status were equally observed regardless of children's gender or socioeconomic status. Among surveyed households, 20.7% reported that school meals had reduced sickness-related absences. In addition, households participating in the HGSFP reported that their children were healthier (80.2%), more capable of learning (57.1%), and more active and focused (18.3%) (as seen in ).

Table 2-28 Responses of Surveyed Households on HGSFP Benefits (%)

|       | Children Became Healthier | Children Can Study More | Absence Due to Sickness Reduced | Children Became More Active and Can Concentrate More |
|-------|---------------------------|-------------------------|---------------------------------|------------------------------------------------------|
| Girls | 81.0                      | 56.8                    | 20.1                            | 17.2                                                 |
| Boys  | 77.1                      | 58.3                    | 22.5                            | 22.1                                                 |
| Total | 80.2                      | 57.1                    | 20.7                            | 18.3                                                 |

Source: Developed by the Survey Team based on [74]

In addition, the program yielded significant benefits for local farmers with 98.0% reporting that the HGSFP allowed them to increase their production. Among participating farmers, 96.0% had increased household income, and participation in the HGSEP increased their ability to sell at acceptable prices, access to sustainable and predictable markets (68.2%) and new markets (23.5%), and more money to save and invest. In addition, the farmers expressed a greater sense of pride in providing safe and nutritious food to local schools [74].

There are four key success factors [70] which are expounded on below.

#### ■ Purchase of Foodstuff by Cash Payment to School Account

The program allowed schools to purchase diverse, nutritious, and safe food from local food producers (farmers, agricultural cooperatives, etc.) by depositing cash into their school accounts. In this way, the program was able to strengthen the food system to meet both sides of the demand and supply.

#### ■ Strong Ownership of the Government

At the request of the Office of the President, the Ministry of Education prepared a concept note for the HGSFP and submitted a budget request to the Ministry of Economy and Finance for a three-year implementation of the HGSFP as part of the National Social Protection Policy Framework (NSPPF) 2016-2025. Thus, the government's deep understanding of the HGSFP and strong leadership have been key factors in its success.

## ■ Cooperation Between Central Government and Municipalities, Including the Establishment of a Monitoring System

Quarterly coordination meetings are held between the central government and municipal authorities to review the progress on implementation, address the challenges encountered since the last meeting and the responses to them, and discuss plans for activities in the next quarter. In addition, an information platform has been developed and operated by the Ministry of Education where monitoring data is uploaded via mobile phones to enable real-time monitoring and evaluation (M&E). This system alerts the program manager to any problems and links complaints and feedback from beneficiaries to the M&E system.

## ■ Inclusion in Policy

The HGSFP is integrated into national policies and strategies, such as the National Social Protection Policy Framework 2016-2025, National Food Security and Nutrition Strategy 2019-2023, Education Strategic Plan 2019-2023, and the National School Meal and Nutrition Policy. The inclusion in such policies is an important attempt to provide a sustainable HGSFP for the country.

### (2) Home-grown School Feeding Programme in Indonesia (WFP)

In Indonesia, the government's National School Lunch Program was initiated in 1996 for elementary school children in underdeveloped villages as part of the National Poverty Reduction Strategy in the Sixth Five-Year Development Plan in the 1990s. The National Pilot School Feeding Program (PROGAS), a program to provide breakfast to elementary school children, was introduced in 2015 and implemented in 2016. However, despite 25,885,053 elementary school children in 132,381 schools across Indonesia in the 2015-2016 school year, the program only covered 36,547 elementary school students in 142 schools [86].

WFP implemented the Local Food-based School Meal Program (LFBSM) in Indonesia in partnership with local governments to 30,214 elementary school students in 153 schools across two provinces from 2012 to 2015. This program provided school meals three times a week, incorporating vegetables sourced from local farmers to improve nutritional status, learning outcomes, hygiene, and healthy habits. The program greatly improved the children's attendance, focus, and food diversity. The Indonesian Ministry of Education and Culture (Ministry of Education) subsequently launched PROGAS, as described above, for which WFP provided technical assistance from 2016 to 2019 [87]. Similar to LFBSM, PROGAS provided nutritious school lunches three times a week using fresh local ingredients and meeting 25% of the recommended daily dietary intake for school-aged children, and “*Shokuiku*” for teachers and children (including WASH and cook training) [87].

According to the 2016 Evaluation Report [88], LFBSM achieved outcomes including 30,000 children receiving health, nutrition, and hygiene education; 790 administrative officers and partner staff and 1,891 cooks were also trained, achieving 73.9% of the target number of trainers; hand washing stations in 113 schools were also improved. Although enrollment did not change, attendance increased (from 86% in 2012 to 97.3% in 2015) and dropout was reduced (LFBSM schools: 0.18%; control schools: 0.64%). Furthermore, on days when school lunches were provided, students did not feel hungry (88.2%) and did not feel sleepy (86.7%), allowing them to concentrate on their classes. Knowledge of health and nutrition was similar between LFBSM and control school children and their parents, but LFBSM children were more likely to eat breakfast occasionally (91.2% vs. 82.7%). Fruits, meat, and

eggs were consumed more by children in LFBSM schools. Dietary diversity scores were also higher for LFBSM children (49.2% vs. 38.1%).

The following seven success factors were identified through the implementation of this program that will lead to the success of the program and further improve its output in the future [88].

### **1) Strengthening Local Government Commitments**

It would be effective to strengthen the commitment of local governments in providing school lunches, to improve access to schools by stakeholders through road and transportation improvements, and to secure budgets for continued school lunch services.

### **2) Using School Gardens to Raise Awareness of the Importance of Micronutrient-rich Crops**

Encouragement of cultivation in school gardens is recommended to educate students, parents, and school lunch service personnel about the importance of crops rich in micronutrients.

### **3) Health and Nutrition Promotion**

In implementing health and nutrition promotion activities, it is effective to do so in the local language and involve the Parent-Teacher Association (PTA).

### **4) Management and Capacity Building of Farmer Groups in Cooperation with Local Level Agricultural Administrations**

In order to maintain a sustainable, high-quality supply of local crops, it is effective to work with local agricultural administrations to implement capacity building for farmer groups. Often parents donate crops, but it is difficult to obtain a sustainable supply of high-quality products, so it is preferable to work with trained local farmers.

### **5) Menu Development**

School lunch menus should be varied. It is necessary to devise more menus that use local produce, and it is recommended that they be prepared in collaboration with the children, the PTA, and the women's union.

### **6) Cooks**

Preparing and cooking school lunches is time consuming. Therefore, if parents or others are asked to prepare the food, they should be paid regular incentives or rewards.

### **7) Strengthening School Lunch Task Force Coordination**

A School Lunch Task Force was established in the pilot province, with members from different government agencies in different sectors, and the strengthened collaboration was effective in implementing the program. The existence of a legal framework was also helpful in terms of political will/mission and budget flexibility for local governments.

## 2.3 Information Collection on School Lunches and “Shokuiku” Projects by JICA

### 2.3.1 School Lunches and “Shokuiku” Projects Implemented by JICA

Table 2-29 lists the school lunches and “Shokuiku” projects that JICA has implemented to date, for which information was collected and organized in this survey.

Table 2-29 School Lunches and “Shokuiku” Projects Implemented by JICA

| No | Project Title                                                                                                                                                                                | Implementation Period                      | Type of Assistance                       |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------|
| 1  | Advisor for the Improvement of Nutrition, Paraguay                                                                                                                                           | 2021-2023                                  | Individual Expert                        |
| 2  | Project for Supporting the Implementation of School Lunch Services, Mongolia                                                                                                                 | 2021-2025                                  | Technical Cooperation Project            |
| 3  | Participatory and Decentralized School Management Support Project (School for All), Madagascar                                                                                               | 2016-2020 (Phase 1)<br>2020-2024 (Phase 2) | Technical Cooperation Project            |
| 4  | Food and Nutrition Improvement Project, Madagascar                                                                                                                                           | 2019-2024 (Phase 1 and Phase 2)            | Technical Cooperation Project            |
| 5  | Project for the Improvement of the Nutritional Situation through Agriculture, Burkina Faso                                                                                                   | 2020-2025                                  | Technical Cooperation Project            |
| 6  | Structure Building Project for Promoting Community Participatory Sustainable School Meal in Collaboration Between Upazila Education Officer and NGO (Structure Building Project), Bangladesh | 2022-2025                                  | Grassroot Technical Cooperation Project* |
| 7  | LEP2.0 Development of the Healthy Central Kitchen (HCK) Guideline, Malaysia                                                                                                                  | 2023 – (3 years)                           | Country-focused Training Program         |
| 8  | School Health                                                                                                                                                                                | 2006 -                                     | Knowledge Co-Creation Program (KCCP)     |

Note\*: Japan-Bangladesh Cultural Exchange Association (JBCEA) is the implementing organization.

### 2.3.2 Data Collection and Organization Method

In this survey, information was collected, organized, and analyzed regarding the school lunch and “Shokuiku” projects by JICA according to the following four points:

1. Information was organized regarding the socioeconomic and policy background leading to the start of cooperation, the nutritional challenges of target groups, and the process leading to decisions on cooperation content.
2. Project outlines were organized, and data on implementation content, techniques, and challenges were collected and analyzed.
3. Educational materials and other resources used in cooperation cases were collected and trends were analyzed.
4. Information on cooperation content and challenges toward institutionalization and policy development was collected and organized, and approaches to sustainable school lunch and “Shokuiku” cooperation were analyzed.

Information collection, organization, and analysis were conducted in three stages as shown in Figure 2-2.

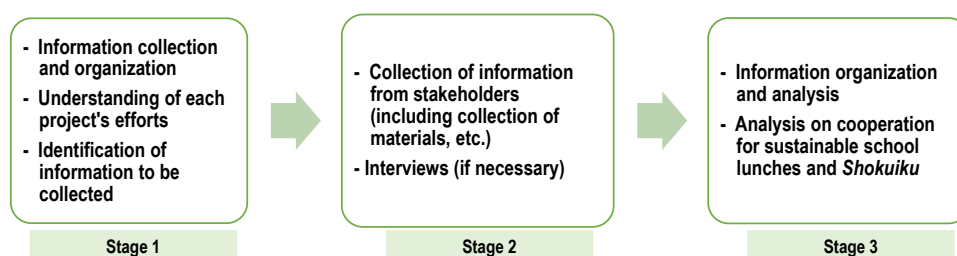


Figure 2-2 Information Gathering and Organization Procedure

First, information was collected and organized from project outlines and reports published on the JICA website to understand the initiatives in each project. At this stage, reference was also made to the final report of the “Data Collection Survey on the Direction of Support for School Lunch Programs and Workplace Nutrition and Health Promotion” (February 2022), which served as a preliminary study for this survey. Based on this review, information gaps and areas requiring further information collection were identified (Stage 1). Next, information was collected from project stakeholders, with interviews conducted as necessary (Stage 2). Finally, after collecting all information, the data was organized and analyzed (Stage 3).

### 2.3.3 Socioeconomic and Policy Background Leading to the Start of Cooperation, Nutritional Challenges of Target Groups, and Process Leading to Decisions on Cooperation Content

Table 2-30 summarizes the socioeconomic and policy background leading to the initiation of cooperation for each projects, as well as the decision-making process on the content of the cooperation. Table 2-31 summarizes the nutritional challenges faced by the target populations.

The nature of these nutritional challenges varies across country. For example, Paraguay is experiencing a “nutrition transition” due to economic growth, leading to an increase in NCDs. Mongolia faces a double burden of malnutrition, with both undernutrition and overnutrition posing significant public health concerns. Madagascar has the fifth-highest level of stunting among children under the age of five globally, while Malaysia also struggles with the double burden of malnutrition.

Governments are pursuing policy responses to these challenges. Mongolia enacted the School Lunch Law in 2019, Madagascar developed a national school lunch policy in 2016, and Burkina Faso has issued a presidential initiative to promote school feeding in 2020. In addition, Burkina Faso, led by its Ministry of Agriculture, has positioned the improvement of nutrition through agriculture as a national strategy. As described above, institutional and policy responses to nutrition issues are being promoted in each country, and it is in this context that JICA’s cooperation has been requested.

Table 2-30 Socioeconomic and Policy Background, and the Process Leading to the Decision on the Cooperation Content

| No | Project Title                                      | Socioeconomic and Policy Background, and Process Leading to the Decision on the Content of the Cooperation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Advisor for the Improvement of Nutrition, Paraguay | <ul style="list-style-type: none"> <li>Facing the “nutrition transition” and “double burden” that comes with economic growth, deaths due to NCDs account for 74% of all deaths. Many people in their 30s are affected by NCDs, and the increasing burden of medical expenses is an issue.</li> <li>Daily meals tend to be high in sugar, oil, salt, and lacking in vegetables and fruits. Therefore, improving the nutritional balance from infancy is necessary.</li> <li>The Government of Paraguay requested the dispatch of expert to contribute to promoting children’s health and reducing lifestyle-related diseases in the future through such measures as supporting the formulation of strategies for nutritional improvement, evaluating, and improving the menus offered in school lunches and at school stores, supporting the creation of educational materials such as nutritional food guides for school-age children, and strengthening public</li> </ul> |

| No | Project Title                                                                              | Socioeconomic and Policy Background, and Process Leading to the Decision on the Content of the Cooperation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |                                                                                            | relations strategies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2  | Project for Supporting the Implementation of School Lunch Services, Mongolia               | <ul style="list-style-type: none"> <li>The School Lunch Act was enacted in 2019, and the implementation of school lunches was planned from 2020. In preparation for the start of providing school lunches, not only were budgetary measures required, but also a department in charge of school lunches was planned to be established within the Ministry of Education and Science. As a result, the Ministry of Education and Science requested cooperation, and the “Data Collection Survey on “<i>Shokuiku</i>” and School Lunches in Mongolia” (FY2020) was conducted.</li> <li>During the survey, information was collected regarding “<i>Shokuiku</i>” and school lunches in Mongolia, and a debriefing session was held for relevant local organizations (Ministry of Education and Science, Ministry of Health, Ministry of Food, Agriculture and Light Industry, etc.) to share knowledge about school lunches in Japan and provide recommendations and advice for the introduction of school lunches in Mongolia.</li> <li>Based on the results of the survey, the details of cooperation for the full-scale introduction of school lunches were decided. KOICA has been providing support for school lunches in Mongolia for some time, but this project was initiated in response to a request to model a system based on Japan’s school lunch and “<i>Shokuiku</i>”, which has a history of school lunches spanning over 70 years and also has the Basic Act on <i>Shokuiku</i>, as a reference for creating a system.</li> </ul> |
| 3  | School for All, Madagascar                                                                 | <ul style="list-style-type: none"> <li>The rate of stunting among children under five is 49%, the fifth highest in the world, and malnutrition is a serious problem.</li> <li>There is a high need for school lunches in Madagascar’s school education system. The main needs of the Ministry of Education and donors are improving nutrition through school lunches and improving academic performance.</li> <li>The National Feeding Policy (2016) was formulated in 2016 and approved in 2017.</li> <li>In response to the needs of local residents who wanted to provide enough food for their children during the agricultural off-season (December to March), the project began providing school lunch support using community resources.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 4  | Food and Nutrition Improvement Project, Madagascar                                         | <ul style="list-style-type: none"> <li>The situation is serious, with stunting exceeding 60% in the three Central Highlands regions.</li> <li>Based on the government’s strong commitment to improving nutrition, the National Nutrition Plan was formulated in 2004, followed by the National Nutrition Action Plan in 2005, which set reducing chronic malnutrition as an important goal.</li> <li>The Government of Madagascar requested this project to the Government of Japan to strengthen efforts to improve nutrition, a key development issue in the country.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5  | Project for the Improvement of the Nutritional Situation through Agriculture, Burkina Faso | <ul style="list-style-type: none"> <li>The Government of Burkina Faso is actively working to improve the nutrition of its population, with several ministry policies including plans to contribute to improving nutrition. Policies such as the “National Rural Sector Program 2 2016-2020” aim to establish an economic base through agriculture and, through that, contribute to improving nutrition.</li> <li>In 2015, the government formulated the Multisector Strategic Nutrition Plan (2016-2020). In addition, in 2020, then-President Kaboré made a commitment to “Ensuring each child of school age at least one balanced meal a day”. Multiple ministries involved in the fields of agriculture, education, and health were called upon to work together and cooperate.</li> <li>In response to this situation, the Government of Burkina Faso requested the Government of Japan to implement a technical cooperation project to improve nutrition through agriculture. In particular, the 2020 Presidential Commitment calling for the provision of “balanced school lunches” emphasized an approach that drew on Japan’s extensive experience in multi-sector collaboration and improving nutrition through school lunches.</li> </ul>                                                                                                                                                                                                                                                                                            |
| 6  | Structure Building Project, Bangladesh                                                     | <ul style="list-style-type: none"> <li>The Japan-Bangladesh Cultural Exchange Association (JBCEA) aims to eliminate malnutrition and poor growth among children in poor rural areas of Bangladesh through its grassroots technical cooperation project “Establishing a Sustainable School Meal Model with Community Involvement” (2017-2021), in which schools, parents, residents, and NGOs worked together to build a sustainable school model with resident participation.</li> <li>In this project, school lunches are provided with community participation, following the menu specified by the Ministry of Primary and Mass Education. A system will be established where Upazila Education Office and NGOs work together to implement and manage sustainable school lunches with community participation, aiming to improve children’s nutrition, enhance the educational environment, and raise health awareness within the local community.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 7  | LEP2.0 Development of the HCK Guideline, Malaysia                                          | <ul style="list-style-type: none"> <li>The ASEAN region faces a double burden, with 17.9 million children under the age of five suffering from stunting, 5.4 million suffering from wasting, and more than 10% suffering from obesity.</li> <li>After three years of training on <i>Shokuiku</i> in the country-focused training program for Malaysia, the training on developing school lunch guidelines started in 2023.</li> <li>Although the standard school lunch menus exist in some ASEAN countries, there are challenges in their implementation and monitoring. Therefore, the Malaysian Ministry of Health is taking the lead in formulating guidelines for providing meals to preschool children using a central kitchen system in the ASEAN region, drawing inspiration from Japan’s central kitchen system and utilizing what has been learned in the country-focused training program.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| No | Project Title | Socioeconomic and Policy Background, and Process Leading to the Decision on the Content of the Cooperation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8  | School Health | <ul style="list-style-type: none"> <li>In the 2000s, morbidity and mortality rates among infants, children, and students remained high in many developing countries, and the impact of children's health on their learning was identified as an issue. Although governments' interest in school health was high, its implementation was not sufficient.</li> <li>In Japan, health education and health management have been conducted through school health since the Meiji Era, with the development of the School Health and Safety Law and other systems. School lunch also has a long history and is characterized by the assignment of nutrition teachers who are dedicated to <i>Shokuiku</i>. As a result, the maintenance and promotion of good health of Japanese children and the learning environment in schools that fosters such health are well developed, and the implementation of KCCP on the theme of school health in Japan was considered.</li> </ul> |

Source: Prepared by the Survey Team based on the project outlines, reports, and interviews

Table 2-31 Target Populations and Nutritional Challenges

| No | Project Title                                                                              | Target Populations                                                                                                                                              | Nutritional Challenges                                                                                                                                                                                                                                           |
|----|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Advisor for the Improvement of Nutrition, Paraguay                                         | School-aged children and adolescents (ages 5-19)                                                                                                                | Overweight and obesity                                                                                                                                                                                                                                           |
| 2  | Project for Supporting the Implementation of School Lunch Services, Mongolia               | Elementary school children (ages 6-11)                                                                                                                          | Undernutrition and overnutrition (double burden)                                                                                                                                                                                                                 |
| 3  | School for All, Madagascar                                                                 | Elementary school children, preschool children                                                                                                                  | Chronic malnutrition (children not getting enough to eat during the off-season farming)                                                                                                                                                                          |
| 4  | Food and Nutrition Improvement Project, Madagascar                                         | Women and children in the pilot communes (especially pregnant women, mothers with children under 2 years old, and children under 2 years old)                   | Chronic malnutrition (stunting)                                                                                                                                                                                                                                  |
| 5  | Project for the Improvement of the Nutritional Situation through Agriculture, Burkina Faso | Residents of the target communities, especially primary school children, children under the age of two and their mothers, and SHEP <sup>26</sup> target farmers | Chronic malnutrition (stunting)                                                                                                                                                                                                                                  |
| 6  | Structure Building Project, Bangladesh                                                     | Children in schools with school lunches, along with school officials, parents, and local residents                                                              | Malnutrition, anemia                                                                                                                                                                                                                                             |
| 7  | LEP2.0 Development of the HCK Guideline, Malaysia                                          | Nursery and kindergarten children (FY 2023)                                                                                                                     | Undernutrition and overnutrition (double burden)                                                                                                                                                                                                                 |
| 8  | School Health                                                                              | Infant and school-aged children                                                                                                                                 | While each country varies, an increasing number of countries are experiencing rising rates of overweight, obesity, and diet-related NCDs. On the other hand, issues related to underweight and malnutrition persist, creating a double burden to some countries. |

Source: Prepared by the Survey Team based on the project outlines, reports, and interviews

## 2.3.4 Summary of Project Outline and Implementation Details, and Efforts and Challenges

Table 2-32 shows an overview of the projects. The cooperation can be broadly categorized into three types: these include projects that comprehensively address both school lunches and “*Shokuiku*” (Burkina Faso, Bangladesh, etc.); projects that focus on establishing a school lunch system (Mongolia, etc.); and projects that focus on “*Shokuiku*” (Madagascar Food and Nutrition Improvement Project, etc.). Regarding counterpart (C/P) organizations, the projects are classified as follows: projects that address nutritional improvement in a multisectoral manner with three or more C/P organizations such as the Ministry of Education, Ministry of Agriculture, and Ministry of Health (Burkina Faso, Madagascar Food and Nutrition Improvement Project); projects that promote the establishment of a school meal provision system with the Ministry of Education as the main C/P (Mongolia);

<sup>26</sup> Smallholder Horticulture Empowerment & Promotion

projects implemented in collaboration between local government organizations and NGOs (Bangladesh); and projects led by the Ministry of Health, which is the implementing agency for nutrition policy (Paraguay).

In determining target areas, a variety of approaches have been taken depending on the project objectives and implementation structure, ranging from the national level (Paraguay, Mongolia, etc.) to specific state or prefecture levels (Madagascar, Burkina Faso, etc.) and pilot areas (Madagascar Food and Nutrition Improvement Project).

Table 2-32 Overview of the Projects

| No | Project Title                                                                              | Target                             | C/P Organization                                                                                                                                              | Goal                                                                                                                                                                                | Target Area                                               |
|----|--------------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| 1  | Advisor for the Improvement of Nutrition, Paraguay                                         | School Lunches and <i>Shokuiku</i> | <ul style="list-style-type: none"> <li>Ministry of Public Health and Social Welfare</li> <li>National Institute of Food and Nutrition</li> </ul>              | Strengthen the implementation of strategies to reduce obesity among school-age children.                                                                                            | Nationwide                                                |
| 2  | Project for Supporting the Implementation of School Lunch Services, Mongolia               | School Lunches                     | <ul style="list-style-type: none"> <li>Ministry of Education and Science</li> </ul>                                                                           | Nutritionally balanced school lunches are ready to be served in primary and secondary schools across the country.                                                                   | Nationwide                                                |
| 3  | School for All, Madagascar                                                                 | School Lunches                     | <ul style="list-style-type: none"> <li>Ministry of National Education, Technical and Vocational Education</li> </ul>                                          | A foundation will be established for the provision of quality basic education based on participatory and decentralized school management in elementary schools in the target areas. | Pilot areas (Regions)                                     |
| 4  | Food and Nutrition Improvement Project, Madagascar                                         | <i>Shokuiku</i>                    | <ul style="list-style-type: none"> <li>National Nutrition Office</li> <li>Ministry of Agriculture and Livestock</li> <li>Ministry of Public Health</li> </ul> | A multi-sectoral intervention framework is established through demonstration of improved nutrition for women and children.                                                          | Pilot areas (communes)                                    |
| 5  | Project for the Improvement of the Nutritional Situation through Agriculture, Burkina Faso | School Lunches and <i>Shokuiku</i> | <ul style="list-style-type: none"> <li>Ministry of Agriculture</li> <li>Ministry of Education</li> <li>Ministry of Health</li> </ul>                          | Behavioral change for improving nutrition is promoted.                                                                                                                              | Region                                                    |
| 6  | Structure Building Project, Bangladesh                                                     | School Lunches and <i>Shokuiku</i> | <ul style="list-style-type: none"> <li>Upazila Education Office</li> </ul>                                                                                    | Establish a school lunch system that can be spread throughout the Upazila through partnership and collaboration between the Upazila, NGOs, and community.                           | Elementary schools in the target Upazilas (Three schools) |
| 7  | LEP2.0 Development of the HCK Guideline, Malaysia                                          | School Lunches and <i>Shokuiku</i> | <ul style="list-style-type: none"> <li>Ministry of Health, Ministry of Education, etc.</li> </ul>                                                             | Understanding and applying Japanese school lunch management concepts will improve the ability to manage and create guidelines.                                                      | Nationwide, and the ASEAN Region                          |
| 8  | School Health                                                                              | School Lunches and <i>Shokuiku</i> | <ul style="list-style-type: none"> <li>Ministry of Health, Ministry of Education, etc.</li> </ul>                                                             | Establishing and improving school health systems suited to each country.                                                                                                            | Nationwide                                                |

Source: Prepared by the Survey Team based on the project outlines, reports, and interviews

Table 2-33 lists the implementation efforts and challenges in the projects. Implementation efforts include: (1) use of a multisectoral approach through collaboration among multiple ministries and agencies (e.g., Mongolia, Burkina Faso); (2) use of local resources (e.g., Madagascar School for All Project); (3) creation of synergistic effects through collaboration with other schemes (e.g., Mongolia); and (4) development of effective teaching materials and tools (e.g., Madagascar Food and Nutrition Improvement Project). On the other hand, challenges include: (1) institutional and budgetary constraints (e.g., Mongolia, Madagascar); (2) constraints on direct inter-organizational collaboration with the Ministry of Education (e.g., Paraguay); and (3) building a sustainable implementation system (e.g., Madagascar Food and Nutrition Improvement Project).

Overall, JICA's school lunches and "Shokuiku" projects are characterized by a multisectoral approach with an emphasis on community involvement. These efforts provide flexibility to address the local needs and circumstances, contributing to effective implementation. In particular, the development and use of visual teaching

materials and tools help reach a broad audience, including people with low literacy skills. However, key challenges include budgetary and institutional constraints, as well as sustainability. In particular, government budgetary and institutional constraints have affected the continuation and expansion of activities. In addition, while the multisectoral approach has been effective, inter-organizational collaboration at the implementation level remains a challenge.

Table 2-33 Implementation Efforts and Challenges

| Implementation Efforts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Implementation Challenges                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Advisor for the Improvement of Nutrition, Paraguay</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <ul style="list-style-type: none"> <li>Focal point meetings were held regularly to promote collaboration between the Department of Vigilance of the Non-communicable Diseases, Ministry of Public Health and Social Welfare and the National Institute of Food and Nutrition.</li> <li>The advisor also developed a teaching guide of existing teaching materials and promoted effective use of the teaching materials.</li> </ul>                                                                                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>There was a mismatch between the roles of the counterpart (C/P) agencies (the Department of Vigilance of the Non-communicable Diseases, Ministry of Public Health and Social Welfare and the National Institute of Food and Nutrition) and the activities of the advisor. There is a difficulty in establishing a direct working relationship with the Ministry of Education, which is in charge of school meals and “<i>Shokuiku</i>”.</li> <li>Cancellation of some activities due to budget constraints (e.g., the creation of a nutritional food guide was cancelled and replaced with the creation of a guide on how to use existing materials).</li> </ul>   |
| <b>Project for Supporting the Implementation of School Lunch Services, Mongolia</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <ul style="list-style-type: none"> <li>Establishment of school lunch committees at the central and provincial levels to share information and promote collaboration among related organizations.</li> <li>Creation of synergistic effects through collaboration with the JICA volunteers (nutritionists) and the grassroots technical cooperation project, “Nutrition Improvement and “<i>Shokuiku</i>” for Children in Mongolia” (2023-2024).</li> <li>Improvement of menus based on the results of dietary survey (calcium, vitamins, dietary fiber deficiency) and supplementation through public-private partnerships (with milk associations and private companies).</li> </ul>                                                                                                      | <ul style="list-style-type: none"> <li>Difficulty in meeting nutrition standards with limited school lunch funds.</li> <li>Constraints on food procurement due to bidding laws.</li> <li>Difficulty in sharing information and coordinating activities with other donors (KOICA).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>School for All, Madagascar</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <ul style="list-style-type: none"> <li>Voluntary school lunch operations utilizing community resources.</li> <li>Responding to local needs for food security during the off-season of agriculture (in one case, the school attendance rate improved from 76% to 90% during the off-season).</li> <li>Efficient dissemination of voluntary school lunch through the forum approach<sup>27</sup>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>Difficulty in securing the budget necessary for the nationwide expansion of school lunch programs.</li> <li>Sustainability of voluntary school lunch programs (especially challenges in securing and managing food ingredients).</li> <li>Differences in implementation between rural and urban areas (especially in areas where it is difficult to obtain ingredients, which affects the quality and frequency of school lunches, etc.)</li> </ul>                                                                                                                                                                                                                |
| <b>Food and Nutrition Improvement Project, Madagascar</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <ul style="list-style-type: none"> <li>Developed a multisector training package that integrates training content from four sectors, i.e.: nutrition, health, agriculture, and water sanitation. Forming a team of master trainers in each region to conduct quality control of cross-sectoral training.</li> <li>Training of community representatives as extension agents through the training. Developed educational materials in the form of storyboards and implemented training using tablets for effective dissemination at the village level.</li> <li>Developed a behavioral change tool called “Food Tracking” to promote awareness and behavioral change at home by visualizing the nutritional balance of the diet through the application of stickers by children.</li> </ul> | <ul style="list-style-type: none"> <li>Issues related to the sustainability of the dissemination system, such as the cost of training participation for resident representatives (travel expenses, daily allowance, etc.) and securing incentives to conduct training in the villages.</li> <li>The training content is difficult to retain due to the wide variety of training contents and the presence of people with low literacy skills. Need to devise teaching materials (e.g., use of illustrations, etc.).</li> <li>Although a multisectoral approach is adopted at the policy level, there is insufficient coordination and collaboration among sectors at the implementation level.</li> </ul> |
| <b>Project for the Improvement of the Nutritional Situation through Agriculture, Burkina Faso</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <ul style="list-style-type: none"> <li>The project aims to increase farmer income through the introduction of SHEP, raise awareness of the importance of improving nutrition, and increase parents associations’ donations for school lunch ingredients.</li> <li>Comprehensive multi-sectoral (agriculture, education, health) interventions.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>The government provides the basic ingredients for school lunches (rice, beans, and oil), and the parents associations provide the cost of ingredients for side dishes. However, the provision of school lunches is unstable due to the government’s late delivery of foodstuffs and lack of financial resources of the parents associations.</li> </ul>                                                                                                                                                                                                                                                                                                            |

<sup>27</sup> The forum approach refers to a problem-solving-oriented collaborative platform developed by JICA through its “School for All” projects in various countries. Various parties involved in educational development in the field come together to analyze problems and derive independently feasible solutions on specific educational issues, and to agree on an action plan for each party involved in the form of a “pledge” to be included in the forum resolution.

| Implementation Efforts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Implementation Challenges                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Structure Building Project for Promoting Community Participatory Sustainable School Meal, Bangladesh</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>Establishment of a school lunch management committee and organization of school lunch support activities by mothers' groups. Established a community-based management system, including collection of donations and monitoring of the school lunch program.</li> <li>Implemented biannual anthropometric measurements and introduced personal cards. A visual record system using stamps, etc., was adopted for parents who have difficulty understanding graphs.</li> <li>Nutrition balance charts are posted in schools to promote children's understanding of "Shokuiku" through visual aids.</li> </ul> | <ul style="list-style-type: none"> <li>New operational challenges have emerged due to changes in activity patterns following the government's tightening of control after the COVID-19 pandemic, including the ban on cooking in schools. There is a need to restructure the involvement of local residents.</li> </ul> |
| <b>LEP2.0 Development of the Healthy Central Kitchen Guideline, Malaysia</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>Develop school lunch provision guidelines for preschool children in the ASEAN region, based on the knowledge and experience of school lunch management in Japan (especially for nursery schools and kindergartens).</li> <li>Participation of government officials involved in school lunch programs other than the Ministry of Health (Ministry of Education, Ministry of Rural Development, State Health Department, etc.)</li> </ul>                                                                                                                                                                     | <ul style="list-style-type: none"> <li>Developing guidelines that are tailored to the specific circumstances of each ASEAN country.</li> <li>Time constraints since the work is part of the regular work of the Ministry of Health counterparts.</li> </ul>                                                             |
| <b>School Health</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>Sharing of comprehensive knowledge of school lunch and <i>Shokuiku</i> in Japan (combination of lectures, educational videos, observation tours, etc.)</li> <li>Practical learning through field visits (observation of school lunch facilities, catering facilities, and actual lunch times).</li> </ul>                                                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>The follow-up of participants after their return to Japan is difficult, and the application of the training results to specific cooperation projects is limited.</li> </ul>                                                                                                      |

Source: Prepared by the Survey Team based on the project outlines, reports, and interviews

### 2.3.5 Teaching Materials Used in the Target Projects

Information was collected on educational materials utilized or created in the target projects. A summary is shown in Table 2-34. In the projects other than training, various activities were conducted to create and use teaching materials and various tools (manuals, etc.) necessary to achieve the goals of the projects. In Paraguay, supplementary teacher materials were developed for existing materials, and materials on healthy breaks and school stores were used effectively.

In the creation and use of the teaching materials, efforts were made to take into consideration the level of understanding and ease of use by the target audience. For example, the Madagascar School for All Project used a "picture-story show" format to convey information on "Shokuiku" in an easy-to-understand manner for children in their early school years. In the Madagascar Food and Nutrition Improvement Project, a sticker-type behavioral change tool was developed to visualize the nutritional balance of meals.

Another unique feature is the adaptation to formats appropriate to local conditions. This includes improving and supplementing existing teaching materials, creating materials in local languages, and using best practices from the region. In addition, sustainability considerations have been taken into account, with measures including joint development with local counterparts, development of instructional materials for teachers and manuals for extension workers, and incorporation of monitoring and evaluation tools. Through these efforts, the project aims to develop a teaching tool that effectively contributes to achieving the goals of each project.

Table 2-34 Development and Use of Teaching Materials in the Target Projects

| No | Project Title                                      | Development and Use of Teaching Materials                                                                                                                                                                                                                                                                      |
|----|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Advisor for the Improvement of Nutrition, Paraguay | <ul style="list-style-type: none"> <li>The materials for (1) Healthy Break Time (<i>Recreo Saludable</i>) and (2) School Shop were already available, but there was no guide on how to use them. As a result, <b>teacher materials (teaching guides)</b> were developed for the existing materials.</li> </ul> |

| No | Project Title                                                                                  | Development and Use of Teaching Materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2  | Project for Supporting the Implementation of School Lunch Services, Mongolia                   | <ul style="list-style-type: none"> <li>Using the results of the meal situation survey and Japanese teaching materials as a reference, the new menu development team and teaching materials development team of the Mongolian University of Science and Technology, together with project experts, developed a <b>menu book</b> for school lunch and a <b>nutritionist's manual</b> (PDCA guide) for school lunch.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3  | Participatory and Decentralized School Management Support Project (School for All), Madagascar | <ul style="list-style-type: none"> <li>The project created and introduced <b>picture story materials</b> (two types regarding “<i>Shokuiku</i>”: “washing hands” and “let’s eat without leaving any leftovers”) for preschool children.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 4  | Food and Nutrition Improvement Project, Madagascar                                             | <ul style="list-style-type: none"> <li>The training was cascaded to project beneficiaries in the form of a “<b>multisectoral training</b>” package that included training in the four sectors, namely, nutrition, health, agriculture, and water and sanitation.</li> <li>Eleven main training materials were used. The main materials used in the training included <b>nutrition materials</b> to provide basic knowledge, <b>behavioral change tools</b> to visualize meal nutritional balance and guide crop selection, and a <b>collection of crop-specific nutritional information and recipes</b> to highlight the nutritional value of crops grown in the kitchen garden and how to prepare it. Additionally, measures such as the use of stickers to record meals and promoting good practices in the community were implemented to facilitate beneficiaries.</li> </ul> |
| 5  | Project for the Improvement of the Nutritional Situation through Agriculture, Burkina Faso     | <ul style="list-style-type: none"> <li>Plans to develop <b>booklets for parents</b> to improve child nutrition (no plans to develop educational materials for children).</li> <li>As of October 2023, a review is underway of the outreach flipcharts prepared by the Ministry of Health, as well as educational materials from neighbouring African countries, focusing on improving nutrition. The key messages will be selected, review meetings will be held with the C/P, and a draft is scheduled to be prepared by the end of December 2023.</li> </ul>                                                                                                                                                                                                                                                                                                                   |
| 6  | Structure Building Project, Bangladesh                                                         | <ul style="list-style-type: none"> <li>The <b>child growth measurement record cards</b> for the anthropometric measurements (conducted twice a year) were created and introduced. Since it is difficult for mothers to understand the graphs, the project plans to devise ways to make them visually understandable.</li> <li>Food cards, balance charts, etc., will be created for “<i>Shokuiku</i>” activities.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 7  | LEP2.0 Development of the Healthy Central Kitchen Guideline, Malaysia                          | <ul style="list-style-type: none"> <li>In FY2023, lectures and site visits on school lunch management (especially for preschools and kindergartens) in Japan was conducted (total of 18 sessions, two weeks). Through the training, a draft of the <b>School Meal Provision Framework for Preschool Children</b> for the ASEAN Region was developed.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 8  | School Health                                                                                  | <ul style="list-style-type: none"> <li>The training was conducted using a combination of instructional videos, materials, and visits of educational institutions, etc. (62 sessions in total for five weeks in FY2023).</li> <li>Regarding school lunches and “<i>Shokuiku</i>”, the program includes introduction of <b>nutrition education tools</b> actually used in Japanese schools, and observation of meal delivery facilities inside and outside of schools.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                  |

Source: Prepared by the Survey Team based on the project outlines, reports, and interviews

### 2.3.6 Cooperation Contents and Challenges Toward Institutionalization and Policy Formulation, and the Ideal Form of Cooperation for Sustainable School Meals and “Shokuiku”

Table 2-35 shows the cooperation contents and challenges for the institutionalization and policy formulation of school lunches and “*Shokuiku*” in the target projects. In order to institutionalize and formulate policies regarding school lunches and “*Shokuiku*”, collaboration with the Ministry of Education, which is the lead ministry, is essential. In the case of Paraguay, direct collaboration with the Ministry of Education was difficult. Therefore, the efforts to institutionalize school lunches and “*Shokuiku*” were limited. Meanwhile, in Mongolia, with the Ministry of Education as the main counterpart, a more comprehensive institutionalization is being pursued by building a collaborative system with the Ministry of Health and the Ministry of Agriculture through the School Meal Committee.

Additionally, securing sufficient budgets is an important element in institutionalizing and formulating policies. In the case of Madagascar, budgetary constraints is a major issue since the budget needed to provide nationwide school lunches is equivalent to approximately 121% of the national budget for primary education. For this reason, in addition to securing government budgets, it is important to create mechanisms for obtaining cooperation from local communities and the private sector.

Table 2-35 Cooperation Contents and Challenges for the Institutionalization and Policy Formulation of School Lunches and “*Shokuiku*”

| No | Project Title                                                                              | Cooperation Contents and Challenges for Institutionalization and Policy Formulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Advisor for the Improvement of Nutrition, Paraguay                                         | <ul style="list-style-type: none"> <li>The Ministry of Education is responsible for the institutionalization of school lunches and “<i>Shokuiku</i>”, but it has been difficult to cooperate with the ministry. The counterpart agencies in this project were the Ministry of Public Health and Social Welfare and the National Institute of Food and Nutrition, but in order to institutionalize school lunches and “<i>Shokuiku</i>”, the Ministry of Education should also be included as a counterpart agency.</li> </ul>                                                                                                                                                                                                                                                                                          |
| 2  | Project for Supporting the Implementation of School Lunch Services, Mongolia               | <p>(Since school lunches have been institutionalized, the details of cooperation contents and issues for improvement are described below.)</p> <ul style="list-style-type: none"> <li>The tender law is the law that governs all procurement of goods, but when it comes to improving school lunches, it is necessary to incorporate flexible application and exceptions that suit local conditions.</li> <li>When increasing school lunch fees, it is necessary to promote understanding among other ministries and agencies and the public as a whole based on evidence.</li> <li>Regarding the above two points, the project is focused on lobbying government ministries and agencies through the School Lunch Committee and on public relations using television and social media.</li> </ul>                     |
| 3  | School for All, Madagascar                                                                 | <ul style="list-style-type: none"> <li>The self-sustaining school lunch model was disseminated through the forum approach. However, a major challenge is to secure a budget for school lunch provision (provision of 175 school lunch days per year requires a budget equivalent to about 121% of the national budget for primary education).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 4  | Food and Nutrition Improvement Project, Madagascar                                         | <ul style="list-style-type: none"> <li>Although activities related to institutionalization and policy making of “<i>Shokuiku</i>” are not included, support is provided to strengthen the evidence-based advocacy capacity of the National Nutrition Office and the destination agencies in the target regions to link “<i>Shokuiku</i>” and nutrition improvement activities with policy.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 5  | Project for the Improvement of the Nutritional Situation through Agriculture, Burkina Faso | <ul style="list-style-type: none"> <li>Although no efforts have been made toward institutionalization or policy formulation in the area of school lunch and “<i>Shokuiku</i>”, support for height and weight measurement in elementary school students has been initiated to ascertain the nutritional status of children (currently Burkina Faso has no system of health checkups or height and weight measurement in schools). After demonstrating the importance of understanding the nutritional status of children based on the data, the plan is to compile recommendations for the introduction of a height and weight measurement system.</li> </ul>                                                                                                                                                           |
| 6  | Structure Building Project, Bangladesh                                                     | <ul style="list-style-type: none"> <li>The project aims to establish a model project that combines school lunch with “<i>Shokuiku</i>”, while responding to changes in the situation in Bangladesh. Taking a cue from Japanese <i>Shokuiku</i>, the school lunch program is positioned as a part of education, and efforts are being made to raise children’s health awareness.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7  | LEP2.0 Development of the Healthy Central Kitchen Guideline, Malaysia                      | <ul style="list-style-type: none"> <li>This training aims to establish guidelines for the provision of school lunches for preschool children through a central kitchen system in the ASEAN region, and is expected to contribute to the institutionalization of school lunches and “<i>Shokuiku</i>” in the region.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 8  | School Health                                                                              | <ul style="list-style-type: none"> <li>Before the training, participants are required to submit an inception report to deepen their understanding of the issues in their home countries. During the training period, each participant will analyze the issues and needs in his/her country, develop an action plan that can be implemented after returning home, and present it on the last day of the training to obtain advice from the lecturers and other participants. The goal is to then take the refined action plan back to their home countries and put it into practice.</li> <li>It was not possible to follow up with all of the participants after their return. Even when good local examples and local needs are identified, it is difficult to link them to specific cooperation projects.</li> </ul> |

Source: Prepared by the Survey Team based on the project outlines, reports, and interviews

Table 2-36 shows the opinions of the stakeholders of the target projects regarding sustainable school lunches and “*Shokuiku*”.

Table 2-36 Opinions on Sustainable School Lunches and “*Shokuiku*”

| No | Project Title                                                                | Opinions on Sustainable School Lunches and “ <i>Shokuiku</i> ”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Advisor for the Improvement of Nutrition, Paraguay                           | <ul style="list-style-type: none"> <li>In order to provide support for nutritional issues in school-age children, it is necessary to designate the Ministry of Education, which is the lead ministry, as the C/P.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2  | Project for Supporting the Implementation of School Lunch Services, Mongolia | <ul style="list-style-type: none"> <li>Government commitment is a critical factor in the successful implementation of school lunch programs. In many countries, the primary ministry responsible for school lunches is the ministry of education. However, it is also essential to obtain understanding and cooperation from multiple ministries, including health, agriculture, and finance. This requires the establishment of a multi-sectoral framework.</li> <li>Since a budget is also required for providing school lunches, in order to make it sustainable, in addition to securing a national budget, cooperation from parents and the private sector may also</li> </ul> |

| No | Project Title                                                                              | Opinions on Sustainable School Lunches and “ <i>Shokuiku</i> ”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |                                                                                            | <p>be necessary, depending on the situation in each country.</p> <ul style="list-style-type: none"> <li>Improving the nutrition of school-age children through school lunches alone is difficult. Therefore, it is desirable to provide “<i>Shokuiku</i>” to school-age children, parents, and teachers at the same time.</li> <li>In order to raise awareness of correct knowledge about nutrition, it is important to train nutritionists and utilize them in the school lunch area.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 3  | School for All, Madagascar                                                                 | <ul style="list-style-type: none"> <li>In order to make school lunches sustainable, the participation of local communities and parents is important. With active involvement of local people, school lunch operations will run more smoothly, and it will be more likely that meals that meet the needs of the local community will be provided.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4  | Food and Nutrition Improvement Project, Madagascar                                         | <p>(Since school lunches are not included in the activities, the following is a description of how sustainable “<i>Shokuiku</i>” cooperation should be.)</p> <ul style="list-style-type: none"> <li>“<i>Shokuiku</i>” is an activity in which it is difficult for beneficiaries to immediately feel the effects, and it is also difficult for those implementing the activities to see the output. Therefore, in order to make “<i>Shokuiku</i>” sustainable, two things are important: (1) it must be enjoyable for beneficiaries; and (2) the effects and results must be made visible.</li> <li>Both (1) and (2) must be in line with the actual conditions of the target area. For example, with regard to (1), possible activities would include developing and introducing recipes that are particularly tasty for children to eat, and developing educational materials that make learning about nutrition fun; with regard to (2), possible activities would include developing tools to visualize the nutritional balance of meals (e.g., Food Tracking) and creating maps that visualize the nutritional status and nutritional activities in the target area.</li> <li>For both (1) and (2), Japan has accumulated a wide range of knowledge through its implementation of <i>Shokuiku</i> to date, and it is therefore possible to provide cooperation that makes use of Japan’s knowledge and experience.</li> </ul> |
| 5  | Project for the Improvement of the Nutritional Situation through Agriculture, Burkina Faso | <ul style="list-style-type: none"> <li>Under the current school lunch system, donations of school lunch ingredients by parents’ associations are essential to providing nutritionally balanced school lunches. To secure continued donations by parent’s associations after the project is completed, it is necessary to raise awareness about the significance of consuming a nutritionally balanced diet during the school-age years.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 6  | Structure Building Project, Bangladesh                                                     | <ul style="list-style-type: none"> <li>Although it is not possible to target all children in Bangladesh, the first goal is to establish an effective model that combines “<i>Shokuiku</i>” with school lunches, and then to record the experience in a form that can be shared.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

Source: Prepared by the Survey Team based on the project outlines, reports, and interviews

In addition, a questionnaire given to participants in the KCCP School Health revealed the following impressions about school lunches and *Shokuiku* in Japan:

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>&lt;School Lunch&gt;</p> <p>Key words of particular interest: school lunch centers, hygiene management, <i>Shokuiku</i> through school lunches, School Lunch Law</p> <ul style="list-style-type: none"> <li>School lunches are positioned as an educational activity, allowing students to learn healthy and hygienic habits in a more practical way than through textbooks. To achieve this, I would like to propose to my country that the school lunch time be extended from 20 minutes to 40 minutes (participant from Sri Lanka).</li> <li>The daily food inspection routine after cooking and the kitchen setup were helpful (participant from Sierra Leone)</li> <li>It was interesting to see how the effects of school lunches were explained using the historical changes in the growth curves of Japanese children (participant from Malaysia).</li> </ul> <p>&lt;<i>Shokuiku</i>&gt;</p> <p>Key keywords of particular interest: food waste, traditional cuisine, teaching materials</p> <ul style="list-style-type: none"> <li>What is fascinating is that the accumulation of each small activity provided in <i>Shokuiku</i> that allows children to acquire comprehensive knowledge, which leads to more desirable behavioral changes (participant from Sri Lanka)</li> <li>There were various ideas for teaching materials that health administrators would not have thought of (Ibid.).</li> <li><i>Shokuiku</i> through cross-disciplinary collaboration and teaching traditional cuisine (participant from Zambia)</li> <li>The concept of <i>Shokuiku</i> itself is new to my country. The themes of <i>Shokuiku</i> include not only the importance of nutrition, but also a wide range of other topics such as food safety, the history of food, gratitude for food, not producing food waste, the importance of breakfast, and the problem of eating alone (participants from Malaysia, etc.)</li> <li>Nutrition teachers are placed in every school (participant from Ecuador)</li> <li>The teaching materials (especially the human anatomy apron) were good (participant from Sierra Leone)</li> </ul> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

In light of the above, the following points are crucial to achieving sustainable school lunches and “*Shokuiku*” cooperation:

First, it is important to establish an institutional basis and a multisectoral, comprehensive approach to effectively promote school lunches and “*Shokuiku*”. This includes the appropriate selection of counterpart institutions, led by the Ministry of Education, and the establishment of a framework for inter-ministerial collaboration with the Ministry of Health, Ministry of Agriculture, and other ministries. Given the involvement of multiple sectors, including education, health, and agriculture, it is essential to establish a framework for collaboration among the relevant ministries and agencies. In the cases of Mongolia and Burkina Faso, a multi-agency committee has been established, and a mechanism for regular information sharing is being developed.

Second, the participation of local communities is essential. In Madagascar and Bangladesh, parents and local residents are actively involved in the management of school lunch programs, aiming for sustainable operations that meet local needs. Community understanding and cooperation play an important role in securing food ingredients and collecting school lunch fees.

Third, it is important to secure a stable financial base. As demonstrated by the Madagascar case, implementing school lunches on a national scale requires substantial budget allocation. Therefore, in addition to securing government budget, it is necessary to establish sustainable funding mechanisms that incorporate support from local communities and the private sector.

Finally, leveraging Japanese knowledge and experience is also critical. Participants in the KCCP “School Health” expressed a high level of interest in Japan’s comprehensive approach to school lunch and *Shokuiku*, as well as its practical teaching materials. In particular, Japan’s experience in positioning school lunch as an educational activity and implementing it in combination with *Shokuiku* provides valuable insights for many countries.

While taking these points into account, a more effective and sustainable school lunch and *Shokuiku* cooperation can be realized by adopting a flexible approach tailored to each country’s circumstances. In the future, it will be necessary to consider how cooperation should be tailored to each country’s context, while further drawing on existing best practices and lessons learned.

## 2.4 Analysis of the Advantages of Japanese School Lunches and “Shokuiku” System and Past Initiatives

The "Information Collection and Confirmation Survey on the Direction of Support Related to School Lunch Programs and Nutrition and Health Promotion Programs in the Workplace"<sup>28</sup> was conducted by JICA in 2021, where Japan's school lunch program was analyzed. Based on information on the situation surrounding school lunches in other countries (including low-income and middle-income countries) and an overview of support by major donors, the survey organized the characteristics of Japan's school lunches into "ten cooperation menus" and proposed support models according to the stage of social development of the target countries (as seen in Table 2-37).

Table 2-37 Ten Cooperation Menus that Make Use of the Unique Features of Japanese School Lunches

|    |                                                                 |
|----|-----------------------------------------------------------------|
| 1  | Creating school lunch intake guidelines                         |
| 2  | Nutrition teacher                                               |
| 3  | School lunch providers (cooks, school nurses, principals, etc.) |
| 4  | Hygiene management                                              |
| 5  | Food procurement (including inventory management)               |
| 6  | Monitoring/assessment                                           |
| 7  | Nutrition education and fostering self-reliance                 |
| 8  | Private sector collaboration (operation outsourcing)            |
| 9  | Community collaboration promotion                               |
| 10 | Strengthening administrative support for school lunches         |

Source: [123]

The aforementioned survey analyzed Japan's "school lunch program" from multiple angles, and organized information on "food education" as one of the components of the school lunch program. The contents were about "evaluation of food education" and "food education promotion plan," but the scope of the analysis did not cover the components of food education in Japan or the characteristics of food education in Japan compared with other countries. Thus, this survey will focus on collecting and analyzing information on these points.

### 2.4.1 Components of School Lunches in Japan

As mentioned in the previous section, detailed information about school lunches in Japan was compiled and analyzed in the aforementioned survey, but only the most important points will be listed below.

#### (1) Major Legal Systems Concerning School Lunches

The lead ministry for the implementation of school lunches in Japan is the Ministry of Education, Culture, Sports, Science and Technology; while the Ministry of Health, Labor and Welfare is in charge of legal systems related to nutrition and hygiene; and the Ministry of Agriculture, Forestry and Fisheries is in charge of food education and local production for local consumption. The three ministries work together to ensure an effective implementation of school lunches. The main legal systems related to the implementation of school lunches by each ministry are summarized in Table 2-38.

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<sup>28</sup> Since the target of this survey was "preschool to elementary school age for school lunches, and elementary school age for food education, including parents," the analysis results of "workplace nutrition and health support programs" in the above-mentioned survey were not included in the review.

Table 2-38 1Legal Systems Related to the Implementation of School Lunches

| Responsible Ministry                                           | Law/System Name (Year of Establishment/Foundation)            | Overview                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ministry of Education, Culture, Sports, Science and Technology | School Education Act (1947)                                   | <p>The 2004 amendment stipulates that nutritional education should be carried out throughout all school educational activities, and stipulates the creation of an "overall plan for nutritional education" as well as the duties of nutrition teachers and school nutrition staff.</p> <p>As a teaching point, the use of locally produced agricultural, such as forestry and fishery products, is recommended. Instructors instructed that nutrition education at schools be promoted in cooperation with related teachers and staff, with nutrition teachers at the core.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                | School Lunch Act (1954)                                       | <p>In light of the fact that school lunches contribute to the healthy development of the mind and body of children and students, and play an important role in nurturing a correct understanding and appropriate judgment regarding food among children and students, the purpose of this law is to promote the dissemination and improvement of school lunches and food education in schools. The 1974 amendment created the school nutrition staff (staff paid for by the prefecture).</p> <p>The following goals are set:</p> <ul style="list-style-type: none"> <li>To promote and maintain good health through proper nutrition.</li> <li>2) To deepen a correct understanding of food in daily life, to develop judgment that will enable one to maintain a healthy diet, and to cultivate desirable eating habits.</li> <li>3) To enrich school life and foster a positive sociability and cooperative spirit.</li> <li>4) To deepen understanding that diet is based on the blessings of nature, and to foster a spirit of respect for life and nature, as well as an attitude that contributes to the conservation of the environment.</li> <li>5) To deepen understanding of how dietary life is supported by various activities of people involved in food, and to foster an attitude of respect for hard work.</li> <li>6) To deepen understanding of the excellent traditional food culture of our country and each region.</li> </ul> <p>To provide a correct understanding of food production, distribution, and consumption.</p> |
|                                                                | Establishment of School Lunch Implementation Standards (1954) | The School Lunch Act stipulates the necessary nutritional amount, the implementation method and content of school lunches, hygiene management, etc. The School Lunch Implementation Standards stipulate school lunch intake standards, and nutritional management of school lunches is based on these standards. The school lunch intake standards are based on the Ministry of Health, Labor and Welfare's Dietary Reference Intakes for Japanese, and stipulate target and standard values for the energy and nutrients that are desirable to consume at school lunches according to age.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                | Nutrition Teacher System (2005)                               | With a rise in awareness of poor eating habits, the government has decided to assign nutrition teachers to schools, who will play a central role in promoting food education, with the aim of helping children acquire "self-food management skills" and "desirable eating habits" so that they can live healthy lives in the future.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                | Revised Curriculum Guidelines (2017)                          | In the "classroom activities" section of the special activities section, "school lunches based on the perspective of food education and the formation of desirable eating habits" were presented. It is expected that through school lunches, students will review and improve their own eating habits, develop desirable eating habits for life, and foster better human relationships and sociability through meals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ministry of Health, Labour and Welfare                         | Basic Law on Food Education                                   | Regarding food education, the basic principle was established as                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Responsible Ministry                   | Law/System Name<br>(Year of Establishment/Foundation)     | Overview                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                        | (2005)                                                    | "cultivating appropriate judgment regarding food and realizing healthy eating habits throughout one's life, thereby contributing to the promotion of physical and mental health and the development of rich human beings," and the responsibilities of the national and local governments were clarified.                                                                                                                                                                                                                                                                                   |
|                                        | The Fourth Basic Plan for Promoting Food Education (2021) | The first edition was established in 2006. The current plan is the fourth one, covering the five-year period from 2021 to 2025. The priority areas are: 1) promoting food education to support mental and physical health throughout life; 2) promoting food education to support sustainable food; and 3) promoting food education in response to the "new normal" and digitalization. Activities include promoting food education at home, school, nursery school, and in the community.                                                                                                  |
| Ministry of Health, Labour and Welfare | Dietitian Law (1947)                                      | It stipulates the general duties and qualifications of nutritionists and registered dietitians.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                        | Nutritional Improvement Methods (1952)                    | This law was enacted with the aim of improving the nutrition of the nation. It stipulates the implementation of a national nutrition survey, nutritional guidance by local governments, testing of the nutritional content of foods, and the labeling of nutritional content. With the enforcement of the Health Promotion Act, it was abolished in 2002.                                                                                                                                                                                                                                   |
|                                        | Registered Dietitian System (1962)                        | A national qualification established by a partial revision of the Dietitian Law. The national examination began in 1985.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                        | Health Promotion Act (2002)                               | It repeals the Nutrition Improvement Act of 1952 and replaces it. Operators of designated food service facilities are required to assign nutritionists and registered dietitians to the facilities and manage their nutrition. Based on Article 16-2 of the Health Promotion Act, the Minister of Health, Labour and Welfare sets standards for the amount of energy and nutrients that are desirable for maintaining and promoting the health of the nation (Dietary Reference Intakes for Japanese People), and these are revised every five years. The 2020 version is currently in use. |

Source: [124]Based [125]on , created by the Survey Team

## (2) Roles of Parties Involved in School Lunch Provision

Various parties are involved in providing school lunches. The roles and responsibilities of the main stakeholders are summarized in Table 2-39.

Table 2-39 Roles and Duties of Parties Involved in Providing School Lunches

| Organization Name                                              | Main Roles and Responsibilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ministry of Education, Culture, Sports, Science and Technology | <ul style="list-style-type: none"> <li>Establishment of "School Lunch Intake Standards" based on the "Standards for School Lunch Hygiene Management" and the "Dietary Reference Intakes for Japanese" formulated by the Ministry of Health, Labor and Welfare</li> <li>Developing policies and legislation related to school lunches and food education</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Ministry of Agriculture, Forestry and Fisheries                | <ul style="list-style-type: none"> <li>Comprehensive and planned implementation of measures to promote food education</li> <li>Coordination of the Food Education Promotion Council and related ministries and agencies regarding food education</li> <li>Promoting the use of domestically produced and locally produced ingredients in school lunches</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Ministry of Health, Labour and Welfare                         | <ul style="list-style-type: none"> <li>Understanding the health and nutritional status of the nation's citizens, including children and students, through the National Health and Nutrition Survey</li> <li>Establishment of the "Dietary Reference Intakes for Japanese" (standards for the amount of energy and nutrients that are desirable to consume in order to maintain and improve health)</li> <li>Dietitian examination, and grasping the number of training facilities for dietitians, nutritionists, and chefs, and the number of licenses issued</li> <li>Formulating dietary guidelines in cooperation with the Ministry of Education, Culture, Sports, Science and Technology and the Ministry of Health, Labor and Welfare</li> <li>Promoting food education for health promotion in the community</li> </ul> |
| Local Governments                                              | <ul style="list-style-type: none"> <li>Provision of school meals (covering facilities and personnel costs)</li> <li>Creating a food education promotion plan</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Board of Education                                             | <ul style="list-style-type: none"> <li>School lunch affairs</li> <li>Guidance and advice to schools regarding school lunch operations</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Prefectural School Lunch Association                           | <ul style="list-style-type: none"> <li>Supplying food ingredients to schools or school lunch kitchens</li> <li>Sanitation inspection and analysis of school lunches</li> <li>Cooking classes, training sessions, menu creation support, support for creating instructional materials for nutrition teachers, etc.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| School or School Lunch Shared Kitchen (school lunch center)    | <ul style="list-style-type: none"> <li>School lunch cooking and distribution</li> <li>Food education</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

Source: [124]Partially revised based on

## (3) Content and Method of School Lunch Provision

There are three types of school lunches, namely: complete lunches (staple food, side dishes, and milk), supplementary lunches (side dishes and milk), and milk lunches (milk only). According to the FY2021 School Lunch Implementation Status Survey, the provision status in public and private elementary and junior high schools is as shown in Table 2-40.

Table 2-40 School Lunch Provision Status (By Type)

|                    | Fully-Fledged School Lunch | Supplementary Meals | Milk School Lunch |
|--------------------|----------------------------|---------------------|-------------------|
| Primary School     | 98.7%                      | 0.2%                | 0.1%              |
| Junior High School | 89.1%                      | 0.3%                | 21%               |

Source: [126]

Meanwhile, there are four types of food provision methods as specified in Table 2-41. As of May 1, 2023, the nationwide food provision methods in elementary schools are single kitchen method (46.3%), shared kitchen method (52.3%), and other cooking method (1.3 %). Furthermore, in junior high schools food provision methods are single kitchen method (23.8 %), shared kitchen method ( 61.7% ), and other cooking method (14.5 % ) [126].

Table 2-41 School Lunch Provision Methods

| Method type           | Contents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Single kitchen system | <ul style="list-style-type: none"> <li>The school has a kitchen on its premises, which cooks food only for the school.</li> <li>The city or town Board of Education sets up a menu planning committee consisting of nutrition teachers and the board's registered dietitian, etc., and creates menus at a review meeting, and the unified menu is prepared by the cooks of each school. Alternatively, the nutrition teacher assigned to each school creates the menu, and the cooks prepare it based on that menu.</li> </ul> |
| Shared kitchen system | <ul style="list-style-type: none"> <li>Lunches for multiple schools are prepared and delivered in bulk.</li> <li>The menu is prepared by nutrition teachers at each center and are prepared by cooks employed by the Board of Education.</li> </ul>                                                                                                                                                                                                                                                                            |
| Parent-child system   | <ul style="list-style-type: none"> <li>Schools that have their own kitchens also prepare and deliver school lunches for nearby schools that do not have their own kitchens.</li> </ul>                                                                                                                                                                                                                                                                                                                                         |
| Delivery method       | <ul style="list-style-type: none"> <li>Private school lunch providers prepare lunches at their facilities and deliver them (delivered in lunch boxes or food tins) to schools.</li> <li>The menu is prepared by the Board of Education's registered dietitian, and cooking is done by a contracted company.</li> </ul>                                                                                                                                                                                                         |

Source: [124]Partially revised based on

#### (4) Cost Sharing

The cost of school lunches is specified in Article 11 of the School Lunch Law and Article 2 of the Enforcement Order of the same law. The breakdown of costs is as shown in Table 2-42. The school lunch fee currently borne by parents varies depending on the local government, but is approximately 250 yen per meal (about 4,000 to 5,000 yen per month). For households receiving welfare assistance or school assistance, measures are taken to either provide school lunches in kind or reduce the school lunch fee for general households. Furthermore, in recent years, some local governments, such as Aomori City in Aomori Prefecture and Hakone Town in Kanagawa Prefecture, have begun to cover the cost of food ingredients, eliminating the financial burden on parents [127] [128].

Table 2-42 Cost Burden for School Lunches

| Classification         | Expense Category | Burden Category | Legal Basis                            | Breakdown                                    | Remarks                        |
|------------------------|------------------|-----------------|----------------------------------------|----------------------------------------------|--------------------------------|
| Food cost for students | Food cost        | Parents         | School Lunch Law, Article 11, Clause 2 | Cost of bread, rice, milk, side dishes, etc. | This is usually called "school |

| Classification | Expense Category         | Burden Category                    | Legal Basis                                                                                          | Breakdown                                                                       | Remarks                                        |
|----------------|--------------------------|------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------|
|                |                          |                                    |                                                                                                      |                                                                                 | lunch fees"                                    |
|                | Utility bills            | Guardian (installer) <sup>30</sup> |                                                                                                      | Expenses for cooking, washing hands, etc.                                       | Expenses required for management and operation |
|                | Facility equipment costs | Installer                          | School Lunch Law, Article 11, Clause 1                                                               | Facility and equipment costs for school lunches                                 |                                                |
|                | Repair costs             |                                    | School Lunch Law, Article 11, Clause 1<br>Article 2, Paragraph 2 of the Enforcement Order of the Act | School meal facility equipment repair costs                                     |                                                |
|                | Labor costs              |                                    | School Lunch Law, Article 11, Clause 1<br>Article 2, Item 1 of the Enforcement Order of the Act      | Salaries and other personnel costs required for staff working in school lunches |                                                |

source: [124]

## 2.4.2 Components of Food Education in Japan

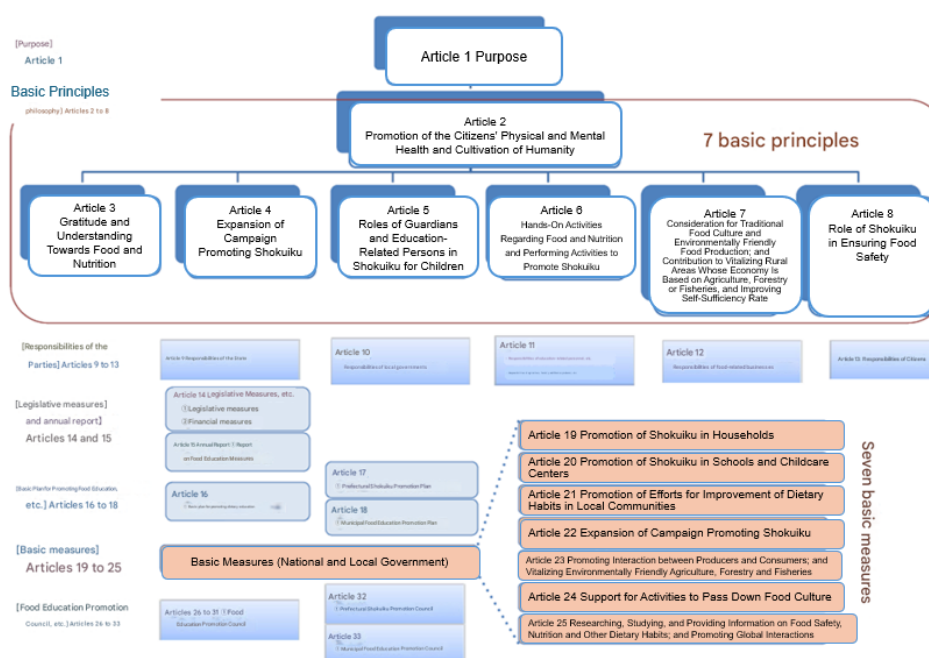
### (1) The Basic Law on Food Education

In Japan, the Basic Law on Food Education was enacted in June 2005, which stipulated that the national government, local governments, and citizens have the responsibility to promote food education to "cultivate healthy minds and bodies throughout their lives and nurture rich humanity ."

The structure of the Basic Act on Food Education is shown in Figure 2-3. The Cabinet Office was the competent authority, but after the amendment of the act in 2015, the responsibility was transferred to the Ministry of Agriculture, Forestry and Fisheries, which is now responsible for promoting food education in cooperation with the Ministry of Health, Labor and Welfare, the Ministry of Education, Culture, Sports, Science and Technology, and the Food Safety Commission.

<sup>30</sup> The Ministry of Education's "Guidelines for Administrative Procedures and Guidance Regarding the Implementation of School Lunches" (1973) states that it is desirable for the operator of the school to cover the costs of utilities.

## Basic Act on Shokuiku (Food and Nutrition Education)



Source: [129]

Figure 2-3 : Structure of the Basic Act of Shokuiku

### (2) Basic Plan for Food Education

To comprehensively and systematically promote policies based on the Basic Law on Food Education, the "Basic Plan for Food Education" has been formulated, which sets out basic policies and goals for promoting food education. The plan is formulated every five years, and the current Fourth Basic Plan for Food Education covers the period from 2021 to 2025. An outline of the Fourth Basic Plan for Food Education is shown in Table 2-43.

Table 2-43 Fourth Basic Plan for Food Education (2021-2025)

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Priority Areas                     | Promoting food education to support mental and physical health throughout one's life (from the perspective of national health)<br>Promoting food education to support sustainable food (social, environmental, and cultural perspectives)                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Cross-cutting Priority Issues      | Promoting food education in response to the "new normal" and digitalization (cross-sectional perspective)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Goals for Promoting Food Education | <ul style="list-style-type: none"> <li>•Practicing a nutritionally balanced diet</li> <li>•Awareness of production areas and producers</li> <li>•Increase in initiatives using local produce in school lunches</li> <li>•Selecting environmentally friendly agricultural, forestry and fishery products and foods</li> </ul>                                                                                                                                                                                                                                                                                                                                |
| What We Will Promote               | <ol style="list-style-type: none"> <li>1. Promoting food education at home</li> <li>2. Promoting food education in schools, nurseries, etc.</li> <li>3. Promoting food education in the community</li> <li>4. Development of the Food Education Promotion Campaign</li> <li>5. Promoting interaction between producers and consumers, and revitalizing agriculture, forestry and fisheries in harmony with the environment</li> <li>6. Measures for activities to preserve food culture</li> <li>7. Promoting research, studies, and information provision and international exchange regarding food safety, nutrients, and other dietary habits</li> </ol> |

Source: [125; 130]

### (3) Food Education in Schools

The Basic Act on Food Education states that "food education is necessary for citizens of all generations," and goes on to state that "food education for children has a significant impact on their physical and mental growth and the formation of their personality, and serves as the foundation for cultivating healthy minds and bodies throughout their lives and nurturing rich humanity," making it particularly important to provide food education for children.

Furthermore, the law emphasizes the need to promote food education in all areas of life as it states that "the task before us is to work on promoting food education as a national movement, focusing on homes, schools, nurseries, local communities, etc." In this work, the target age group for the survey on food education is elementary school students, thus, this section will focus on food education in elementary schools.

## **1) Allocation of Staff to Provide Nutritional Guidance**

In Japan, school nutrition staff who are qualified as nutritionists or registered dietitians have been involved in creating school lunch menus and managing hygiene. Following the enactment of the Basic Law on Food Education, the system of "nutrition teachers" was established in 2005 as a profession that plays a central role in promoting food education in schools. In addition to the expertise of a nutritionist or registered dietitian, nutrition teachers are qualified teachers, and unlike school nutrition staff, they are able to provide food education as a "class."

Nutrition teachers are responsible for 1) nutritional guidance which includes individual guidance for students on obesity, picky eating, food allergies, etc., collective nutritional guidance in cooperation with class teachers, and liaison and coordination for nutritional guidance in cooperation with other teachers, families, and the community; as well as 2) management of school lunches which includes nutrition management, hygiene management, food testing, supply management, etc. From the perspective of decentralization, the standards for establishing nutritional teachers are left to the discretion of local governments, and the number of teachers varies greatly from prefecture to prefecture. The average number of nutritional teachers in 2023 was 145 per prefecture, but in Tokyo, which has the fewest teachers in the country, there were only 77. [131] In Tokyo, nutritional teachers are assigned as supervisors for multiple schools, and in each school, teachers designate a "food education leader" to provide nutritional guidance.

## **2) Guidance Using School Lunches**

A distinctive feature of food education in Japanese schools is that it utilizes school lunches as a living educational material. In other words, school lunches and food education function as two wheels of a cart. School nutrition staff or nutrition teachers create school lunch menus that align with school lunch intake standards, nutritional excellence, and serve as educational materials. Additionally, they create materials for nutritional guidance through school lunches (introducing the day's school lunch menu, explaining its nutritional value, and introducing local food producers, etc.) The methods of using the materials are devised according to the facilities and personnel of the school, such as "introducing it on the school broadcast during lunch time," "teaching in class during lunch time," "posting it on the electronic whiteboard during lunch time," etc. While information on food education is provided to students' parents through "school lunch menus," "school lunch newsletters," "food education newsletters," etc., that are taken home by the students.

### 3) Guidance in the Classroom

#### ■Formulating an Overall Plan for Dietary Education and an Annual Teaching Plan

Each school will create an "Overall Plan for Nutrition Education" that sets out the goals of nutrition education based on the school education goals, the Basic Plan for Promoting Nutrition Education, and the actual situation of the students. In addition, an annual teaching plan for nutrition education through subjects and events will be made, and nutrition education will be implemented in line with this. With this plan, educators can determine what and how much to teach throughout the year, to have a structured learning approach for students. As a reference for each school, Figure 2-4 shows an example of how to fill out the plan created by the Tokyo Metropolitan government.

| health education goals                       |                                              | Aiming to maintain and improve lifelong mental and physical health, students will acquire basic lifestyle habits and attitudes that will enable them to practice healthy living.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                    |                                                                                                                   |                                                                                                                    |                                                                                                                     |                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                        |                                                                                                                                                                    |  |                                                                                                                                                                                                           |  |
|----------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Goals of food education                      |                                              | You will learn the importance of having breakfast every day and of eating without being picky about what you eat.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                    |                                                                                                                   |                                                                                                                    |                                                                                                                     |                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                        |                                                                                                                                                                    |  |                                                                                                                                                                                                           |  |
|                                              |                                              | April                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | May                                                | June                                                                                                              | July                                                                                                               | August                                                                                                              | September                                                                                                                                                                                                                                                                                                    | October                                                                                                                                                                                                                                | November                                                                                                                                                           |  |                                                                                                                                                                                                           |  |
| Academic, moral and comprehensive study time | society                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                    |                                                                                                                   |                                                                                                                    |                                                                                                                     |                                                                                                                                                                                                                                                                                                              | People's Work and Our Lives (Company)<br>• At home, this is expressed in terms of what stores they go to and what products they buy.<br>• Understand the state, overview, innovations, and efforts of local specialty production areas |                                                                                                                                                                    |  |                                                                                                                                                                                                           |  |
|                                              | science                                      | Let's Grow Plants (1) <Feelings><br>• Understand that plants grow in a certain order and that their bodies are made up of roots, stems and leaves.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                    |                                                                                                                   |                                                                                                                    |                                                                                                                     | Let's Grow Plants (2) <Feelings><br>• Research the roots, stems, leaves, etc. of various vegetables and understand which parts are used as food ingredients.<br>• The children will harvest the vegetables they have grown and have a cooking experience with the help of their parents and local residents. |                                                                                                                                                                                                                                        |                                                                                                                                                                    |  |                                                                                                                                                                                                           |  |
|                                              | Physical Development (Health)                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                    |                                                                                                                   |                                                                                                                    |                                                                                                                     |                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                        | Daily life and health<br>- It is necessary to continue to get enough activity, rest and sleep every day to stay healthy<br>- Eat a balanced diet three times a day |  |                                                                                                                                                                                                           |  |
|                                              | moral                                        | * In moral education classes, food education can be enhanced by using reading materials and video materials on the subject of "food." In particular, the following value items are closely related to the enhancement of food education.<br><br>Mainly about yourself<br>Mainly about relationships with other people<br>Mainly related to relationships with nature and the sublime<br>Mainly related to relationships with groups and society<br><br>2-(1) Etiquette<br>2-(2) Respect and gratitude<br>2-(3) Love of nature, importance of life<br>2-(4) Love of life, protection of animals and plants<br>2-(5) Labor<br>2-(6) Family love<br>2-(7) Patriotism |                                                    |                                                                                                                   |                                                                                                                    |                                                                                                                     |                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                        | Ideas for Introduction<br><br>Development Ideas<br><br>End of the World Ideas                                                                                      |  | From birth, breastfeeding, diet, and the lives of others<br>Cultivate the feelings and sentiments of those involved in school lunches. 2-(4)<br>A story about family eating habits and respect for family |  |
|                                              | Other subjects                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                    |                                                                                                                   |                                                                                                                    |                                                                                                                     |                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                        |                                                                                                                                                                    |  |                                                                                                                                                                                                           |  |
|                                              | Comprehensive study time                     | "Welcome!" Let's become a little shop assistant.<br>research and hands-on activities themed on shopping streets, children will learn that many different foods and ingredients are produced and transported by the hands of many people, and develop a sense of gratitude.                                                                                                                                                                                                                                                                                                                                                                                        |                                                    |                                                                                                                   |                                                                                                                    |                                                                                                                     |                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                        |                                                                                                                                                                    |  |                                                                                                                                                                                                           |  |
| School lunch time                            | Instructions regarding food during lunchtime | Let's learn about school lunches (Jyu-Ken)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Know the importance of breakfast (Jyu-Ken)         | Chew your food thoroughly (Jyu-Ken)                                                                               | Thinking about summer health (Jyu-Ken)                                                                             | About diet and exercise (Jyu-Ken)                                                                                   | About seasonal foods (Jyu-Ken)                                                                                                                                                                                                                                                                               | Experience the local flavors! (Jyu-Ken)                                                                                                                                                                                                |                                                                                                                                                                    |  |                                                                                                                                                                                                           |  |
|                                              | Content                                      | • The school lunch is a balanced meal<br><br>Learn how to serve lunch.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | • Balanced breakfast<br><br>Learn dining etiquette | • Understanding the importance of chewing well and being able to chew food thoroughly<br><br>Take care of hygiene | • Eating three meals a day<br>Importance: Know the sugar content of cold drinks<br>Food for summer diet and health | • Nutrition and exercise are important for building a strong body.<br><br>With a regular rhythm Build a strong body | • Seasonal food<br><br>Let's have a friendly dinner.                                                                                                                                                                                                                                                         | • Usual cuisine includes Knowing our own desires and the wisdom of people from the past<br><br>Eat with gratitude                                                                                                                      |                                                                                                                                                                    |  |                                                                                                                                                                                                           |  |
|                                              | School lunch balance                         | • Safe preparation<br>Cooperating to clean up                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | • Good posture<br>• Meal etiquette                 | • The importance of hand washing<br>• Clean clothes                                                               | • Let's think about it (Jyu-Ken)<br>• Meals during hot weather<br>• Eat regularly do<br>• hydration                | • The importance of nutrition, exercise, and rest<br><br>• Fun group work<br>• Choose a topic<br>• Enjoyable dinner | • Be thankful for the blessings of nature and the hardships of people                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                        |                                                                                                                                                                    |  |                                                                                                                                                                                                           |  |

source: [132]

Figure 2-4 Example of an Annual Teaching Plan for "Education on Food" (Third Grade of Elementary School), Tokyo

#### ■ Implementing "Food Education" in Each Subject

In its "Guidelines for Nutrition Education (Second Revised Edition, 2019)," the Ministry of Education, Culture, Sports, Science and Technology outlines a policy for conducting "food education" based on the goals and content of each subject. Examples of instruction are shown in Table 2-44. Since nutrition teachers are not assigned to every school and instruction time is limited to lunchtime, it is important to link instruction for the content of each subject. Instruction in each subject is carried out by teachers of each subject and nutrition teachers, either alone or together, by creating lesson plans and lesson concept cards based on the annual teaching plan.

Table 2-44 Examples of Nutrition Education Instruction in Each Subject

|    | Subject                                           | Teaching Points                                                                                                                                                                                                                                                                                                                                                                                  |
|----|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Society                                           | Students will be encouraged to research the origins of the ingredients used in Tempura Soba and learn how much of the ingredients are imported from overseas.                                                                                                                                                                                                                                    |
| 2  | Science                                           | <ul style="list-style-type: none"> <li>For example, when considering ingredients for school lunch menus, if the item is chicken, students are encouraged to research chicken feed and learn about the food chain.</li> <li>By learning the names of parts of plants and observing their growth, children will be encouraged to understand which parts of vegetables they are eating.</li> </ul>  |
| 3  | Lifestyle (Elementary School)                     | By writing about memories of meals with family and helping with meals in a picture diary, children are encouraged to realize the joy of eating.                                                                                                                                                                                                                                                  |
| 4  | National Language                                 | Try making the dishes that appear in the stories in your textbooks.                                                                                                                                                                                                                                                                                                                              |
| 5  | Home, Technology and Home                         | <ul style="list-style-type: none"> <li>The students will make miso soup by making stock using kelp, bonito flakes, and dried sardines, and will be asked to think about the differences in taste that result from using different stocks.</li> <li>Create a meal plan or a daily menu and try cooking it.</li> </ul>                                                                             |
| 6  | Art and Crafts                                    | Create food-related playing cards.                                                                                                                                                                                                                                                                                                                                                               |
| 7  | Physical Education, Health and Physical Education | Promote understanding of the importance of a balanced diet that includes nutrients such as calcium and protein for healthy development.                                                                                                                                                                                                                                                          |
| 8  | Mathematics and Programming                       | Use programming to start a toaster oven and bake cookies.                                                                                                                                                                                                                                                                                                                                        |
| 9  | Moral                                             | The project encourages children to have a love for their hometown by using karuta cards that clearly show the relationship between local agricultural products and food.                                                                                                                                                                                                                         |
| 10 | Comprehensive Study Time                          | Have students research the ingredients of the sweets they usually eat and think about what ingredients need to change to make the sweets healthier.                                                                                                                                                                                                                                              |
| 11 | Special Activities                                | <ul style="list-style-type: none"> <li>To make eating lunch more enjoyable, create opportunities for class discussions about desk arrangements, group formation, etc., and encourage students to think independently about ways to "have fun while eating."</li> <li>In conjunction with disaster prevention education, packed cooking school lunches and cooking will be introduced.</li> </ul> |

Based on the source: [131]

## 2) Individualized Nutritional Guidance

School nutrition teachers or school nutrition staff, in cooperation with school nurses and class teachers, provide individual guidance to children with dietary issues (picky eating, food allergies, underweight or obesity, anorexia or overeating) and children who need special attention in terms of nutritional intake (children who are involved in sports, etc.) When providing guidance on underweight or obesity, growth curves for height and weight are used.

## (4) Food Education by the Ministry of Agriculture, Forestry and Fisheries

In 2022, the Ministry of Agriculture, Forestry and Fisheries published the "Digital Food Education Guidebook," introducing examples of practical methods for "online food education events," "food education videos," "food education activities using social media," and "food education activities using apps."



source: [133]

Figure 2-5 Example of the Ministry of Agriculture, Forestry and Fisheries' "Digital Food Education Guidebook"

## (5) Food education by the Ministry of Health, Labor and Welfare

The Ministry of Health, Labor and Welfare is working to promote food education by holding various training sessions for municipal employees and nurturing "food lifestyle improvement promoters (volunteers through food)."

### 2.4.3 Analysis of the Advantages of Japan's School Lunch System

The advantages of Japan's school lunch system are summarized in Table 2-45, following the items in the "School Lunch Support Menu."

Table 2-45 Analysis of the Advantages of Japan's School Lunch System

| School Lunch Support Menu                       | Japan's Advantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Creating School Lunch Intake Guidelines         | FAO, UNICEF, and others have provided support for the creation and improvement of nutritional guidelines and intake standards <sup>33</sup> . However, for Southeast Asian countries, where the physiques of people are closer to that of Japanese people than to Westerners, support based on Japan's experience—which has its own school lunch intake standards—would be effective.                                                                                                                                                                |
| Nutrition Teacher                               | FAO and WFP also conduct training on nutrition and school lunch preparation for school teachers and others. However, the system of having nutrition teachers take the lead in running school lunches in collaboration with other teachers and cooks is unique to Japan. If it is possible to develop a system that is in line with the actual situation in the donor country, it is considered as a great advantage.                                                                                                                                 |
| School Lunch Providers                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Hygiene Management                              | UNICEF and other organizations support the development and improvement of guidelines for ensuring safe drinking water and sanitation management in schools. <sup>34</sup> Japan has an extensive experience in this area, providing toilets in schools and promoting hand washing as part of its support in the education sector. Therefore Japan has an advantage when it comes to these activities.                                                                                                                                                |
| Food Procurement                                | FAO and WFP are implementing programs such as home-grown school feeding in countries such as the Philippines, and are supporting the procurement of local ingredients for school lunches in cooperation with local small-scale farmers. Meanwhile, JICA is working to improve the quality of school lunches in Burkina Faso by combining food procurement through SHEP. The combination of SHEP and school lunches is considered to have advantages as a support approach that makes use of Japan's strengths.                                       |
| Monitoring Assessment /                         | No representative projects by other donors in this field have been identified. Meanwhile, Japan has been conducting long-term monitoring of school lunches through the initiatives such as the "Survey on School Lunch Implementation Status" and the "School Lunch Nutrition Report Survey," leading to improvements in school lunches. Japan's knowledge is thought to be extremely advantageous when designing the survey items and methods for monitoring/assessment in target countries, as well as the construction of implementation systems. |
| Nutrition Education and Fostering Self-Reliance | See Table 2-46.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Private Sector Collaboration                    | No representative projects by other donors in this field have been identified. Meanwhile, Japan has an extensive experience of managing school meals through private sector collaboration, and is considered to have a strong advantage. However, sufficient information needs to be collected to determine whether there are private companies in the target country that can collaborate in terms of sustainability and cost.                                                                                                                      |

<sup>33</sup> Among the countries surveyed, the FAO Regional Office for Asia and the Pacific is currently revising the Nutritional Guidelines for School Lunches in Thailand (from a field survey in August 2023).

<sup>34</sup> Among the countries surveyed, UNICEF is providing support for safe drinking water in schools in the Philippines (from a field survey in August 2023).

| School Lunch Support Menu                               | Japan's Advantages                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Community Collaboration Promotion                       | No representative projects by other donors in this field have been identified. JICA has an extensive experience in supporting the management of school lunch programs in collaboration with communities in countries such as Madagascar and Burkina Faso. Thus, it is believed that support utilizing Japanese expertise would be effective. |
| Strengthening Administrative Support for School Lunches | No representative projects by other donors in this field have been identified. Japan has an extensive experience in working to develop laws, manuals, and guidelines to promote the implementation of school meals at the national and local levels, and Japan's expertise is thought to be extremely advantageous.                          |

Source: Survey Team

#### 2.4.4 Analysis of the Advantages of Japanese Food Education

"The advantages of Japan's food education system are summarized in Table 2-46, based on the items in the "Food Education Support Menu."

Table 2-46 Analysis of the Advantages of Japanese Food Education System

| Food Education Support Menu                                    | Japan's Advantages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nutritional Human Resource Development                         | There are no confirmed efforts by other donors to develop nutritional personnel for promoting food education. The system which involves promoting food education with nutrition teachers at the core and in cooperation with other teachers is unique to Japan. If this system is adapted to the actual situation in the target country, Japan is considered to have a high advantage.                                                                                                                                                                                                                                                     |
| Development of Teaching Materials and Manuals                  | Many donors such as UNICEF, FAO, and WFP have a track record in providing nutritional education materials for children. However, Japan's food education materials and manuals are in line with the country's dietary guidelines, include a variety of perspectives on food education, and have multiple versions available to suit children's developmental stages. Additionally, Japan offers flexible support by responding to the needs of recipient countries, such as supporting the development of materials and manuals in line with the food culture and food environment, making this approach an extremely advantageous feature. |
| Introduction of School Lunches and their Use in Food Education | There are no confirmed donors that provide both "school lunches and nutrition education". The concept of viewing school lunches as "living nutrition education materials" is unique to Japan. By providing school lunch support in combination with nutrition education support using school lunches, a synergistic effect can be expected, and it is believed that the advantages are extremely high.                                                                                                                                                                                                                                     |
| Collaboration with Health and Other Subjects                   | In many countries, nutrition education is integrated in elementary schools as part of subjects such as health, and food-related knowledge is taught in subjects such as language studies (e.g., Japanese, English), science, and geography. In addition, many countries through organizations such as UNICEF, provide support for school health and knowledge on nutrition and hygiene. On the other hand, the creation of an annual teaching plan for food education across subjects is a unique initiative in Japan and is thus considered to have an extremely high advantage.                                                          |
| Cooperation with Families and Communities                      | There are no confirmed donors that support family and community collaboration in food education. Through the years, Japan has had extensive experience in engaging families and interacting with local producers (in agriculture, fisheries, etc.) to provide information on food education. This expertise allows Japan to support the collaboration of family and community based food education in a way that adapts to the target country's situation, and this is considered to be a strong advantage.                                                                                                                                |
| Improvement of the Food Environment                            | UNICEF is providing support to secure safe drinking water, regulating the marketing of unhealthy food and drinks in and around schools, and promoting nutritional labeling. Japan has a track record of providing support for water and sanitation as part of its support in the education and health sectors, but this is an area that needs to be clearly differentiated from the activities of other donors.                                                                                                                                                                                                                            |
| Monitoring/Assessment                                          | There has been no confirmation of support from other donors for monitoring/assessment for the promotion of <i>Shokuiku</i> . In Japan, multiple indicators related to the dietary habits of households and children are monitored as targets in the <i>Shokuiku</i> Basic Plan. This Japanese knowledge can be utilized when designing the survey items and methods for monitoring/assessment, as well as the construction of implementation systems in donor countries, and is considered to have a high advantage.                                                                                                                       |

| Food Education Support Menu                                   | Japan's Advantages                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Supporting Food Education in Schools Administrative Functions | There has been no confirmation of support from other donors for strengthening administrative functions to promote food education. In Japan, there are efforts such as the development of laws and ordinances related to food education, and the formulation and promotion of food education promotion plans by the national and local governments. From this, a great deal of knowledge has been accumulated, so it is thought that Japan has a strong advantage. |

Source: Survey Team

## Chapter.3 FIELD SURVEY

As shown in Table 3-1, four countries, namely: Fiji, Malaysia, the Philippines, and Thailand, were selected from the 20 countries that were included in the desk survey, and field surveys were conducted in these countries.

### 3.1 Conducting On-Site Surveys

The period of the field survey and the main places visited are shown in Table 3-1.

Table 3-1 1Survey Period

| Eligible Countries | On-site Survey Period           | Survey Period | Main Destinations                                             |
|--------------------|---------------------------------|---------------|---------------------------------------------------------------|
| Fiji               | September 29 - October 13, 2023 | 14 days       | -Ministries of Health and Education                           |
| Malaysia           | July 24 - August 6, 2023        |               | ·Primary school                                               |
| Philippines        | August 13 - August 26, 2023     |               | ·JICA Office                                                  |
| Thailand           | August 27 - September 9, 2023   |               | -Major donors, NGOs, and universities in the nutrition sector |

Source: Survey Team

### 3.2 Main Field Survey Results

Of the four countries surveyed in the field, Thailand is the only one that has a school lunch system that covers all elementary school students. Malaysia and the Philippines have a meal provision system that covers some students while Fiji does not have a meal provision system. Malaysia, the Philippines, or Fiji do not have plans to introduce a school lunch system that covers all students.

Regarding nutrition education in elementary schools, all four countries provide it as part of regular classes, and both the content of textbooks and teaching methods are well devised, although the class time is limited to around eight hours per year.

Table 3-2 2Field Survey Results

| Eligible Countries | School Lunch Implementation Status in Elementary Schools                                                                                | Status of Nutrition Education in Elementary Schools                                                                                    |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Fiji               | There is no school lunch system that covers all children.                                                                               | This is conducted as part of regular classes (Healthy Living).                                                                         |
| Malaysia           | There is no school lunch system that covers all children.<br>There is a food subsidy system for the underprivileged.                    | This is conducted as part of regular classes (health education).                                                                       |
| Philippines        | There is no school lunch system that covers all children.<br>There is a food provision system in place to target malnourished children. | This is implemented as part of regular classes (subjects with four elements called MAPEH: Music, Art, Physical Education, and Health). |
| Thailand           | There is a school lunch system that covers all children.                                                                                | This is conducted as part of regular classes (health education).                                                                       |

Source: Survey Team

### 3.3 Selection of Countries for Pilot Activities

Based on the results of the field survey and the intentions of the Malaysian government, and in consultation with JICA, Malaysia was selected as the target country for the pilot activities.

The reasons for selecting Malaysia as the target country for the pilot activities include the increasing need for nutritional improvement due to the "double burden of malnutrition" situation, the development of legal systems and guidelines regarding nutritional improvement for adults and children, and the high level of commitment from the government.

Additionally, Malaysia has shown significant interest in food education and Japanese-style school lunches, and in 2018 the country participated in a training course in Japan on the topic of food education. More recently, in September 2023, Malaysia conducted a country-specific training course to develop school lunch guidelines. This increased understanding of JICA's work, further supporting its selection for the pilot activities.

## **Chapter.4 CREATING TOOLS FOR FORMULATING SCHOOL LUNCHES AND “SHOKUIKU” EDUCATION PROJECTS**

### **4.1 Categorizing School Lunches and “Shokuiku” Projects**

The classification of school lunch projects and food and nutrition education projects is described below. Note that the implementation status of school lunches and food and nutrition education, health issues, and required cooperation in each target country differs greatly from country to country, so the following classification should only be used as information to organize a rough outline of the cooperation and its direction.

#### **(1) Categorization of School Lunch Projects**

The direction of cooperation for school lunch projects varies greatly on the current state of the school lunch system in the target country and the government's intention to expand the system.

##### <Target Countries Category A>

Category A includes "countries with a school lunch system for all children." Among the countries surveyed, Thailand falls into this category. For these countries, the general direction of cooperation will focus on improving the current school lunch system, on the premise that the school lunch system exists.

##### <Target Countries Category B>

Category B includes "countries that have a school lunch system for a limited number of children and intend to expand the system." Among the countries surveyed, the Philippines falls into this category. For these countries, the general direction of cooperation will focus on expanding the current school lunch system, which serves a limited number of children.

One of the major issues in expanding school lunch systems is the budget. For example, a field survey in the Philippines identified budget constraints as a major issue in expanding school lunch systems. However, achieving a sustainable expansion of school lunch systems in Category B countries would be more effective through a cooperative approach that incorporates the perspective of independent school lunch management that utilizes the resources of local residents and communities.

##### <Target Countries Category C>

Category C includes "countries that do not have a school lunch system or have a school lunch system for a limited number of children, but have no intention of expanding the system." Among the countries surveyed, Fiji and Malaysia fall into this category. For example, for these countries, improving schools' food environment and reviewing school kiosk snack menus would be an effective approach. Although the scope of cooperation is limited because it is based on the assumption that there is no school lunch system.

Figure 4-1 shows the cooperation country categories and the direction of cooperation for each country category. Note that the "Other countries" in the figure are merely provisional classifications based on information obtained through desk research (for example, in a country that currently has a school lunch system for a limited number of children, if there is no mention of expanding school lunches in the relevant national strategies, the country is provisionally classified as Category C).

| Target Country Category                                                                          | A                                                                 | B                                                                                                                                                                         | C                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Current status of school lunches system and Government Intention for expansion the system</b> | Countries with a school lunches system for all children           | Countries that has a school lunches system for a limited number of children and has the intention to expand the system                                                    | Countries that does not have a school lunches system, or has a school lunches system for a limited number of children, and no intention of expanding the system |
| <b>Target countries</b>                                                                          | Ex: Thailand<br>Other countries: Brunei, Cambodia, Vietnam, Palau | Ex: Philippines<br>Other countries: Laos, Timor-Leste, Micronesia                                                                                                         | Ex: Malaysia, Fiji,<br>Other countries: Indonesia, Kiribati, Marshall Islands, PNG, Samoa, Solomon Islands, Tonga, Vanuatu, Tuvalu                              |
|                                                                                                  | ↑                                                                 | ↑                                                                                                                                                                         | ↑                                                                                                                                                               |
| <b>Direction of cooperation</b>                                                                  | Improving the current school lunch system                         | Expanding school lunch system<br>(Cooperation that incorporates the perspective of independent school lunch management utilizing local residents and community resources) | Limited support based on the assumption that there is no school lunch system                                                                                    |

Source: Developed by Survey team

Figure 4-1 Cooperation Country Categories and the Direction of Cooperation For each Country Category (School Lunches)

## (2) Overview of Cooperation for each Category and Organization of Cooperation Menus (School Lunches)

Below is an overview of possible cooperation for each country category, and a breakdown of the cooperation menus.

### Overview of cooperation for Category A countries

The scope of cooperation for Category A countries varies significantly based on the specific challenges and cooperation required for school lunches in the target country. Therefore, it is essential to build a cooperation menu of the ten cooperation items that are particularly lacking in the target country. For example, in Thailand, the current school lunch system is considered to have major challenges relating to a shortage of personnel responsible for school lunches, insufficient monitoring/assessment mechanisms, and limited cooperation between ministries. To address these issues, cooperation initiatives that are centered on cooperation ②③, cooperation ⑥, and cooperation ⑩ would be effective.

### Overview of cooperation for Category B countries

In countries for category B countries, when implementing cooperation that incorporates the perspective of autonomous school lunch management that utilizes the resources of local residents and cooperation of communities, cooperation initiatives that are centered on cooperation ③, cooperation ⑤, and cooperation ⑨ would be effective.

### Overview of cooperation for Category C countries

Cooperation in countries from category C will be limited in scope, such as cooperation ⑧, which includes collaboration with stores that provide snacks and lunches that are nutritious and healthy; and cooperation ⑨, which includes educating parents on the influence of making lunches for their children.

| School Lunch Cooperation Menu             | Advantages                                                                                                                                                                                                                                                                                                | Overview of Cooperation for Category A Countries*<br>(Ex: Thailand)<br>*There is a school lunch system for all children.                                                                                                                                                                       | Overview of Cooperation for Category B Countries*<br>(Ex Philippines)<br>*There is an intention to expand the current system | Overview of Cooperation for Category C Countries*<br>(Ex Malaysia, Fiji)<br>*No school lunch system/No intention to expand the current system                                              |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ① Development of "DRIs in School Lunches" | In some countries, cooperation is being provided <sup>35</sup> by FAO, UNICEF, etc. to create and improve nutritional guidelines and intake standards. Japan, which has its own school lunch intake standards, is expected to have an advantage in providing cooperation that utilizes its experience.    | This cooperation menu is effective when the nutritional intake targets used in the target country are not in line with the nutritional issues, or when there is a high need to set unique school lunch intake standards.                                                                       |                                                                                                                              | Cooperation such as establishing guidelines and standards for school cafeterias and stores could be effective.                                                                             |
| ②Diet and Nutrition Teacher               | In some countries, home-grown school feeding programs by FAO, WFP, and other organizations provide training for school teachers on nutrition and lunches preparation.                                                                                                                                     | As teachers and cooks currently involved in school lunch programs in target countries do not necessarily have knowledge of nutrition or experience in procuring ingredients, it is considered that cooperation such as strengthening the capabilities of those responsible would be effective. |                                                                                                                              | The school lunch system is limited, or there are no plans or intentions to expand it. Therefore, cooperation such as training nutrition teachers and school lunch staff is a low priority. |
| ③School Lunch Providers                   | On the other hand, Japan has its own system where diet and nutrition teachers play a central role in managing school lunches in cooperation with other teachers and cooks. If it is possible to develop this system in line with the actual conditions in the countries, it would be highly advantageous. |                                                                                                                                                                                                                                                                                                |                                                                                                                              |                                                                                                                                                                                            |
| ④Hygiene Management                       | In some countries, UNICEF and other donors are providing cooperation in the form of hard support, such as creating and improving guidelines related to                                                                                                                                                    | It would be effective to develop hygiene management guidelines for school lunch, provide cooperation for the health, hand hygiene, and grooming of cooks, as well as cleaning of cooking utensils and kitchens, and provide cooperation for hygienic management.                               |                                                                                                                              | Supporting the development of guidelines for hygiene management in school cafeterias and stores could be effective.                                                                        |

<sup>35</sup> Among the field surveyed countries, the FAO Regional Office for Asia and the Pacific is currently revising nutritional guidelines for school lunches in Thailand (from a field survey in August 2023).

| School Lunch Cooperation Menu | Advantages                                                                                                                                                                                                                                                                                                                        | Overview of Cooperation for Category A Countries*<br>(Ex: Thailand)<br>*There is a school lunch system for all children.                                                                                                                                                                                                        | Overview of Cooperation for Category B Countries*<br>(Ex Philippines)<br>*There is an intention to expand the current system                                                                                                                           | Overview of Cooperation for Category C Countries*<br>(Ex Malaysia, Fiji)<br>*No school lunch system/No intention to expand the current system                                                |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                               | sanitation management and ensuring safe drinking water <sup>36</sup> . By combining soft support (where Japan has a lot of expertise, such as health management for kitchen staff, grooming, and cleaning) with activities by other donors, a more effective cooperation may be possible.                                         |                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                        |                                                                                                                                                                                              |
| ⑤ Food procurement            | In some countries, cooperation is being provided for independent school lunch management using community resources through programs such as home-grown school feeding by FAO and WFP. On the other hand, Japan may have an advantage in providing cooperation for the development of food supply systems and procurement methods. | If the school lunch teacher does not have the knowledge or experience to procure nutritious ingredients, then cooperation for human resource development will be effective. If there are issues such as ensuring a stable supply of ingredients, then cooperation for establishing a food procurement system will be effective. | In order to operate school lunches independently and sustainably, while utilizing the resources of local residents and communities, then cooperation for stable food procurement in collaboration with local farmers, parents, etc. will be effective. | School lunch programs are limited or there are no plans/intent to expand, so food procurement cooperation is a low priority.                                                                 |
| ⑥ Monitoring/assessment       | In Japan, monitoring of school lunches is carried out, and this knowledge may be useful when designing the survey items and methods for monitoring/assessment, as well as the establishment of implementation structures in donor countries.                                                                                      | The situation regarding monitoring/assessment varies greatly from country to country. In countries where appropriate monitoring/assessment of school lunches is not being carried out, cooperation for survey items, survey methods, and the establishment of implementation systems is effective.                              |                                                                                                                                                                                                                                                        | By conducting surveys of the menus served at school cafeterias and shops, as well as appropriate monitoring and assessments, it may be possible to come up with effective cooperation plans. |

<sup>36</sup> Among the field surveyed countries, UNICEF is providing cooperation for safe drinking water in schools in the Philippines (from a field survey in August 2023).

| School Lunch Cooperation Menu                              | Advantages                                                                                                                                                                                                                                                                                                       | Overview of Cooperation for Category A Countries*<br>(Ex: Thailand)<br>*There is a school lunch system for all children.                                                                                                                                                                                                                                                                                                                                                                           | Overview of Cooperation for Category B Countries*<br>(Ex Philippines)<br>*There is an intention to expand the current system                                         | Overview of Cooperation for Category C Countries*<br>(Ex Malaysia, Fiji)<br>*No school lunch system/No intention to expand the current system                                                                          |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ⑦"Shokuiku" and Fostering Independence                     | (Refer "Overview of possible cooperation for each country category ("Shokuiku") ")                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                      |                                                                                                                                                                                                                        |
| ⑧Private-Sector Partnership                                | There are no major projects from other donors that have been identified the active promotion of private sector collaboration. Japan's experience in private sector collaboration in its aid efforts may be effective.                                                                                            | Promoting collaboration with private companies in areas such as school lunch management, hygiene management, and improving the kitchen environment can be an effective form of cooperation.                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                      | School cafeterias and stores are generally rented out to outside businesses, etc. For example, it may be effective to cooperate/collaborate with businesses that provide nutritious lunches and snacks.                |
| ⑨Promotion of Community Collaboration                      | Community collaboration is being promoted in programs such as home-grown school feeding by FAO and WFP. However, there are no confirmed cases on the active involvement of parents. Cooperation utilizing Japanese initiatives, such as school lunch management with the participation of PTA, may be effective. | By involving parents, local farmers, and others while supporting the promotion of collaboration and cooperation, it is possible to implement sustainable and effective school lunches.                                                                                                                                                                                                                                                                                                             | By promoting collaboration with local residents and communities, it will be possible to provide independent and sustainable cooperation for school lunch operations. | In countries, where children bring their own packed lunches from home, it may be possible to improve the nutritional balance of children's school lunches by providing parents with nutritional knowledge and recipes. |
| ⑩Strengthening of Administration to Support School Lunches | By utilizing Japanese knowledge and experience in cooperating strengthening administrative affairs, it may be possible to provide effective cooperation.                                                                                                                                                         | In general, in many ASEAN countries, school curricula are the responsibility of education-related ministries, while school lunches, nutritional education, physical measurements, data utilization, etc. are the responsibility of health-related ministries. In the field surveyed countries, a lack of cooperation between ministries was cited as a challenge, specifically, cooperation for promoting cooperation between ministries and assistance with legal development would be effective. |                                                                                                                                                                      |                                                                                                                                                                                                                        |

Source: Developed by the Survey team

### **(3) Categorization of Food and Nutrition Education Projects and an Overview of Cooperation for Each Category**

There are many factors that influence the content of cooperation for food and nutrition education projects, with one of the factors being "whether or not there is content related to nutrition and food in the school curriculum". If content related to nutrition and food is already included in the school curriculum, it would be effective to provide cooperation for the practice of food and nutrition education that goes beyond the scope of so-called nutrition education, with the aim of raising children who can make healthy food choices. On the other hand, in countries where content related to nutrition and food is not included in the curriculum, important cooperation would be to first implement pilot activities and verify the effectiveness of the activities, with the aim of incorporating content related to food and nutrition education into the curriculum.

Additionally, one of the major factors that determines the content of cooperation is "the presence or absence of personnel to supervise nutrition education in schools". For example, in Malaysia, nutritionists are stationed in district health offices and visit schools to provide nutritional guidance. In cases where such personnel that supervise nutrition education in schools already exist, it is possible to increase the number of personnel and strengthen their capabilities. This develops the nutrition personnel and carries out monitoring/assessment. On the other hand, in cases where such personnel are not stationed, it is essential to identify, train, and develop local nutrition personnel who can effectively support school nutrition education.

#### <Target Countries Category A>

Category A countries are "countries where nutrition and food-related content is included in the school curriculum and where personnel are in place to supervise nutrition education in schools". Among the field surveyed countries, Malaysia and the Philippines fit this category. For these countries, it would be effective to provide cooperation centered on increasing the number of existing nutrition personnel and provide capacity building to develop nutrition personnel and build monitoring/assessment systems. This approach will be integrated with other necessary cooperation menus.

#### <Target Countries Category B>

Category B countries are "countries where nutrition and food-related content is included in the school curriculum, but there are no specific personnel in place to supervise nutrition education in schools". Among the countries surveyed, Thailand falls into this category. For these countries, it is effective to provide cooperation centered on identifying and training nutrition personnel. This approach will be integrated with other necessary cooperation menus.

#### <Target Countries Category C>

Category B countries are "countries where nutrition and food-related content is not included in the school curriculum." Although no field surveyed countries in the field fell into this category, Timor-Leste and Tuvalu, may fall into this category. Effective cooperation for these countries would involve initially implementing pilot activities aimed at incorporating nutrition education content in the curriculum, verifying the effectiveness of these activities, and then providing cooperation curriculum revision based on the results of these pilot activities.

Figure 4-2 shows the cooperation country categories and the direction of cooperation for each country category. Similar to Figure 4 -1, note that the target countries listed as "other countries" in the figure are merely provisional classifications based on information obtained from desk research (for example, in desk research countries other than those surveyed on the ground, no information was obtained on the placement of personnel to supervise nutrition personnel in schools. Therefore, all countries that include content related to nutrition and food in the school curriculum are entered in the figure as "Category A or Category B").

| Target Country Category                                         | A                                                                                                                                                                   | B                                                                                                                                                                      | C                                                                                           |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <b>Current status of the school curriculum, and supervisors</b> | countries where nutrition and food-related content is included in the school curriculum and where personnel are in place to supervise nutrition education           | countries where nutrition and food-related content is included in the school curriculum, but there are no specific personnel in place to supervise nutrition education | countries where nutrition and food-related content is not included in the school curriculum |
| <b>Target countries</b>                                         | Ex: Malaysia, Philippines<br>Other countries: Vietnam, Indonesia, Laos, Palau, Micronesia, Vanuatu, Kiribati, Marshall Islands, Solomon Islands, PNG, Brunei, Samoa | Ex: Thailand, Fiji                                                                                                                                                     | Other countries : Timor-Leste, Tuvalu, Tonga, Cambodia                                      |
|                                                                 | ↑                                                                                                                                                                   | ↑                                                                                                                                                                      | ↑                                                                                           |
| <b>Direction of support</b>                                     | increasing the number and building capacity of existing nutrition personnel<br>+<br>Other necessary cooperation menu                                                | Nutrition human resource development through identifying and training nutrition human resources<br>+<br>Other necessary cooperation menu                               | Cooperation aimed at incorporating nutrition education content into the curriculum          |

Source: Developed by the Survey Team

Figure 4-2 Cooperation Country Categories and the Direction of Cooperation for Each Country Category (Food and Nutrition Education)

#### (4) Overview of Cooperation for Each Category and Organization of Cooperation Menus (Food and Nutrition Education)

Below is an overview of possible cooperation for each country category, and a breakdown of the cooperation menus.

##### Overview of Cooperation for Category A and Category B Countries

As mentioned above, cooperation to target countries in categories A and B has a significantly different approach in cooperation ① (School nutrition professionals). With this, it is desirable to formulate cooperation by selecting and combining multiple cooperation menus that have been analysed as having shortcomings or high needs in each country.

##### Overview of Cooperation for Category C Countries

For countries in category C, effective cooperation would be to implement pilot activities and verify their effectiveness, aiming to incorporate nutrition education content into the curriculum, and to provide cooperation curriculum revision based on the results of the verification. The content of the cooperation for implementing pilot activities and verifying their effectiveness will vary depending on the country and the target region. Furthermore, the basic components of the pilot activities will be interventions centered on cooperation menu ①, cooperation②, and cooperation③. In addition, cooperation⑧ could foster more sustainable implementation of nutrition education by supporting the integration

of food and nutrition programs in schools into national and regional education and health-related policies, strategies, and plans; as well as supporting school curriculum revisions.

| Food and Nutrition Education Cooperation Menu                | Advantages                                                                                                                                                                                                                                                                    | Category A* Cooperation Overview<br>(Ex. Malaysia and the Philippines)<br>*Nutrition education is included in the curriculum, and a supervisor is assigned                                                                                                                                                                                                            | Category B* Cooperation Overview<br>(Ex. Thailand and Fiji)<br>*Nutrition education is included in the curriculum, but no supervisor is assigned      | Category C* Cooperation Overview<br>(Timor-Leste and Tuvalu)<br>*No nutrition education in the curriculum                                                                  |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ①School Nutrition Professionals                              | The system where diet and nutrition teachers take the lead in promoting food and nutrition education in collaboration with other teachers is unique to Japan. Therefore, it is thought to have a great advantage.                                                             | Cooperation for promoting the acquisition of knowledge and skills by teachers who teach nutrition classes at schools through increasing the number of existing human resources and supporting capacity building will be effective.                                                                                                                                    | Cooperation for nutrition human resource development centered on identifying and developing locally available nutrition human resources is effective. | As part of the pilot activities, capacity building training for teachers in charge of nutrition classes in target schools may be required.                                 |
| ②Teaching Materials and Manuals                              | Japanese <i>Shokuiku</i> teaching materials and manuals are highly unique. Cooperating with the development of teaching materials and manuals may be effective if they are created in a way that is in line with the food culture and food environment of the target country. | Cooperation that makes use of Japan's unique characteristics of <i>Shokuiku</i> will be effective such as considering food culture and improving self-sufficiency rates, incorporating comprehensive and diverse perspectives into teaching materials and manuals, and including messages that encourage behavioral changes in children like choosing balanced foods. |                                                                                                                                                       | As part of the pilot activities, it may be necessary to develop teaching materials that take advantage of the characteristics of Japanese teaching materials and manuals.  |
| ③School Meals Implementation and its use for <i>Shokuiku</i> | The idea of viewing school lunches as "living teaching textbook" is unique to Japan. Combining this with school lunches cooperation can be a highly advantageous form of cooperation.                                                                                         | This can be an effective form of cooperation in schools where school lunches are provided.                                                                                                                                                                                                                                                                            |                                                                                                                                                       | One way to further enhance the effectiveness of the pilot activities is to use school lunches for food and nutritional education.                                          |
| ④Cross-Curricular Collaboration with Health etc              | UNICEF and other donors are providing cooperation for school health in some countries. The link between school health/physical education and nutrition education is                                                                                                           | In many schools in the field surveyed countries, there is no information of collaboration with health education, such as the use of physical measurement data at school. Cooperation for collaboration between health and food and nutrition education, including the promotion of                                                                                    |                                                                                                                                                       | To further enhance the effectiveness of the pilot activities, utilizing physical measurement data in schools and providing individualized instruction may prove effective. |

| Food and Nutrition Education Cooperation Menu        | Advantages                                                                                                                                                                                                                                                                                                                                                                                                       | Category A* Cooperation Overview<br>(Ex. Malaysia and the Philippines)<br>*Nutrition education is included in the curriculum, and a supervisor is assigned                                                                                                                                                | Category B* Cooperation Overview<br>(Ex. Thailand and Fiji)<br>*Nutrition education is included in the curriculum, but no supervisor is assigned | Category C* Cooperation Overview<br>(Timor-Leste and Tuvalu)<br>*No nutrition education in the curriculum                                                                                                                                                                                          |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                      | unique to Japan. Therefore, there is a possibility that effective cooperation can be implemented by collaborating with other donors.                                                                                                                                                                                                                                                                             | Individualized instruction and cross-disciplinary food and nutrition education, may be effective.                                                                                                                                                                                                         |                                                                                                                                                  |                                                                                                                                                                                                                                                                                                    |
| ⑤Collaboration with Households and Local Communities | The development of food and nutrition education based on collaboration with families and local communities is highly unique to Japan and can be a highly advantageous form of support.                                                                                                                                                                                                                           | There have been no confirmed cases in which parents have been actively involved. It may be effective to provide cooperation that utilizes knowledge of Japanese initiatives, such as disseminating dietary education newsletters and providing nutrition and dietary guidance through three-way meetings. |                                                                                                                                                  | To further enhance the effectiveness of the pilot activities, it may be beneficial to leverage knowledge gained from Japan's initiatives, such as disseminating information about food and nutrition education in Japan and providing nutrition and dietary guidance through three-way interviews. |
| ⑥Healthy School Food Environment                     | UNICEF and other organizations provide cooperation for securing safe drinking water and regulating marketing of unhealthy food and drinks in and around schools in some countries. These are areas where Japan's knowledge in nutritional labeling, hand washing, and hygiene can be utilized, Although there are cases where it is necessary to distinguish between these activities and those of other donors. | There is a possibility that effective cooperation can be provided through collaboration with other donors.                                                                                                                                                                                                |                                                                                                                                                  | Activities that could further enhance the effectiveness of the pilot activities could include providing cooperation for nutritional labelling, hand washing, and hygiene.                                                                                                                          |
| ⑦ Monitoring/Assessment                              | In Japan, multiple indicators related to household and child dietary habits are monitored as targets for the Basic Plan for <i>Shokuiku</i> . This                                                                                                                                                                                                                                                               | The situation regarding monitoring/assessment varies from country to country. In countries where appropriate monitoring/assessment of “ <i>Shokuiku</i> ” in school is not being carried out, cooperation for survey items,                                                                               |                                                                                                                                                  | As part of the pilot activities, proper monitoring/assessment of school lunches should be carried out.                                                                                                                                                                                             |

| Food and Nutrition Education Cooperation Menu                 | Advantages                                                                                                                                   | Category A* Cooperation Overview<br>(Ex. Malaysia and the Philippines)<br>*Nutrition education is included in the curriculum, and a supervisor is assigned                                                                                                                                                                                                                                                                                                                                | Category B* Cooperation Overview<br>(Ex. Thailand and Fiji)<br>*Nutrition education is included in the curriculum, but no supervisor is assigned                                                                                                                                                                                                                       | Category C* Cooperation Overview<br>(Timor-Leste and Tuvalu)<br>*No nutrition education in the curriculum |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|                                                               | Japanese knowledge may be useful when designing the survey items and methods for monitoring/assessment.                                      | survey methods, and the establishment of implementation systems is effective.                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                           |
| ⑧Strengthening of administration to implement <i>Shokuiku</i> | By utilizing Japanese knowledge and experience in strengthening administrative affairs, it may be possible to provide effective cooperation. | In general, in many target countries, school curricula are the responsibility of education-related ministries, while school lunches, nutritional education, physical measurements, data utilization, etc., are the responsibility of health-related ministries. In the field surveyed countries, a lack of cooperation between ministries was cited as a challenge, and in particular, promoting cooperation between ministries and assistance with legal development would be effective. | Cooperation for incorporating content related to promoting food and nutrition in schools into national and regional education and health policies, strategies, and plans, as well as cooperation for revising school curricula in accordance with the needs of the donor country, could lead to the implementation of a more sustainable food and nutrition education. |                                                                                                           |

Source: Developed by the Survey Team

## 4.2 Creating Checklists and Other Materials that Can be Used When Formulating School Lunches and “Shokuiku” Projects

In this survey, two checklists, namely: a "school lunch version" and a "food education version" were created to serve as reference materials when formulating school lunch and food education projects.

### (1) Checklist for Formulating School Meal Projects

**Table 4-1** shows a checklist for formulating school meal projects. It is recommended to use this to select the desired item from the "School Meal Support Menu." Check the applicable items to identify the future work.

Table 4-1 Checklist for Formulating School Meal Projects

|   | School Meal Support Menu                        | Check Items                                                                                                                                                                                                                         | Check Box |
|---|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1 | Creating School Lunch Intake Guidelines         | Have you collected and reviewed existing relevant guidelines (e.g., dietary reference intakes for children)?                                                                                                                        | ✓         |
|   |                                                 | Have you obtained the school lunch intake standards of neighboring countries as reference examples?                                                                                                                                 | ✓         |
|   |                                                 | Is there any duplication with similar assistance from donors?                                                                                                                                                                       | ✓         |
|   |                                                 | Have you identified key people to advise you on developing the guidelines?                                                                                                                                                          | ✓         |
| 2 | Nutrition Teacher                               | Would you create a new nutrition position or strengthen the capacity of current teachers who provide nutrition education in schools?                                                                                                | ✓         |
|   |                                                 | Are there people other than teachers who provide nutritional guidance at schools? (For example, nutritionists from the Ministry of Health who visit schools to provide guidance) How do you think roles should be shared with them? | ✓         |
| 3 | School Lunch Providers                          | Make a list of everyone currently involved in school meals in some way and outline their roles.                                                                                                                                     | ✓         |
|   |                                                 | Are there any roles that can be strengthened among stakeholders to improve the quality and service of school lunches?                                                                                                               | ✓         |
| 4 | Hygiene Management                              | Have you collected existing hygiene management guidelines for restaurants, etc., and reviewed their contents?                                                                                                                       | ✓         |
|   |                                                 | Have you checked with the person in charge of health management (Ministry of Health, etc.)?                                                                                                                                         | ✓         |
| 5 | Food Procurement                                | Have you organized your current situation and issues regarding logistics, such as budget management, procurement, and inventory management?                                                                                         | ✓         |
|   |                                                 | Have you prioritized the tasks you have organized?                                                                                                                                                                                  | ✓         |
| 6 | Monitoring/Assessment                           | How are the contents of school lunches and the situation regarding leftover food monitored?                                                                                                                                         | ✓         |
|   |                                                 | Is there a system for collecting data on students' height and weight at school? How is the collected data used?                                                                                                                     | ✓         |
|   |                                                 | Have you conducted any surveys on food intake at home? How are the analysis results used?                                                                                                                                           | ✓         |
| 7 | Nutrition Education and Fostering Self-reliance | Are there any surveys on the awareness of children and parents regarding dietary intake?                                                                                                                                            | ✓         |
|   |                                                 | Are there any initiatives to encourage behavioral change among children and parents towards healthier eating habits?                                                                                                                | ✓         |
| 8 | Private Sector Collaboration                    | In running school lunches, have you made a list of the private companies you currently work with and clarified their roles?                                                                                                         | ✓         |

|    | School Meal Support Menu                                | Check Items                                                                                                                                                                 | Check Box |
|----|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|    |                                                         | Among the businesses on your list, are there any that should be reviewed in order to improve school lunch services? Are there any businesses that you can collaborate with? | ✓         |
| 9  | Community Collaboration Promotion                       | Have you compiled a list of potential relevant organizations, such as parent-teacher associations, local education, and nutrition groups?                                   | ✓         |
|    |                                                         | Have you consulted with relevant organizations to introduce/improve school lunches? Are there any initiatives that can be undertaken?                                       | ✓         |
| 10 | Strengthening Administrative Support for School Lunches | Have you listed the relevant ministries and agencies and identified their current roles from central to local level?                                                        | ✓         |
|    |                                                         | Which ministries and agencies and at what levels do they need strengthening?                                                                                                | ✓         |

Source: Survey Team

## (2) Checklist for Formulating School Lunch Projects

Table 4-2 shows the checklist for formulating school lunch projects. Check the status of each Check Item in the "School Lunch Support Menu" by selecting Yes or No. Menus with a high number of "Yes" responses are considered to have high priority.

Table 4-2 Checklist for Formulating School Lunch Projects

|   | School Lunch Support Menu               | Check items                                                                                                                                                                                                                   | Yes | No |
|---|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 1 | Creating School Lunch Intake Guidelines | School lunch intake standards are "unestablished".                                                                                                                                                                            |     |    |
|   |                                         | Related guidelines (such as dietary reference intakes for children) are "not yet established".                                                                                                                                |     |    |
|   |                                         | There is a need for support in creating school lunch intake guidelines.                                                                                                                                                       |     |    |
| 2 | Nutrition Teacher                       | Currently, there are no teachers in charge of nutritional guidance at school, or there are teachers in charge of nutritional guidance but capacity building is necessary.                                                     |     |    |
|   |                                         | There are no non-teacher personnel who can provide nutritional guidance in schools (e.g., nutritionists dispatched by the Ministry of Health), or there are non-teacher personnel but are insufficient in number.             |     |    |
|   |                                         | There is a need for support in training nutrition teachers.                                                                                                                                                                   |     |    |
| 3 | School Lunch Providers                  | Regarding the implementation of school lunches, there is "no opportunity" for regular exchange of opinions between the key personnel (e.g., cooks, school nurses, etc.) and the principal, who is responsible for the school. |     |    |
|   |                                         | There is a need for support in developing school lunch staff or strengthening cooperation between related parties.                                                                                                            |     |    |
| 4 | Hygiene Management                      | Hygiene guidelines for school cafeterias are "not established".                                                                                                                                                               |     |    |
|   |                                         | Although hygiene management guidelines for school cafeterias have been established, regular monitoring by government officials is "not being carried out" or guidance is "not being thoroughly implemented."                  |     |    |
|   |                                         | There is a need for support to improve hygiene management.                                                                                                                                                                    |     |    |
| 5 | Food Procurement                        | Schools and local governments are responsible for activities related to food procurement for school lunches, such as                                                                                                          |     |    |

|    | School Lunch Support Menu                                        | Check items                                                                                                                                                                                        | Yes | No |
|----|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
|    |                                                                  | budget management, procurement, and inventory management.                                                                                                                                          |     |    |
|    |                                                                  | There are challenges in the process of procuring food for school lunches and there is a need for support.                                                                                          |     |    |
| 6  | Monitoring/<br>Assessment                                        | The monitoring system for the contents of school lunches/meals and the situation regarding leftover food is "not well established".                                                                |     |    |
|    |                                                                  | The system for health checks and measuring height and weight data of children at school is "not well established", or even if there is a system, the data from the measurements is "not utilized". |     |    |
|    |                                                                  | Surveys on children's food intake at home are "not being conducted," or even if they are conducted, the analysis results are "not being utilized".                                                 |     |    |
|    |                                                                  | There is a need for support in monitoring/assessment.                                                                                                                                              |     |    |
| 7  | Nutrition Education<br>and Fostering Self-<br>Reliance           | There are no opportunities for parents and schools to collaborate on food education (meetings, newsletters, school lunch tastings, etc.)                                                           |     |    |
|    |                                                                  | There are no surveys on the awareness of children and parents regarding dietary intake.                                                                                                            |     |    |
|    |                                                                  | Nutritional guidance for underweight and obese children is not being provided.                                                                                                                     |     |    |
|    |                                                                  | There is a need for support regarding food education and fostering independence.                                                                                                                   |     |    |
| 8  | Private Sector<br>Collaboration                                  | There are services that you already outsource or would like to outsource in the areas of food procurement, cooking, and hygiene management.                                                        |     |    |
|    |                                                                  | There is a need for support in utilizing private sector collaboration to improve the quality of school lunches.                                                                                    |     |    |
| 9  | Community<br>Collaboration<br>Promotion                          | The school in question does not have a parent-teacher association, or the parent-teacher association is "hardly active."                                                                           |     |    |
|    |                                                                  | There is no cooperation with the parents' association regarding the operation of school lunches/canteens, or even if there is cooperation, it is insufficient.                                     |     |    |
|    |                                                                  | There is a need to strengthen cooperation with the community, including parent-teacher associations.                                                                                               |     |    |
| 10 | Strengthening<br>Administrative<br>Support for School<br>Lunches | School lunch laws are "underdeveloped".                                                                                                                                                            |     |    |
|    |                                                                  | Guidelines and manuals for implementing school lunches are "not yet established".                                                                                                                  |     |    |
|    |                                                                  | There is a need to improve laws and systems to promote school lunches.                                                                                                                             |     |    |

Source: Survey Team

### (3) Checklist for Formulating Food Education Projects

Table 4-3 shows a checklist for formulating a food education project. Check the current status of each Check Item in the "Food Education Support Menu" by selecting Yes or No. Menus with a high number of "Yes" responses are considered to have high priority.

Table 4-3 Checklist for Formulating a Food Education Project

|   | Food Education Support Menu                                    | Current Status Confirmation                                                                                                                                                                                                        | Yes | No |
|---|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 1 | Nutritional Human Resource Development                         | Currently, there are no teachers in charge of nutritional guidance at school, or there are teachers in charge of nutritional guidance but capacity building is necessary.                                                          |     |    |
|   |                                                                | There are no non-teacher personnel who can provide nutritional guidance in schools (e.g. nutritionists dispatched by the Ministry of Health), or there are non-teacher personnel but are insufficient in number.                   |     |    |
|   |                                                                | There is a need for support in training nutrition teachers.                                                                                                                                                                        |     |    |
| 2 | Development of Teaching Materials and Manuals                  | Textbooks, teaching materials, and manuals that include nutrition education content are underdeveloped, or there is room for improvement in light of the nutritional issues of the country.                                        |     |    |
|   |                                                                | Educational materials based on the nutritional guidelines of the country have not been created.                                                                                                                                    |     |    |
|   |                                                                | There is a need for support in the development of teaching materials and manuals.                                                                                                                                                  |     |    |
| 3 | Introduction of School Lunches and their Use in Food Education | There is already a system in place to provide meals to some children.                                                                                                                                                              |     |    |
|   |                                                                | The ministry in charge of school lunches intends to expand the scope of the system.                                                                                                                                                |     |    |
|   |                                                                | When it is difficult to introduce school lunches, there is a need for food education based on the ingredients in the cafeteria (e.g., introducing seasonal menus and providing explanations).                                      |     |    |
| 4 | Collaboration with Health and Other Subjects                   | Currently, food and nutrition education are not included in school classes, or even if it is included, the amount of information is insufficient.                                                                                  |     |    |
|   |                                                                | It is possible to devise ways to deepen the knowledge about nutrition education (e.g., by incorporating games and experiments) in subjects related to nutrition education, such as health, physical education, and home economics. |     |    |
|   |                                                                | There is a need for support to promote food education throughout the school.                                                                                                                                                       |     |    |
| 5 | Cooperation with Families and Communities                      | The target school does not have a parent-teacher association, or at the current stage, food education is rarely brought up as a topic at parent-teacher meetings.                                                                  |     |    |
|   |                                                                | There is no cooperation with the parents' association regarding the operation of school lunches/canteens, or even if there is cooperation, it is insufficient.                                                                     |     |    |
|   |                                                                | There are no initiatives to collaborate with producers regarding food education.                                                                                                                                                   |     |    |

|   | Food Education Support Menu                                   | Current Status Confirmation                                                                                                                                                                                  | Yes | No |
|---|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
|   |                                                               | There is a need to strengthen cooperation with families and communities regarding the promotion of food education.                                                                                           |     |    |
| 6 | Improvement of the Food Environment                           | Guidelines regarding school cafeterias and restaurants/food stalls around schools are "not yet established".                                                                                                 |     |    |
|   |                                                               | Although hygiene management guidelines for school cafeterias have been established, regular monitoring by government officials is "not being carried out" or guidance is "not being thoroughly implemented". |     |    |
|   |                                                               | There is a need for support in improving the food environment.                                                                                                                                               |     |    |
| 7 | Monitoring/Assessment                                         | The monitoring system for the contents of school lunches/meals and the situation regarding leftover food is "not well established".                                                                          |     |    |
|   |                                                               | The system for health checks and measuring the height and weight of children at school is "not well established", or even if there is a system, the data from the measurements is "not utilized".            |     |    |
|   |                                                               | Surveys on children's food intake at home are "not being conducted," or even if they are conducted, the analysis results are "not being utilized".                                                           |     |    |
|   |                                                               | There is a need for support in monitoring/assessment.                                                                                                                                                        |     |    |
| 8 | Administrative Functions to Support Food Education in Schools | Laws related to nutrition are "underdeveloped".                                                                                                                                                              |     |    |
|   |                                                               | Guidelines such as nutritional intake standards for children are "underdeveloped".                                                                                                                           |     |    |
|   |                                                               | There is a need to establish laws and systems to promote food education in schools.                                                                                                                          |     |    |

Source: Survey Team

### 4.3 Creating Food “Shokuiku” Leaflets

This survey created a "Food Education Version" of the school lunch leaflet, based on the format of the school lunch leaflet developed through the "Information Collection and Confirmation Survey on the Direction of Support Related to School Lunch Programs and Nutrition and Health Promotion Programs in the Workplace" conducted by JICA in 2022. The structure of the food education leaflet is shown in Table 4-4.

Table 4-4 Composition of the Dietary Education Leaflet

|                                                                                          |
|------------------------------------------------------------------------------------------|
| "Food education to foster sustainable and healthy food choices"                          |
| Food education in Japan:<br>1. What is Food Education?<br>2. Basic Law on Food Education |

|                                                                                               |
|-----------------------------------------------------------------------------------------------|
| 3. Characteristics of Food Education                                                          |
| Promoting Food Education as a National Movement                                               |
| Cooperation content that takes advantage of the characteristics of food education in schools: |
| 1. Nutritional Human Resource Development                                                     |
| 2. Development of teaching materials and manuals                                              |
| 3. Introduction of school lunches and their use in food education                             |
| 4. Collaboration with health and other subjects                                               |
| 5. Cooperation with families and communities                                                  |
| 6. Improvement of the food environment                                                        |
| 7. Monitoring/assessment                                                                      |
| 8. Administrative functions to support food education in schools                              |
| Cooperation Tailored to Each Country's Needs                                                  |
| Cooperation cases in Mongolia, Malaysia, Indonesia, and Paraguay                              |

Source: Survey Team

#### 4.4 Creating “Shokuiku” Materials Based on Japanese Materials

##### (1) Creation of Food Education Materials for Fourth Graders

Based on the results of discussions with JICA and the Malaysian Ministry of Education Curriculum Division, fourth-grade elementary students were selected as the target audience for the nutrition education materials to be created in this study. The selection was made because they have the comprehension skills to understand the contents of nutrition education, and are less preoccupied compared with fifth and sixth graders.

In Malaysia, "nutrition" is taught in health classes at elementary schools. Therefore, so the study team collected health curricula and textbooks for first through sixth graders and organized the descriptions of nutrition. In addition, based on the contents of the key messages in Malaysia's Nutrition Guidelines, the study team organized a "draft key messages for fourth graders." In line with the contents of the key messages, the study team then created a draft booklet titled <sup>37</sup>"Let's think about eating," which refers to the descriptions in Japan's Ministry of Education, Culture, Sports, Science and Technology's elementary school nutrition education materials, health textbooks from various

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<sup>37</sup> "Enjoying meals and nutrition education (February 2016)"

publishers, and home economics textbooks. In the process of selecting the key messages and creating the draft booklet, the team discussed the content at monthly meetings with JICA.

In July 2024, the English versions of five documents—including a booklet proposal for fourth graders, pre- and post-tests, a newsletter for parents, a teacher's guide, and a poster for school cafeterias—were submitted to the Malaysian Ministry of Education's Curriculum Division and received approval. Following this, translations into Malay, Chinese, and Tamil versions were also completed. However, due to a lack of response from the top brass of the Malaysian Ministry of Education regarding the implementation of the pilot activities, in September 2024, taking into account the implementation deadline of this study, the implementation of the pilot activities in elementary schools was abandoned.

## **(2) Creating Nutrition Education Materials for Kindergarten Parents**

In October 2025, during a visit to Japan by officials from the Ministry of Women, Early Childhood and Community Wellbeing Development (KPWK)—the agency in charge of preschool education in Sarawak—it was confirmed that there was a high interest in nutrition education. As a result, discussions were held with Sedidik regarding the implementation of pilot activities with kindergarten parents, and a proposal was submitted to KPWK in December 2024, and the activity content was approved. From December 11th to 14th, the study team visited Sarawak and, following meetings with the relevant parties, it was agreed that pilot activities would be conducted in January 2025 at three kindergartens in Kuching. Since the target group of the nutrition education materials was changed to "kindergarten parents," key messages were revised based on the contents of the "Malaysia Dietary Guidelines (2020)". The final content was finalized after supervision by a professor in the Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, University of Sarawak, who is one of the co-authors of the guidelines.

## Chapter.5

## PILOT ACTIVITIES USING “SHOKUIKU” MATERIALS

The location of Sarawak is shown in Figure 5-1. Its state capital, Kuching, [134] is located 971 km in a straight line from Malaysia’s capital, Kuala Lumpur, with a flight time of approximately 1 hour and 50 minutes by plane.



Source: [136]

Figure 5-1 Location of Sarawaku

### 5.1 Overview of the Pilot Activities

An overview of the pilot activities is shown in Table 5-1 Overview of the Pilot Activities while an overview of the target facilities is shown in Table 5-2.

Table 5-1 Overview of the Pilot Activities

|                     |                                                                                                                                                                                                                                     |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose             | <ol style="list-style-type: none"> <li>1. To verify the effectiveness of "food education" teaching materials for parents of kindergarten children.</li> <li>2. To improve the materials based on participants’ feedback.</li> </ol> |
| Activities          | Conduct a workshop to raise nutritional awareness using the "food education" teaching materials.                                                                                                                                    |
| Eligible Facilities | Public kindergartens in Sarawak (three facilities in different geographical locations were selected)                                                                                                                                |
| Target Audience     | Parents of kindergarten children, 20 people per facility                                                                                                                                                                            |
| Date                | January 18-19, 2025                                                                                                                                                                                                                 |

The overview of the three kindergartens selected as target facilities is shown in Table 5-2. The selection of the target facilities was carried out by Sedidik based on the location conditions presented by the Survey Team.

Table 5-2 Overview of the Target Facility

|   | Location    | Target Facility Name | Distance from the City Centre            | Facility Overview                     | Number of Children (2025) |
|---|-------------|----------------------|------------------------------------------|---------------------------------------|---------------------------|
| 1 | Urban Areas | UTC                  | 550 km, approximately 2 minutes by car   | Full-time course, with nursery school | 50                        |
| 2 | Suburban    | Semariang            | 12.8 km, approximately 25 minutes by car | Full-time course, with nursery school | 46                        |
| 3 | Rural Areas | Santubong            | 33 km, approximately 45 minutes by car   | Half-day, kindergarten only           | 25                        |

Source: Prepared by the Survey Team based on the results of interviews

For this workshop, the parents of 20 children, randomly selected by Sedidik from each kindergarten, were invited to the workshop. The physical characteristics of the selected children (calculated by applying BMI values to the WHO growth curve) are shown in Table 5-3.

Table 5-3 Physical Characteristics of the Selected Children

| Eligible Facilities | Number of Eligible Children | Too Thin | Thin | Standard | Overweight | Obesity | Total Composition Ratio |
|---------------------|-----------------------------|----------|------|----------|------------|---------|-------------------------|
| UTC                 | 20                          | 20%      | 20%  | 35%      | 10%        | 15%     | 100%                    |
| Semariang           | 20                          | 10%      | 25%  | 55%      | 0%         | 10%     | 100%                    |
| Santubong           | 20                          | 5%       | 10%  | 50%      | 25%        | 10%     | 100%                    |
| Whole               | 60                          | 12%      | 18%  | 47%      | 12%        | 12%     | 100%                    |

Source: Prepared by the Survey Team based on data provided by Sedidik

### 5.1.1 Number of Participants

The pilot activities were carried out in two days, starting from January 18 to 19, at three kindergartens operated by Sedidik. A total of 60 parents were scheduled to participate, 20 from each facility. But due to cancellations caused by the bad weather, only a total of 41 people participated from the three facilities. The number of participants by facility is shown in Table 5-4.

Table 5-4 Number Of Participants by Facility for the Four Pilot Activities

| Date                       | Eligible Facilities | Number of Expected Participants | Number of Participants | Pre-test and Post-test Number of Respondents |
|----------------------------|---------------------|---------------------------------|------------------------|----------------------------------------------|
| Saturday, January 18, 2025 | Semariang           | 20                              | 13                     | 13                                           |
| Sunday, January 19, 2025   | Santubong           | 20                              | 9                      | 9                                            |
| Sunday, January 19, 2025   | UTC                 | 20                              | 19                     | 14                                           |
| Whole                      |                     | 60                              | 41                     | 36                                           |

Source: Survey Team

### 5.1.2 Workshop Program

The nutrition awareness workshop program is shown in Table 5-5. The program is common to all three facilities.

Table 5-5 1

| Time                    | Activities                                                 |
|-------------------------|------------------------------------------------------------|
| 09:00 a.m.              | Participants' self-introduction, pre-test, and orientation |
| 09:30 a.m.– 11:00 a.m.  | Explanation of the contents of food education materials    |
| 11:00 a.m. - 12:00 p.m. | Lunch break and post-test                                  |
| 12:00 p.m. - 12:45 p.m. | Group discussion                                           |
| 12:45 p.m.              | Summary                                                    |
| 13: 00 p.m.             | Closing                                                    |

Source: Survey Team

### 5.1.3 Workshop Photos

Sedidik Semariang (January 18, 2025)



Sedidik Satubong (January 19, 2025)



Sedidik UTC (January 19, 2025)



## 5.2 Comparison of Pre-test and Post-test Results

To assess the parents' level of understanding regarding the contents of the “Shokuiku” materials, simple tests (pre-tests and post-tests) were administered. Additionally, to understand the eating habits of the children, the questionnaire was administered to the parents. An overview of the results is shown below. There was a total number of 36 parents from all three facilities who took the pre- tests and post-tests and eating habits questionnaire.

The percentage of correct answers for each question in the pre-test and post-test is shown below.

Some questions (Question Nos. 2, 7, and 11) had a correct answer rate of 95% or higher in the pre-test, there was no change in the correct answer rate between the pre-test and post-test. However, for all other questions, an increase in the correct answer rate was observed in the post-test compared with the pre-test and post-test.

Table 5-6 Correct Answer Rate for Each Question (in percentage)

| Corresponding Message in the Material        | No | Question Summary                                               | Facility     | Pre-test Correct Answer Rate (%) | Post-test Correct Answer Rate (%) |
|----------------------------------------------|----|----------------------------------------------------------------|--------------|----------------------------------|-----------------------------------|
| Introduction: To Refresh Your Memory!        | 1  | Malaysian Food Pyramid                                         | Semariang    | 23.1                             | 76.9                              |
|                                              |    |                                                                | Santubong    | 22.2                             | 88.9                              |
|                                              |    |                                                                | UTC          | 35.7                             | 100                               |
|                                              |    |                                                                | <b>Total</b> | <b>27.8</b>                      | <b>88.9</b>                       |
|                                              | 2  | Three Functions of Food                                        | Semariang    | 92.3                             | 92.3                              |
|                                              |    |                                                                | Santubong    | 100                              | 100                               |
|                                              |    |                                                                | UTC          | 100                              | 100                               |
|                                              |    |                                                                | <b>Total</b> | <b>97.2</b>                      | <b>97.2</b>                       |
| 1. Do Your Children Have “Balanced Lunches”? | 3  | Malaysian Food Plate                                           | Semariang    | 76.9                             | 84.6                              |
|                                              |    |                                                                | Santubong    | 11.1                             | 55.6                              |
|                                              |    |                                                                | UTC          | 57.1                             | 92.9                              |
|                                              |    |                                                                | <b>Total</b> | <b>52.8</b>                      | <b>80.6</b>                       |
| 2. Make Sure Your Children Have Breakfast    | 4  | Importance of Eating Breakfast                                 | Semariang    | 61.5                             | 69.2                              |
|                                              |    |                                                                | Santubong    | 77.8                             | 77.8                              |
|                                              |    |                                                                | UTC          | 71.4                             | 78.6                              |
|                                              |    |                                                                | <b>Total</b> | <b>69.4</b>                      | <b>75.0</b>                       |
|                                              | 5  | Nutritionally Balanced Breakfast                               | Semariang    | 46.2                             | 69.2                              |
|                                              |    |                                                                | Santubong    | 44.4                             | 55.6                              |
|                                              |    |                                                                | UTC          | 78.6                             | 71.4                              |
|                                              |    |                                                                | <b>Total</b> | <b>58.3</b>                      | <b>66.7</b>                       |
| 3. Cook Nutritious Food at Home              | 6  | Nutritional Differences Between Eating Out and Cooking at Home | Semariang    | 100                              | 100                               |
|                                              |    |                                                                | Santubong    | 88.9                             | 100                               |
|                                              |    |                                                                | UTC          | 92.9                             | 100                               |
|                                              |    |                                                                | <b>Total</b> | <b>94.4</b>                      | <b>100</b>                        |
|                                              | 7  |                                                                | Semariang    | 100                              | 100                               |

| Corresponding Message in the Material     | No | Question Summary                                 | Facility     | Pre-test Correct Answer Rate (%) | Post-test Correct Answer Rate (%) |
|-------------------------------------------|----|--------------------------------------------------|--------------|----------------------------------|-----------------------------------|
| 4. Try to Manage Your Children's Snacks   |    | Downsides of Eating Too Many Snacks              | Santubong    | 100                              | 100                               |
|                                           |    |                                                  | UTC          | 100                              | 100                               |
|                                           |    |                                                  | <b>Total</b> | <b>100</b>                       | <b>100</b>                        |
| 5. What is Good to Drink?                 | 8  | The Downsides of Drinking Too Many Sugary Drinks | Semariang    | 100                              | 100                               |
|                                           |    |                                                  | Santubong    | 88.9                             | 100                               |
|                                           |    |                                                  | UTC          | 100                              | 100                               |
|                                           |    |                                                  | <b>Total</b> | <b>97.2</b>                      | <b>100</b>                        |
| 6. Make Your Children Take Milk Every Day | 9  | Milk Intake, Type, and Nutrients                 | Semariang    | 69.2                             | 69.2                              |
|                                           |    |                                                  | Santubong    | 22.2                             | 22.7                              |
|                                           |    |                                                  | UTC          | 71.4                             | 100                               |
|                                           |    |                                                  | <b>Total</b> | <b>58.3</b>                      | <b>80.6</b>                       |
| 7. Pay Attention to Nutrition Labeling    | 10 | Nutrition Labeling                               | Semariang    | 0                                | 15.4                              |
|                                           |    |                                                  | Santubong    | 0                                | 11.1                              |
|                                           |    |                                                  | UTC          | 0                                | 0                                 |
|                                           |    |                                                  | <b>Total</b> | <b>0</b>                         | <b>8.3</b>                        |
| 8. Be Careful of Germs                    | 11 | Benefits of Hand Washing                         | Semariang    | 100                              | 100                               |
|                                           |    |                                                  | Santubong    | 100                              | 100                               |
|                                           |    |                                                  | UTC          | 100                              | 100                               |
|                                           |    |                                                  | <b>Total</b> | <b>100</b>                       | <b>100</b>                        |
| 9. Make Your Children Active!             | 12 | Benefits of Physical Activity                    | Semariang    | 46.2                             | 69.2                              |
|                                           |    |                                                  | Santubong    | 33.3                             | 66.7                              |
|                                           |    |                                                  | UTC          | 35.7                             | 78.6                              |
|                                           |    |                                                  | <b>Total</b> | <b>38.9</b>                      | <b>72.2</b>                       |
| 10. Food is Precious                      | 13 | Leftovers                                        | Semariang    | 92.3                             | 100                               |
|                                           |    |                                                  | Santubong    | 100                              | 100                               |
|                                           |    |                                                  | UTC          | 78.6                             | 100                               |
|                                           |    |                                                  | <b>Total</b> | <b>88.9</b>                      | <b>100</b>                        |

Source: Developed by the Survey Team

### (1) Questions that Already Had a High Correct Answer Rate in the Pre-test

Among the 13 questions, the average correct answer rate for the participating parents was over 80% in the pre-test for questions about the three functions of food (Question No. 2), the nutritional differences between eating out and cooking at home (Question No. 6), the downsides of snacks and sugary drinks (Questions No. 7 and 8), the benefits of hand washing (Question No. 11), and food waste (Question No. 13).

Although the “*Shokuiku*” materials used in this workshop were customized for Malaysian parents in terms of their expressions and content, the original content was created for elementary school students (middle grades). One

reason for the high pre-test scores may be that the difficulty level of the pre- and post-questions themselves was set relatively low.

## **(2) Questions for Which a Large Increase in the Correct Answer Rate Was Observed in the Post-test**

Among the 13 questions, the average correct answer rate of participating parents was less than 60% in the pre-test for the following questions: Malaysian Food Pyramid (Question No. 1), Malaysian Food Plate (Question No. 3), a nutritionally balanced breakfast (Question No. 5), milk intake, type and nutrients (Question No. 9), nutrition labeling (Question No. 10), and benefits of physical activity (Question No. 12). For all these questions, the correct answer rate increased in the post-test, especially for the Malaysian Food Pyramid (Question No. 1), Malaysian Food Plate (Question No. 3), milk intake, type and nutrients (Question No. 9), and benefits of physical activity (Question No. 12). The correct answer rate increased by more than 20% in the post-test compared with the pre-test. In particular, the Malaysian Food Pyramid and Food Plate are important knowledge that form the basis for a nutritionally balanced diet. It was suggested that this “*Shokuiku*” material will be useful in improving the nutritional knowledge that is lacking among Malaysian parents.

## **(3) Questions for Which a Large Increase in the Correct Answer Rate Was Not Observed in the Post-test**

On the other hand, the increase in the rate of correct answers in the post-test for the importance of eating breakfast (Question No. 4), a nutritionally balanced breakfast (Question No. 5), and nutrition labeling (Question No. 10) was not as high (less than 10%).

A nutritionally balanced breakfast (Question No. 5) was a question that asked participants to choose nutritionally balanced menus from three options, but the increase in the correct answer rate in the post-test was only 8.4%, which was a relatively small improvement. This question was a practical/applied question that considered knowledge of the Malaysian Food Pyramid (Question No. 1) and the Food Plate (Question No. 3). While a large increase in the correct answer rate was observed in the post-test for Questions No. 1 and No. 3, practical/applied Question No. 5 did not show a large increase in the correct answer rate. This suggests that though a short-term lecture, such as this workshop, are effective in basic knowledge but may be less effective in understanding of the practical/applied aspects. In order to promote understanding of the practical/applied aspects that can lead to behavioral change, it seems that a lesson curriculum over a certain period of time (such as two months) is necessary.

It is highly likely that the question about the significance of eating breakfast (Question No. 4) was somewhat difficult, and the intention behind the design of the nutrition labelling question (Question No. 10) was not fully conveyed to respondents<sup>38</sup>.

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<sup>38</sup> Regarding the significance of eating breakfast (Question No. 4), one of the correct answer options was not directly stated in the nutrition education materials. Regarding nutrition labeling (Question No. 10), almost all parents selected "manufacturing date/expiration date" as information found in the nutrition labels. While many products include the manufacturing date/best expiration date, these are not listed as part of the "nutrition labeling".

#### (4) Differences in Results Between Facilities

For some questions (Question nos. 3 and 9), the correct answer rate was lower in Santubong (a suburban facility) compared with the other facilities. However, no clear patterns were found that would allow for consideration of differences in knowledge between regions or facilities.

#### (5) Teachers' Pre-test and Post-test Results (TADIKA SeDidik UTC)

In order to understand the level of understanding of teacher's nutrition education materials, a pre-test and post-test was conducted on five UTC teachers. The results are shown below. The tendency of the correct answer rate was almost the same as the results of the parents, and it was not found that the correct answer rate of the teachers was significantly higher (or lower) than that of the parents.

Table 5-7 2

| Corresponding Message in the Material        | No | Question Summary                                               | Pre-test Correct Answer Rate (%) | Post-test Correct Answer Rate (%) |
|----------------------------------------------|----|----------------------------------------------------------------|----------------------------------|-----------------------------------|
| Introduction: To Refresh Your Memory!        | 1  | Malaysian Food Pyramid                                         | 20.0%                            | 80.0%                             |
|                                              | 2  | Three Functions of Food                                        | 100%                             | 100%                              |
| 1. Do Your Children Have "Balanced Lunches"? | 3  | Malaysian Food Plate                                           | 60.0%                            | 60.0%                             |
| 2. Make Sure Your Children Have Breakfast    | 4  | Importance of Eating Breakfast                                 | 80.0%                            | 80.0%                             |
|                                              | 5  | Nutritionally Balanced Breakfast                               | 40.0%                            | 60.0%                             |
| 3. Cook Nutritious Foods at Home             | 6  | Nutritional Differences Between Eating Out and Cooking at Home | 80.0%                            | 100%                              |
| 4. Try to Manage Your Children's Snacks      | 7  | Downsides of Eating Too Many Snacks                            | 100%                             | 100%                              |
| 5. What is Good to Drink?                    | 8  | Downsides of Drinking Too Many Sugary Drinks                   | 100%                             | 100%                              |
| 6. Make Your Children Take Milk Every Day    | 9  | Milk Intake, Type, and Nutrients                               | 60.0%                            | 80.0%                             |
| 7. Pay Attention to Nutrition Labeling       | 10 | Labeling                                                       | 0%                               | 0%                                |
| 8. Be Careful of Germs                       | 11 | Benefits of Hand Washing                                       | 80.0%                            | 100%                              |
| 9. Make Your Children be Active!             | 12 | The Benefits of Physical Activity                              | 60.0%                            | 80.0%                             |
| 10. Food Is Precious                         | 13 | About Leftovers                                                | 60.0%                            | 100%                              |

Source: Developed by the Survey Team

### 5.3 Results of the Dietary Questionnaire Analysis

Below are the results of a questionnaire on eating habits administered to parents<sup>39</sup>.

#### Questions About Children's Dinner

Below are the results of the question, "Did your child eat dinner yesterday?" Although there were some differences in the results depending on the facility, overall, more than 90% of parents answered with "yes."

Table 5-8 Results of the Question "Did your child eat dinner yesterday?"

| Facility     | Yes (person)      | No (person)     |
|--------------|-------------------|-----------------|
| Semariang    | 12 (92.3%)        | 1 (7.7%)        |
| Santubong    | 9 (100%)          | 0 (0%)          |
| UTC          | 12 (85.7%)        | 2 (14.3%)       |
| <b>Total</b> | <b>33 (91.7%)</b> | <b>3 (8.3%)</b> |

Source: Developed by the Survey Team

The results of the question, "Did yesterday's dinner contain the nutrients below?" are shown in the following table. Approximately 40% of parents said that yesterday's dinner contains all three nutrients (carbohydrates, protein, and vitamins/minerals) in Malaysian food plate.

Table 5-9 Result of 3Question, "Did Yesterday's Dinner Contain the Nutrients Below?"

| Facility     | Carbohydrates   | Carbohydrates and Protein | Carbohydrates, Protein and Vitamins/Minerals | Carbohydrates and Vitamins/Minerals | Protein          | No Answer       |
|--------------|-----------------|---------------------------|----------------------------------------------|-------------------------------------|------------------|-----------------|
| Semariang    | 1 (7.7%)        | 6 (46.2%)                 | 4 (30.8%)                                    | 0 (0%)                              | 1 (7.7%)         | 1 (7.7%)        |
| Santubong    | 0 (0%)          | 0 (0%)                    | 7 (77.8%)                                    | 0 (0%)                              | 2 (22.2%)        | 0 (0%)          |
| UTC          | 0 (0%)          | 4 (28.6%)                 | 4 (28.6%)                                    | 1 (7.1%)                            | 3 (21.4%)        | 2 (14.3%)       |
| <b>Total</b> | <b>1 (2.8%)</b> | <b>10 (27.8%)</b>         | <b>15 (41.7%)</b>                            | <b>1 (2.8%)</b>                     | <b>6 (16.7%)</b> | <b>3 (8.3%)</b> |

Source: Developed by the Survey Team

#### Question About Snacks

Below are the results of the question, "Did your child eat a snack between lunches and dinner yesterday?" Although there were slight differences in the results depending on the facility, overall, about 70% of parents answered with "yes".

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<sup>39</sup> For two questions (question about what snacks children ate yesterday and the amount of soft drinks children drank) where there were not enough responses (<10 respondents), data is not presented.

Table 5-10 Results of the Question, "Did your child eat a snack between lunches and dinner yesterday?"

| Facility     | Yes (person)      | No (person)       |
|--------------|-------------------|-------------------|
| Semariang    | 9 (69.2%)         | 4 (30.8%)         |
| Santubong    | 6 (66.7%)         | 3 (33.3%)         |
| UTC          | 10 (71.4%)        | 4 (28.6%)         |
| <b>Total</b> | <b>25 (69.4%)</b> | <b>11 (30.6%)</b> |

Source: Developed by the Survey Team

Below are the results of the question, "Did you control your child's snacks (the amount, type, and timing)?". Although there were some differences in the results depending on the facility, overall, about 90% of parents answered with "yes".

On the other hand, in workshops, many participating parents mentioned the difficulty of controlling their children's snacks. To better understand the extent to which parents can control the amount, type, and timing of snack intake, more detailed survey and questionnaire are needed.

Table 5-11 Results of the Question, "Did you control your child's snacks?"

| Facility     | Yes (person)      | No (person)      |
|--------------|-------------------|------------------|
| Semariang    | 13 (100%)         | 0 (0%)           |
| Santubong    | 7 (77.8%)         | 2 (22.2%)        |
| UTC          | 12 (85.7%)        | 2 (14.3%)        |
| <b>Total</b> | <b>32 (88.9%)</b> | <b>4 (11.1%)</b> |

Source: Developed by the Survey Team

#### Questions About Soft Drinks

The results of the question, "Did your child drink a soft drink yesterday?" are shown below. The results varied greatly between facilities, but at every facility, more than half of the parents answered with "no."

Table 5-12 Responses to the Question "Did your child drink a soft drink yesterday?"

| Facility     | Yes (person)     | No (person)       |
|--------------|------------------|-------------------|
| Semariang    | 0 (0%)           | 13 (100%)         |
| Santubong    | 4 (44.4%)        | 5 (55.6%)         |
| UTC          | 3 (21.4%)        | 11 (78.6%)        |
| <b>Total</b> | <b>7 (19.4%)</b> | <b>29 (80.6%)</b> |

Source: Developed by the Survey Team

#### Questions About Handwashing

The results of the question, "Did your child wash their hands before dinner last night?" are shown below. Although there were some differences in the results depending on the facility, more than 90% of parents at all facilities answered with "yes".

Table 5-13 Results of the Question, "Did your child wash their hands before dinner last night?"

| Facility     | Yes (person)      | No (person)     |
|--------------|-------------------|-----------------|
| Semariang    | 12 (92.3%)        | 1 (7.7%)        |
| Santubong    | 9 (100%)          | 0 (0%)          |
| UTC          | 14 (100%)         | 0 (0%)          |
| <b>Total</b> | <b>35 (97.2%)</b> | <b>1 (2.8%)</b> |

Source: Developed by the Survey Team

#### Questions About Exercise

The results of the question, "Did your child exercise for more than an hour yesterday (including walking to school, etc.)?" are shown below. Although the results differed slightly depending on the facility, approximately 55% of the total parents answered with "yes".

Table 5-14 Result of the Question "Did your child exercise for more than an hour yesterday?"

| Facility     | Yes (person)      | No (person)       | I don't know (person) |
|--------------|-------------------|-------------------|-----------------------|
| Semariang    | 7 (77.8%)         | 2 (22.2%)         | 0 (0%)                |
| Santubong    | 5 (38.5%)         | 7 (53.8%)         | 1 (7.7%)              |
| UTC          | 8 (57.1%)         | 5 (35.7%)         | 1 (7.1%)              |
| <b>Total</b> | <b>20 (55.6%)</b> | <b>14 (38.9%)</b> | <b>2 (5.6%)</b>       |

Source: Developed by the Survey Team

#### Questions About Leftovers

The results of the question, "Did your child eat all of their dinner last night?" are shown below. Although there were slight differences in the results depending on the facility, 50% of the total parents answered with "yes" and the remaining 50% answered with "no".

Table 5-15 Result of the Question, "Did your child eat all of their dinner last night?"

| Facility     | Yes (person)      | No (person)       |
|--------------|-------------------|-------------------|
| Semariang    | 6 (46.2.8%)       | 7 (53.8.2%)       |
| Santubong    | 6 (66.7%)         | 3 (33.3%)         |
| UTC          | 6 (42.9%)         | 8 (57.1%)         |
| <b>Total</b> | <b>18 (50.0%)</b> | <b>18 (50.0%)</b> |

Source: Developed by the Survey Team

#### Summary of Eating Habits Questionnaire Results

While it appears that children have generally developed the habit of washing their hands before meals, there is a need to improve their eating habits in areas such as nutritional balance, exercise habits, and leftovers.

## 5.4 Feedback from the Participants

After the lecture, a group discussion was held to gather opinions from the participants on the following questions. The most representative opinions are summarized below.

Questions:

(1) What did you learn from the workshop?

(2) Are there any practices you would like to implement to improve your child's eating habits? Are there any practices you would like to incorporate but find difficult to implement?

(3) Do you have any comments about the teaching materials or methods?

### (1) What did you learn from the workshop?

#### 1) General

I thought I had a fair amount of knowledge about nutrition, but I was able to deepen my understanding even further.

I've never had the chance to take the time to think about healthy eating before, so this was a great opportunity.

#### 2) Revision of Malaysian Food Pyramid

I didn't know that the food pyramid had been revised to encourage eating more vegetables and fruits than carbohydrates, so it was good to be able to update my knowledge.

#### 3) The Importance of Breakfast

I used to think that I didn't have to eat breakfast if I didn't want to, but today's workshop taught me the importance of breakfast.

#### 4) Food Labels

I have hardly ever looked at food labels before. From now on, I will compare the food labels of multiple food when I shop.

#### 5) Where does Food Come From?

I had never normally thought about food producers or distributors, but I was reminded that food passes through the hands of many different people before reaching our table.

### (2) Are there any practices you would like to implement to improve your child's eating habits? Are there any practices you would like to implement but find difficult?

#### 1) What I Want To Do

I would like to use the text as a reference and adjust the amount and timing of my children's snacks.

You want to avoid having an unhealthy stack in your home.

## **2) Points that are Difficult to Put Into Practice**

Your child keeps asking for unhealthy snacks, so you give it to him.

I want my child to eat vegetables, but he just won't eat them.

Although she tries not to give her children sweet treats or junk food, her in-laws, who live with her, secretly give them sweets when the children beg.

## **(3) Do you have any comments about the teaching materials or methods?**

### **1) General**

I hope they create another opportunity like this (many similar comments).

The time allocation of one hour for lecture and 45 minutes for discussion was appropriate and helped me to maintain concentration.

I would like it to be more interactive, with elements like games and dancing.

### **2) Date and Time of the Event**

It is best to avoid holding the workshop during the rainy season (heavy rains occurred on the day of the workshop in Santubong, causing many participants to cancel).

It is best to avoid Sundays as people attend church during that time.

### 3) Program

I am having trouble getting my child to eat, so next time I would like to add an element that teaches me how to arrange food in a way that will interest my child. I would like to see activities where I can cook and eat with my child (many comments have been similar).

If the event is held on the weekend, it would be good to include activities that children can also participate in. For example, hands-on activities like making sandwiches with children.

I want my child to be lectured on how to eat snacks. Children don't listen to what their parents say, but they may accept the opinion of a third party.

### 4) Teaching Materials

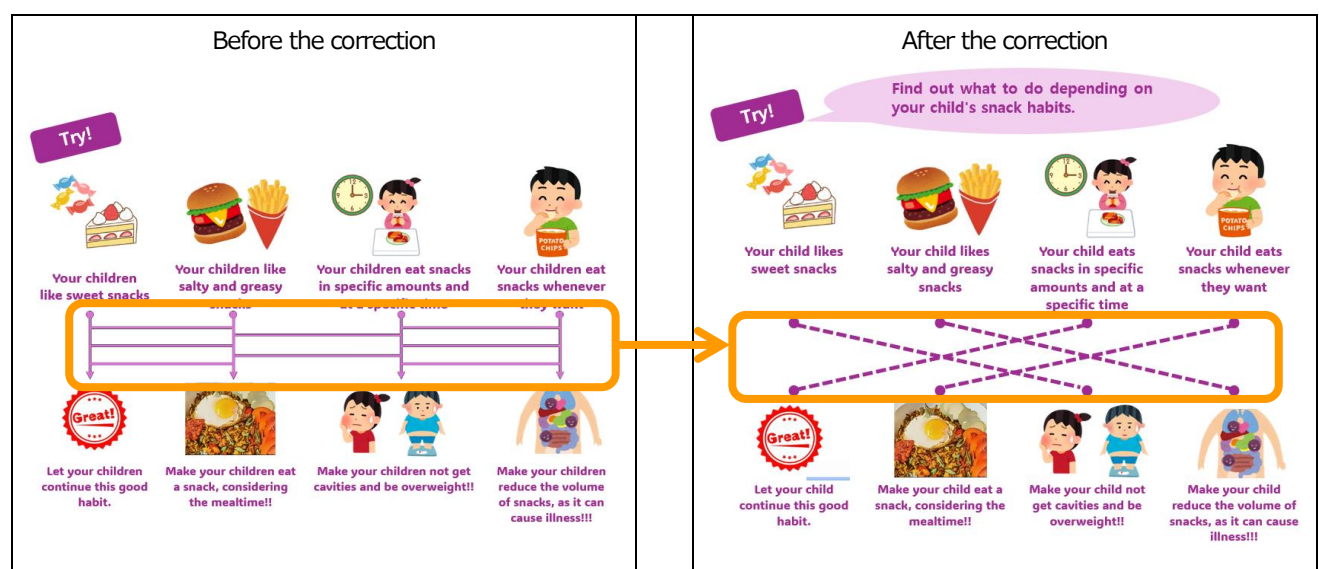
Can you give me some examples of healthy meals for breakfast, lunch, and dinner that fit within my daily calorie limit?

Please include recipes for healthy meals.

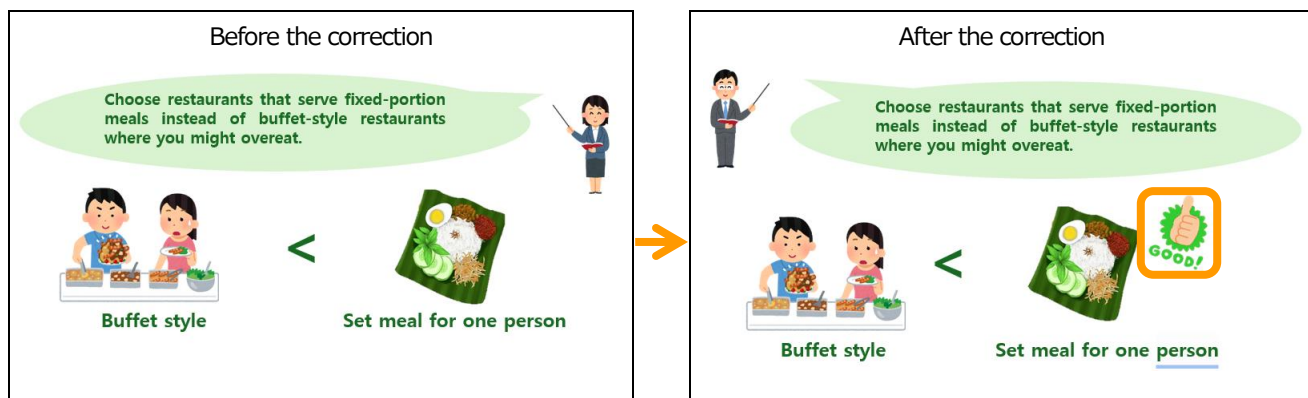
I would like the content to be easy for children to understand using only visual information, so I can show it to them at home and explain it.

### 5) Specific Improvements to Teaching Materials

After receiving feedback that people were not sure how to play the "Amidakuji" game, we improved it to use simple lines.



It was pointed out that using inequality signs to indicate which option is better was difficult to understand, so a "Good!" sign was placed next to the preferred option.



## 5.5 Challenges and Lessons Learned

As shown in Table 5-6, a comparison of the pre-test and post-test results indicates that the correct answer rate for all respondents increased from 78.8% to 89.6%. This suggests that the workshop using the food education materials had a certain effect on promoting understanding of healthy eating habits. In addition, as shown in Section 5-3 Feedback from Participants, many participants expressed a desire for more opportunities to learn about nutrition.

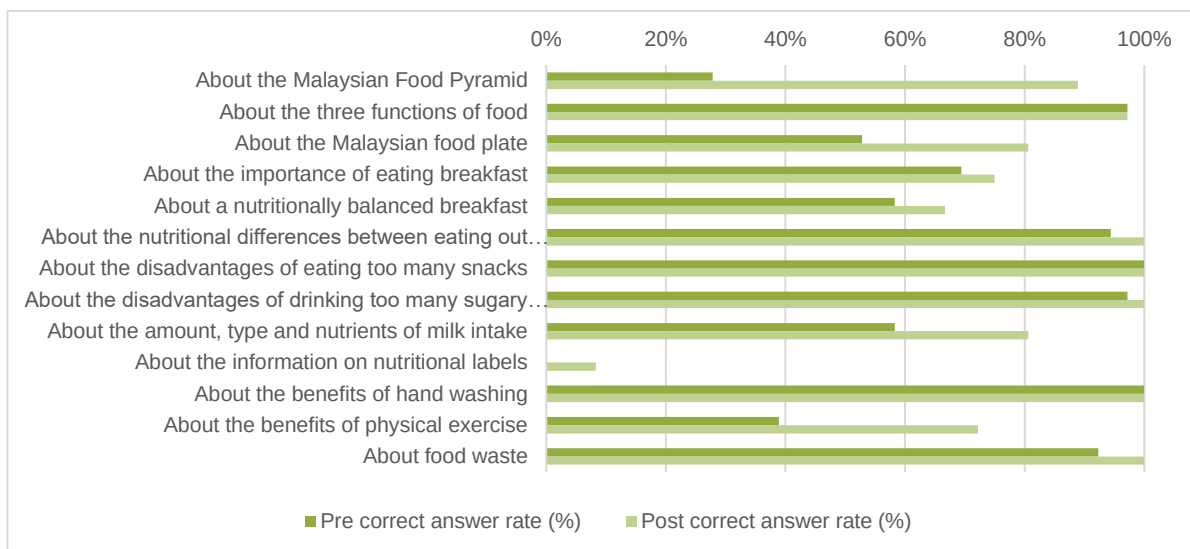
On the other hand, the results of the pre-test and post-test showed that the correct answer rate reached 78.8% at the pre-test stage, and the difficulty level was generally low. However, the correct answer rate for some questions did not improve significantly, which is an issue. To enhance learning outcomes, it is necessary to improve the teaching materials, content of the questions, and teaching methods for these questions.

During the discussion, many parents expressed concerns such as "I'm worried about my child's picky eating," "They only drink liquids and don't eat," and "They don't show any interest in food," showing that even before the issue of nutritional balance comes up, there is a high level of interest in "how to get children to eat." These concerns show that there is a need for opportunities for parents to receive advice on their children's overall eating habits.

### (1) Issues and Lessons Learned from Pre- and Post-test Results

#### (2) Adjusting the Difficulty of Questions

Among the 13 questions, the correct answer rate for six questions exceeded 90% even in the pre-test, and it is highly likely that the content of the teaching materials and the questions included content that was too easy for the participants (Figure 5-2). If there had been more time in the schedule, it would have been necessary to conduct a baseline survey of the participants to grasp their knowledge of nutrition before creating the teaching materials and tests.



Source: Survey Team

Figure 5-2 Comparison of Correct Answer Rates Between the Pre-test and Post-test

## 2) Strengthening Ability to Deal with Applied Problems

The correct answer rate for the question "About a nutritionally balanced breakfast" was 58% in the pre-test, while the correct answer rate in the post-test was 67%, showing only a marginal improvement. This question asked about what food to place in the empty spaces on a Malaysian food plate, and since it involved application of knowledge about the three major nutrients learned in previous chapters, it is assumed to have been somewhat difficult. It would have been necessary to allocate more time and provide a thorough explanation of the teaching materials and practice.

## 3) Examination of Question Options

The correct answer rate for the question "Information shown in the information in the nutrition label" was extremely low, at 0% in the pre-test and 8% in the post-test. This question asks participants to answer Yes or No regarding whether the three items shown in Table 5-16 are included in the nutrition label or not. Only correct answers to all three items are counted as correct.

In the post-test, the correct answer rate for "calories and major nutrients contained in food (Yes: yes, correct answer)" was 100%, and for "consumer evaluation of taste (No: no, correct answer)" was 97.2%, which was very high. However, the correct answer rate for "manufacturing date and expiration date (No: no, correct answer)" was only 11.1%, which was very low, resulting in a correct answer rate for all three questions of 8%. It seems that more detailed explanations were needed for these items.

Table 5-16 Percentage of Correct Answers to the Question: What Information is Included in the Nutrition Label?

|                                             | Correct Answer | Pre-test Correct Answer Rate (%) | Post-test Correct Answer Rate (%) |
|---------------------------------------------|----------------|----------------------------------|-----------------------------------|
| Manufacturing Date and Expiry Date          | No             | 0.0                              | 11.1                              |
| Calories and Major Nutrients in Food        | Yes            | 100.0                            | 100.0                             |
| Consumer Evaluation of Taste                | No             | 91.7                             | 97.2                              |
| Correct Answer Rate for All Three Questions |                | 0.0                              | 8.0                               |

Source: Survey Team

## **(2) Providing Programs Suited to the Participant's Demographic**

The workshop was conducted at three locations, two of which used the largest room in the kindergarten as the venue. Participants were invited as "one of the parents," with attendance being primarily composed of mothers. The remaining location used a conference room on the same floor of the building. The conference room had space for more than 50 people, and since the workshop was held on a Sunday, Sedidik called for "couples and children to join." Most participants came as couples with one to two children.

In the sessions where families participated, parents were sometimes distracted by the need to care for their children. To address this, advance preparations were necessary, such as incorporating exercise time with the cooperation of kindergarten teachers. It was also necessary to consider providing separate programs, such as adults receiving lectures while children play with kindergarten teachers in a separate room.

## **(3) Responding to Consultation Needs Regarding Children's Eating Habits**

The target audience for this workshop were parents of kindergarten children aged four to six years old, many of whom were worried about their children's picky eaters and small appetites. During the discussion time, many made comments such as "my child won't eat" and "what can I do to get them interested in eating?" Even if parents prepare a balanced meal, if the child refuses to eat it, it will not lead to improved nutrition, so "ways to get them to eat" is an important perspective. Participants said they would like opportunities to receive advice from time to time about "children's eating habits in general (food education)," and it is hoped that such opportunities will be provided.

## **(4) Strengthening Kindergarten Teachers' Ability to Provide "Food Education"**

During pre-interviews with kindergarten teachers about nutritional guidance, the teachers commented, "We warn parents of underweight and obese children based on the results of monthly height and weight measurements, but we do not have specialized knowledge about nutrition, so we cannot provide guidance with confidence." With this as reference information, pre-tests and post-tests with the same content for parents were also administered to teachers at UTCs (urban kindergartens). A comparison of the correct answer rates of parents and teachers is shown in Table 5-17. Although the correct answer rate of teachers was slightly higher than that of parents, the difference was not significant, indicating that parents and teachers have similar levels of nutritional knowledge.

It seems necessary to take steps to strengthen teachers' ability to respond to children's overall eating habits (food education), including improving nutrition.

Table 5-17 Comparison of Correct Answer Rates Between Parents and Teachers (in percentage)

| Categories | Number | Pre-test Correct Answer Rate (%) | Post-test Correct Answer Rate (%) |
|------------|--------|----------------------------------|-----------------------------------|
| Parents    | 36     | 78.8                             | 89.6                              |
| Faculty    | 5      | 80.8                             | 91.2                              |

Source: Survey Team

## 5.6 Proposals for Assistance in the Future

Based on the information collected during the field survey and the results of the pilot activities, the current situation and issues surrounding food education in kindergartens (Sedidik) under the KPWK in Sarawak, Malaysia are summarized in Table 5-18.

Table 5-18 Current Situation and Issues Surrounding Food Education in Sedidik

| Item                                                                            | Current Status                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Assignment                                                                                                                                                |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Contents of School Lunch                                                        | <ul style="list-style-type: none"> <li>The nutritional balance is calculated and the menu is approved by the Ministry of Health, but from observation, the food is mainly desalinated.</li> <li>The menu only lists the names of dishes (rice vermicelli, macaroni, fried noodles, fried rice, etc.) and there is no information about the ingredients.</li> <li>The menu and the food served may differ (e.g., the menu says "rice noodles and milk" but what is actually served is "rice noodles and apples").</li> </ul> | <ul style="list-style-type: none"> <li>Menu review</li> <li>Monitoring school meal content and improving content based on results</li> </ul>              |
| Using School Lunches as Teaching Materials<br>Nutritional Guidance for Children | <ul style="list-style-type: none"> <li>During school lunches at kindergartens, there is no explanation of the menu or ingredients, and no specific nutritional guidance is given.</li> <li>On one occasion, the Ministry of Public Health sent a nutritionist to a kindergarten to demonstrate making fresh juice, but such opportunities are rare.</li> </ul>                                                                                                                                                              | <ul style="list-style-type: none"> <li>Introducing explanations of menu items and ingredients</li> </ul>                                                  |
| Collection and Use of BMI Data                                                  | <ul style="list-style-type: none"> <li>Determining whether someone is obese or underweight involves entering each person's data into a Google app, which is a time-consuming process.</li> <li>Although the data is submitted to Sedidik on paper every month, Sedidik does not compile or analyze the data, and the data is not being utilized.</li> </ul>                                                                                                                                                                 | <ul style="list-style-type: none"> <li>Introduction of software to determine whether employees are obese or underweight to simplify operations</li> </ul> |

| Item                             | Current Status                                                                                                                                                                                                                                                                                                                                                                                                          | Assignment                                                                                                    |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>Data collection and analysis results at Sedidik</li> </ul>             |
| Nutritional Guidance for Parents | <ul style="list-style-type: none"> <li>Based on monthly measurements of height and weight, teachers advise parents of obese or underweight children to be careful on the amount of food they eat. However, one teacher commented, "We don't have detailed information, so we can't give advice with confidence."</li> <li>There is no specific training provided to teachers regarding nutritional guidance.</li> </ul> | <ul style="list-style-type: none"> <li>Strengthening teachers' capacity through nutrition training</li> </ul> |

Source: Survey Team

Based on the current situation and challenges shown in Table 5-18, proposed support measures to strengthen the nutrition education teaching capabilities of Sedidik Kindergarten teachers are summarized in Table 5-19.

Table 5-19 Technical Cooperation Project: Proposed Support Measures to Strengthen the Nutrition Education Teaching Capabilities of Sedidik Kindergarten Teachers

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Overall Goal | Improved nutritional status of kindergarten children in Sarawak.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Project Goal | The nutritional status of children at Sedidik Kindergarten was improved.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Results      | <ol style="list-style-type: none"> <li>The nutrition education teaching capabilities of Sedidik Kindergarten teachers will be enhanced.</li> <li>The school lunch menu at Sedidik Kindergarten will be improved.</li> <li>Nutrition education will be implemented at Sedidik Kindergarten, using school lunches as teaching materials.</li> <li>Nutrition education guidance will be provided to the parents of Sedidik Kindergarten children.</li> <li>The capacity for nutrition-related data analysis at Sedidik will be strengthened.</li> </ol>                                                                                                                                                                                                                                                   |
| Activities   | <ol style="list-style-type: none"> <li>1-1. Training programs will be developed to strengthen teachers' nutrition education instruction capabilities.</li> <li>1-2. Training will be provided for teachers.</li> <li>2-1. The current school lunch menu will be reviewed, and the actual meals served will be monitored.</li> <li>2-2. A discussion with KPWK and Sedidik will be held to improve the content of school meals.</li> <li>2-3. Improved school lunch menus will be introduced.</li> <li>3-1. Teachers and kindergartens will take turns creating "topics of conversation" for food education.</li> <li>3-2. Food education related to school lunch ingredients will be implemented.</li> <li>3-3. A competition for "topics of conversation" for food education will be held.</li> </ol> |

|                            |                                                                                                                                                                                                                                                                                                                                                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            | 4-1. Food education materials for parents will be developed.<br>4-2. Dietary education guidance for parents will be provided.                                                                                                                                                                                                                  |
|                            | 5-1. An application will be developed for recording children's height and weight.<br>5-2. Training on the use of nutrition-related data will be provided to Sedidik staff.<br>5-3. Sedidik will monitor nutrition-related data and provide feedback to the kindergartens.<br>5-4. Kindergartens will be monitored for underweight and obesity. |
| Cooperation<br>Period      | Three Years                                                                                                                                                                                                                                                                                                                                    |
| Counterpart<br>Institution | Sedikik, KPWK Sarawak, Ministry of Public Health, Housing and Local Government Sarawak                                                                                                                                                                                                                                                         |

Source: Survey Team

## Chapter.6

## SUPPORT FOR THE CREATION OF MALAYSIA’S HCK GUIDELINES

### 6.1 HCK Guidelines

In Malaysia, the Ministry of Health is spearheading the development of an ASEAN regional framework for Healthy Central Kitchen (HCK) (HCK Guidelines) for daycare centers and kindergartens. While the ASEAN region, including Malaysia, faces 17.9 million cases of stunting and 5.4 million cases of wasting in children under five years old, it simultaneously confronts obesity rates exceeding 10% – creating a double burden of malnutrition. Given that children consume approximately two-thirds of their daily meals at childcare facilities, effective nutritional management of these meals is crucial in improving their nutritional status. Although some ASEAN countries have standard meal menus, there are challenges in their implementation and monitoring systems. Therefore, the Malaysian Ministry of Health, drawing inspiration from Japan’s central kitchen system, initiated the development of HCK Guidelines to establish a framework for efficiently providing and managing safe, nutritionally balanced meals through HCK.

### 6.2 Support for HCK Guidelines Development During the Malaysia Country-Focused Training Program

A country-focused training program for Malaysian administrative officials involved in school lunch services, titled “LEP2.0 Development of the Healthy Central Kitchen Guideline”, was conducted at the JICA Chubu Center from September 4 to September 16, 2023. The objective of this training was to acquire knowledge from Japan’s expertise in school lunch operation management, which is rooted in its extensive history and experience with school lunches, and to implement these learnings in the development of HCK Guidelines.

Nine administrative officials from the Ministry of Health, Ministry of Education, and State Health Department, among others, participated in the training. The program included lectures and site visits related to Japan’s school lunch system. Participants learned about Japan’s knowledge and techniques in meal service management through expert-led lectures from related organizations such as the Children and Families Agency, Ministry of Education, Culture, Sports, Science and Technology, and public health centers, and visits to school lunch centers and daycare facilities. As part of the training, participants conducted a practical site visit to a daycare center in Toba City, Mie Prefecture, where they learned about practical aspects such as meal preparation and management methods, actual meal service to children, food allergy management, and *Shokuiku* activities.

As part of this survey, a Survey Team member accompanied the training to support HCK Guidelines development (attending in person from September 6-8 and September 13-15, with online participation on September 4 and 5). The main activities included: 1) understanding participants’ interests and guideline development issues through Q&A sessions during lectures; 2) participating in and supporting the compilation of guideline development workshops; and 3) supporting content review and draft preparation based on workshop discussions.

### 6.3 Drafting the Food Education Section of the Guidelines

The guidelines will include a section outlining the framework for food education practices in Japanese nurseries and kindergartens. To support trainees in developing the guidelines, a draft of the description was prepared to serve

as reference. In preparing the draft, reference was made to "For Children Who Enjoy Eating: Guidelines for Food Education in Nurseries" (Ministry of Health, Labor and Welfare) [137] and other sources.