The History, Current Status, and Future Directions of the School Lunch Program in Japan

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ABSTRACT

Objective: This article aims to review the history of the school lunch program in Japan and to clarify matters that are important for other countries trying to start and develop a sustainable school lunch program.

Method: Literature and reports on the school lunch program were searched, selected and analyzed.

Results: The sustainable school lunch program in Japan was developed after the School Lunch Act was enacted in 1954, in which the school lunch was positioned as an educational activity, and government financial subsidies were legislated. In addition, in order to provide meals that are safe and suitable for the growth of school children, professionals with a dietitian license were appointed for the operational management of school lunches, and the diet and nutrition teacher system was established in 2004. The nutritional standards for school lunches have repeatedly been revised to ensure the maintenance and improvement of the nutritional status of growing children. In 2008, the objectives and targets of the School Lunch Act were revised.

Conclusion: The sustainable school lunch program in Japan developed owing to the School Lunch Act that clarified its objectives, established a financial foundation, and positioned professionals to manage it. Legislative preparations, including the revision of the necessary standards in response to social backgrounds and issues, are essential for the continuous advancement of the school lunch program.

I. Introduction

School lunch programs have been implemented in many countries for the healthy development and growth of children. Further, such programs are globally recognized as being among the public nutrition programs that significantly improve children’s nutrition. The content of such programs varies depending on the economic conditions, health conditions, and food situation in each country.

In Japan, when meals are provided to a large number of people from a specific group, the Health Promotion Act obliges the implementation of nutrition management for the users1). This food service is called a kyushoku (institutional food service) and this service is legally institutionalized as a “meal service program”, which is different from a feeding service for many unspecified people. A kyushoku is provided for persons in each stage of life and the kyushoku is now recognized socially. The kyushoku is one of the choices that users access for maintaining and promoting their own health and therefore, constitutes a part of their food environment. The kyushoku has developed in response to changing times, along with measures for resolving food issues and health problems in Japan.

The school lunch program is a typical example of the kyushoku system in Japan, and many Japanese citizens share the experience of receiving this school meal service. The school lunch program has developed in a unique way in Japan.

Today, as a super-aging society, Japan has been making efforts to solve a variety of new health problems ahead of the rest of the world. Under these circumstances, the Japanese kyushoku system and school lunch program are gaining attention from other Asian countries.
This article aims to look back on the history of the school lunch program in Japan and to clarify the matters that are important for other countries that are trying to start and develop a sustainable school lunch program.

II. Method

I mainly investigated the historical transition of the school lunch program by reviewing the laws, announcements, and notifications on the operation of the program, nutritional standards, and hygienic control, as well as the results of the surveys on the School Lunch Program by the Ministry of Education, Culture, Sports, Science, and Technology (MEXT).

III. Results

1. History of the school lunch program from inception to the enactment of the School Lunch Act

Table 1 shows the history of the school lunch program. The school lunch program in Japan began in 1889, when free lunch was offered to poor pupils in an elementary school in Yamagata Prefecture. After the 1910s, when school meals were offered as nutritional support, this system had developed into the school lunch as a social policy in the 1930s, which aimed to promote school attendance. Furthermore, while shifting to the school lunch during the wartime, the system changed with respect to the generalization of the targets and publicization of the implementing entities. The school lunches at that time represented “the meals provided under the supervision of the school, to the children or students enrolled in the school.”

The school lunch service was suspended once during the Second World War, but it was resumed thanks to the support (LARA Supplies) from other countries, including the United States (US), in order to relieve school children of the malnourishment caused due to postwar economic difficulties and food shortage.

In 1946, a new school lunch program was started not only for poor and frail children but for all children. The aim of this program was to promote the healthy development of school children based on the notification issued by the Vice Ministers of the Ministry of Education, the Ministry of Health and Welfare and the Ministry of Agriculture and Forestry. Established in 1949, the school lunch program that used the skim milk donated by United Nations Children’s Fund (UNICEF) had spread throughout the country. The school lunch program gradually won public support in light of the comparison of the physical constitution of children at schools receiving and not-receiving donation from UNICEF. The school lunch program participation rate of elementary schools rose from 23% in 1946 to 69% in 1950, indicating a rapid spread of the program.

In 1951, donation of wheat flour from the US through the Government and Relief in Occupied Areas (GARIOA) Fund, which was the financial resource for the school lunch program, was terminated. As the implementation of the school lunch program became difficult, and the continuation of the government-aided program was requested, the necessity for proper legislation was underlined. As a result, the School Lunch Act was enacted in 1954, and the framework leading to the current school lunch program was established.

2. Significance of the School Lunch Act

Table 2 shows the structure of the School Lunch Act of 1954. The purpose of the Act stipulated in Article 1 states that “School lunch shall contribute to the healthy development of the mind and body of school children and shall contribute to the improvement of the dietary life of the people.” Article 2 stipulates that the goal of the Act is “to realize the purpose of education at compulsory education schools.” The role of the school lunch program according to the School Lunch Act was not that of a simple provider of meals but it was one of the educational activities, which was an important feature of the program. The financial aid for the program is stipulated in Article 4 and 5 of the act. Article 4 stipulates that “founders of compulsory education schools shall endeavor to implement the school lunch program” and Article 5 stipulates that “the national and local government shall endeavor to promote the spread and sound development of the school lunch program,” both indicative of the government’s support for the program. It was very important that the national budget bore a part of the operating expense, to ensure the stable operation of the school lunch program.

Since its enactment in 1954, the School Lunch Act has undergone minor revisions. In 2008, the purpose of the
Table 1  History Relating to the Japanese School Lunch Program

| Western calendar | Event |
|------------------|-------|
| 1889             | Free lunch is first offered to poor pupils in an elementary school in Yamagata Prefecture. This is considered the origin of the school lunch program in Japan. |
| 1923             | The school lunch program is encouraged as a method to improve children’s nutrition in accordance with the Notice of the Vice-Minister of Education. |
| 1932             | The government-aided school lunch program is implemented for the first time for the relief of poor children in accordance with the Charge issued by the Ministry of Education, Science, Sports, and Culture. |
| 1946             | A new school lunch policy is established not only for poor and frail children but for all children in accordance with the Notification issued by the Vice Ministers of Education, Science, Sports, and Culture; Health and Welfare; and Agriculture and Forestry. A pilot school lunch program is implemented in three cities. |
| 1947             | The school lunch program is started for about 3 million school children in cities across the country. |
| 1949             | A country-wide school lunch program is implemented using skim milk donated by UNICEF. |
| 1950             | A full-meal school lunch program (a combination of staple food, accompanying dish, and milk) is implemented in eight large cities using wheat flour donated by the US. |
| 1951             | The full-meal school lunch program is implemented throughout the country. Donation of wheat flour from the US through the Government and Relief in Occupied Areas (GARIOA) Fund, which is the financial resource for the school lunch program, is terminated. A movement requesting the continuance and expansion of the government-aided school lunch program is implemented throughout the country. |
| 1952             | A half-price subsidy of wheat flour is started. |
| 1953             | Wheat flour for the school lunch program is enriched with vitamin B1 and B2. |
| 1954             | The School Lunch Act is promulgated, and the implementation system of the school lunch program is legally organized. |
| 1962             | Wheat flour for the school lunch program is additionally enriched with vitamin A. |
| 1964             | A subsidy system is established for setting up facilities for collective kitchens and appointment of school dietitians. |
| 1976             | Cooked rice is formally introduced into the school lunch program, as it has profound significance in education. |
| 2001             | At the Advisory Board of the Minister of the Ministry of Education, Culture, Sports, Science and Technology (MEXT), a comprehensive policy for improving the physical strength of children is discussed. |
| 2002             | It is stipulated that the Nutrition Improvement Law be abolished and the Health Promotion Act be enacted so that the population may endeavor to promote health throughout their lifetime. The responsibilities of the founders toward those who use the school lunch program are also stipulated. Establishment of a Diet and Nutrition Teacher System is recommended in the report of the Advisory Board of the Minister of MEXT. |
| 2003             | At a session of the Advisory Board of the Minister of MEXT, a working group on dietary leadership is established, and specific measures to enhance dietary guidance are discussed. |
| 2004             | The report on the establishment of dietary leadership of the Advisory Board of the Minister of MEXT is issued with a conclusion proposing that the Diet and Nutrition Teacher System be established. The Act on Partial Revision of the School Education Act is promulgated to establish the Diet and Nutrition Teacher System. |
| 2005             | The Shokuiku Basic Act is enacted and promotion of food education is legislated. |
| 2006             | The Diet and Nutrition Teacher System is started. The Shokuiku Promotion Basic Plan is enacted, including the further popularization and utilization of school lunches as living educational material. |
| 2008             | The School Lunch Act is revised and the goals of the school lunch program are amended. |
| 2009             | Revision of the School Lunch Act is implemented. |

Act itself was reviewed and a major amendment took place\(^6\). The background to this revision was a major change in Japanese dietary habits associated with changes in the social environment and a response to diet-related health issues. This amendment was driven by a major change in the dietary life of the Japanese, which has resulted in a decrease in the carbohydrate intake, marked by reduced consumption of rice and other staple foods,
accompanied by an increase in fat intake, marked by the higher consumption of animal products\(^7, 8)\). As for Japanese disease patterns, infectious diseases have decreased while non-communicable diseases have increased\(^8\). Due to lifestyle changes, the number of people skipping breakfast, including growing children, has increased. As the number of three-generation families and the average family size have decreased, the frequency of cooking at home and eating together has also decreased. Instead, the tendency to purchase food cooked outside the home and to eat it at home or that of children eating alone has increased\(^8, 9\). The opportunities for cultivating the fundamental knowledge and skills for a good diet, the basis for nurturing the ability to live, and the opportunities for understanding food culture through daily life at home are now being lost. A sense of crisis regarding a trend of continuous decreasing children’s physical strength was also part of this background. In 2001, comprehensive measures to improve the physical strength of children were discussed by the Advisory Board of MEXT. In the Board’s report, the importance of dietary guidance in the schools was indicated in order to respond to diet-related health issues, and the establishment of the Diet and Nutrition Teacher System was recommended. Since 2003, specific measures to enhance dietary guidance have also been intensively deliberated. In January 2004, deliberations resulted in the decision to establish a new Diet and Nutrition Teacher System\(^10\). In May 2004, the Act on Partial Revision of the School Education Act was promulgated to establish the Diet and Nutrition Teacher System, which was implemented in April 2006.

The importance of Shokuiku “Food and Nutrition Education” was recognized throughout Japanese society. The Shokuiku Basic Act\(^11\) was enacted in 2005 and the promotion of food education was legislated. The school lunch program was also positioned as one of the basic measures for Shokuiku. In 2006, the Shokuiku Promotion Basic Plan was enacted\(^12\), which included the dissemination and utilization of the school lunch program as teaching materials. The School Lunch Act was, therefore, revised from the viewpoint of Shokuiku. Consequently, the purpose of the school lunch program also changed from just “contributing to the improvement of the dietary life of the people” to ensuring Shokuiku as well.

The early 2000s were a major turning point in Japan’s nutrition policy, and the Health Promotion Act implementing a policy of nutrition management in school lunch facilities was also enacted in 2003. In this way, the School Lunch Act was amended in the midst of changes in conjunction with several other measures.

### Table 2 Structure of the School Lunch Act

| Structure of the School Lunch Act (1954 to March 2009) | Structure of the revised School Lunch Act (since April 2009) |
|-----------------|-----------------------|
| Objective | Article 1 |
| Goals of the school lunch program | Article 2 |
| Definition | Article 3 |
| Tasks for the founders of compulsory education schools | Article 4 |
| Tasks for the national and local public organizations | Article 5 |
| Chapter 2 Basic points relating to the implementation of the school lunch program | Facilities necessary for implementation of the school lunch program in two or more compulsory education schools |
| School lunch nutritionist | Article 7 |
| Criteria for the provision of school lunches | Article 8 |
| Standard for the Hygiene Control of School Lunches | Article 9 |
| Chapter 3 Guidance on diet for school lunch | Liability for expenses | Article 6 |
| National government subsidy | Article 7 |
| Grant proposal etc. | Article 8 |
| Subsidy reimbursement etc. | Article 9 |
| Commissioned to cabinet order | Article 10 |
| Chapter 4 Miscellaneous rules | Liability for expenses | Article 11 |
| National government subsidy | Article 12 |
| Subsidy reimbursement etc. | Article 13 |
| Commissioned to cabinet order | Article 14 |
Table 2 shows the structure of the School Lunch Act before and after revision\(^6\).

Major points of the revision were the changes in the purpose of school lunches prescribed in Article 1 and the goals prescribed in Article 2 from the standpoint of Shokuiku. Table 3 shows the goals of the school lunch program prescribed in Article 2. The number of goals increased from four to seven\(^5, 6\). In addition to nutrition and health, appreciation of food and the dissemination of food cultures were included. The improvement of Shokuiku through the school lunch program (Article 10) became clearer.

Another major revision was that both the Criteria for the Provision of School Lunches and the Standard of Hygiene Control of School Lunches, which were only a notification and announcement, respectively, before revision, were legislated (Article 8 and 9). As a result, the roles of individuals who established the school lunch programs and managed its administration, such as school principals, and center managers of the school lunch preparation centers (collective kitchens), were clarified.

3. Characteristics of school lunch as lively learning materials

The school lunch program is provided at kindergartens, elementary schools, junior high schools, and part-time evening courses and its implementation rate varies depending on the school district. It is high mainly in elementary schools, followed by junior high schools. Basically, school lunches are offered five days a week. The number of days of implementation was 190 at elementary schools and 186 at junior high schools in 2016\(^13\). The school lunch program is an effective strategy to improve the nutrition of growing children using a population approach. The Criteria for Provision of School Lunches were formulated based on the nutrition intake of school children. Based on the Dietary reference intakes for Japanese, the nutrient-based standards were established along with food-based standards\(^14\). Current nutrition-based standards were established in consideration of three groups of elementary school grades (1st and 2nd grade, 3rd and 4th grade, and 5th and 6th grade), junior high schools, and ages, but gender-based standards were not established\(^14\). It was decided that one-third of the daily allowance should be supplied for some nutrients at lunch, while more should be supplied for others in order to increase the intake of nutrients that students tend to be deficient in (Table 4)\(^14\). These standards have been revised nine times so far, to keep up with the actual dietary life of school children.

Milk and vitamin B\(_1\) enriched rice are included in the school lunch to compensate for the corresponding deficiencies in these nutrients. Wheat flour enriched with...
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vitamin B1 and B2 received from the US has been used for the school lunches since 1953. Though cooked rice was introduced formally into the school lunch program in 1976, enriched rice has been used as before. Milk was introduced into the school lunch program in 1949, when UNICEF started donating skim milk. In the 1960s, skim milk was replaced with conventional milk2-4).

There are three categories of school lunches: full meal, supplementary meal, and milk only. The full meal consists of staple food, an accompanying dish, and milk. The staple food includes cooked rice, bread, and noodles. Cooked rice has been promoted as a staple food to educate children about forming desirable dietary habits, to deepen their interest in the native land through the food culture and to highlight the basis of the Japanese traditional dietary life15). The inclusion of cooked rice in the school lunch reached 100% in 2011, and the frequency of provision of cooked rice was 3.4 times a week in 201613).

Accompanying dishes consist of a combination of a main dish and side dishes. The standard food composition, the food-based standards, and target food group intakes are provided.

Even one meal a day at school greatly contributes to appropriate nutrient intake in school children. A survey comparing the nutrient intake on the days with and without school lunch shows the former to be much better16, 17). In addition, school lunch offers valuable opportunities for growing children to understand various tastes, foods, and dishes through experiences. The meals offered are the core of the Shokuiku as “lively learning materials.” Therefore, it is very important to design the school meals as educational materials, produce them as designed, and ensure they are of good quality.

4. The Operational System of the School Lunch Program

The operational system of the school lunch program in Japan has two major systems. The first is an independent kitchen system in which lunches are cooked at school kitchens. This is a conventional system. The other is a central kitchen system in which lunches are cooked in a

| Table 4  The Basis of School Lunch Nutritional Standards |
|-----------------------------------------------|
| **Elementary school** | **Junior high school** |
| Energy† | 33% of the estimated energy requirement |
| Protein‡ | 12 to 20% energy |
| Fat§ | 25 to 30% energy |
| Sodium chloride equivalent§ | Below 33% of tentative dietary goal for preventing life-style related diseases |
| Calcium | 50% of the recommended dietary allowance |
| Iron|| 33% of the recommended dietary allowance |
| Vitamin A|| 33% of the recommended dietary allowance |
| Vitamin B1|| 40% of the recommended dietary allowance |
| Vitamin B2|| 40% of the recommended dietary allowance |
| Vitamin C|| 33% of the recommended dietary allowance |
| Dietary fiber | 8 g/1,000 kcal |
| Magnesium|| 50% of the recommended dietary allowance |
| Zinc|| 33% of the recommended dietary allowance |

The school lunch nutritional standards for energy and nutrients were formulated taking into account the results of the school children’s dietary life survey and dietary circumstances survey, based on the 2010 edition of the Dietary Reference Intakes for Japanese.

The nutritional standards for energy, sodium chloride equivalent, calcium, iron, vitamin B1, vitamin B2, vitamin C, magnesium, and zinc were established by determining the percentage of the respective dietary reference intake per day.

The nutritional standards for proteins and fats were determined as percentages of energy intake.

The nutritional standard for dietary fiber was determined in terms of the energy density.

† Percentage of energy intake from school lunch with reference to the estimated energy requirement
‡ Percentage of energy
§ Percentage of nutrient intake from the school lunch with reference to the tentative dietary goal for preventing life-style related diseases
|| percentage of nutrient intake from school lunch with reference to the recommended dietary allowance
collective kitchen located outside the school and delivered
to multiple schools. This can be termed a commissary
system. The lunches are stored in heated containers and
delivered to the schools with a dedicated car and served
without reheating after delivery. This is a unique opera-
tional system of the school lunch program. Initially, when
the School Lunch Act was created, an independent kitchen
system was assumed, but after the introduction of the
subsidy system for collective kitchens in 1964, the number
of collective kitchens has increased gradually. Although
collective kitchens have advantages in terms of efficiency
and reduced operating expenses, it is essential to maintain
continual efforts to overcome disadvantages such as
issues in quality control and safety management, as well
as the lack of opportunities to cook in the vicinity of chil-
dren.

5. Positioning of professionals in the school lunch
program

Article 7 of the School Lunch Act stipulates that “school
lunch nutritionists” be designated as officials responsible
for the nutritional standards of school lunches. They are
defined as officials who are in charge of matters related to
nutrition in school lunches at school kitchens or collective
kitchens. These officials are required to have a dietitian
license and are required to be either a diet and nutrition
teacher or a school dietitian.

Diet and nutrition teachers were a new addition to the
school lunch program since 2004. Established by the
School Education Act, these positions opened doors for
nutrition professionals, enabling them to change their title
from staff to a school teacher. Diet and nutrition teachers
are education professionals with both expertise in nutri-
tion and qualification in education. As staff members, they
also have the responsibility of managing the school lunch
program. This is a complex situation in which two types of
nutrition professionals work together.

However, the assignment of school lunch nutritionists
to every school is not obligated, and they are assigned to
a school kitchen. School lunch nutritionists who are
assigned to a collective kitchen are in charge of their
school, but the operation base is the kitchen. Therefore,
the relationship between school children and the nutrition
professionals in schools in which lunch is cooked at the
school kitchen is different from that in schools where
meals cooked at collective kitchens are delivered. The
assignment of school lunch nutritionists is determined
based on the number of school children (Table 5). How-
ever, according to the conventional system, school lunch
nutritionists are not assigned to all schools. Therefore,
even if schools with a small number of children have a
kitchen at the school, one school lunch nutritionist could
cover several schools.

Table 6 shows the implementation of the school lunch
program at elementary and junior high schools in 2016. Cur-
rently, the number of schools and students that
receive meals from collective kitchens is larger, especially
in junior high schools. At some collective kitchens, the
meals for elementary schools and junior high schools are
prepared at the same time and delivered to these schools.
The assignment of the nutrition professionals to these
kitchens is different in the conventional system and com-
missary system. The number of school children covered
by one school lunch nutritionist varies widely, and the
school founders can decide to cover fewer children by a
school lunch nutritionist than that set by the assignment
standards. In other words, the specifics of how to operate
the school lunch program and assign the professionals
depends on the local administrative chief. In addition,
whether a diet and nutrition teacher or a dietitian without
a teaching certificate (school dietitian) is designated as
the school lunch nutritionist depends on the local govern-
ments. As for the practical operations for providing school
meals, there is no difference between the diet and nutri-
tion teachers and the school dietitians because school
lunch nutritionists are responsible for the operations.
Meanwhile, since the guidance on a good diet at school is

| Table 5   School Lunch Nutritionist Assignment Standards |
|-------------------------|-------------------------|-------------------------|
|                         | School kitchen           | Collective kitchen       |
| Number of school children | Number of school lunch nutritionists per school | Number of school children | Number of school lunch nutritionists per collective kitchen |
| 550 or more             | 1                        | 1,500 or less           | 1                        |
| Below 550               | 1/4                       | 1,501 to 6,000          | 2                        |
|                        |                           | 6,001 or more           | 3                        |

Created based on the Act on Standards for Class Formation and Fixed Number of School Personnel in Public Compulsory Education Schools.
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a part of the educational activities, teachers (those with a teaching certificate) are responsible for it. However, when providing guidance on a good diet, there is a difference in the responsibilities of the dietitian with a teaching certificate and those of one with only a dietitian certificate. Therefore, the promotion of guidance on a good diet by teachers, professionals, and other persons concerned is required under the leadership of the school principal as a team, with the diet and nutrition teachers at the core19).

IV. Discussion

Looking back at the history of the school lunch program in Japan, it can be said that the foundation that supports the current program was established following the enactment of the School Lunch Act. With this act, the school lunch program not only provides meals that support nutrition at schools but also plays a role in educating children and securing financial aid from the national government, founders of schools and the parents of school children receiving school lunch. For the sustainable development of the school lunch program, to revision of the various standards or acts in response to changing social issues seemed essential. It is also important to legislate the assignment of dietitians who design school lunches that have all the nutrients required for the growth and healthy development of school children, taking into account their tastes and ability to eat. The dietitians also control the preparation and provision of the meals ensuring hygienic and safe practices with proper measures taken against food allergies.

It is also critical that dietitians are assigned to schools and a diet and nutrition teacher, who is qualified as a teacher as well, is appointed. It can, therefore, be said that during the period of compulsory education from elementary to junior high schools, when growing children receive equal education, an environment has to be created to properly educate the children about the basis of a desirable dietary life.

One of the problems that children in Japan suffer today is poverty. According to the results of a 2012 survey, the relative poverty rate among children in Japan is 16.3%, which is high as compared to that in developed countries20). A survey by Murayama et al. reveals that the household income has an impact on children's dietary life21). Increasing the implementation rate of school lunch programs at junior high schools is regarded as one of the measures to fight poverty22). The school lunch program which was started for the salvation of poor children now plays a role in solving other similar social problems.

Furthermore, the school lunch program has been making a great contribution by ensuring proper nutritional intake through the provision of a nutritionally balanced diet for all age groups, regardless of the economic state of the households, which remains unchanged today. In future, personalized nutrition management will be needed for each child to take measures against their individual food allergies.

By placing dietitians in the kitchen, improvement in the quality and safety of meals has been achieved. In the future, it may be necessary to move the nutrition professionals from the kitchen to the schools. With the number

| Table 6 School Lunch Nutritionist Assignment |
|---------------------------------------------|
| operation system | Number of schools | Number of school children | Number of school lunch nutritionists | Number of diet and nutrition teachers† | Number of schools per school lunch nutritionist | Number of school children per school lunch nutritionist |
| Conventional system‡ | Elementary | 9,262 | 3,660,267 | 5,590 | 2,448 | 1.66 | 654.8 |
| | Junior high | 2,265 | 783,777 | 1,403 | 527 | 1.61 | 558.4 |
| Commissary system§ | Elementary | 9,931 | 2,599,369 | 1,740 | 2,019 | 4.18 | 1,100.5 |
| | Junior high | 5,242 | 1,513,359 | 704 | 527 | 1.61 | 558.4 |
| Others | Elementary | 94 | 29,101 | 3,101 | 67 | 4.61 | 432.0 |
| | Junior high | 924 | 308,335 | 2,800 | 527 | 1.61 | 558.4 |

Created based on the results of the survey on of the school lunch program implementation in 201613).

The table shows the numbers of schools adopting the operational system, children eating school lunches, and school lunch nutritionists at such schools.

† Number of diet and nutrition teachers among school lunch nutritionists.
‡ School lunches are cooked at a school kitchen.
§ School lunches are cooked at a collective kitchen located outside the school and delivered to multiple schools.
of children decreasing due to a declining birthrate, the number of schools has decreased due to the consolidation of schools in some areas. It seems that further streamlining will be required for the continuation of the school lunch program, for example, by outsourcing the cooking or by increasing the size of collective kitchens.

In order to maintain the school lunch system in Japan more vigorously, the concept that Shokukiku is a part of the educational activities should be shared by the whole country, and legislative actions should be taken to respond to various issues within the limited resources.

V. Conclusion

The school lunch program in Japan has been developed by clarifying its objectives, establishing a financial foundation, and appointing professionals according to the School Lunch Act. Positioning the school lunch program as a part of education has helped in deepening the social understanding of the system. For the sustainable development of the school lunch program legislative actions, such as revising the necessary standards in response to the social backgrounds and tasks of the age of the program recipients, are necessary.

Conflict of Interest

There are no conflicts of interest to declare.

References

1) Ministry of Health, Labor and Welfare, Japan: Health Promotion Act. (in Japanese). http://law.e-gov.go.jp/htmldata/H14/H14HO103.html (Accessed February, 3, 2018)
2) Gypsum Co., Ltd.: School Lunch Companion, 8th revised ed., pp. 1000–1009 (2013) Gypsum, Co., Ltd., Tokyo (in Japanese)
3) Federation of Prefectural School Lunch Association of Japan: The History of School Lunch Services. (in Japanese). http://www.zenkkyuren.jp/lunch/ (Accessed February, 3, 2018)
4) Ishida, H.: Role of school meal service in nutrition, J. Nutr. Sci. Vitaminol., 61, S20–22 (2015)
5) Research Study Collaborator Conference on Nutrition and Cooking-related laws: Nutrition and Cooking-related laws in 2008, pp. 836–839 (2007) Shin-nihon-houki shuppan, Co., Ltd., Tokyo (in Japanese)
6) Ministry of Education, Culture, Sports, Science and Technology, Japan: School Lunch Act. (in Japanese). http://law.e-gov.go.jp/htmldata/S29/S29HO160.html (Accessed February, 3, 2018)
7) Ministry of Health, Labor and Welfare, Japan: Summary of the National Health and Nutrition Survey in 2015. (2017). (in Japanese). http://www.mhlw.go.jp/file/04 (Accessed February, 3, 2018)
8) Ministry of Health, Labor and Welfare, Japan: Report of “healthy meals” supporting longevity of Japanese. (2014). (in Japanese). http://www.mhlw.go.jp/stl/seisakuinshitsu/bunysu/0000059933.html (Accessed February, 3, 2018)
9) Cabinet Office, Japan: A White Paper on Children and Young People 2015 (summary). (2015). http://www8.cao.go.jp/youth/english/policy_2015.html (Accessed February, 3, 2018)
10) Ministry of Education, Culture, Sports, Science and Technology, Japan: On Preparation of Guidance System related to Food (Report of the findings). (2004). (in Japanese). http://www.mext.go.jp/b_menu/shingi/chukyo/chukyoo/ touchin/04011502.htm (Accessed February, 3, 2018)
11) Cabinet Office, Japan: Shokukiku Basic Act. (in Japanese). http://law.e-gov.go.jp/htmldata/H17/H17HO63.html (Accessed February, 3, 2018)
12) Ministry of Agriculture, Forestry and Fisheries, Japan: Shokukiku Promotion Basic Plan. (2006). (in Japanese). http://www.maff.go.jp/j/study/tisan_tisyo/h18_01/pdf/data11.pdf (Accessed February, 3, 2018)
13) Ministry of Education, Culture, Sports, Science and Technology, Japan: The Results of School Lunch Implementation Survey in 2016. (2017). (in Japanese). http://www.e-stat.go.jp/SG1/estat/List.do?bid=000001096398&cycode=0 (Accessed February, 3, 2018)
14) Research Study Collaborator Conference on Formulation of Dietary Reference Intake of School Children in School Lunch Program: Formulation of the School Lunch Intake Standards (Report). Ministry of Education, Culture, Sports, Science and Technology, Japan. (2011). (in Japanese). http://www.mext.go.jp/b_menu/shingi/hakucho/ nc/__icsFiles/afieldfile/2013/03/21/1332086_2.pdf (Accessed February, 3, 2018)
15) Ministry of Education, Culture, Sports, Science and Technology, Japan: Promotion of School Lunch with Cooked Rice, Announcement of Director of Sports and Youth Bureau. Ministry of Education, Culture, Sports, Science and Technology. (2009). (in Japanese). http://www.mext.go.jp/b_menu/hakusho/nc/1283835.html (Accessed February, 3, 2018)
16) Nosue, M., Kyungyul, J., Ishihara, Y., et al.: Differences in food consumption and distribution of meals between the days with or without school lunches among 5th grade elementary school students, Jpn. J. Nutr. Diet., 68, 298–308 (2010) (in Japanese)
17) Asakura, K., Sasaki, S.: School lunches in Japan: their contribution to healthier nutrient intake among elementary-school and junior high-school children, Public Health Nutr., 20, 1523–1533 (2017)
18) Ministry of Education, Culture, Sports, Science and Technology, Japan: Act on Standards for Class Formation and Fixed Number of School Personnel of Public Compulsory Education Schools. (in Japanese). http://law.e-gov.go.jp/htmldata/S33/S33HO116.html (Accessed February, 3, 2018)

19) Ministry of Education, Culture, Sports, Science and Technology, Japan: Shokuiku henceforth on centering on the Diet and Nutrition Teachers - PDCA of Shokuiku promotion grappling with team schools. (2017). (in Japanese). http://www.mext.go.jp/a_menu/sports/shokuiku/___ics-Files/afieldfile/2017/08/09/1385699_001.pdf (Accessed February, 3, 2018)

20) Ministry of Health, Labor and Welfare, Japan: Summary of Comprehensive Survey of Living Conditions, for Fiscal 2013, Income etc. of Various Main Household. (2016). (in Japanese). http://www.mhlw.go.jp/toukei/saikin/hw/k-tyosa13/dl/03.pdf (Accessed February, 3, 2018)

21) Murayama, N., Ishida, H., Yamamoto, T., et al.: Household income is associated with food and nutrient intake in Japanese schoolchildren, especially on days without school lunch, Public Health Nutr., doi:10.1017/S1368980017001100 [Epub ahead of print] (2017)

22) Cabinet office, Japan: Independence Support Project for Single-Parent and Multi-Child Families (Directionality of policies) (in Japanese), http://www8.cao.go.jp/kodomonohinkon/kaigi/k_3/pdf/s1-1-7.pdf (Accessed February, 3, 2018)

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