

School Lunch Program and Rice Consumption Behavior in Thailand

**Darunee Jumpatong
Thai Ministry of Education :**

Introduction

The School Lunch Program in Thailand is a crucial practice that has been affecting the well being of millions of students particularly those in the rural areas over decades. The program has become not only the malnutrition solution in school children but also the contribution towards schooling. Although the program has been executed successfully to some extent, there are some aspects need to be reexamined. This study aims to explore the possible perspectives for a broader set of further program development aligning with the considerations to promote rice consumption behavior.

Thailand as a Rice Society

Thailand is a small but strong agricultural backbone country in Southeast Asia with rice as a main crop. Rice is grown in all provinces of the country and roughly 60 percent of Thailand's labor force is engaged in agricultural sector (State Government, 2005). During the last two decades, in many areas with the reservoir system improvement and with different bleedings, rice can be planted throughout the year. It counts about 25 percent of rice lands that are irrigated, while the rest is still rainfed (FAO, 2004). This leads Thailand be the biggest rice producer and become a major exporter in the world rice market.

In Thailand, rice is the predominately staple food, and its successful cultivation is not just only food production but a major part of the Thai culture. This reflects in language, customs, dress, art forms and expressions, religion, and cooking traditions that all are unique. Rice farming is usually the family inheritance which has been passed on from one generation to the next for more than 5,000 years. In the past, farmers basically relied on subsistence agriculture for household consumption and sold any excess for income (FAO, 2004). In this sense,

thus, rice production in Thailand did not definitely depend upon the price. In the farmer's perspective, it was the household security to have rice in their barn for consumption throughout the year. However, during the past four decades, the national industrial and export-oriented development policy has led the country to the transformation from an agricultural subsistence into a competitive rice export country.

It is noted that, generally, the largest nutritional problems occurring both globally and in rice consuming countries are protein-energy malnutrition, and micronutrient deficiency of iron, iodine and vitamin A (Kennedy, G. et al, 2002). This has also happened in Thailand as dietary patterns mostly rely on rice, for it is the main source of calories and protein. Thus, the linkages between food production and the nutritional status of the individual consumer are very complicated. Ample food production does not always guarantee adequate consumption (Kosulwat, V., 2002). In Thailand, although rice is the country's most important crop and the country is considered to be food self-sufficient, unfortunately, a large number of school children particularly those from disadvantaged areas and families are facing nutritional problems due to unbalanced diets, while some do not have lunch to bring from home due to an uneven distribution of wealth.

Food insecurity is linked to specific developmental consequences for children, and that these consequences may be both nutritional and non-nutritional in that it certainly affects school children's cognitive function (Hughes & Bryan, 2003; Sungthong et al., 2004), weight gain, and social skills (Jyoti, Frongillo & Jones, 2005). Accordingly, the School Lunch Program in Thailand has emerged to provide lunch for those children not only to solve the problem of malnutrition but also the channel to educate children about diets, agricultural activities, values and social manners through the practices of the Program. It also helps maintain the school attendance of students in the remote areas.

The School Lunch Program

1. Background

To address food and nutrition problems, the Thai government has put an emphasis on human development and increased participation of

families and communities in food and nutrition with the vision of “achieving nutritional well-being for all Thais”. Consequently, one of the main orientations is to promote food based strategies to alleviate nutritional problems. The specific objectives are food security, desirable eating behavior, acceleration in alleviating malnutrition, and proper growth and full development of children.

The term ‘malnutrition’ indicator in Thailand means only the underweight (weight for age) in children rather than those with stunting and wasting. Stunting is a measure of height for age and is considered of chronic malnutrition, while wasting is measured in terms of weight for height and indicates acute malnutrition (Kennedy, Burlingame, & Nguyen, 2002).

Recognizing that poor nutrition adversely affects physical and mental development of children and reduces their ability to fully benefit from education provided in schools, the School Lunch Program was then initiated and could be traced back since 1950’s in order to help children in needs. However, the Program was not consistently supported from the government. In 1987, it became an important campaign of the government to fight with those starving children on the occasion of the King’s 60th anniversary. The program had been recognized among the public and finally to be funded by the government annually. It has gained an increasing importance amongst the governments’ programs in order to improve nutritional status in pre-school and primary school age children. In 1992, by law, the Program has been established as a School Lunch Fund of 6,000 million Baht. Lunch has then been provided through the Fund’s interests. However, due to the lower interest rate, and the fluctuations of the nation’s economy, the additional budget of about 3,000 million Baht has been allocated yearly from the government (OPEC, 2005). The program has been implementing in all public primary schools (approximately 30,000 schools), and about 1.8 million primary school children and nearly 700,000 kindergarten children could rely on the School Lunch Program funding annually.

2. Current Issues

The School Lunch Program is a major contribution to

household food security in Thailand. It is aimed at providing one meal a day to malnutrition children as the first priority; these being selected through growth monitoring (weight for age). While the children in poverty are the second targets.

Each school in which beneficiaries have been identified receives a grant calculated on the basis of 10 Thai Baht per child per meal, for 200 school days. On the average, at the national level, the program addresses 30 percent of school children. The budget allocated to each school can be utilized either to buy raw ingredients and cook it in the school's facilities where teachers, involved students and volunteers from the community take turns to, or to hire the services of private caterers.

2.1 Problems

1) It is noted that the budget allocated by the program annually enables to help about 30 percent of all students or approximately 2.5 million children of primary and kindergarten (The Office of Basic Education Commission – OBEC, 1999) while there are more students in need (such as 48.81 percent in 1998). As the result, the schools manage to provide lunch to all needy students in ways that they can. Thus, various practices have been employed considerably in order to provide lunch to the greater number of children. At this stage, lunch has been provided just to meet the fundamental concept of having 'lunch' in terms of 'quantity' through the slogan of 'everyone – everyday'.

2) Although the School Lunch Program remains an essential contribution to food security and children's well being, its effectiveness has been affected due to the fact that teachers were lack of practical support from the community. In too many establishments, the beneficiaries only receive "coupons" to buy food outside school settings. In doing so, the School Lunch Program loses all control upon the appropriate learning practices, nutritional quality and quantity of food that the children receive.

2.2 Current Practices

The main objective of the Program is to solve the nutritional problems. However, the Ministry of Education has also recognized the effective learning process of the children, eating habit cultivation as well as agricultural activities through the School Lunch Program practices in order to equip it with the means to sustainable development. To achieve this, the School Lunch Program has been implemented through flexible practices responsive to the local needs. Major measures are as follows:

1. The Program's budget allocation was adjusted to effectively correspond to the local needs. Due to the budget allocation policy, schools have been classified into three categories: 1) schools that can be self-reliant as they can provide lunch to 'everyone-everyday' without the budgetary support from the government. Most of them are located in cities that parents can afford for lunch of their children; 2) schools that can partly help themselves that they can sell lunch to some students, but still need funding from the government. Mostly they are situated in rural areas; 3) schools in the remote areas that mostly rely on the government's budget. Among those schools that need the support, the budget would be allocated upon the provincial index of poverty. In doing so, schools located in particular poorer areas, children benefit from the program even more.

2. The School Lunch Program also promotes food production activities in order to establish the sustainable development at the school level. This includes growing fruit trees and vegetables, raising poultry and fishes in ponds, and even pigs and cows for in turn income when products can be sold. Some schools may even plant rice in the school or community fields. The most products served as a complement to what can be purchased by the grant provided by the Program. A great number of schools have been successful in farming and can be the learning centers of the communities, while many are struggling. These activities usually supported and cooperated with the Agriculture College and private enterprises in the region. Although this initiative has yet wildly impact, but it is a good attempt that the project encourages the students to participate

in agricultural activities in ways that they can learn how to make a living and it is responsive to their daily life particularly those living in the rural areas. Those activities are the great contribution providing both lunch and the social lab to students.

3. Fully aware that some practices have to be adjusted and that the program should be sustainable, in the time of economic crisis, additional funds cannot be drawn to increase the impact of the School Lunch Program. The Ministry of Education has been calling for improved management through available resources and increased involvement of the communities to strengthen the School Lunch Program locally.

Involving communities is also considered as the basis of the Program sustainability at the school level. Community participation has been implemented through various ways such as: 1) raising additional fund and food resources in order to complement the inputs provided by the School Lunch Program; 2) volunteering to help cooking. Moreover, it has been strongly encouraged by the government, which recognized that community leaders, teachers and food handlers needed guidance, information and practical training to ensure that food production, food preparation and food preservation can be efficiently implemented towards improving the nutritional quality of school lunch menus.

4. There are several models of lunch provision depending upon the school and community context. These models certainly provide rice-based lunch as rice is widely available in most households that students can bring to the school for lunch. The exemption applies to those from very poor families in remote areas, and those from the wealthier families that they can buy lunch at the schools. The practices are as followed:

a. School lunch is provided entirely on the family funding. This practice is mostly implemented in relatively prestige schools in urban areas and cities that all families can completely afford lunch for their children.

b. School lunch is provided free of charge to the poor, but sell to the students who can afford. This practice is usually employed in the schools in the suburban or moderate economic status communities.

c. School lunch is provided free of charge to the poor. Additional food is given to the ones who could bring only rice from home, and sell to the ones who can afford. This is often employed in schools in the relative rural areas.

d. School lunch is provided free of charge to all students in the schools. This is a common practice of schools in the remote areas.

It is noted that these models are flexible, easily adjusted to the student needs. The early stage of the program is that the practice had been emphasized mainly on feeding students certainly with rice-based lunch and the available side dishes. Through these practices, 95 percent of school children all over the country have lunch everyday (OBEC, 2005).

5. Aligning with those adaptable practices, currently, the quality of food is the central focus of the Program. It has launched a guideline for effective lunch provision with the collection of more than 100 favorite recipes of students surveyed from every part of the country. In the guideline, besides the suggestion of particular attention paid on that school meals are properly prepared through sound hygiene practices, all the proposed recipes served with rice, dessert and fruits including milk were analyzed and calculated in order to guarantee the 600-640- calories lunch. The lunch counts for 40 percent of energy needed for students daily. This guide strongly recommends that rice must be provided for lunch at least four days or even five days a week for sufficient nutrients and energy of students as other sources like noodles are not adequate. Fortunately, all such favorite recipes recommended by students are different side dishes that have to be eaten with rice. Through those recipes, besides promoting rice consumption behavior, the nutritionists help arrange the flexible dietary plan in a week, hoping to serve students with adequate nutrients and energy.

6. Nutrition classes reflected in learning standards in Health Science require students to acquire the knowledge and skill in food selection for consumption in primary education while analyze the nutrition effects relating to health problems in secondary education (OPEC, 2000). Those lessons certainly support health and reduce the risk of illness and future chronic diseases.

3. The Project Performance

By the School Lunch Fund law, the main objective of the program is to alleviate nutrition problem of students. It is noted that the severe malnutrition rate had been gradually decreasing over fifteen years during 1975-1990 from 36 percent to 18 percent (Mahidol University). At the present, such a rate has been consistently declining to about half from the beginning year of the Fund in 1992, as follows.

Table 1 Percentage of malnutrition in Thailand

Year	Malnutrition rate (%)
1992	18.00*
1998	12.10*
1999	11.57*
2000	11.50*
2003	9.97**
2004	8.56**
2005	8.42**

* The data reported by Ministry of Public Health

** The data surveyed by The Office of Basic Education Commission, Ministry of Education

Although the reduction of malnutrition in school children is remarkable, deficiencies in certain micronutrients such as iodine, iron and vitamin A are still significant problems. In 1995, the prevalence of Iodine deficiency disorders in primary school children was 2-6.8% and anaemia ranged from 12.2 to 20.4%. Vitamin A deficiency is also a problem. To address these issues, and besides supplementation programs, the consumption of iron and vitamin A rich foods are encouraged. Since 1994 it has been mandated for table salt in Thailand to be fortified with either potassium iodate or potassium iodine (Kosulwat, V., 2002).

Moreover, in practice, the School Lunch Program has been implemented more than just lunch provision. Although the learning outcomes have unlikely been improved as nutritional food has differentially affected the cognitive capacity (Hughes & Bryan, 2003; Sungthong et al., 2004) but not the academic performance (Sungthong et al., 2004), it is also the means of learning coherently to their daily life particularly for the poor in rural areas. The Program is designed for student participation integrating with values and attitudes throughout the process responsive to the local context. The common practices of the program are that higher grade children take turns to learn and help prepare raw ingredients, cook, serve, and clean. Some students buy food, some are given, some bring lunch from home. Students usually have lunch together in groups in order to share food among them and that they can have more food variety to intake. They also learn to keep eating manner. Moreover in the school farming activities, students would learn how to work in team, learn to be patient etc.

Discussion for Further Development

Currently, the school lunch program in Thailand seems to achieve the ‘quantitative’ target that almost all students have lunch at school every day aligning with the declining of the malnutrition. The next stage of the program implementation will be an emphasis upon the ‘quality’ of their food and that its objectives may become complicated. They are desirable eating behavior, effective consumer protection, acceleration in alleviating malnutrition, and proper growth and full development of children. Thus, the importance of the quality of the food source in reducing micronutrient deficiencies is now coming to the forefront. On the one hand,

this discussion was on the fundamental values whether the school lunch program could achieve its qualitative goal, and on the other hand, it is implemented in ways to promote rice consumption behavior. The pertinent issues should be re-determined in order to achieve appropriate results.

1. Rice fortification or modification and plant breeding for nutritional improvement should be urgent desirable measures to help improve the nutrition of this grain. In Thailand, although the dietary patterns have changed dramatically particularly in the urban areas, but the diets of the rural people are unlikely. In traditional villages, rice is considered a strength-giving food that people in rural areas mainly rely on rice. The culture of rice will continue to dominate the lives of the people for generations to come. The school lunch program will certainly provide rice-based lunch for students as the main food coming with the side dishes and dessert or fruit. But malnutrition is still the major problem needed rectification as feeding for the young must closely match nutrient needs. Bouis (1996 cited in Kennedy, Burlingame, & Nguyen, 2002) has suggested four strategies of direct interventions believed to be successful in reducing micronutrient malnutrition: supplementation, fortification, dietary diversification and disease reduction. As the daily food of more than half of humanity and most of the world's poor, rice offers enormous potential for improving public health through biofortification. A small increase in its nutritional value would have significant benefits for poor consumers' health (International Rice Research Institute, (2003).

2. Appropriate eating habits are highly wished for. While the malnutrition rate is declining in Thailand, there still exist the dietary problems of micronutrients due to the unbalanced development during the past four decades. The eating habits are thus of significance to promote.

Education through curriculum and instruction has an important role to play in nutritional promotion to the young. Nutrition addresses the development of a healthy body composition through the balance of food intake and physical activity. Nutrition includes many concepts, such as the relationships among food choices and growth, nutrition guidelines, food insecurity, current health needs,

chronic disease, a healthy lifestyle (McManis, 1999) and social influences.

An adequate and healthy intake of food and nutrients is essential for students to take full advantage of the learning environment in school. Thus, students of all ages need the knowledge and skills to make wise food choices in the contemporary food environment and throughout their lives (McManis, 1999). In this regards, the establishment of age appropriate and culturally-sensitive health education program through nutrition curriculum and instruction that help students develop the knowledge, attitudes, skills, and behaviors to adopt, maintain, and enjoy healthy eating habits and a physically active lifestyle is necessary. Comprehensive nutritional education is needed for the public to improve the quality of their diets. Additional reading materials: books, leaflets, nutritional guidelines, traditional rice-based cuisine should be widely spread for teachers, students, and the public. Moreover, school feeding or food program in schools may consider not only rice for school lunch but also include rice may be consumed by students in school as breakfast, snack, and dessert.

3. Societal changes certainly have been influencing changes in dietary practices. In Thailand, the government has promoted overall nutritious diets, but does not have national programs to promote animal source for specifically, except milk (Smittasiri & Chotiboriboon, 2003), but consumption of animal products started to increase after 1975 and a drastic change occurred in 1986 (Kosulwat, 2002). Animal product consumption increased because more food was available, the distribution of food and nutritional knowledge about the causes of malnutrition were better. Notably, one of the positive behavioral changes was the increased intake of vegetables and fruits over this period of time, and it has remained steady since 1986 (Kosulwat, 2002). Nevertheless, the Public Health Ministry have been facing with the fast-rising rates of the chronic diseases of affluence that accompany a turn to western-type diets richer in saturated fats than the traditional Asian ones (Gifford, n.d). This phenomenon can be partly explained by the first rank of disease cause to death is the disease of circulatory system, heart disease, while cancer has ranked as the third cause since the late of 1980's (Kosulwat, 2002; The National Statistic Office, 2005).

Rice consumption among Asian countries obviously tends to

be declining (Ito & Kako, 2005). This as well occurs in Thailand due to the fact that people consume more meat, fruits and vegetables as the Health Ministry has encouraged for more other healthy diets (Smitasiri & Chotiboriboon, 2003) regardless the impact on the decreasing rice consumption. This eventually turns to the chronic health problems of the increased rate of obesity particularly in children. Certainly that there is no evidence either poor children are more likely to be overweight or that school food programs contribute to overweight among poor children was found (Hofferth & Curtin, 2005). This happens particularly among the higher income families, and among young people in cities and big cities. In terms of obesity, the rapid changes in food intake and lifestyle patterns should be carefully monitored and must be reversed through appropriate behavior modification and the promotion of proper eating practices and physical activities (Kosulwat, 2002).

Table 2 Changes of food consumption in Thailand, 1960-1995

Food Item (gram)	Years of survey			
	1960	1975	1986	1995
Rice, cereals and tuber	440.2	374.0	350.9	305.7
Meat and poultry	17.5	27.0	80.0	71.4
Fish and shellfish	46.3	51.0	54.4	46.1
Eggs	4.2	14.0	23.9	21.4
Milk and products	-	-	70.9	29.3
Pulses and products	-	4.0	56.9	9.1
Vegetables	81.9	106.0	115.9	113.4
Fruits	6.1	36.0	99.2	73.6
Fats and oils from animal source	0.8	6.0	13.5	1.9
Fats and oils from plant source	19.0	22.0	9.6	12.1
Sugar	0.2	7.0	13.6	13.7

Source: Nutrition Division, Department of Health, Ministry of Public Health
(Cited in Kosulwat, 2002)

Though the balance dietary patterns are extremely desirable, it would be naïve to ignore the situation of such a decreasing trend which is the staple food and the major production of the countries as those staples food and side dishes have being replaced by the western diets containing a higher proportion of fats and animal meat leading to other types diet-related chronic diseases. Unfortunately, public concern about these issues is relatively limited. Thus, rice consuming countries may need to find ways to foster rice consumption culture through variety of practices domestically and internationally. Surprisingly decreasing of rice consumption should be provocative to the local public awareness in the countries. In Thailand, the orientations of nutrition policy in 1998 recommended rice as the food-based in dietary guidelines while the rice consumption behavior has long been cultivated through the School Lunch Program. Internationally, it has considerable potential to introduce rice in other foreign countries as it has begun to be seen as part of healthy diet, with gourmet possibilities (Gifford, 2002). For example, Thailand inspires to be the world's kitchen introducing Thai food to the world and there are now about 9,100 Thai restaurants in different countries worldwide. More authentic Thai restaurants are encouraged to be established in foreign countries through the government supports, while the Japanese food is also the most popular among foreigners due to its nutritional value. Sushi has also become the alternative of sandwiches or hamburgers. Besides, this study also particularly agrees with Ito and Kako' (2005) suggestion of the creation of rice products.

4. The school lunch program has great potential in promoting rice consumption behavior and is able to cultivate effectively the eating habits to maintain the basic pattern of traditional diets leading to sustainability in the long run. Thus, the flexible model school rice-based lunch has possible potential to be promoted as the urgent policies of countries particularly in the region before the deterioration in many aspects of nutritional diet is likely. The school lunch program is also the effective means to pass on national culture which has long been reflecting through rice: language, customs, dress, art forms and expressions, religion, and cooking traditions. Those cultures may be fading away in the future if rice consumption cannot be properly maintained in the region. Research institutes in nutrition and food products should play an important role in the area while policy makers need to further examine for appropriate alternatives.

Conclusions

Rice is still seen to have a high value as the most vital food among the Thai even the young intake more variety of food, none cannot replace rice. The Program's survey (2004) is the evidence that all of the students' preferences are those side dishes which needed to eat with rice. However, the traditional patterns of diets in many societies have been changing by the influencing western dietary culture which leads to the other types of chronic diseases.

Public awareness on the negative impact of westernization of the diets leading to various chronic diseases and the decreasing rice consumption is very limited. A recognition of such trends may lead to the formulation of policies to campaign and encourage maintenance of the traditional Asian dietary pattern in which rice and vegetables constitutes the main body of the diet with moderate amount of animal food. Traditional food certainly makes a substantial contribution due to its healthy patterns of diets which rice is a leading composition. Schools have a significant role to play in that rice-based school lunch program is an urgent need to be established in rice consuming countries particularly those with a great size of population in Asia such as China, India, Indonesia, Japan and Korea, and the countries in South America .

The rice-based school lunch program will greatly enhance the capacity of the government policy through developing practical nutritional guidelines and flexible practices to be fully responsive to the local needs. The Program aims at providing meals which better meet the nutritional needs of school-age children leading to the proper habits of consumption. Moreover, students will have the chance to learn through the participation in pertinent activities: the selection of appropriate foods, preparation, preservation, agricultural activities as well as food hygiene practices. Most important, many traditional cultures can certainly be well maintained through rice consumption behavior in the long run.

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