



# Policy Design and Evaluation Based on Nutrition Meal Program from the Perspective of Public Policy

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## Abstract

This paper analyzes the current situation and existing problems of China Nutrition Meal Program, and draws on experiences from American. In view of problems of nutritional meals in the policy implementation process, especially the lack of nutrition and food safety risk, this paper proposes that we can improve relevant legislations and establish standards for nutrition; cultivate more full-time nutritionists to ensure that nutrition meals meet standard; increase investment and provide different forms of feeding patterns and subsidies; release information timely; improve the regulatory mechanism; improve food safety risk management mechanism and take preventive measures. Based on the public policy evaluation standard theory of William N. Dunn, this paper mainly evaluates the policy suggestions from the aspects of efficiency and adequacy, and thinks that the above policy suggestions have certain applicability.

## Subject Areas

Human Geography, International Relations, Politics, Sociology

## Keywords

China Nutrition Improvement Program, Policy Design, Public Policy Evaluation, Food Safety Risk, Food Nutrition

## 1. Introduction

Because of the long-term imbalance in China's economic and social development, some rural students, especially those in poor areas, still suffer from malnutrition. In order to improve the level of nutrition and health of compulsory education students in rural areas, the executive meetings of the State Council decided to

implement compulsory education students' Nutrition Improvement Program in rural areas, from the fall semester of 2011, which referred as Nutrition Meal Program [1]. However, due to the wide range of projects, covering a wide area, large differences in the level of economic and social development in different regions and other reasons, the gaps of actual implementation of each school are also large. Five years later, in June 2017, the China Development Foundation launched an investigation. By monitoring the nutritional status of 9200 schools in 100 counties, this survey found that 52% of the school's nutritional meals did not meet national standards [2]. The implementation of Nutrition Meal Program in rural areas, aims to improve the nutritional status of students in rural areas and improve the rural students' health level, however, in the implementation process, there appears a series of problems, especially food safety problems and lack of nutrition, having aroused great concern from all walks of life.

What is the current status of China's Nutrition Meal Program? Whether to achieve the desired policy objectives? What are the problems? From the perspective of public policy, this study will discuss the above issues, put forward policy recommendations by drawing on the successful experience of the United States, and based on Dunn's public policy evaluation theory to make policy evaluations. This research conclusions hope to improve the implementation effect of the Nutrition Meal Program policy, and then improve the nutritional status and the health level of rural students. The academic significance of the research lies in applying Dunn's policy evaluation standard in practice and enriching and developing the theory of public policy. The social significance of the study is that, in view of the existing problems in the nutrition meal plan of our country, we should use the experience of the United States for reference and put forward some suggestions for improvement. The study evaluates the proposed policy, demonstrates its feasibility and effectiveness, with a view to improving the effect of the implementation of the nutrition meal policy, thereby improving the nutritional status of rural students and improving the health level of rural students.

## **2. Nutrition Meal Program Policy and Implementation Status**

This paper will give a brief introduction to the public policy and implementation status of the Chinese rural compulsory education students' Nutrition Improvement Program, including relevant laws and regulations, subsidy standards, coverage, feeding patterns and food.

### **2.1. Relevant Laws and Regulations**

*National Medium- and Long-Term Education Reform and Development Plan Outline* (2010-2020) states clearly that the government will improve the nutrition level of rural students in poor areas. In order to carry out the Outline, the General Office of the State Council has carried out students' Nutrition Improvement Program in Compulsory Education in rural areas since 2011, involved 30 million middle and primary school students in 699 counties of con-

centrated and particular poverty-stricken areas in China. Nutrition Improvement Program will steadily improve the nutrition of rural students, including the launch of national pilot, support local pilot, improve the dining conditions, encourage social participation, improve the living expenses' subsidy for those students with family financial difficulties, and pay attention to food safety [1].

Subsequently, in order to implement rural compulsory education students' Nutrition Improvement Program scientifically and effectively, the State Council in accordance with relevant state laws and regulations and standards, especially formulated "*Detailed rules for the implementation of the Nutrition Improvement Program for rural compulsory education students*", "*Interim Measures for the administration of food safety guarantee for rural compulsory education students' Nutrition Improvement Program*", "*Interim Measures for the administration of canteens in Compulsory Education Schools in rural areas*", "*Interim Measures for student information management of real name system for rural compulsory education students' Nutrition Improvement Program*", "*Interim Provisions on publicity of information disclosure for rural compulsory education students' Nutrition Improvement Program*". These documents provide for the responsibilities of the main body and the relevant departments, specify the contents and patterns of catering, canteen building and management, food quality and safety, capital use and management, supervision and inspection and accountability, establish and standardize the working mechanism and process of all aspects of nutrition meal supply [3].

## 2.2. Subsidy Standards

The central government provides nutrition and dietary subsidies for students in the compulsory education phase in the pilot rural areas. The standard is 3 yuan per student per day (200 days according to the student's school time). All the funds required are borne by the central government. Boarding students, whose have family economic difficulties, can increase living allowance standard 1 yuan per day to reach primary school students 4 yuan per day, junior high school students 5 yuan per day standard.

## 2.3. Coverage

China's state council has launched a rural compulsory education Nutrition Improvement Program, making more than 16 billion yuan available in order to improve student nutrition [4].

At the end of June 2015, a total of 1422 counties in China launched a pilot work on Nutrition Improvement Programs. Among them, 699 national pilot counties have achieved full coverage of rural compulsory education students; 723 counties have carried out local pilot, compared with the same period in 2014 increased 107 counties, an increase of 17.4%. The number of schools implementing the Student Nutrition Improvement Program reached 134,000, the number of beneficiaries reached 32.09 million [5].

## 2.4. Feeding Patterns and Food

Due to the different financial affordability and school infrastructure, the government should determine the appropriate feeding content based on local eating habits. Meals are mainly served with a full lunch, and schools that cannot offer lunch have a choice of a meal or a break. Food products must meet the relevant food safety standards and nutritional requirements to ensure fresh food safety. For meals, especially for extra meals, meat, eggs, milk, vegetables, fruits and other foods should be given priority, and no substitute for health food or milk drink is available for meal [3].

Pilot counties and schools, according to different circumstances, determine the mode of feeding, the school canteen for meals based, enterprise (unit) feeding mode supplemented. In some remote areas, for some remote areas, schools and teaching sites that do not have canteen meals and corporate (unit) meals for the time being are available for family (personal) [3].

## 3. Problems in Nutrition Improvement Program of Rural Compulsory Education in China

The implementation of the plan is to improve the nutritional status of rural students and improve the health of rural students. However, in the specific implementation process, due to the increased operating costs of the meal, school cafeteria staff costs and other expenses into the local budget, increase the economic burden of the local government. On the other hand, there are some problems such as lack of relevant laws and regulations [6], food safety problems [7] [8], lack of nutrition [9] [10] and confusion of fund use [11]. The paper will focus on the problems of food safety and the lack of nutrition in the process of Nutrition Meal Program. The paper draws lessons from the successful experience of the United States and tries to put forward relevant policy suggestions for China's national conditions.

### 3.1. Food Safety Issues

Since the spring of 2012, Xinjiang Jimu Nai County, Yunnan Xuanwei, Zhenxiong, Jingdong, Luxi, Guizhou Zhijin, Gansu Kangxian, Lingtai, Shaanxi Baoji City Weibin District, Guangxi Masan, Napo, Qinghai Tongde County, Chuse, Anhui Yingshang 8 provinces and 14 counties (districts) have occurred more than a dozen food safety incidents, affecting more than 1500 students. October 2015, Hangzhou Xiaoshan parents broke the news that the child's school "nutrient lunch" appalling: rice is caught, the dishes are insects and bamboo leaves; food packaging plastic foam box is dirty.

### 3.2. Nutrition Meal Lacks Nutrition Problems

In order to complete the task of improving the health level of rural students, especially poor areas and families with financial difficulties, all pilot schools need professional nutritionists' guidance or training, to provide real healthy and nutritious food for the students. According to statistics, China's current full-time

nutritionist is less than 4000 people. The contradiction between the supply and demand of nutritionists has led many pilot schools in the implementation of Nutrition Improvement Program to go a lot of wrong way. Such as Guizhou Zhijin County, using nutritional subsidies to buy “Mengniu sour milk”, which protein content of only 2% and can only be called milk drinks, nutritional value is much lower than milk; Some schools also purchase a variety of snacks such as bread and ham sausage as a nutritional supplement, additives in these snacks are not conducive to the healthy growth of students.

#### **4. Successful Experiences in the United States**

So far, China has not promulgated laws on nutrition and nutrition meals, so there is no legal regulation on the behaviors of nutrition meals. In contrast, the US free lunch program works well. Schools in the United States serve more than 12 million breakfasts and 32 million lunches every school day, as well as multiple snacks and supper meals in some cases. These meals are funded by federal legislation and regulated by nutrition standards that follow the Dietary Guidelines for Americans [12]. This paper will take the free lunch project in the United States as an example to discuss the successful practices and experiences, mainly summarized as the following five aspects.

##### **4.1. Government Agencies Attach Great Importance to the Legislative Protection**

The United States attached great importance to the free lunch program. First of all, Congress passed the bill to implement the famous “goods donation project”, which authorizes the Ministry of agriculture to support agriculture with 30% tariff income. The acquisition of surplus agricultural products by the Ministry of Agriculture has stabilized the prices of agricultural products, while the Ministry of Agriculture has donated surplus products to unemployed workers and schools, and many poor families have obtained these surplus products through a free lunch program. Subsequently, the US Congress passed the “*National School Lunch Act*”, through national legislation to regulate free lunch items related issues. In order to arouse people’s attention, the United States also set up a “national free lunch week”.

##### **4.2. Provide a Different Lunch Subsidies for Different Income Families**

Lunch is divided into three categories according to fees: full free, subsidized lunch and full price lunch. The federal subsidies for free lunch have been adjusted according to economic and social conditions as well as the number of free or subsidized lunches.

##### **4.3. Provisions of Different Lunch Types of Food and Nutrition Standards**

In order to ensure a balanced diet and nutritional balance, the federal government has developed specific nutritional requirements: School lunches must meet

the recommendations of the American Dietary Guidelines, with no more than 30% fat and less than 10% saturated fatty acids. Diet must also include protein, vitamin A, vitamin C, iron, calcium and calories [13]. The type of food offered or the specific method of making food at school lunch is determined by the local authorities, but it is necessary to ensure that the lunch meets the corresponding nutritional standards.

#### **4.4. Establish Food Safety Regulation for Free Lunch**

First, implement a strict access system to the business and employees who provide free lunches. Secondly, the United States government has a special agency responsible for supervising school food safety, and regularly trains relevant personnel. In addition, the US government uses videos, radios, newspapers, magazines and other channels to promote food hygiene knowledge, and issuing food safety brochures to all practitioners, requiring them must comply with food safety standards [14]. The US Department of Agriculture's Food Safety and Emergency Office has also developed a biosafety management program to prevent terrorist attacks.

#### **4.5. Strengthen Supervision to Ensure the Quality of Service**

The American free lunch program is supervised by the Department of agriculture and supervised by the education department. *The American School Lunch Act* also calls for the establishment of a national advisory committee to oversee the implementation of school lunch programs, child nutrition programs, and bills related nutrition programs for children. The members of the Commission come from all sectors of society and have broad representation. They propose proposals for improvement, submitted by the committee to the president or Congress in the form of annual reports or legislative proposals. The Federal Ministry of Agriculture conducts twice a year on food safety. The school must publish the latest food test report and provide a written report to the public representative. The US Free Lunch Program also focuses on stakeholder satisfaction with parents and students. Schools must educate parents about free lunch policies and promote policies through the media. The school must publish the recipe for the next week in advance through websites, billboards, or leaflets.

### **5. Policies Design for Food Safety and Nutrition for Nutritional Meals**

In order to effectively solve the problems of non-nutrition and food safety hidden in the implementation of the nutritious meal, the relevant departments of China may formulate policies in the following aspects:

#### **5.1. Improve Relevant Legislations and Establish Standards for Nutrition**

*The Nutrition Law of the People's Republic of China* has been formulating since 2008, but it has not been published for a variety of reasons. There is no uniform

standard on food quality and nutrition and national nutrition standards. The lack of legislation led to frequent incidents of food safety accidents, the shirking responsibility of each department and the division of responsibilities.

In order to solve the practical difficulties, on the one hand, the Chinese legislative authorities should speed up the formulation of *The Nutrition Law of the People's Republic of China*, and formulate nutrition standards and dietary guidelines in line with the Chinese people's physical characteristics. On the other hand, *the National School Lunch Law* will be established as soon as possible in light of the problems arising from Nutritional Improvement Program and China's national conditions.

### **5.2. Cultivate More Full-Time Nutritionists to Ensure That Nutrition Meals Meet Standard**

According to statistics, at least 4 million nutritionists are needed. Many nutritious food companies do not have full-time nutritionists. Many schools have almost no systematic and formal nutrition education. This situation makes a lot of school nutrition meal is difficult to guarantee nutrition. Solving this problem requires unremitting efforts. In the short term, it is necessary to carry out the training of kitchen staff so that they can understand some knowledge of nutrition. In response to frequent food safety issues, experts are invited to organize seminars on food procurement, processing and preservation in order to improve the awareness and knowledge of food safety and food nutrition of the relevant staff. In the long run, schools should cultivate more professional nutrition talents, and the government shall formulate relevant policies to guide professional nutrition personnel to enter the education system, and effectively ensure the safety and nutrition of food in the school's nutritious meals.

### **5.3. Increase Investment and Provide Different Forms of Feeding Patterns and Subsidies**

In poor areas, some schools do not have enough money to build a professional kitchen, and can only use public houses or classrooms to serve as temporary kitchens. These temporary kitchen equipment and hygiene conditions are poor, while most of the kitchen staffs are farmers, lacking of nutrition knowledge, make the nutritional value of food is not high. For this problem, the government should increase investment, and actively call for social welfare, expand funding sources, increase investment in kitchen facilities in rural areas, to ensure food safety and health. For suppliers who provide food, a strict access and exit system should be implemented. For illegal enterprises or individuals, they should be promptly punished, increase penalties.

### **5.4. Release Information Timely, Improve the Regulatory Mechanism**

The pilot schools can be equipped with a supervisor, specific expenses of lunch through the school's microblogging every night before seven o'clock, organize professional inspection team to check accounts and dine regularly. Schools

should announce the nutrition of the supplier, purchase price and nutrition recipes and other relevant information through the official website, the official WeChat and other media platforms one day ahead, ensuring release information timely and comprehensive.

In the aspect of food safety supervision, the government should increase the intensity and intensity of supervision, combine regular inspections with irregular inspections, intensify penalties and conduct comprehensive and effective supervision of all aspects. Each school can set up supervision and evaluation committee, composed of teachers, parents, students and the community, to monitor the daily expenses of school expenses to ensure nutrition and food safety. Conditional pilot schools can record the whole process of school diners. This can not only regulate the operation of the canteen, quickly and effectively find the security problem, but also allows the whole society to participate in the supervision of food safety.

### **5.5. Improve Food Safety Risk Management Mechanism, Take Preventive Measures**

Schools at all levels should establish a risk management mechanism suitable for the actual situation, take the initiative to actively deal with the risk. Schools should set up special treatment points and establish contact mechanisms with local medical institutions. At the same time, at all levels of governments should be based on the actual situation around the school, allocate funds to finance the purchase of emergency equipment and help schools to set up special emergency funds. The health department should organize special staff to publicize the knowledge of emergency rescue, so that students and teachers can calmly deal with the danger when accidents occur. At the same time, the school can buy insurances for students and establish a sound food safety risk management mechanism.

## **6. Assessment of Food Safety and Nutrition Policy Design for Nutritional Meals**

Dunn (2008) mainly evaluates the policy from six aspects, such as efficiency, efficiency, fairness, adequacy, responsiveness and appropriateness.

The introduction and implementation of the nutrition meal policy is to improve the nutritional level of compulsory education students in rural areas and meet the needs of specific interest groups, so the policy is responsive. The implementation of the policy may not be expected, but to a certain extent, indeed improve the nutritional status of students in poor areas, which has a certain policy suitability. In the specific implementation process, there exits rent-seeking behaviors or uses special funds for other purposes, financial security issues of the policy thus draw wide attention. This has the problem of cost and benefit distribution among different stakeholders, that is, the fairness of policy is threatened. This paper deals with the policy design of the food safety and nutrition, so this factor is not considered. Therefore, according to Dunn's point of view, this pa-



per will evaluate the policy design of food safety and nutrition from the following three aspects:

### **6.1. Efficiency**

This dimension examines whether the policy has achieved valuable results. Efficiency usually refers to the efficient use of resources. The problems encountered in the implementation of the Nutrition Meal Program can be solved through efforts and policy adjustments and improvements. For example, nutrition meals cannot meet the standards of nutrition and food safety can be solved by improving the efficiency of policies through the design of relatively comprehensive policies.

### **6.2. Benefits**

This dimension reflects economic rationality, which means how much the cost of implementing the policy is expected. Also called cost-benefit analysis, it means getting as much output as possible with as little input as possible. It includes the ratio of expected accomplishments, the ratio between benefits and costs, direct costs and indirect costs. In the design of the above policies, legislation is the premise and the basis for regulating the behaviors of each subject. Training nutritionists, making nutrition meals, increasing the construction of school canteens and developing strict entry and exit mechanisms are important measures to directly affect food nutrition and safety. Timely and effective information disclosure system, supervision system, food safety risk management mechanism, increase the cost of punishment, improve students' awareness are important measures of indirect food nutrition and safety. Multipronged approach can achieve little input and great returns. It can effectively solve the problems of food safety and nutrition shortage in the process of nutrition meal supply, and effectively ensure the effectiveness of policy implementation.

### **6.3. Adequacy**

This dimension examines how valuable results are obtained and to which extend social problems are solved. As of the end of June 2015, a total of 1422 counties in China launched a pilot work on nutrition improvement programs, the number of schools reached 134 thousand and benefit 32.09 million students. Central and local governments have been collecting funds almost 144.3 billion yuan. Construction of student canteen more than 25.38 million square meters, accounting for 97.5% of the approved construction area; completed 24.12 million square meters, accounting for 92.7%, 20% higher than the same period in 2014. In addition, the social welfare forces are also actively involved in this activity. "Nine Yang hope kitchen", "Chunmiao kitchen", "happy kitchen" and other public welfare projects have been built more than 1000 rural school kitchen; "free lunch" public welfare projects, launched by more than 500 journalists and dozens of domestic media joint China Social Welfare Education Foundation, have been opened a meal in 185 schools. It can be seen that the implementation of the

nutrition improvement program for compulsory education students in rural areas has in a certain extent solved the nutritional problems of children in poverty-stricken areas, and it has a certain degree of adequacy.

## 7. Conclusion

In view of the lack of nutrition and food safety problems in the implementation of the nutrition meal policy, this paper draws on the experiences of the US government: the organization attaches great importance to the legislative protection; provides different lunch subsidies for different income of the family; stipulates the different types of food and nutrition standards; establishes of free lunch food safety management practices; strengthens supervision and ensures the quality of service. Combined with China's actual situation, this paper proposes that we can improve relevant legislations and raise people's awareness; cultivate more full-time nutritionists to ensure that nutrition meals meet standard; increase investment and strict quality control; release information timely; improve the regulatory mechanism; improve food safety risk management mechanism and take preventive measures. Based on the public policy evaluation standard theory of William N. Dunn, this paper mainly evaluates the policy suggestions from the aspects of efficiency and adequacy, and thinks that the above policy suggestions have certain applicability. This study did not explore the changes in the policy of nutrition meal, nor consider other countries' excellent practices when we draw on experiences, which can be improved in future research.

Since its implementation, the rural compulsory education students' Nutrition Improvement Program has provided financial support for the improvement of the nutritional status of rural compulsory education students, thus reducing the burden on farmers and promoting education equity. As the project covers a wide range and has huge investment funds, there is no experience in running meals, and there are some problems in the implementation process. With the improvement of the system of Nutrition Improvement Programs and learning from other countries and public welfare organizations, it is believed that this policy will benefit more students in compulsory education.

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