

“Improving Food and Nutrition Security in the Philippines through school interventions”

23 January 2017

Ms. Cherry Lou D. De Mesa
Schools Division Superintendent
Department of Education, Cavite Province
Telefax: 419 0014

Department of Education
DIVISION OF CAVITE
RECORDS SECTION
JAN 24 2017

Dear Ms. De Mesa:

Greetings from IIRR!

The project management team of the action research project composed of key representatives from IIRR, FNRI-DOST, DepEd and DA Region 4A convened on January 17-18, 2017. Accomplishments, issues and 2017 milestones were discussed as well as mechanisms to address implementation challenges. One of the gaps that need urgent action is the baseline data for school-based feeding program and nutrition education as components of the integrated school nutrition model. Data from this research project will be used to back up the policy recommendation that will be crafted in support of school nutrition program. Thus, we would like to ask for your permission to conduct simultaneous interview with 26 SBFP coordinators from lighthouse schools. We hope to hold the interview at Siliit Ugnayan of Library Hub on January 25-26, 2017 from 8:00 am-5:00pm (please see attached list of SBFP coordinators). We are also attaching the research brief for your reference.

Once again, thank you so much for your understanding and incessant support to this endeavor. For clarification or inquiries, you can contact Kirstein Itliong at (0916) 664 9163 or (046) 430 0016.

Sincerely,

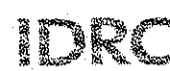
Irish P. Baguilat
Irish P. Baguilat
Program Manager
Philippine Country Program
Regional Center for Asia
International Institute of Rural Reconstruction

TO: Elementary School Heads

January 24, 2016

For your information, guidance and approval as attendance to any activity of school-based personnel and learners is within your discretion.

Cherry Lou D. De Mesa
CHERRYLOU D. DE MESA
OIC, Schools Division Superintendent

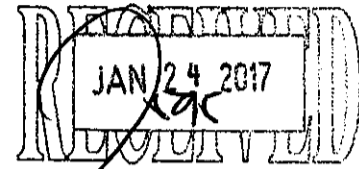


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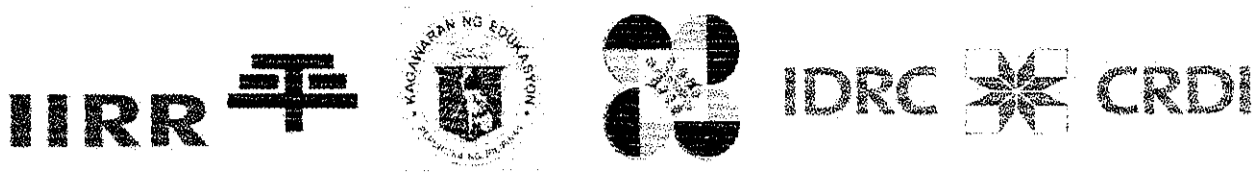
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Irish P. Baguilat
 Program Manager
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Lighthouse School	SBFP Coordinator
January 25, 2017	
1. Upli ES	Aiza Rollan
2. Amadeo ES	Liza Dela Pena/Aira Bedruz
3. Mariano Anakay ES	Donnalyn C. Villanueva
4. Carmona ES	Lynor H. Cacao
5. Bailen ES	Luzviminda C. Dimapilis
6. General Gregorio S. Atoña Sr. MES	Besilisa C. Obispo
7. San Gabriel 2 ES	Maria Eloisa V. Bersamin
8. Indang CS	Leticia V. Mojica
9. Alulod ES	Ammie C. Creencia
10. Potol Sta. Isabel ES	Fredanila S. Angosta
11. Medina ES	Zenaida L. Vilanio
12. Maragondon ES	Yolanda Sadiasa
13. Panungyan ES	Caral Peñalba
January 26, 2017	
1. Naic ES	Lodivina T. Antiojo
2. San Roque ES	Eugenía P. Ignacio
3. Noveleta ES	Josephine D. Padua
4. Bagbag 2 ES	Ma. Beverly N. Altavaro
5. Kalubkob ES	Rosemin Laysa
6. Bulihan Sites & Services Project ES	Charito Campos
7. Maguyam ES	Ma. Victoria Cruz
8. Pulong bunga	Angelina C. Perea
9. Malabag ES	Gicelle Anne A. Fernandez
10. Carlos Batino MES	Teresita J. Amulong
11. Isidro Cuadra ES	Marites M. Diesta
12. Ternate CS	Procerfida L. Olano
13. Lapidario ES	Lorna Monabe



“Improving Food and Nutrition Security in the Philippines through school interventions”

Research Brief

Time frame: 28 months (February 2016 – May 2018)

ABSTRACT OF RESEARCH PROJECT

Schools provide strategic, targeted pathways for delivering nutrition interventions among children and, indirectly, to their families and communities. A 3-year action research project (Phase 1) funded by IDRC from 2012 to 2015 developed and tested an integrated nutrition model of gardening, supplementary feeding and nutrition education, among schoolchildren in Cavite province in the Philippines. Results showed that supplementary feeding of malnourished school children using iron-fortified rice and indigenous vegetables from school gardens significantly improved their nutritional status. Enhanced knowledge, attitude and practices on gardening and nutrition were observed among parents. The project tested and successfully sustained bio-intensive nutrition gardens and crop museums that aimed to retrieve and conserve crop cultivars while improving year-round availability of a diverse range of climate-resilient, locally adapted, and nutritionally important vegetables.

Phase 2 of this project will deepen the understanding and operationalization of the integrated model by expanding the number of research schools. The potential of schools as platform for nutritional and environmental learning will be investigated. Modalities by which local government and private sectors can support school nutrition will also be explored. A multi-scalar approach will test two pathways for scaling up. The first will be directed towards public elementary schools at a sub-national level. The second will be directed at national agencies, policymakers, planners and media. Phase 2 intends to influence school health and nutrition programming, which currently is targeted towards 2 million malnourished schoolchildren (14% of total number of elementary students).¹

BACKGROUND

Integrating gardens, school-based feeding and nutrition education: Results of Phase 1 of an IDRC-supported project

¹ Department of Education, School Health and Nutrition Unit, 2012–2013 data.

A 3-year research project supported by IDRC was designed to develop and test an integrated school nutrition model while generating best practices in the province of Cavite in the Philippines. The project was implemented by International Institute of Rural Reconstruction (IIRR), the Food and Nutrition Research Institute-Department of Science and Technology (FNRI-DOST) and Department of Education, Division of Cavite (DepEd Cavite). The project studied how better integration of gardens, school feeding and nutrition education could be achieved. School gardens were enhanced with agro-ecological technologies. This included bio-intensive gardening practices developed in the Philippines to improve productivity and sustainability of gardens, with deep-dug, raised plots followed by minimum tillage, organic fertilizers from tree leaves, and planting summer-season legumes to protect soil health. Decentralized crop museums were introduced to help conserve local vegetables.

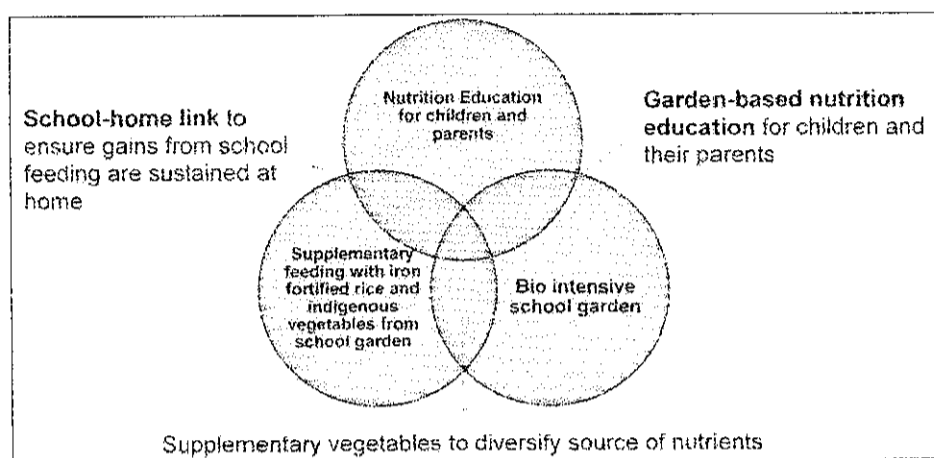


Figure 1. The integrated school nutrition model

Supplementary feeding of malnourished boys and girls used an iron-fortified rice premix developed by FNRI and indigenous vegetables raised in school gardens. Fifteen menus with indigenous vegetables were developed, lab-tested, and implemented in schools. Nutrition education was provided for students and parents, especially mothers, during feeding of malnourished children to promote nutrient-dense food and good eating habits. The results indicated that the SFP made a significant improvement in the nutritional status of schoolchildren. It showed a high reduction of wasting from 17.8% to 13.7%, while stunting was reduced from 11% to 4.1%. Also noted were significant decreases in underweight figures (63.0% to 34.2%), increased hemoglobin levels ($12.60 \pm .96$ to $13.09 \pm .07$), and significant reductions in anemia prevalence from 20.8% to 4.2% due to the intervention of using iron-fortified rice. There was also a reduced energy intake with 1,359.07 (± 1455.63) to 1,340.36 (± 598.33) kcal from baseline to endline. Cost saving in feeding programs as a result of increased use of school grown vegetables – though recorded over only a single season/single feeding cycle – was also noted. Details about the research project can be found in <http://schoolnutritionphilippines.wordpress.com/2014/07/25/strengthening-the-school-nutrition-program-in-the-philippines-2/>

Phase 1 of the IDRC-funded project also tested pathways for effective implementation of school

nutrition in a single province: Cavite. Experience with pilot implementation of the program underscored the importance of institutional mechanisms, partnership building, communication support, and capacity-building strategies in enhancing integration and sustainability of gardens. The project was able to achieve a province-wide adoption of school-based nutrition gardens that rely primarily on internal resources.

Other Influences of the Phase 1 research program were already noted midway through Phase 1. The promotion of the integrated nutrition model in Cavite was extended to Region IV-A: two batches of 105 teachers and supervisors from other Region IV-A provinces – Laguna, Batangas, Rizal, and Quezon - were brought to Cavite to learn. There were also policies / guidelines developed within the DepEd, Cavite that are supportive of school gardens and feeding and their links. These were:

- DepEd Order No. 54, s. 2013, 20 Dec 2013. Guidelines on the Implementation of school feeding programs
- DepEd Cavite, Division Memorandum No. 09, s. 2014 – Sustaining and maintaining garden productivity through cover cropping and planting Kakawate (*Gliricidia sepium*) trees
- DepEd Cavite, Division memo - Adoption of the cycle menu featuring the indigenous vegetables in the school feeding program.

Advocacy for linking school gardens with school feeding and nutrition education programs can now be backed up with strong biochemical and anthropometric evidence from the scientific studies undertaken in the selected research schools during the research period. A set of culturally relevant menu options promoted widely had considerable initial evidence of wider uptake not only by Cavite DepEd but also by the Department of Social Welfare and Development. The use of iron fortified rice as well as utilization of vegetable garden produce for school feeding were also included in the school feeding guidelines of the Department of Education.

The research also tested and demonstrated the concept of crop museums, featuring ways to retrieve, foster exchange and conserve agro biodiversity of nutritional importance. During a national conference, where the research results were shared, commitments were made by the School Health and Nutrition Center to promote bio-intensive approaches and the concept of the crop museum. In the guidelines of the GPP (Gulayan sa Paaralan or Vegetable Gardens in Schools), BIG was suggested as a preferred approach to gardening and the idea of establishing one crop museum per school district was floated and even incorporated in its program milestones. See <https://schoolnutrition.phils.wordpress.com/2014/11/26/agro-biodiversity-poster/>

Policy briefs, working papers, and a range of other knowledge products such as videos and educational posters were generated towards the end of the project and distributed nationally via the national meetings mentioned earlier and, via the project blogs (shared elsewhere in this document).

Significance of proposed research

The proposed Phase 2 of the project will deepen the understanding and operationalization of the integrated school nutrition model. With better understanding of the structural and functional factors, processes and policies that influence the adoption and implementation of an integrated school-based nutrition program, the tested approaches can now be subjected to a second round of action research. The questions of scaling up of various elements are further studied at a regional level as basis for eventual outscaling and upscaling school level platforms for nutrition.

Direct benefits are also expected from this research: more effective and low-cost school feeding program leading to significant reduction in the number of malnourished school-age children. The project will leverage the extensive network of school infrastructure of the Department of Education, its already favorable and responsive policy framework concerning school feeding legislation, and the known potential for local governments and the private/business sector to co-finance field-tested models. The project will directly engage with at least 600 teachers, multiple tiers of government officers, and at least two of the largest companies in the Philippines.

Improved learning outcomes are expected, especially for girls. Effective school feeding programs are expected to increase school attendance and children's cognitive skills and educational achievements when supported by complementary actions such as deworming and micronutrient fortification or supplementation. Though the roles of both males and females are recognized, the targeting of women and girls is particularly warranted (FAO 2012). The project will target mothers and home economics teachers in feeding center activities through creatively designed nutrition education interventions supportive of sustainable and healthy diets. Aside from serving as sources of a diverse range of vegetables for feeding, 58 decentralized crop museums will help in the conservation of a nutritionally significant genetic resource heritage.

Through this new project, models that schools put in place to implement, sustain and scale up the previously tested nutrition model will be studied and documented. The research will generate new knowledge on the multiple objectives of school gardens, including addressing nutrition in the context of a changing climate and in developing nutrition and climate change education materials and method.

Research on implementation models can help inform policy at the regional and national levels to facilitate sustainability and scaling up of school-based nutrition programs. A study on how to improve the performance, implementation, and functioning of holistic and integrated approaches to school feeding is of relevance not just to the Philippines, specifically to key agencies like the Department of Education, the National Nutrition Council, and the Department of Social Welfare and Development, but to the global community as well.

OBJECTIVES:

General objective: To institutionalize and scale up the implementation of a sustainable, holistic, gender-sensitive, and integrated school nutrition model to improve nutritional awareness and status of school-age children in the Philippines.

Specific objectives

1. To fine-tune the implementation of an integrated school nutrition model in the Philippines
2. To test a multi-scalar approach to scale up and sustain the school nutrition model
3. To use schools as platforms for nutritional and environmental learning and sharing

METHODOLOGY

Conceptual and theoretical framework

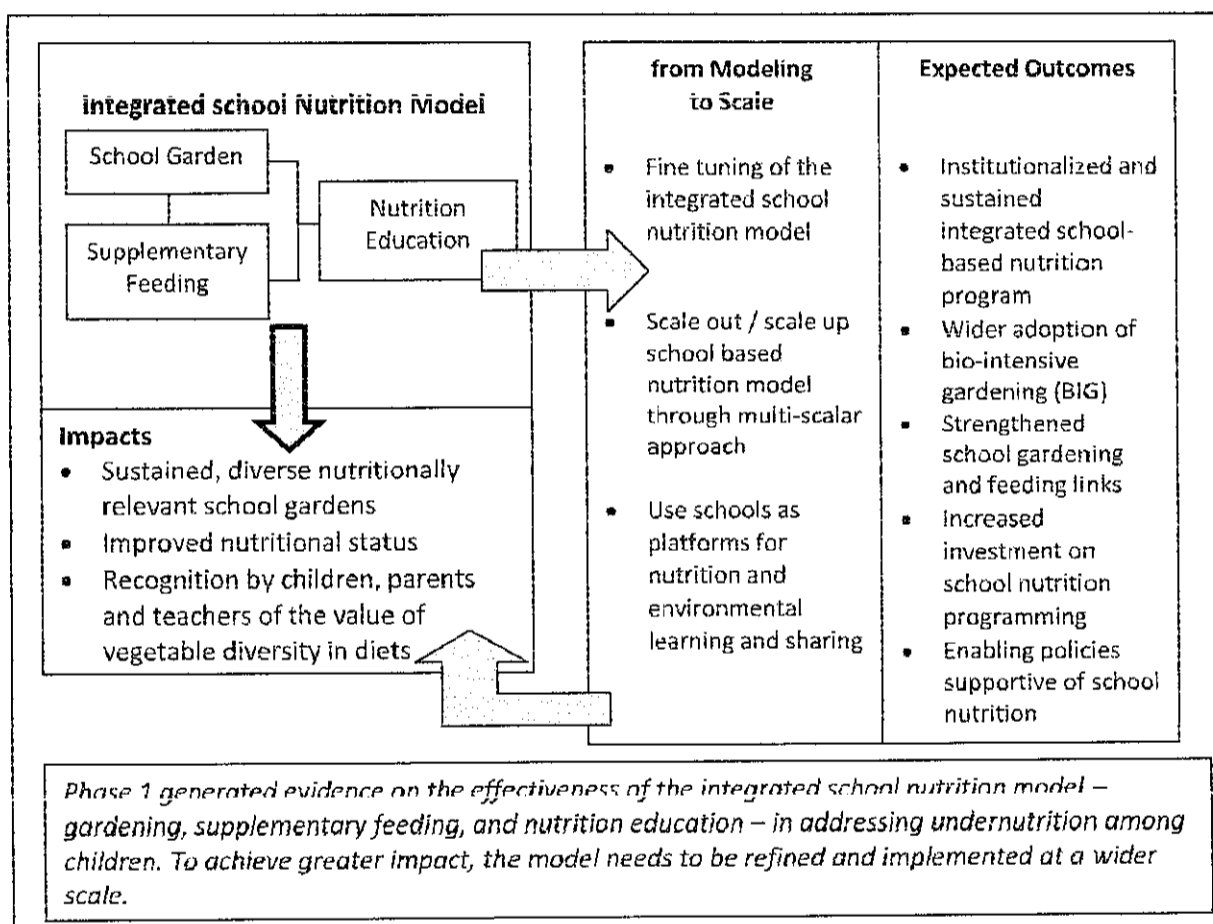


Figure 2: Conceptual and Theoretical Framework

different methodologies of data gathering and analysis. The research will attempt to answer the following questions directed at fine tuning the integrated nutrition model, scaling it up using a multi scalar approach and exploring the potential of schools to serve as platforms for nutrition and environmental learning and sharing.

Research Questions

Fine tuning of the integrated model

1. What are the requirements to bring about effective integration of gardening, supplementary feeding, and nutrition education?
2. What are the educational, communication strategies and follow-up mechanisms needed to enhance institutionalization and sustainability of integrated school nutrition programs into the school system?

Scaling up the model

1. How effective is the multi-scalar approach in promoting the adoption and scaling of school nutrition model at sub-national level?
2. What are the modalities to effectively engage the private sector and local government units to support school based nutrition interventions?
3. What is the role of school crop museums in supporting school and community nutrition programs?
4. In what ways can constructive dialogue platforms foster better information and resource sharing and enhanced collaboration towards better gender-responsive food security and nutrition programming?
5. How can action research within lighthouse schools influence policies and plans at the sub-national and national level?

Using schools as platforms for nutritional and environmental learning and sharing

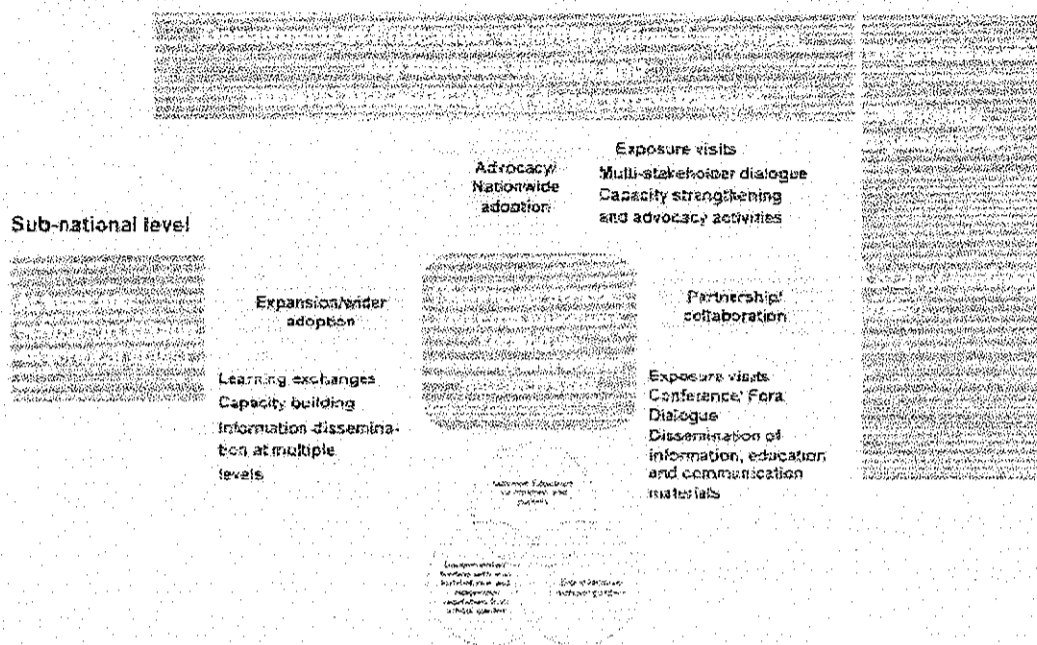
1. How can schools influence nutrition awareness of parents and communities?
2. What are the prerequisites and enabling factors for schools to serve as local level platforms for nutritional and environmental learning and sharing?

The research will involve public elementary schools in Cavite province and select schools in other provinces of Region IV-A. A total of fifty-eight (58) schools: 48 schools in Cavite and 18 schools in another 4 provinces will be selected using purposive sampling and will receive direct support. Consultation meetings will be held with various groups from the Department of Education at different levels at the inception phase.

The Department of Education, being the main user of the research outputs, was involved during

the conceptualization of the research project and it will play a major role in the implementation phase. School administrators at different levels, teachers and parents will be engaged and consulted at different stages. Other government agencies working with schools, particularly the Department of Agriculture, will also be involved in the implementation of the research. The action research will be undertaken jointly by the three collaborating institutions.

National level



Multi scalar approach to scale up the school nutrition model

Figure 3: Multi-scalar approach for scaling the integrated school nutrition model

Data collection

The research will employ both quantitative and qualitative methods. Baseline data collection will be undertaken at the onset of the research.

Performance in terms of the integration of the three components will be assessed in 3 select sentinel sites – these are schools where the integrated models are implemented, supported, and closely monitored.

The following will be carefully studied:

- Contribution of gardens to school feeding, agro biodiversity conservation and learning
- Changes in nutritional status using anthropometric measurements, specifically height and weight of schoolchildren

Success of the multiscalar approach in expanding implementation of the integrated school

nutrition model will be investigated. The following data will be gathered and analyzed in all the 58 lighthouse schools:

- * Contribution of gardens to school feeding, agro biodiversity conservation, and learning
- * Changes in nutritional status of schoolchildren using anthropometric measurements (secondary data from DepEd)
- * Integration of nutrition topics into the lesson plans and parent-teacher meetings
- * Changes in knowledge, attitude, and practice related to gardening, food, nutrition and environment
- * Level of participation and support of communities to school nutrition program
- * Mobilization of human and financial resources by schools
- * Integration of nutrition activities into the school improvement plan

Implementation of the BIG standards will be assessed through direct observation using the checklist developed by IIRR in Phase 1 to gain better understanding of the facilitating and hindering factors in using and ways they are adapting it. The quantity and diversity of garden produce utilized in school feeding, how gardens are used to teach, and how gardens are sharing produce and planting materials will be tracked and documented using simple tools that will be developed. Teachers are expected to keep records of garden outputs during the research period.

The effectiveness of nutrition education strategies will be measured through KAP (knowledge, attitude, practice) survey. A KAP questionnaire will be developed by the research team led by FNRI. Case study research will be used to assess factors affecting the ability of schools to mobilize resources, the participation and support of external stakeholders, and factors affecting the integration and implementation of the model. In addition, a more detailed survey tool to measure the potential of the model to be sustained will be developed.

The performance of the scaling up model will also be assessed. The study will include other schools in Cavite province and other provinces of Region 4-A, the private sector, local government units, and other organizations. The following indicators will be examined:

- * Level of adoption of key elements of the integrated model by schools, the private sector, civil society organizations, and national agencies
- * Resources mobilized to support school nutrition activities
- * Level of support by the private sector and local government units to school nutrition
- * Networks established among key actors
- * Collaboration, knowledge sharing, and resources sharing among key stakeholders

The research project team expects variations in the adoption of the integrated model. Direct observation and questionnaires will be used to assess the level of adoption by schools, the private sector, civil society organizations, and national agencies. A survey will be conducted to gather data on resources mobilized by schools to support nutrition activities. A stakeholder analysis will be conducted to investigate participation and level of support by key stakeholders to school nutrition programs. Focus group discussions and interviews will be conducted to assess the effectiveness of the instructional and communication support developed during the research period. School-initiated nutrition activities will be documented.