IMPROVING FOOD AND NUTRITION SECURITY IN THE PHILIPPINES THROUGH SCHOOL INTERVENTIONS

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IDRC Grant/ Subvention du CRDI: 108156-001-Improving food and nutrition security in the Philippines through school interventions
Improving Food and Nutrition Security in the Philippines through School Interventions
South East Asia Average

- C. Best et al, 2010 [a review of 369 studies (2002 to 2009) from 76 countries: developing and in transition]

**CHILD STUNTING**
Low height for age
- 29% (+/-18 SD)

**CHILD WASTING**
Low weight for height
- 39% (+/-17 SD)

**CHILD OVERWEIGHT**
High weight for height
- 13% (+/-9 SD)

**MICRONUTRIENT DEFICIENCY**
iron, folic Acid, vitamin A, zink, iodine below healthy thresholds
- 32% (+/-23 SD)
National Nutrition Survey 2013 (FNRI-DOST)

Results among children (5.08-10.0 years old)
Trends in the prevalence of malnutrition among children, 5.08-10.0 years old (60-120 months): Philippines, 2003-2013

From: FNRI-DOST
## Prevalence of anemia among children, 6.0–12.0 years old by region: Philippines, 2013

<table>
<thead>
<tr>
<th>Region</th>
<th>% Anemic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philippines</td>
<td>11.1</td>
</tr>
<tr>
<td>NCR</td>
<td>6.9</td>
</tr>
<tr>
<td>CAR</td>
<td>5.8</td>
</tr>
<tr>
<td>Ilocos</td>
<td>9.6</td>
</tr>
<tr>
<td>Cagayan Valley</td>
<td>19.8</td>
</tr>
<tr>
<td>Central Luzon</td>
<td>14.0</td>
</tr>
<tr>
<td>CALABARZON</td>
<td>10.8</td>
</tr>
<tr>
<td>MIMAROPA</td>
<td>21.5</td>
</tr>
<tr>
<td>Bicol</td>
<td>10.1</td>
</tr>
<tr>
<td>Western Visayas</td>
<td>10.0</td>
</tr>
<tr>
<td>Central Visayas</td>
<td>14.7</td>
</tr>
<tr>
<td>Eastern Visayas</td>
<td>10.0</td>
</tr>
<tr>
<td>Zamboanga Peninsula</td>
<td>4.4</td>
</tr>
<tr>
<td>Northern Mindanao</td>
<td>5.8</td>
</tr>
<tr>
<td>Davao</td>
<td>12.5</td>
</tr>
<tr>
<td>SOCCSKSARGEN</td>
<td>9.6</td>
</tr>
<tr>
<td>ARMM</td>
<td>18.4</td>
</tr>
<tr>
<td>CARAGA</td>
<td>10.1</td>
</tr>
</tbody>
</table>

From: FNRI-DOST
What can be done
A study of the California Department of Health Services showed that students who had experienced gardening ate more fruits and vegetables.

- www.kavanagcommunity.org
Nutrition education and nutrition programs that are LINKED to school gardens have resulted in improved academic achievement.

**SBFP Objective:** To improve the nutritional status of the 552,038 SW and 1,271,405 W learners

**GPP Objective:** To promote food security in schools and communities through self-help food production activities and values among learners and appreciation of agriculture as a life support system.

**DepEd’s Programs**

**Short Overview of Division’s Plans/Framework**

- **Nutrition Support**
  - School-Based Feeding Program
  - Gulayan sa Paralan Program
  - National Salt Iodization Program

- **School Health Service Delivery Systems**
  - Learner Health Appraisal System (LHAS)
  - Integrated Helminth Control Program (IHCP) - Schistosomiasis Prophylaxis
  - School-Based Immunization Program
  - Oral Urgent Treatment (OUT)
  - Oral Health Program – Bright Smiles, Bright Future (BSBF)
  - Mental Health and Psychosocial Support (MHPSS)
  - Sports Medicine: Screening/Management of Athletes and Coaches
  - Tamang Serbisyo Kalusugan Pamamilya (TSEKAP) for Teachers and NTP
  - BP ng Teacher Ko Alaga Ko

- **Healthy School Environment**
  - Wash in Schools (WinS)
  - Toxic Free Schools
  - School-Based HIV AIDS Education Program
  - National Drug Education Program
  - Smoke Free Environment / Tobacco Control Program
  - Mental Health and Psychosocial Support Programs
  - Health Promoting Schools
There is growing evidence that school-based nutrition education encourages healthy eating and exercise, especially on preventing of obesity.

-2016 Global Nutrition Report
Studies also showed that school feeding programs increase school enrollment, cognition and educational achievement.

-DepEd Operational Guidelines on the Implementation of SBFP
DepEd’s Current Programs and Targets

**SBFP Objective:** To improve the nutritional status of the 533,425 SW and 1,385,039 W learners

**GPP Objective:** To promote food security in schools and communities through self-help food production activities and values among learners and appreciation of agriculture as a life support system.
Challenges

**Garden sustainability**

- Physical factors
  - poor soil quality, space, poor drainage & water access
- Multiple tasks of teachers, among others

**Weak link between: gardens – feeding and garden learning**

**Availability of evidence for reference of policy makers**

**Locally-innovated models for more effective & efficient implementation of nutrition programs**
Phase 1: Model Development

- developed and tested the integrated school nutrition model
- IIRR, FNRI-DOST, DepEd Region IVA specifically Cavite
- The complete package of the model was tested in 2 research sites in Cavite and 25 schools for selected components
Phase 2

- Phase 2 (28 months): February 2016 - May 2018
- IIRR, FNRI-DOST, DepEd, DA Region 4A
- Supported by International Development Research Centre
Integrated School Nutrition Model

Bio-intensive School Garden

- Use of iron-fortified rice and indigenous vegetables from school gardens through the development of 15 lab-tested recipes
- School gardens enhanced using ecological practices to improve productivity and sustainability

Supplementary Feeding

Nutrition Education

- Nutrition Education for children, parents/caregivers/guardians and teachers using nutrition-sensitive lesson plans, modules, posters and flyers
Phase 1 results

- Improved nutritional state of school children (weight and anemia prevalence)
- Improved knowledge and attitude towards nutrition and gardening through education
- Enhanced garden productivity and functionality
Phase 1 results

- Improved year-round availability of diverse vegetables with lesser inputs, easier maintenance of gardens and overall improvement in yield and crop performance (as perceived by implementers)

- Conservation and mass production of indigenous vegetables through the establishment of 27 school crop museums
Phase 2: Objectives

General Objectives:

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.
Phase 2: Objectives

To fine-tune the implementation of an integrated school nutrition model in the Philippines

To test a multi-scalar approach to scale up and sustain the school nutrition model

To use schools as platforms for nutritional and environmental learning and sharing
Research Framework

**Integrated school Nutrition Model**

- School Garden
- Supplementary Feeding
- Nutrition Education

**Impacts**
- Sustained, diverse nutritionally relevant school gardens
- Improved nutritional status
- Recognition by children, parents and teachers of the value of vegetable diversity in diets

**From Modeling to Scale**

- Fine tuning of the integrated school nutrition model
- Scale out / scale up school based nutrition model through multi-scalar approach
- Use schools as platforms for nutrition and environmental learning and sharing

**Expected Outcomes**

- Institutionalized and sustained integrated school-based nutrition program
- Wider adoption of bio-intensive gardening (BIG)
- Strengthened school gardening and feeding links
- Increased investment on school nutrition programming
- Enabling policies supportive of school nutrition
Component 1: Nutrition Education
## STRATEGIES

<table>
<thead>
<tr>
<th>Formal Nutrition Education</th>
<th>Non-formal Nutrition Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Integration of nutrition and related themes in the curriculum</td>
<td>1. Nutrition education for parents</td>
</tr>
<tr>
<td>2. Use of the Gulayan sa Paaralan as a learning laboratory</td>
<td>2. Nutrition IEC materials</td>
</tr>
</tbody>
</table>
Nutrition Education before the Feeding Proper
Nutrition Integration in classroom discussion
Establishment of Nutrition Learning Resource Centers and display of posters give parents and students access to nutrition and gardening information.
Nutrition Education for parents & the community
Familiarize them with indigenous vegetables and recipes
Component 2: School Gardens
Sustained diverse gardens functioning as nutrition source and learning
Component 3: School-based Feeding
Availability of recipes that utilizes indigenous vegetables grown in school gardens is key to linking the 2 programs
Iron-rich recipes

- Ginisang Togue
- Tofu Balls with Sweet & Sour Sauce
- Tortang Gulay
- Beans-Tok Lumpia
- Pork Vegie Soup
- Rebosadong Gulay
- Bean-Squash Patties
- Corny Malunggay
- Ginulayang Munggo
- Vegie Tofu
- Beef Zesty in Sauce
- Fried Vegie Tuna
- Ginataang Tuna
- Picadillo Malunggay
- White Bean Stew
Strategies for scaling up
Up scaling

- Institutionalized and sustained integrated school-based nutrition program
- Wider adoption of bio-intensive gardening (BIG)
- Strengthened school gardening and feeding links
- Increased investment on school nutrition programming
- Enabling policies supportive of school nutrition

National level:
Department of Education, relevant national agencies, key decision makers and bilateral and multi lateral donor organizations

The private sector
Civil society organizations
Local government units

Multi scalar approach to scale up the school nutrition model

At least 400 schools in Region 4A (critical mass)

Lighthouse schools and crop museums serving as learning and action research sites

Advocacy/Nationwide adoption

Exposure visits
Multi-stakeholder dialogues
Capacity strengthening
Advocacy activities

Partnership/collaboration

Exposure visits
Conference/Fora
Dialogue
Dissemination of information, education and communication materials

Learning exchanges
Capacity building
Information dissemination at multiple levels

Sub national level
• Our goal is to make CALABARZON a lighthouse region (evidence-based) where others will learn from.

• To generate data on ways to enhance efficiency and effectiveness of school nutrition program.

• How do we ensure that dissemination and scaling out of the model will happen in each division?
TO: SCHOOLS DIVISION SUPERINTENDENTS

FROM: DIOSDADO M. SAN ANTONIO
Director IV-A

SUBJECT: IMPLEMENTATION OF THE "INTEGRATED SCHOOL NUTRITION MODEL IN CALABARZON"

DATE: August 15, 2016

The International Institute for Rural Reconstruction (IIRR) in coordination with the Department of Education IV-A, Education Support Services, Health and Nutrition Unit and Division of Cavite Province has been introducing the Integrated Approach on School Nutrition Program under the umbrella of the project, "Improving Food and Nutrition Security in the Philippines through School Interventions", a scaling up project being implemented in the region. The aim is to test the effectiveness of the Integrated Nutrition Model in decreasing the percentage of malnourished school children in CALABARZON.

Schools provide strategic, targeted pathways for delivering nutrition interventions among children and, indirectly, to their families and communities. The 3-year action research project (Phase 1) funded by IDRC from 2012 to 2015 was developed and was tested in integrated nutrition model of gardening using bio-intensive gardening approach, supplementary feeding using iron-fortified rice and indigenous vegetables and nutrition education for children and parents.

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 integrated model evolved under normal conditions including existing human resource capacities of the Department of Education. Experience with the pilot implementation of the program underscored the important role of institutional mechanisms, partnership building, and communication support and capacity-building strategies.
✓ Establishment of Lighthouse schools

Action research sites

Serves as learning hub if the nutrition mode in region 4A
• A lighthouse school (LS) is a designated focal point for decentralized and location-specific action research site on integrated school nutrition.

• Every LS will feature a regular school feeding program, a well maintained/sustained bio intensive garden, and related school-based nutrition education activities.
## Lighthouse Schools in CALABARZON

<table>
<thead>
<tr>
<th>Division of Cavite: 28</th>
<th>Division of Batangas: 2</th>
</tr>
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<tbody>
<tr>
<td>City Division of Dasmarinas: 5</td>
<td>City Division of Tanauan: 1</td>
</tr>
<tr>
<td>City Division of Imus: 3</td>
<td>City Division of Lipa: 1</td>
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<tr>
<td>City Division of Bacoor: 3</td>
<td>City Division of Batangas: 2</td>
</tr>
<tr>
<td>City Division of Cavite: 1</td>
<td>Division of Quezon: 2</td>
</tr>
<tr>
<td>City Division of Lagu na: 2</td>
<td>City Division of Lucena: 1</td>
</tr>
<tr>
<td>City Division of Sta. Rosa: 1</td>
<td>City Division of Tayabas: 1</td>
</tr>
<tr>
<td>City Division of Binan: 1</td>
<td>Division of Rizal: 1</td>
</tr>
<tr>
<td>City Division of Calamba: 1</td>
<td>City Division of Antipolo: 1</td>
</tr>
<tr>
<td>City Division of San Pabló: 1</td>
<td>TOTAL: 58</td>
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</table>
✓ Establishment of school crop museums

Decentralized nurseries for indigenous vegetables
<table>
<thead>
<tr>
<th>School Division</th>
<th>LS</th>
<th>CM</th>
<th>School Division</th>
<th>LS</th>
<th>CM</th>
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<td>City Division of Lipa</td>
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<td>City Division of Bacoor</td>
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<td>City Division of Batangas</td>
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<tr>
<td>City Division of Cavite</td>
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<td>Division of Quezon</td>
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<tr>
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<td>3</td>
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<td>4</td>
<td>City Division of Tayabas</td>
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<td>3</td>
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<tr>
<td>City Division of Binan</td>
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<td>2</td>
<td>Division of Rizal</td>
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<tr>
<td>City Division of Calamba</td>
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<td>3</td>
<td>City Division of Antipolo</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>City Division of San Pablö</td>
<td>1</td>
<td>7</td>
<td><strong>GRAND TOTAL</strong></td>
<td><strong>58</strong></td>
<td><strong>229</strong></td>
</tr>
</tbody>
</table>
✔ Development and dissemination of information, education and communication materials
## Evidence building

### Sample data: Utilization of garden produce

<table>
<thead>
<tr>
<th>Covered Date</th>
<th>Area, sqm</th>
<th>Types of Crops</th>
<th>Frequency of Harvests</th>
<th>Total Harvest, kg</th>
<th>% Harvest Used in SBFP</th>
<th>% Harvest school funded meals</th>
<th>% Harvest Distributed to Children</th>
<th>% Harvest SOLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Julugan ES</td>
<td>August to Dec22</td>
<td>200</td>
<td>21</td>
<td>106</td>
<td>101.47</td>
<td>63.61%</td>
<td>22.47%</td>
<td>1.35%</td>
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<tr>
<td>Sunny Brooke ES</td>
<td>July 7 to Dec7</td>
<td>200</td>
<td>22</td>
<td>105</td>
<td>354.88</td>
<td>38.15%</td>
<td>10.11%</td>
<td>0.34%</td>
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<tr>
<td>Tinabunan ES</td>
<td>July to Dec27</td>
<td>200</td>
<td>29</td>
<td>227</td>
<td>252.71</td>
<td>23.05%</td>
<td>60.63%</td>
<td>0.99%</td>
</tr>
<tr>
<td>Carlos Batino MES</td>
<td>Aug10 to Dec9</td>
<td>200</td>
<td>17</td>
<td>94</td>
<td>132.80</td>
<td>26.36%</td>
<td>49.92%</td>
<td>16.94%</td>
</tr>
<tr>
<td>Upli ES</td>
<td>Jun30 to Nov21</td>
<td>400</td>
<td>25</td>
<td>121</td>
<td>318.65</td>
<td>6.21%</td>
<td>18.52%</td>
<td>5.02%</td>
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<tr>
<td>GAMES</td>
<td>Jun3 to Dec8</td>
<td>450</td>
<td>22</td>
<td>139</td>
<td>253.72</td>
<td>9.32%</td>
<td>48.31%</td>
<td>12.14%</td>
</tr>
<tr>
<td>Isidro Cuadra ES</td>
<td>Aug to Nov22</td>
<td>200</td>
<td>10</td>
<td>64</td>
<td>48.81</td>
<td>4.94%</td>
<td>95.06%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>
THANK YOU / SALAMAT PO