

Securing a Health and Nutrition-Conscious Young Generation through the School and Community Education System for Society 5.0

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Abstract

The creation of a Society 5.0 would require quality human resources that are forward-looking, smart, responsible and practice an active and healthy lifestyle. Balanced nutrition contributes to producing this kind of human resources that are critical in bringing about faster economic growth and reducing social problems for society members.

SEAMEO RECFON promotes balanced nutrition from early childhood to adolescent-aged school children through its two flagship programs, namely: Early Childhood Care, Nutrition and Education (ECCNE) and Nutrition Goes to School (NGTS). Launched in late 2016, the NGTS program is a school-based multisectoral program designed to build character and improve students' learning outcomes and active participation in school activities by practicing proper nutrition, hygiene and sanitation. It is being piloted in 6 districts in East and West Java, and West Kalimantan provinces in Indonesia involving 55 primary, junior high and vocational schools. The ECCNE program was conceptualized in 2017 as a community-based multisectoral intervention program aimed at providing a model of integrated implementation of essential components of childcare and parenting to ensure optimal psychomotor, cognitive and affective growth and development of a child. It is being piloted in one district each in East Java, West Kalimantan and Central Sumatra provinces in Indonesia involving 54 community early childhood education centers. These programs are SEAMEO RECFON's modest attempts to contribute to Sustainable Development Goals Target 2.2 and SEAMEO Priority Areas 1 and 2.

This paper presents the experiences and contributions of SEAMEO RECFON's ECCNE and NGTS programs thus far in Indonesia to help secure a health and nutrition-conscious young generation to support the creation of a Society 5.0.

Introduction

Malnutrition is a global and multisectoral concern that affects human capacities to contribute to national development. The so-called triple burden of malnutrition, (i.e. underweight, overweight, and nutrient deficiencies) does not discriminate age, socioeconomic class and gender that could result to different types of illness and mortality. These forms of malnutrition can co-exist in the same individuals, within households and communities across different countries and regions. Thus in 2015, the UN member states agreed to "end malnutrition in all its forms" as Target 2 under the Sustainable Development Goal (SDG) 2 by 2030. SDG 2 focuses on ending hunger, achieving food security, improving nutrition and promoting sustainable agriculture. The UN also declared 2016-2025 as the Decade of Action on Nutrition to accelerate the implementation of this target globally towards a healthy and productive population.

Under-five and school-aged children up to adolescence are considered among the sectors of the society that are most vulnerable to malnutrition. Malnourished children are most likely to experience slow or poor brain development which then affect their performance in school. In the long run, this may limit their opportunities to find a decent job during adulthood and thus affect the country's economic growth.

Southeast Asian countries experience varying forms of malnutrition. The 2018 Global Nutrition Report indicates that overweight is prevalent in Brunei Darussalam, anemia in Singapore, stunting in the Philippines, overweight and anemia in Thailand, stunting and anemia in Cambodia, Indonesia, Lao, Myanmar, Timor Leste and Vietnam, and overweight, anemia and stunting in Malaysia.

In support of the SDGs, the Southeast Asian Ministers of Education Organization (SEAMEO) identified seven priority areas in 2015 wherein the mandates and expertise of its 26 specialist centres could be fully tapped. The seven priorities are (1) Achieving Universal Early Childhood Care and Education, (2) Addressing Barriers to Inclusion, (3) Promoting Resilience in the Face of Emergencies, (4) Promoting Technical and Vocational Education and Training, (5) Revitalizing Teacher Education, (6) Promoting Harmonization in Higher Education and Research, and (7) Adopting a 21st Century Curriculum.

As one of the specialist centres of SEAMEO, the Regional Centre for Food and Nutrition (RECFON) initiated two flagship programs under its Second Five-Year Development Plan (2016-2021) to address the first and the second priority areas, namely: Early Childhood Care, Nutrition and Education (ECCNE) and Nutrition Goes To School (NGTS), respectively. These programs are also the Centre's modest attempts to contribute to achieving SDG Target 2.2. SEAMEO RECFON believes that promoting proper nutrition to the young generation could help them secure a better future and allow them to respond to the demands of the Industrial Revolution 4.0 and conform to the vision of Society 5.0.

The ECCNE and NGTS programs subscribe to the life-cycle approach to nutrition development of individuals from early childhood to adolescence. The Centre sees the critical role of the school and community education systems to achieve this.

General Approach , Framework, Intervention Type and Coverage of SEAMEO RECFON's Flagship Programs on ECCNE and NGTS

Approach. SEAMEO RECFON adopts mitigation and prevention approaches for its flagship programs in combatting malnutrition among the under-five and school-aged children. The ECCNE Program focuses on the mitigation approach towards preventing the effects of malnutrition among under-five children during the later stage of their life. On the other hand, the NGTS Program deals with prevention approach to avoid new born becoming malnourished by providing nutrition education to adolescent school children who would eventually become parents.

Framework. Both programs operate within the Demand, Supply, Policy and Information System (DSPIS) framework (Fig.1). The programs are expected to respond to and/or create the demand for target stakeholders to choose healthier and nutritious foods that could be made available within and in the immediate vicinity of the school and community learning centres. The programs are also expected to ensure that target stakeholders have access to supplies of safe, affordable, locally available and nutritious foods as well as clean water and environment. The programs believes that having practical and easy to implement policies to create an environment conducive to practicing good health and nutrition habits in

schools and community learning centres among its stakeholders is critical. The information system is meant to facilitate the creation of communication platform for sharing, monitoring and evaluating program experiences and lessons learned for improvement and scaling up eventually.

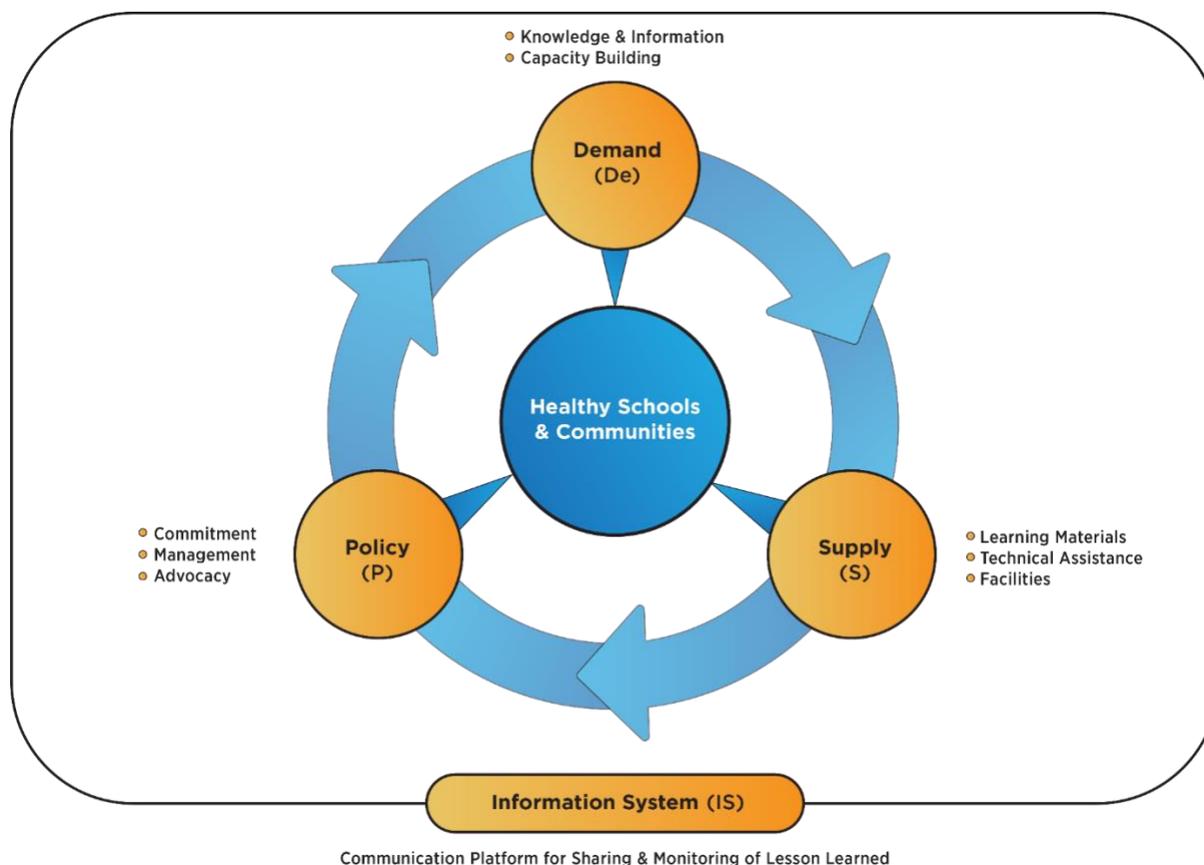


Figure 1. The DSPIS Framework for NGTS and ECCNE Programs

Interventions. The activities of ECCNE and NGTS programs are combination of nutrition-sensitive and nutrition-specific interventions. These interventions are carried out through the community development, capacity building, knowledge management, and research mandates of the Centre.

Coverage. SEAMEO RECFON is currently piloting the two flagship programs in Indonesia. The ECCNE Program is being piloted in four sites in Indonesia, namely: Malang in Central Java Province, Sambas in West Kalimantan Province, East Lombok in Nusa Tenggara Province, and Jambi in Central Sumatra Province. It involves early childhood education (ECE) teachers, community health workers and mothers for nutritional development of under-five children. The NGTS Program is being implemented in six sites, namely: Sambas in West Kalimantan Province, Klaten in Central Java, Malang in East Java Province, and Bogor, Cimahi and Cirebon in West Java Province. It involves school teachers and principals, local education and health officers, and academic institutions for nutrition literacy of primary, secondary and vocational school children. The NGTS Program is expected to end its piloting period in Indonesia in 2021 while the ECCNE Program in 2022.

Several efforts have been made to initiate the implementation of NGTS and ECCNE Programs in other Southeast Asian countries. These countries include Cambodia, Lao PDR, and Myanmar for ECCNE Program in 2018 and Timor Leste for NGTS Program in 2019. Both programs have been endorsed by the 11 Ministers of Education of Southeast Asian countries for scaling up during their 50th annual SEAMEO Council Meeting in July 2019 in Kuala Lumpur, Malaysia.

The ECCNE Program: Ensuring Optimal Growth and Development of Under-Five Children

Early childhood development interventions, especially during the first 1,000 day in the life of a newborn, are essential in paving the way for better health and learning capacity, increased potential for livelihood generation during adulthood, poverty reduction, fewer inequalities, and more peaceful societies (The 2016 Lancet Early Childhood Development Series). These interventions could include promotion of optimal infant and young child feeding, healthy home care and nutritional support, disease prevention, management of childhood illness, and high-quality early childhood care and education (ECCE) programs. These, however, present challenges for most national governments in Southeast Asia.

SEAMEO RECFON's ECCNE program is a community-based multisectoral intervention program aimed at providing a model of integrated implementation of essential components of childcare and parenting to ensure optimal psychomotor, cognitive and affective growth and development of a child. It is a collaborative endeavor with other two SEAMEO Centres, namely: Regional Centre for Early Childhood Care Education and Parenting (CECCEP) and Regional Centre for Tropical Medicine (TROPMED) Network.

The ECCNE Program was conceptualized in 2017 but implementation fully took off in 2018. Its framework has five components that are necessary to achieve an integrated approach to optimal child growth and development (Fig.2). These are arranged in a form of a house that represents a family, a household, a school, or a community where they could and should operate. A house is supposed to serve as a nurturing environment for a child's growth and development, and security.



Figure 2. ECCNE Program Framework

Specifically, the program aims to:

1. Formulate strategies, approaches and guidelines for each program component and integrate them to form a single ECCNE model;

2. Generate evidence of the effectiveness of the strategies and approaches for each component;
3. Advocate the use of the ECCNE model to relevant stakeholders for adoption;
4. Build the capacity of stakeholder to implement the ECCNE model; and
5. Establish mechanisms for the sustainable implementation of the ECCNE model

The ECCNE Program has the following activities that are categorized into nutrition-sensitive and nutrition-specific according to the DSPIS Framework:

Classification in DSPIS	Nutrition-Specific	Nutrition-Sensitive
Demand	<ul style="list-style-type: none"> • Generation and implementation of food-based recommendations for under-two children from locally available nutrient-dense food sources • Supplementary feeding 	<ul style="list-style-type: none"> • Learning Module Development • Capacity Building of EC Educators, Parents & Community Health Workers on ECCNE • ECCNE Working Group Formation and Functioning
Supply		<ul style="list-style-type: none"> • ECCNE Working Group Formation and Functioning
Policy	-	<ul style="list-style-type: none"> • Advocacy to mainstream ECCNE through partnership with local governments and academic institutions in program sites • ECCNE Working Group Formation and Functioning
Information System	-	<ul style="list-style-type: none"> • Online Mapping of Early Childhood Educators' Competencies on ECCNE • ECCNE Working Group Formation and Functioning

In Indonesia, the ECCNE Program supports the Presidential Regulation No. 60 of 2013 on Integrative Holistic Early Childhood Development as well as the National Strategy on Accelerating Stunting Prevention 2018-2024. After two years of implementation, the ECCNE Program has the following accomplishments per activity type:

1. Online mapping of early childhood education (ECE) teachers' competencies in ECCNE

A total of 17,821 ECE teachers in 484 out of 514 districts (94%) across all provinces of Indonesia have been surveyed on their ECCNE competencies in October 2018. Interestingly, 77.3% of these teachers have not received any training on nutrition which provided the strong justification for SEAMEO RECFON to conduct series of capacity building activities in the ECCNE program sites.

2. Capacity building of ECE teachers, community health workers and mothers on ECCNE

- Training of eight nutritionists and healthcare staff from two districts, 80 cadres and 480 mothers with under-two children on stunting prevention in February 2019 and March 2019 in Malang City and Sambas District, respectively
- Training of 36 ECE teachers from 18 ECE centres in Sambelia and Pringabaya Subdistricts, East Lombok District and West Nusa Tenggara District on ECCNE in disaster-prone areas in February and April 2019
- Training of 21 Master Trainers from Sambas, Malang and Tanjung Jabung on ECCNE under the concept of Holistic-Integrative Early Childhood Education in September 2019
- Training of Trainers on ECCNE under the concept of Holistic-Integrative Early Childhood Education for 78 ECE teachers from Sambas and Tanjung Jabung in September 2019

3. Development of ECCNE learning materials

- Two learning modules have been developed and published, namely: ECCNE for Stunting Prevention in February 2019, and Guidelines for ECCNE in Disaster-Prone Areas in April 2019
- A series of 8 modules on Holistic and Integrative Early Childhood Care Education have been finalized for printing in February 2020

4. Establishment of ECCNE Models

Three ECCNE models have been established, namely:

- Health Centre-based ECCNE Model for Stunting Prevention in Malang and Sambas Districts starting in 2018
- ECCNE Centre-based ECCNE Model for Stunting Prevention in Malang, Sambas and Tanjung Jabung Districts starting in 2019
- ECCNE Model for Post-Disaster Recovery in East Lombok District starting in 2018

Another model, Daycare-based ECCNE model, has been recently conceptualized and is expected to be implemented in 2020 in Jakarta City.

5. Advocacy to Mainstream ECCNE Program through Partnerships

SEAMEO RECFON signed Memorandum of Understanding in 2018 with three academic institutions, one district government and one civil society group to implement the ECCNE Program. These institutions include the University of Brawijaya and Malang Health Polytechnic Institute in Malang, East Java, Sambas District Government and Pontianak Health Polytechnic Institute in West Kalimantan, and HIMPAUDI which is based in Jakarta.

SEAMEO RECFON has formulated a policy brief in 2019 on its research on formulation of local specific food-based recommendations (FBR) for stunting prevention in ECCNE program sites and had submitted it to the Ministry of Health of Indonesia for consideration. Details of the research is discussed under No. 7.

6. ECCNE Working Group Formation and Functioning

The ECCNE Program has created its Indonesian Working Group on 9 July 2019 whose members come from government education and health agencies, academic institutions, civil society group, research organizations including SEAMEO RECFON. The Working Group is expected to carry out mapping of competencies of ECE teachers, develop ECCNE learning materials and models, and document ECCNE best practices.

7. Formulation of local specific food-based recommendations (FBR) for stunting prevention in ECCNE program sites

Using linear programming approach through Optifood software, the ECCNE Program team developed and tested optimized local specific food-based recommendations (FBRs) among 240 under-five children in two sites (i.e. Malang and Sambas) as intervention group for six months in 2019 and compared the results with another 240 under-five children as control group (Fig. 3).

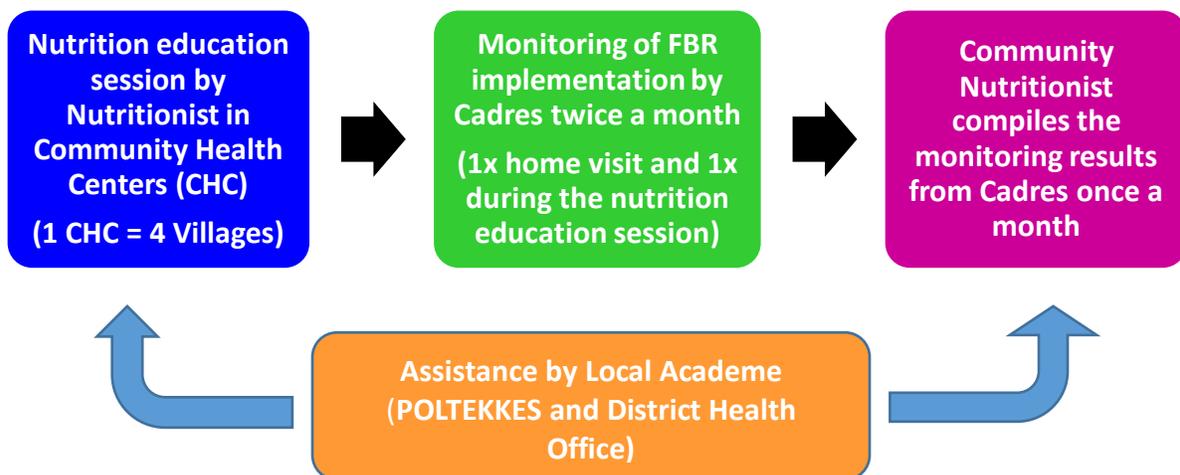


Figure 3. Implementation Scheme of Food-based Recommendation Promotion And Nutrition Education in Two ECCNE Program Sites for Six Months

The study showed positive benefit in terms of improved dietary diversity score and nutrient intakes among children in the intervention group. Additionally, the positive and significant benefit of CFR in terms of anemia and linear growth was observed in Sambas district in West Kalimantan Province where the ratio of animal protein from animal source foods (ASF) to plant protein is 3:1 as compared to Malang where the ratio is 0.9:1. At the end of six-month promotion of optimized FBRs in Sambas, significant differences were found among children under control (C) and intervention (I) groups in terms of stunting cases (C=33.5%, I=23.9%) and anemia cases (C=43.5%, I=23.9%).

In 2018-2019, ECCNE Program Coordinator and team members have been providing technical assistance to Ministries of Health of Cambodia, Lao PDR and Myanmar in formulating FBRs for under-five children.

The NGTS Program: Developing AWESOME School-Aged Children

The NGTS Program targets school-aged children because it is in this period when eating habits are developed and/or acquired either within or outside the household and school environments that could affect their nutritional status later during adulthood. Thus, it is the opportune time to help improve dietary behaviors of this group of children. The program aims to develop AWESOME (i.e., Active, Well-Nourished, and Smart Of Me) school children that is expected to be manifested in their school performance both in class and extra curricular activities. An active student means performing any form of physical activity everyday in a week for at least 30 minutes per day as recommended by the Ministry of Health of Indonesia (2014). A student is well-nourished if his/her body mass index (BMI) fall in the normal range as indicated in the growth curve published by WHO (2006). Being smart is measured through the improvement in the academic performance of the students in class. The Program framework has three components, namely: nutrition education, policy and management support, and school environment improvement (Fig. 4). Policy and Management Support component refers to existing school-related regulations and those that need to be developed as well as decision-making processes to make the school environment and curricular activities address the health and nutrition needs of school children. The school environment component refers to the socio-physical environment and the different interactions taking place within the classroom, within the school campus, and in the immediate vicinity outside the school. The nutrition education component refers to the integration of nutrition concepts and principles in both the classroom and extra curricular activities of the students in relation to their school environment and policy and management support situation. These components are expected to play critical roles when integrated in both classroom and extra curricular activities of school children to become AWESOME.

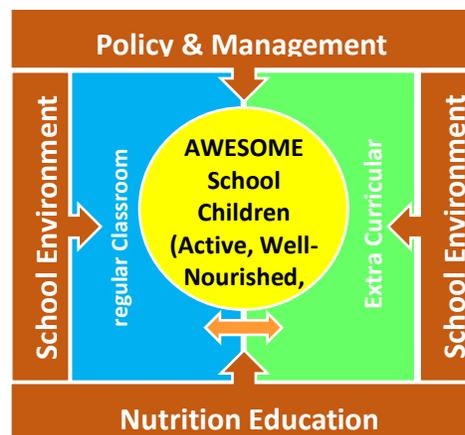


Figure 4. NGTS Program Framework

The NGTS Program has the following activities that are categorized into nutrition-sensitive and nutrition-specific according to the DSPIS Framework:

Classification in DSPIS	Nutrition-Specific	Nutrition-Sensitive
Demand	<ul style="list-style-type: none"> • Generation and implementation of food-based recommendations from locally available nutrient-dense food sources for adolescent female school children 	<ul style="list-style-type: none"> • Learning module development • Capacity building of school teachers, local government education officials on nutrition education and WASH education • Continuous technical assistance via social media • Establishment of Southeast Asia School-Based Nutrition Promotion (SBNP) Working Group
Supply		<ul style="list-style-type: none"> • Establishment of School Garden • Establishment of Health School Canteen • Monitoring of Implementation of IFA Supplementation • Establishment of Southeast Asia School-Based Nutrition Promotion (SBNP) Working Group
Policy	-	<ul style="list-style-type: none"> • Advocacy to mainstream NGTS Program in schools partnership with local governments and academic institutions in program sites • Establishment of Southeast Asia School-Based Nutrition Promotion (SBNP) Working Group
Information System	-	<ul style="list-style-type: none"> • Mapping of school readiness to implement NGTS Program • Establishment of Southeast Asia School-Based Nutrition Promotion (SBNP) Working Group

The NGTS Program supports several national government programs under the Ministry of Education and Culture and the Ministry of Health such as Usaha Kesehatan Sekolah (UKS or School Efforts for Health), Program Sekolah Sehat (or Healthy School Program), Adiwiyata (or Green School Program), Program Gizi Anak Sekolah (ProGas or School Feeding Program), etc.

After three years of implementation, the NGTS Program has accomplished the following:

1. School Readiness Mapping for NGTS Implementation

The Program sampled 664 schools (i.e. 74 percent government and 26 percent private) from different levels from the major islands of Indonesia in 2017 in relation to their readiness to implement NGTS Program according to DSPIS framework. The results showed that around 78

percent of the schools surveyed were ready to implement an NGTS program. This enabled SEAMEO RECFON identify and implement NGTS in certain program sites.

2. Learning Module Development

From 2017 to 2018, the NGTS Program developed five learning modules, namely:

- Gizi dan Kesehatan Anak Usia Sekolah Dasar (Health and Nutrition for Primary School Children)
- Gizi dan Kesehatan Remaja (Health and Nutrition for Adolescent School Children)
- Panduan Gizi Seimbang untuk Remaja (Balanced Nutrition Guide for Adolescent School Children)
- Kantin Sekolah Sehat (Health School Canteen)
- Edukasi Gizi Berbasis Kebun Sekolah (Nutrition Education Based on School Garden)

3. Capacity Building of School Teachers and Piloting of NGTS with Partner-Schools

The NGTS Program had conducted Training of Trainers (face to face mode) for 396 teachers from 114 partner-schools at all levels from six NGTS Program sites (i.e., Sambas, Malang, Cirebon, Bogor, Klaten, Bandung, West Lombok) on nutrition, hygiene and sanitation education. It had also trained 993 teachers from 105 schools via online mode. Both training modes required the participants to formulate action plans to implement any or a combination of NGTS activities (i.e., nutrition education, school garden, school canteen, physical activities, WASH) in their respective schools.

4. Advocacy to Mainstream NGTS Program through Partnerships

Between 2018 and 2019, SEAMEO RECFON signed Memorandum of Understanding with eight Health Polytechnic Institutes/University for implementation of NGTS Program in Bogor, Cimahi and Cirebon Districts in West Java, Klaten District in Central Java, Malang City in East Java, and Sambas District in West Kalimantan. Two partner-schools in Bogor sought to formalize their partnership with SEAMEO RECFON by signing an MOU in 2019.

5. Monitoring the Implementation of Iron Folic Acid (IFA) Supplementation under the Aksi Bergizi (Adolescent Nutrition) Project of UNICEF

Since NGTS Program targets adolescent school children, SEAMEO RECFON has been selected by UNICEF as its partner-institution to carry out its Aksi Bergizi Project which includes the monitoring of the implementation of IFA supplementation among secondary school children.

Impacts Thus Far of SEAMEO RECFON's Flagship Programs

on NGTS and ECCNE

A. ECCNE Program

1. With the ECCNE Program experiences in developing learning modules,
 - the Ministry of Education and Culture of Indonesia has endorsed the new set of 8 modules on Holistic and Integrative Early Childhood Care and Education that the program team developed in 2019. The endorsement comes in the foreword from the Directorate General of Early Childhood and Community Education. The modules are expected to be published in March 2020.
 - the Ministry of Health of Indonesia requested SEAMEO RECFON's ECCNE Program Team to develop three guidelines on stunting prevention for District/City Governments, Community Health Centers (Puskesmas), and Integrated Family Planning and Health Service Centers (Posyandu). The first drafts are expected to be ready before the end of 2020.
2. The Ministry of Health of Indonesia has accepted, in principle, the recommendations contained in the policy brief developed by the ECCNE Program resulting from the research on formulating local specific food-based recommendations for under-five children for stunting prevention in Sambas and Malang sites in 2019. This policy brief will be launched in March 2020.
3. Two other district governments sought to formalize partnership with SEAMEO RECFON to strengthen the implementation of the ECCNE model on stunting prevention. The Centre will be signing an MoU with the District Government of East Lombok in Nusa Tenggara Province, and Tanjung Jabung East SubDistrict in Jambi Province in March 2020.
4. With the ECCNE Program team expertise and experiences in formulating local specific food-based recommendations for under-five children, the Ministry, through funding support from GAIN and the Government of United Kingdom, has requested SEAMEO RECFON to train local academe of 37 priority districts for stunting prevention on formulating local specific FBRs for their respective localities. The training will be conducted in February 2020.
5. The Ministry of Religious Affairs of Indonesia and SEAMEO RECFON agreed to allocate slots for teachers of Islamic schools under the Ministry to join the online course on ECCNE for Early Childhood Teachers in implementing the concept of holistic and integrative early childhood education through parenting session. This online course will be conducted starting March to April 2020.

B. NGTS Program

1. At least 83 schools that have received NGTS training (face-to-face and online modes throughout Indonesia) joined SEAMEO RECFON's NGTS Awards to recognize those that have integrated nutrition concepts and principles in their lesson plans for classroom and extra-curricular activities. Ten schools became awardees from primary, junior, and senior/vocational levels.
2. With the progress made by the NGTS Program in various sites with partner-schools under the Ministry of Education and Culture of Indonesia, the Universitas Muhammadiyah and Muhammadiyah Organization sought the partnership of SEAMEO RECFON to initiate the same program to Madrasah schools to be piloted in Jakarta City starting in March 2020.
3. Some partner-schools have become finalists in the Healthy School Award at district/city, provincial and national levels. In Cirebon site, two primary schools became finalists at the district/city level, one junior high school at provincial level, and one junior high school at national level in 2019. In Sambas, one junior high school is a finalist at national level for 2020.

Some Lessons Learned in Implementing SEAMEO RECFON's Flagship Programs on ECCNE and NGTS

1. Painting the bigger picture of the NGTS and ECCNE Programs including their relevance to global protocols and national policies and programs is critical to obtain the buy-in of stakeholders
2. Clarifying the specific roles of partners, emphasizing shared ownership of the Programs, and formalizing the partnership help facilitate program implementation
3. Support/Endorsment from top provincial/district government officials helps ensure program sustainability and wider coverage of implementation
4. Using existing national government programs as one entry point can boost the relevance and acceptance among partners
5. Research results provide for better evidence/informed-based decision making from among the partners involved thus strengthening their commitments to the Programs
6. Selection of schools by district education offices and consensus with academic partner-institutions enhances program ownership and commitment to implement planned activities
7. Encouraging academic and government partners to integrate NGTS and ECCNE programs in their regular activities could help reinforce implementation
8. Sustained and timely technical assistance to school teachers, ECE teachers, and community health workers is critical to ensure achievement of program objectives and targets
9. Aside from the face-to-face monitoring, the proper use of social media maintains continuous communication, sharing of experiences, and documentation of progress between and among partners

10. Providing proper recognition of efforts by school teachers/EC educators deepens their personal and school advocacy to promote NGTS and ECCNE activities.

References

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