



## One Million Eggs Program in Sigi Regency (Efforts to Reduce Stunting Rates)

\*Ketut Suarayasa, Bertin Ayu Wandira\*\*

\*Department of Public Health and Community Medicine,  
Tadulako University Faculty of Medicine  
\*\*Health Policy Administration Department,  
Tadulako University School of Public Health

### Abstract

**Introduction.** Malfunctioning of the food system and failure to provide the required food intake is a problem that causes stunting. The need to reduce stunting and malnutrition is the reason for implementing several innovation programs in Sigi district, Central Sulawesi. The stunting rate in Sigi Regency based on data from the 2021 Indonesian Nutrition Status Survey (SSGI) is 40.7% and is above the average stunting rate for Central Sulawesi Province, which is 29.7%.

There are 6 (six) stunting intervention programs in Sigi district, including: 1) program to provide 3 hectares of land per village; 2) One Million Eggs program; 3) the Sigi Healthy Walking Clinic program; 4) establishment and implementation of Theurepatic Feeding Center; 5) establishing and implementing ceting posts; and 6) provision of additional food for toddlers and implementation of village-level stunting consultations.

**This study aims** to evaluate the implementation of the One Million Eggs program in Sigi district in terms of: impact, relevance, effectiveness and sustainability of the program. Quantitative approach through evaluation of intervention program results (secondary data) and qualitative approach through in-depth interviews with 10 informants (Head of Bappeda, Head of Health Service, Head of nutrition section, head of health center, 2 community leaders, 2 chicken breeders, 2 mothers household) and Focus Group Discussion with groups of women and children community groups.

**Research results:** 1) the impact of the program has succeeded in increasing egg consumption among pregnant women by 56%, breastfeeding mothers increasing by 68%, and egg consumption among toddlers increasing by 65%; 2) the program is quite relevant in helping increase the knowledge and motivation of farmers to improve their farming practices and improve the perceptions of housewives about the negative impact of consuming eggs; 3) door-to-door campaigns and social media are considered quite effective as innovative strategies that can increase egg consumption and ensure proper nutrition for the community; and 4) Pilot farms have created a new ecosystem for three parties (namely breeders, private partners, and the government) to keep the learning process sustainable. Intensive communication and organization will help this program continue and exist in the community.

**Conclusion:** The one million eggs movement has encouraged more frequent consumption of eggs in the community and can overcome the fundamental problem of stunting, namely food security at the household level due to the difficulty in accessing the availability of adequate micronutrient intake.

**Keywords:** Stunting, Million Eggs Movement, Egg Consumption

Received 08 Feb., 2023; Revised 18 Feb., 2023; Accepted 20 Feb., 2023 © The author(s) 2023.

Published with open access at [www.questjournals.org](http://www.questjournals.org)

### I. Introduction

Stunting is a nutritional problem in toddlers that has become a global concern in recent years, especially in low- and middle-income countries, including Indonesia ([Kemenkes RI] Kementerian Kesehatan Republik Indonesia, 2014). Stunting indicates a linear growth disorder (length/height for age) which is below -2 Standard Deviation (<-2SD) according to the World Health Organization (WHO) median standard, occurs due to chronic malnutrition and repeated infections during the first 1000 days of life (HPK). Globally there are 155 million children under five years of age (toddlers) experiencing stunting (Unicef, 2012).

WHO data, reports that Indonesia is one of the countries contributing the third highest stunting rate in Southeast Asia, reaching 36.4% from 2005-2017(WHO (World Health Organization), 2016). The prevalence of stunting under five in Indonesia based on basic health research reports, has increased from 2016 to 2018, namely 27.5% in 2016, 29.6% in 2017 and increased 30.8% in 2018(Kemenkes RI, 2018).

Central Sulawesi is one of the provinces in Indonesia with an 80% rural population, with a still high poverty rate (40% live on less than \$2 per day). The prevalence of stunting is still at 25.2%, underweight at 14.5% and wasting at 9%. Even though it is still below the national figure, it is still above the WHO target of reducing stunting <20%, <10% underweight and <5% wasting. The stunting rate in Sigi Regency based on data from the 2021 Indonesian Nutrition Status Survey (SSGI) is 40.7% and is above the average stunting rate for Central Sulawesi Province, which is 29.7%(Dinas Kesehatan Provinsi Sulawesi Tengah, 2018).

There are six innovations to accelerate the reduction of stunting carried out by the Sigi Regency Government, including: 1) Implementation of a program to provide 3 hectares of land per village. This is to ensure food availability (food security) in handling stunting and dealing with food shortages during a pandemic; 2) Implementation of the One Million Eggs program. One Million Eggs is a community nutrition improvement program by providing eggs for toddlers and families who experience malnutrition; 3) Implementation of the Sigi Healthy Walking Clinic (KibasSigi) program. Kibas is a program to bring health services closer to the community, especially for people who live in remote areas by forming a team for the early detection of cases of malnutrition in remote areas; 4) Formation and implementation of Theurepatic Feeding Center (TFC) in Sigi Regency. TFC itself is a nutrition recovery center located at the Marawola Health Center for toddlers who experience chronic malnutrition; 5) Formation and implementation of ceting posts, namely a gathering place for pregnant women with KEK and mothers of toddlers with underweight nutritional status, stunting and wasting to receive education about IMD, parenting, environmental sanitation, provision of local supplementary food for pregnant women with KEK and underweight toddlers; 6) Allocation of Village Funds (DD) to all villages in Sigi Regency which are allocated for provision of supplementary food (PMT) for toddlers and village-level stunting rebug activities.(Sigi, 2020)

The aim of the research is to evaluate the implementation of the One Million Eggs program in Sigi district related to: impact, relevance, effectiveness and sustainability of the program.

## **II. Methodology**

The research method is a mix-method, with quantitative and qualitative approaches(John W. Creswell, 2014)(Masturoh & Anggit, 2018). Quantitative data was obtained from survey results on the base-line and end-line (secondary data). While the qualitative data was obtained through in-depth interviews with 10 informants (Head of Bappeda, Head of the Health Service, Head of the nutrition section, head of the puskesmas, 2 community leaders, 2 chicken breeders, 2 housewives) and focus group discussions with groups of women and children community groups.

The Sigi district government has carried out the One Million Egg Movement intervention program from June 2018 to November 2020. The intervention target is 1,344 population (general public, pregnant women, toddlers and laying hen breeders) in Sunju Village, Marawola District. The results of the base-line and end-line surveys from the one million egg program are used to evaluate the impact of activities, complement the results of interviews and focus group discussions.

## **III. Results and Discussion**

### **3.1. Program Impact**

The survey results of the one million eggs program succeeded in increasing egg consumption in 361 households which were targeted to reduce stunting by 53%. Target households consist of 106 households of pregnant and lactating women and 255 parents and caregivers of toddlers. At the same time, the level of egg consumption among pregnant women in the program's pilot villages has increased by 56%. The most significant impact was achieved by increasing egg consumption in lactating mothers by 68% and by 65% for toddlers. The prevalence of stunting status in Sigi Regency showed a significant decrease in 2019 compared to 2018, from 19.8 to 17.9. In addition, the one million eggs program has achieved its target of increasing the percentage of families providing eggs in their daily diet by 68%(Bappeda Sigi, 2020).

From the farmer's side, 50% of the participating farmers showed an increase in their egg production. The amount of increase varies from under 50 % to greater than 150 %. The results of the interviews showed that farmers considered the increase to be still in the moderate category. In fact, according to farmer informants, there are several breeders who have not experienced an increase in egg production(Zuchdi, 1995).

Based on survey results, the program succeeded in increasing household exposure to egg nutrition information by 43%, which has the potential to change previous consumption attitudes. The results of interviews with housewives said that their perception of eggs had changed. They no longer see eggs from a negative side (allergy), but can already see positive aspects such as the nutritional value they contain.

### **3.2. Program Relevance**

The results of interviews with the head of the Bappeda and the head of the Sigi district health office show that the one million eggs program is very relevant to the stunting reduction strategy which aims to provide interventions ranging from food provision, parenting and health aspects. One of the activities of the one million eggs program is to provide training to chicken farmers. From the perspective of laying hen farmers, the training provided has been very helpful in increasing the farmer's knowledge and motivation to improve their current farming practices.

From the household side, the social marketing strategy has touched on a number of erroneous perceptions regarding the reluctance to consume eggs such as the impact of allergies and other myths that link egg consumption and pregnancy (C.K. et al., 2018).

According to one of the community leaders interviewed, the One Million Eggs program increases people's creativity in utilizing their home land to raise chickens, as well as improving the economy of the people in the village.

### **3.3. Program Effectiveness**

The social marketing approach (Salter Mitchel, 2020), especially door-to-door campaigns and social media, is considered by the local government as an innovative strategy that can ensure proper nutrition for the people. The results of the focus group discussion on housewife groups and community groups in Sunju village stated that the one million eggs program had succeeded in creating a "network orchestra". Network orchestration has been successful in connecting farmers with suppliers so that high quality inputs can be made available to farmers. With the formation of pilot farms, the relationship between private partners and breeders is then realized more concretely. The training conducted during this program allows for the involvement of other sectors. This collaboration in turn provides the basis for a more integrated layer chicken farming system.

Cross-sector collaboration has been recognized as an important strategy in health development. At the 7th International Health Promotion Conference in Nairobi-Kenya, cross-sectoral partnerships and cooperation became important issues discussed. The conference explored the level of investment in health promotion, how health promotion can be more effective in supporting health programs and policies, and the role of health promotion practitioners, researchers and policy makers in safeguarding these (health) investments. Health experts are of the opinion that it will be impossible to achieve development goals in the health sector-including reducing stunting rates-without the role of other sectors (Notoatmodjo, 2012).

### **3.4. Program Sustainability**

Establishment of a livestock model and institutional arrangements (production-supply-consumption flow) established during the one million eggs program is core to program sustainability. The results of interviews with the Head of Bappeda, the Head of the Health Office and the Head of the Puskesmas stated that the one million eggs program could continue if the government maintained a conducive climate for the supply and consumption of eggs. For egg supply, the government must participate in strengthening chicken farmers. The fact is that in Sigi district, the pilot farm has created a new ecosystem for three parties (namely breeders, private partners and the government) that can keep the learning process sustainable.

To keep egg consumption sustainable, door to door campaign efforts, massive use of social media and giving "branding" to the existence of eggs with their nutritional content can provide a different (positive) understanding so that people are no longer reluctant to consume eggs. Finally, intensive communication and organization will help this program continue and exist in the community.

## **IV. Conclusion**

The one million eggs movement has encouraged more frequent consumption of eggs in the community and can overcome the fundamental problem of stunting, namely food security at the household level due to the difficulty in accessing the availability of adequate micronutrient intake.

## **Acknowledgments**

The author would like to thank the Sigi Regency Government for providing data on the results of the implementation of the one million eggs program. The author also thanks those who are willing to become informants in this study.

## **Reference**

- [1]. [Kemenkes RI] Kementerian Kesehatan Republik Indonesia. (2014). Infodatin Situasi Kesehatan Ibu. In Kemenkes RI, Pusat data dan informasi.
- [2]. Bappeda Sigi. (2020). Ringkasan eksekutif Program Sejuta Telur.
- [3]. C.K., L., L.L., I., & C.P., S. (2018). The potential of a simple egg to improve maternal and child nutrition. *Maternal and Child Nutrition*. <https://doi.org/10.1111/mcn.12678> LK - <http://surrey-primotc.hosted.exlibrisgroup.com>

- [4]. Dinas Kesehatan Provinsi Sulawesi Tengah. (2018). Profil Kesehatan Provinsi Sulawesi Tengah Tahun 2018. Profil Kesehatan Provinsi Sulawesi Tengah Tahun 2018.
- [5]. John W. Creswell. (2014). *Research Design (Qualitative, Quantitative and Mix-Methods Approaches)* (University of Nebraska-Lincoln (ed.); University, Vol. 21, Issue 1). University of Nebraska-Lincoln.
- [6]. Kemenkes RI. (2018). Kemenkes RI. Profil Kesehatan Indonesia 2017. Data dan Informasi. Kementerian Kesehatan RI; 2018. In *Jurnal Ilmu Kesehatan*.
- [7]. Masturoh, I., & Anggit, N. (2018). Metodologi Penelitian Kesehatan (KEMENKES RI). In *Bahan Ajar Rekam Medis dan Informasi Kesehatan*.
- [8]. Notoatmodjo, S. (2012). Promosi Kesehatan dan Perilaku Kesehatan. In *Journal of Chemical Information and Modeling*. <https://doi.org/10.1017/CBO9781107415324.004>
- [9]. Salter Mitchel. (2020). *the\_Little\_Book\_of\_Social\_Justice*. Communication and Behavioral Change.
- [10]. Sigi, D. K. (2020). Profil Dinas Kesehatan Sigi. Dinas Kesehatan Kabupaten Sigi, 12–26.
- [11]. Unicef. (2012). Kesehatan Ibu & Anak. UNICEF Indonesia. <https://doi.org/9870>
- [12]. WHO (World Health Organization). (2016). WHO | Millennium Development Goals (MDGs). Who.
- [13]. Zuchdi, D. (1995). PEMBENTUKAN SIKAP. *Jurnal Cakrawala Pendidikan*.