

# Scaling Up Nutrition

## The future of Indonesia



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2017**

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**Terbit : 2017**  
**Edisi : I**  
**Oleh : Supriyatiningih**

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## **Acknowledgement**

Specific recognition has to be given to DIKTI as the funder and the team for their great support of this work. Especially for Prof. Dr. Med. Ralph J. Lelle, MD,PhD,MIAC, Dr.dr. Arlina Dewi, M.Kes, Dr.dr. Sri Sundari, M.Kes, Dianita Sugiyo, S.Kep.,Ns.,MHID.,HNC, Winny Setyonugroho,S.Ked.,MT, PhD for their dedicated work in collecting and collaborating data used in this book as a part of the objective of our research for this book.

## **Introduction**

The achievement of Millenium Development Goals (MDGs) requires immediate action for children nutrition. Currently, a quarter of children in Indonesia are undernourished. This increases their chance of death, undermines their cognitive development and reduces their capacity to earn a living. Malnutrition in all its forms remains a global concern, particularly affecting highly vulnerable populations in several regions of the world, including Indonesia as a developing country. Excessive intake of energy-dense food, a form of malnutrition, together with reduced physical activity, has led to an epidemic of obesity, overweight, and nutrition-related noncommunicable diseases. Ambitious global targets and sustainable development goals have been set to address this problem. Achievement of these goals and targets requires political will and leadership of the government, supported by an informed and empowered civil society and a committed and engaged private sectors.

Proven solutions are available and nations want to act on this knowledge. Investments in Scalling Up Nutrition will yield immediate returns. It will save lives, enable children and their mothers to have a better future, contribute to livelihoods, reduce poverty and contribute to the economic growth nations.

This book is a description of the nutritional situation in Indonesia, its commitment for Scalling Up Nutrition, include the effort for the good nutrition of children in the future.

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## **References**

# Chapter I

## Background

### SCALLING UP NUTRITION IN THE WORLD

It is estimated that 805 million people around the world suffer from hunger every day and more than two billion people suffer from micronutrient deficiencies. Children in the developing world tend to be among the worst affected. One in five children under-five (or approximately 161 million globally) is stunted – most of whom live in developing Countries [1]. Half (45%) of the deaths of young children (under five) are linked to Undernutrition [2]. A substantial amount (12%) of which is attributed to sub-optimal breastfeeding [3].

Wasting and stunting are caused by a lack of energy (calories), particularly protein and micronutrients such as iodine, vitamin A and iron. However a significant number of people who eat sufficient calories do not obtain sufficient micronutrients and this leads to the third form of undernutrition: micronutrient deficiency, which is sometimes referred to as hidden hunger. As with obesity the economic costs of undernutrition are high. It is estimated that many countries lose 2-3% of their gross domestic product (GDP) due to undernutrition. However, in the hardest hit countries in Africa and Asia the cost of undernutrition can be as high as 11% of GDP [4].

Basic Health Research 2013 produced by the Ministry of Health noted that the national stunting prevalence for children under five had reached 37.2%, higher than 2010 (35.6%) and 2007 (36.8%). This means that around 8 million or one every three of Indonesian children are stunted. This stunting prevalence is significantly higher than other countries in South East Asia, such as Myanmar (35%), Vietnam (23%), and Thailand (16%). Globally, Indonesia has the fifth highest number of stunted children [5].

The Scaling Up Nutrition (SUN) collaborative process that began in 2009 with the development of the Scale Up Nutrition Framework, has evolved into a Movement that is both stimulated and reinforced by political interest in nutrition among leaders of national governments and development partners alike.

Scaling Up Nutrition is a global push for action and investment to improve maternal and child nutrition. Evidence shows that proper nutrition during the 1000 days between a woman's pregnancy and her child's second birthday gives children a healthy start at life. Poor nutrition during this period leads to irreversible consequences such as stunted growth and impaired cognitive development. Improving nutrition is a precondition to achieving goals of eradicating poverty and hunger, reducing child mortality, improving maternal health and combating disease - which all contribute to a stronger future for communities and nations.

The principles guiding the SUN movement are as follows: (a) SUN efforts are led from countries and external support processes must add value to this country-led action and must be demand-driven; (b) ongoing initiatives to improve nutrition should be linked together for greater coherence, efficiency, and impact, wherever possible; and (c) a combination of networks and movements are needed to enable a range of stakeholders to work together and contribute to lasting results. The following describes the mechanisms that enable the movement to function in a coordinated and coherent way.

The Road Map for Scaling up Nutrition, which was produced between July and September 2010, provides the principles and direction for increased support for countries as they scale up efforts to tackle under-nutrition across a range of sectors. The Road Map is translated into action with a view to helping countries affected by under-nutrition to achieve long-term reduction in under-nutrition and realize the first Millennium Development Goal, and to start demonstrating this impact within three years. Different groups of stakeholders are being encouraged to provide support in a coordinated way - working together to support country-led actions.

### **SUN Lead Group**

The SUN Movement continues to gain momentum today with the convening of 27 leaders committed to advancing the strength and security of nations by improving maternal and child nutrition. This influential group, appointed by UN Secretary-General Ban Ki-Moon to represent the many countries, organizations and sectors working to improve nutrition, will serve as strategic guides for this global Movement.

The members of the Lead Group include Heads of State from countries that have prioritized efforts to scale up nutrition, as well as representatives of the donor, civil society, business and UN system organizations that are aligning resources to

help SUN countries drive progress. The Lead Group's role is to ensure that the countries at the heart of the Movement are supported as they work to create tangible and sustainable improvements in nutrition. In addition to providing strategic oversight, the Lead Group will help to mobilize support and strengthen both coordination and accountability within the Movement.

## Prevalence Stunting in ASEAN Countries



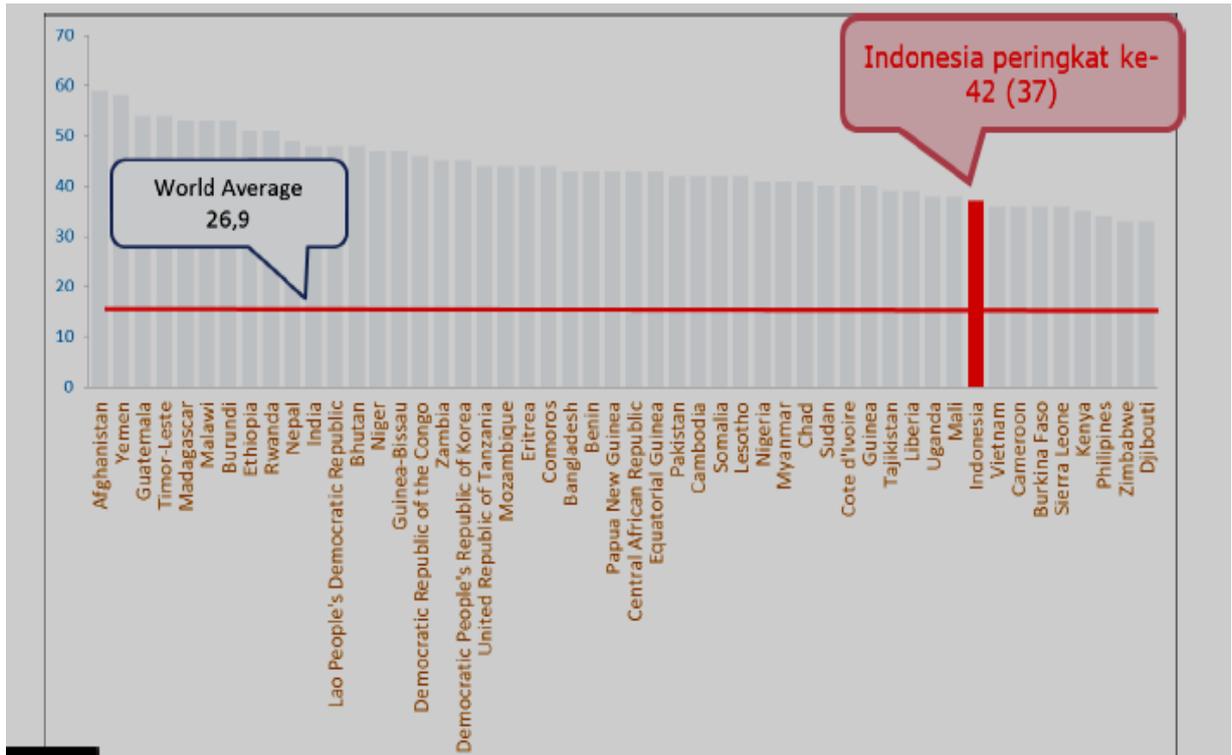
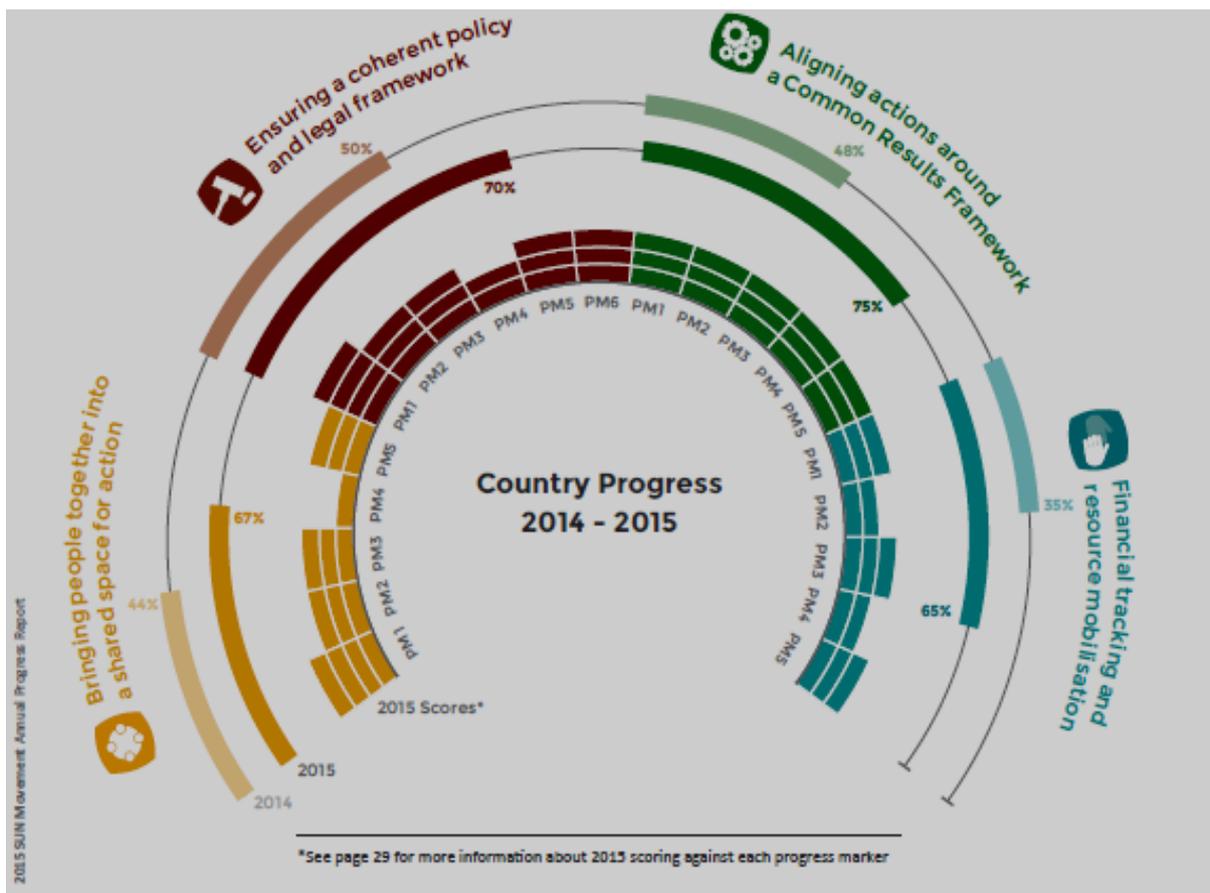


Figure 1.1 Prevalence Stunting in 50 Countries 2003-2008  
(Source: UNICEF 2009)



## High Prevalence of IUGR, Stunting and Severe Wasting in Children Under 5



13 million babies are born each year with intrauterine growth restriction

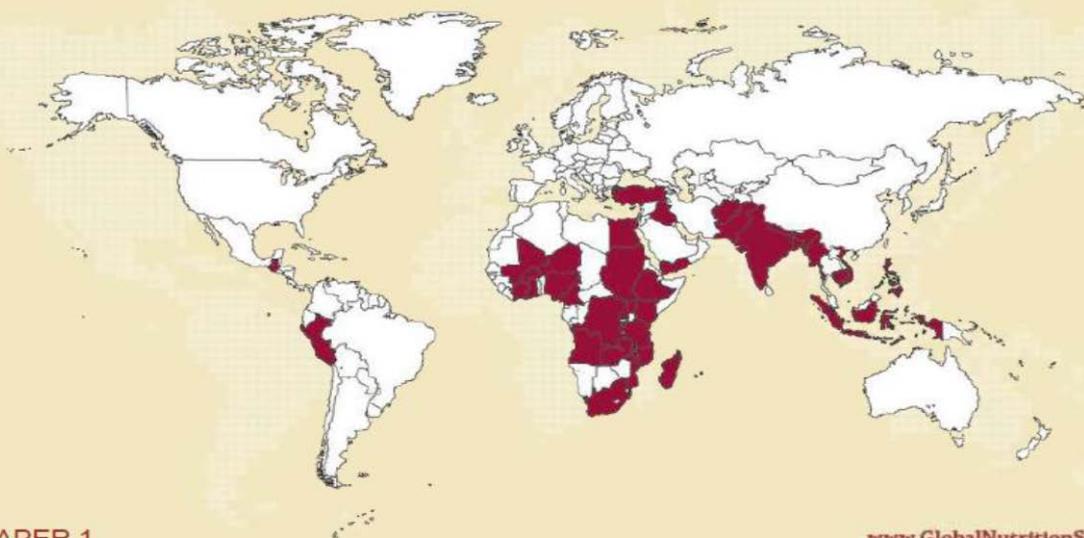
178 million children are stunted; 32% of all children

19 million children are severely wasted

Figure 1.2 Prevalence Stunting Globally  
(Source: [www.GlobalNutritionSeries.org](http://www.GlobalNutritionSeries.org))

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## 90% of All Stunted Children Live in Just 36 Countries



PAPER 1

[www.GlobalNutritionSeries.org](http://www.GlobalNutritionSeries.org)

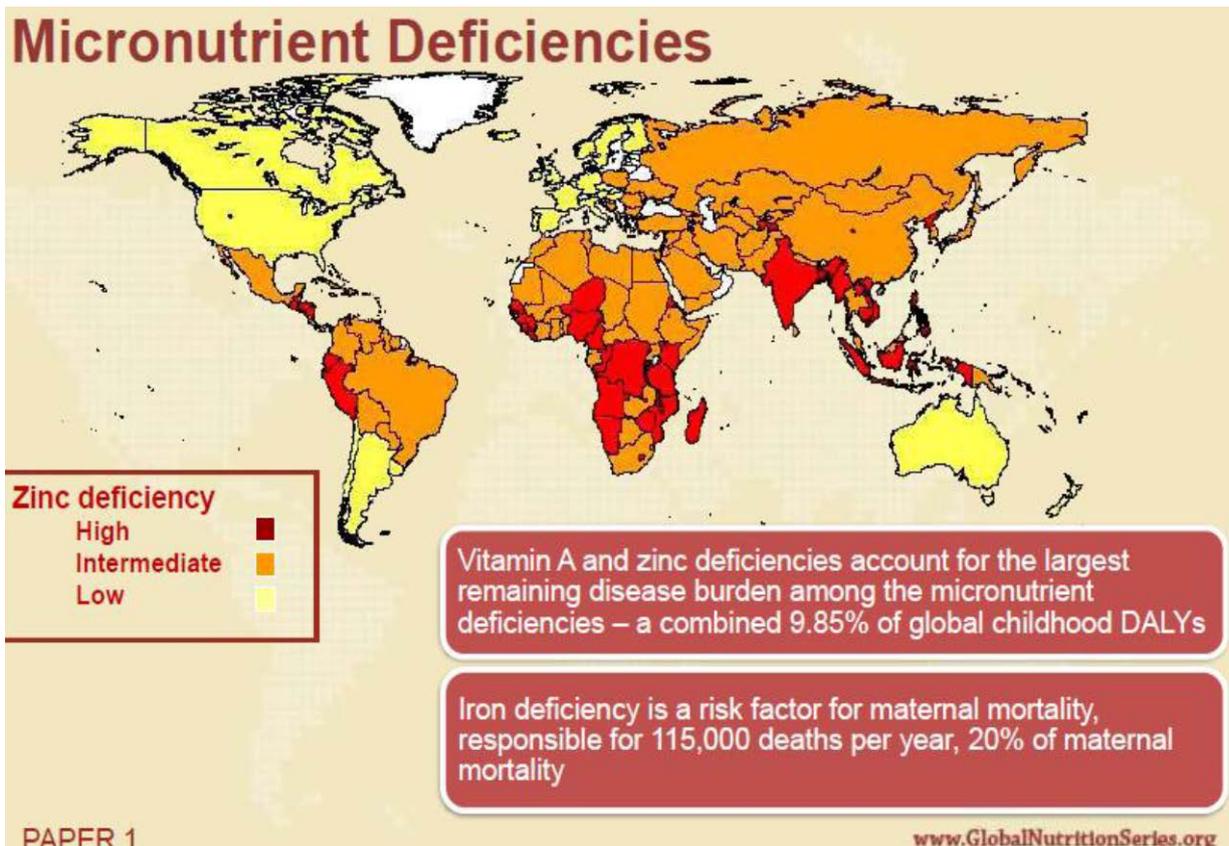


Figure 1.3 Stunted Children in the world  
 (Source: [www.GlobalNutritionSeries.org](http://www.GlobalNutritionSeries.org))

i) Child stunting

Stunting refers to the condition when a child's height is considered too short for his or her age and is a sign of chronic under-nutrition. The majority of SUN countries have a stunting prevalence of more than 30 per cent; and 13 have a stunting rate of more than 40 per cent. According to the latest survey data, Haiti, Mali, Mauritania and Peru have moved below 30 per cent. Senegal and The Gambia remain within the 20-30 per cent range, despite recent increases in stunting prevalence.

Prevalence of stunting among children under 5 in SUN Countries		
Stunting Bellow 30%	Stunting 30% to bellow 40%	Stunting 40% and above
Namibia (29%, 2006-07) Ghana (28%, 2008) Mali (27%, 2010) Senegal (27%, 2011) Peru ((24%, 2009) The Gambia (23%, 2010) Haiti (23%, 2011-12)* Mauritania (18%, 2011)* Kyrgyz Republic (18%, 2005)	Indonesia (36%, 2010) Sierra Leone (34%, 2010)* Burkina Faso(34%, 2011)* Uganda (30%, 2011) Zimbabwe (32%, 2010- 11)	Madagascar (49%, 2000) Guatemala (48%, 2008) Niger (47%, 2008) Malawi (47%, 2010) Zambia (45%,2007) Ethiopia (44%, 2011) Lao PDR (44%, 2011) Mozambique (44%, 2008) Rwanda (44%, 2010) Benin (43%, 2006) Tanzania (42%, 2010) Bangladesh (41%, 2011) Nepal (41%, 2011) Nigeria (41%, 2011)

Table 1.1. Prevalence Stunting children under 5

Data source: WHO database or published reports from Multiple Indicator Cluster Surveys (MICS), Demographic Health Surveys (DHS) and national surveys using SMART methods.  
\*Validated national SMART Survey (all figures rounded)

SUN countries vary considerably in their progress in reducing stunting. Eleven countries are likely to continue reducing the number of stunted children if they sustain an annual relative reduction rate greater than 2%. In 2013, there will be an estimated 20 million stunted children across these 11 countries, taking into account the population annual growth and the relative stunting annual reduction rate.

Below 2% any yearly gain in stunting reduction is offset by the annual population growth rate. Unless there is a sharp increase in the stunting reduction rate, 15 countries in the SUN Movement will continue to be challenged by an

increase in the number of stunted children each year. In 2013, the number of stunted children across these 14 countries is estimated to be around 33 million children.

Countries with an annual stunting reduction rate below 1% and a stunting prevalence above 40% face the highest increase in the number of stunted children, especially where the annual population growth is above 2%. Countries facing this challenge include Benin, Guatemala, Madagascar, Mozambique, Nigeria and Rwanda. Countries with annual stunting reduction rates significantly above 2% and a stunting prevalence above 30%, are those most likely to experience yearly decreases in the number of stunted children - especially when their population growth is below 2%. Countries in this category are Bangladesh, Nepal and Zimbabwe. The WHO target is 3.9% relative reduction of stunting per year between 2012 and 2025.

<b>Estimated number of stunted children in 2013</b> (based on annual reduction rate from 2000 and annual population growth)		
<b>Annual reduction rate from 2% and above</b>	<b>Annual reduction rate below 2%</b>	
	<b>From 1% to below 2%</b>	<b>Annual reduction rate below 1%</b>
Mauritania: 102,900 (6.7%)	Haiti: 285,313 (1.8%)	Guatemala: 1,072,627 (0.9%)
Ghana: 825,324 (4.9%)	Indonesia: 7,966,254 (1.6%)	Senegal: 599,069 (0.8%)
Mali: 748,819 (4.5%)	Malawi: 1,339,026 (1.4%)	Nigeria: 11,319,646 (0.7%)
Bangladesh: 5,844,978 (3.1%)	Niger: 1,504,296 (1.3%)	Mozambique: 1,758,058 (0.6%)
Nepal: 1,419,282 (3.3%)	Sierra Leone: 373,427 (1.3%)	Rwanda: 864,201 (0.6%)
Burkina Faso: 858,913 (3.4%)	Tanzania: 3,555,603 (1.1%)	Namibia: 86,458 (0.2%)
Uganda: 2,205,813 (3.0%)		Lao PDR: 336,844 (0.2%)
Peru: 649,317 (2.6%)		The Gambia: 86,804 (0.09%)
Ethiopia: 5,317,848 (2.5%)		Madagascar: 1,761,188 (0.04%)
Zambia: 1,046,156 (2.3%)		Benin: 803,676 (-1.9%)
Zimbabwe: 517,460 (2.3%)		
<b>Total: 19,528,151</b>	<b>Total: 33,712,490</b>	

Table 1.2 Estimated number of stunted children in 2013

(Data Source: WHO Database or published report from Multiple Indicator Cluster Surveys (MICS), Demographic Health Surveys (DHS) and National Surveys using SMART methods).

## ii) Child wasting

Wasting refers to a child whose weight is too low for his or her height, and is an indicator of acute malnutrition. It is sensitive to sudden changes such as droughts, food price increases and instability. The WHO global target calls for countries to reduce and maintain childhood wasting at less than 5%. Nine

countries in the SUN Movement indicate a wasting prevalence below 5% in their latest national survey, but only Guatemala, Peru and Tanzania have been consistently on target since 2000. Another nine countries report a wasting prevalence above 10%, with the highest prevalence in Bangladesh, Indonesia and Nigeria. Burkina Faso, Ethiopia, Mauritania, Mozambique, Rwanda and to some extent Malawi and Sierra Leone have been able to consistently reduce wasting prevalence since 2000.

Based on the most recent childhood wasting prevalence, the SUN countries with the highest number of wasted children are Nigeria with about 3.8 million, Indonesia with about 3 million, Bangladesh with 2.5 million, Ethiopia with 1.2 million and Madagascar with half a million children. Collectively these countries account for around 11 million children, or two-thirds of the 15 million children estimated to be wasted across countries in the SUN Movement.

Prevalence of wasting among children under 5 in SUN countries		
Wasting Below 5%	Wasting From 5% to below 10%	Wasting From 10% and above
Tanzania (4.9%, 2010)	Senegal (9.8%, 2011)	Bangladesh (17.5%, 2011)
Mozambique (4.2%, 2008)	Mali (8.9%, 2010)	Madagascar (15.2%, 2004)
Haiti (4.1%, 2011-12)*	Ghana (8.7%, 2008)	Nigeria (14.4%, 2008)
Malawi (4%, 2010)	Benin (8.4%, 2006)	Indonesia (13.3%, 2010)
Kyrgyz Republic (3.4%, 2005)	Namibia (7.5%, 2006-07)	Niger (12.4%, 2006)
Zimbabwe (3.1%, 2010-11)	The Gambia (7.4%, 2006)	Nepal (11.2%, 2011)
Rwanda (3%, 2010)	Lao PDR (7.3%, 2006)	Mauritania (10.7%, 2011)*
Guatemala (1.1%, 2008)	Sierra Leone (6.9%, 2010)*	Burkina Faso (10.2%, 2010)*
Peru (0.6%, 2009)	Zambia (5.6%, 2007)	Ethiopia (10.1%, 2011)
	Uganda (5%, 2006)	

Table 1.3 Prevalence of Wasting Children under 5

(Data Source: WHO Database or published report from Multiple Indicator Cluster Surveys (MICS), Demographic Health Surveys (DHS) and National Surveys using SMART methods.

\*Validated National SMART Surveys; all figures rounded.)

# CHAPTER II

## Global Epidemiological evidence

### Study Results of Guatemala

The proportion of short- 16 times more in women who at the age of 3 years very short, shorter than the reply lightly. Value differences in baca score [17].

- The adult male has a baca score 15 points (19%) was lower in those who are very short at the age of 3 years - shorter than those who light. In the women's 11 points (15%) lower.

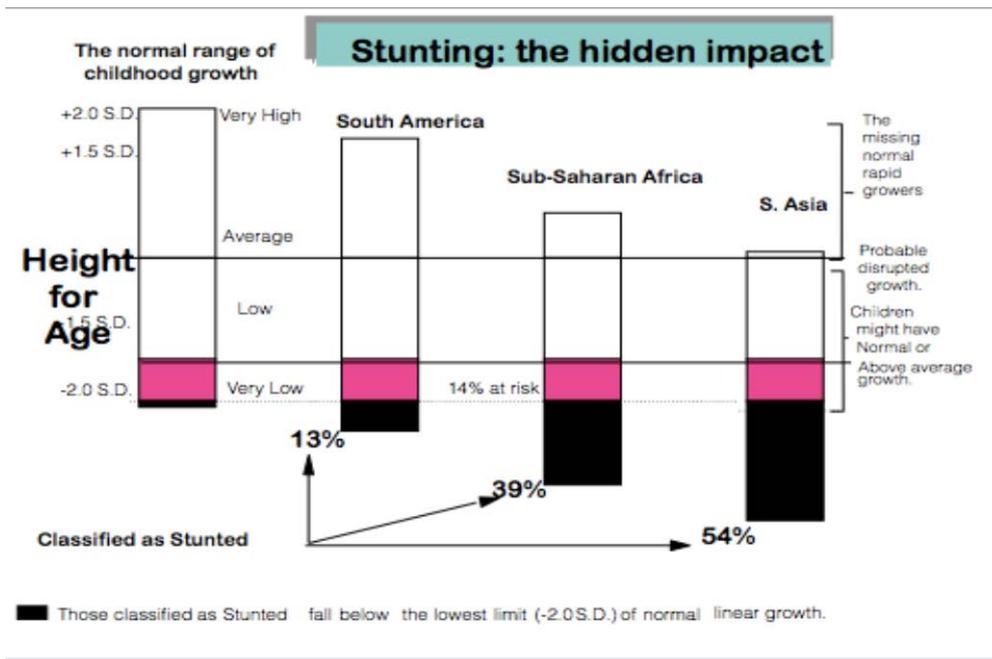
The differences in levels of school

- Male 1.6 levels of (26%) was lower in the group that stunting severe than the mild stunting
- Women's 1.3 levels of (26%) lower

The differences between the two extremes

- Income at \$ 903 men (23%) lower - Women \$ 656 (43%) lower

The Cohort's study showed the effects of intrauterine malnutrition can be stretched to three generations, as indicated by the relationship between the size of the height grandmother and birth weight of babies whos born from women [18].



(Source: R. Uauy, SEA Change, Singapore 2013)

## **Growth and Cognitive Function**

Evidence from India: child malnutrition, likely to become short adults, then likely gave birth to a little baby, have risk of low educational achievement in the future, and finally have a low economic status. Stunting in early age can predict cognitive performance and the risk of coronary heart disease in adults [19]. Improve nutrition at an early age (0-36 months) can increase cognitive functions significantly [20]. *Rates of return to human capital investment* : the best if the intervention is carried out at pre-school age [21].

Analysis of cohort studies in 5 the state gives powerful evidence that nutrition is relatively in the uterus and in the first 2 years of life very critically for human resource development [22].

The results of the study in Hertfordshire - English

From 15,000 males and females who were born 50 years earlier (before 1930), 3,000 of them have died and nearly half of them died of a heart attack. The proportion whose has died was higher in people born with lower birth weight. More lower of birth weight, the higher of the risk heart disease.

The study of 100,000 nurses in the United States.

Those born with lower Body Weight has a higher risk of heart disease, without relating to the pattern of life and living conditions.

### **In Amerika**

Heart disease is higher in the poorest area than the rich area: West Virginia (10%)> Kentucky (9%), and lowest in Colorado (5%). In each state, the poor people have a higher risk.

Relationship between fetal growth restriction, which is represented by birth weight, have a higher risk for the occurrence of coronary heart disease (CHD), stroke, hypertension and type 2 diabetes increasingly.

The relation are not limited to the birth weight less than 2500 grams. Evidence shows that the risk also extends to the baby who has birth weight more than 2,500 grams. The relation is assumed to be a consequence of the "developmental

plasticity" [23]. Overweight women can deliver macrosomic baby (very large), which often can not produce insulin properly, so that the risk of obesity and type 2 diabetic [24].

Children from obese mothers or diabetes mother have a higher risk of diabetes and other Cardiometabolic complications [25].

Evidence regarding the effects of maternal obesity and gestational diabetes as a risk factor for metabolic diseases and cardiovascular diseases later in babies born more convincing, it is indicating the continuation of inter-generation of the disease [26].

## **Chapter III**

### **WHY INDONESIA JOINED THE SUN MOVEMENT**

On 22 December 2011, the Republic of Indonesia joined the SUN Movement with a letter of commitment from HE Endang Rahayu Sedyaningsih, the Minister of Health. At the time, Indonesia had begun the 'First 1,000 Days of Life Movement' which was launched by four government ministers. The 'First 1,000 Days of Life Movement' included objectives cemented in an official policy framework that mirrored the World Health Assembly 2025 targets on nutrition. A central multi-stakeholder, multi-sectoral coordinating SUN Forum had been established across key constituencies and the National Food and Nutrition Action Plan (2011 – 2015) served as the common results framework for addressing nutrition.

Indonesia's Presidential Decree No. 42/2013 on National Movement to Accelerate Nutrition Improvement within the Framework of the 'First 1,000 Days of Life Movement' led to the establishment of a multi-stakeholder high-level Task Force under the Ministry of People's Welfare. This Task Force convenes multiple stakeholders and 13 line Ministries at national and sub national level and is expected to be decentralised at the provincial level. The Minister for People's Welfare Decree No. 11/2014 led to the establishment of a Technical Team to facilitate coordination at the national level.

The issuance of the Deputy Minister for Human Resources and Culture Decree No. 37/2014 resulted in the setting up of six Working Groups (Campaign, Advocacy, Training, Planning and Budgeting, Partnership and Environmental Risk Factor Study), supported by an Expert Team with stakeholders from government, business, United Nations (UN) agencies, international partner network, community and social organisations, professional organisations, academia and mass media. A SUN Secretariat is hosted in the State Ministry of National Development Planning and is fully operative.

The membership of the Business Network has expanded and international development partners and UN agencies are part of the Donor and UN Country Network on Nutrition (DUNCNN). The DUNCNN are providing support to the SUN

Secretariat. The Terms of Reference of the SUN Civil Society Alliance has been finalised.

The Coordinating Ministry for People's Welfare (CMPW) is mandated by the President to coordinate specific ministries in the planning, preparation and implementation of policies in the area of public welfare.

In the meantime, a SUN Forum has been established under the leadership of the Deputy Minister for Human Resources and Culture of the Ministry of National Development Planning/Bappenas. The SUN Forum includes members from the National Development Planning Agency, Ministry of Health, Ministry of Agriculture, civil society, academic and research institutions, UN System Organisations and professional organisations.

Beyond this overarching SUN Forum, five separate platforms of stakeholders have been recently initiated to support the SUN Initiative that include government, development partners, non-governmental organisations, professional associations, private sector and media.

## **CHAPTER IV**

### **SUN MOVEMENT IN INDONESIA**

Civil society organizations are engaged at sub-national levels and work directly with beneficiaries in partnership with local government and other stakeholders. Their work contributes to increased demand for nutrition services. Civil society is also highly involved in mobilizing public opinion on several issues such as breastfeeding. The Food and Nutrition cluster for emergency response engages 12 NGOs in its activities. On an annual basis, several nutrition conferences are also held to share experiences between members of the civil society and government counterparts.

Recently, a SUN platform has been established for NGOs and Professional Organizations working in nutrition. This includes: Darwa Wanita, Save the Children, Micronutrient Initiative, World Vision, Child's Fund, Plan Indonesia, Mercy Corps, Perinasia, Asosiasi Ibu Menyusui Indonesia, Sentra Laktasi, PA CSR and MUI, Association of Nutritionists, Associations of Medical Doctors, Association of Nurses, Associations of Midwives and Association of Public Health.

Other civil society organisations working on nutrition in Indonesia include:

1. ACF (Action Contre La Faim)
2. Asosiasi Ibu Menyusui Indonesia
3. CARE
4. Child Fund
5. Helen Keller International
6. IAKMI (Ikatan Ahli Kesehatan Masyarakat Indonesia)
7. IBI (Ikatan Bidan Indonesia)
8. IDI (Ikatan Dokter Indonesia)
9. POGI (Persatuan Obstetric dan Ginekologi Indonesia)
10. IDAI (Ikatan Dokter Anak Indonesia)
11. KFI (Koalisi Fortifikasi Indonesia)
12. PERSAGI (Persatuan Ahli Gizi Indonesia)
13. PDGMI (Persatuan Dokter Gizi Medik Indonesia)
14. Mercy Corps

15. Micronutrient Initiative
16. Perinasia
17. Plan
18. Sentra Laktasi Indonesia
19. Save the Children
20. Surf-Aid
21. World Relief
22. World Vision
23. Yayasan Balita Sehat
24. Yayasan Buddha Tzu Chi Indonesia
25. Yayasan Kesejahteraan Anak Indonesia
26. Yayasan Kusuma Buana
27. Yayasan Orangtua Peduli

United Nations agencies have established several mechanisms to coordinate their activities around nutrition. UN agencies and representatives working on nutrition in Indonesia include:

- UNICEF;
- World Health Organization (WHO);
- World Food Programme (WFP);
- UN Resident Coordinator; and
- Food and Agriculture Organization (FAO).

UNICEF, WHO, the World Bank and UN Population Fund (UNFPA) work together through the UN Health 4 (H4) inter-agency mechanism which aims to harmonize and accelerate actions to improve maternal and newborn health.

There is also the UN Food and Nutrition Cluster which includes UNICEF, WFP, WHO and several NGOs in addition to the government (Ministry of Health). In addition, the UN Country team provides a platform for all UN agencies in the country.

UN agencies also participate in the SUN Platform for Development Partners under the overarching SUN Forum. United Nations agencies involved in the SUN Platform for Development Partners include:

- UNICEF;
- World Food Programme (WFP); and
- World Health Organization (WHO).

Technical and research institutions participate in several multi-sector platforms, including the overarching SUN Forum as well as the SUN platform established for civil society. They also coordinate their activities through mechanisms such as the Consortium of Universities and Association of Polytechnic Health Training Institutes.

The research and technical community supports the SUN Forum by helping to take stock of the current situation on health and nutrition in Indonesia. In addition, they provide advice to the SUN platform on nutrition and health targets, bottleneck analysis for scaling up nutrition and policy options to overcome them. Research and technical organizations also conduct additional research in the field of health and nutrition if necessary.

The following universities, research institutes and training centers contribute to nutrition capacity and knowledge building:

- University of Indonesia, Faculty of Public Health;
- University of Gadjah Mada, Medical School and Faculty of Public Health;
- National Institute of Health Research and Development;
- Bogor Institute of Agriculture;
- University of Hasannudin;
- University of Esa Unggul; and
- University of Andalas.

## **CHAPTER V**

### **CONDITION IN INDONESIA**

The Scaling Up Nutrition (SUN) movement is a global advocacy effort to mobilise governments, institutions, communities and families to prioritise nutrition as central to national development and imperative for achieving the MDGs. Stunting is a chronic under nutrition problem caused by long-term insufficient nutrient intake and frequent infections. Stunting may occur from pregnancy and only appear once the child is two years old.

Indonesia has a relatively high prevalence of stunted children: 37.2%. It is higher than other countries in South East Asia, such as Myanmar (35%), Vietnam (23%), and Thailand (16%).<sup>1</sup> According to 2013 Basic Health Research written by the Ministry of Health, WHO considers public health problems to be high when the stunting prevalence reaches 30-39%, and very high when the stunting prevalence is higher than 40%. The research shows that there are 14 provinces of Indonesia in the “high” category, and 15 provinces in “very high” category. Three provinces with the highest stunting prevalence are East Nusa Tenggara (48%), West Sulawesi (45%), and West Nusa Tenggara (39%).

Nutritional deprivation in a child’s early life leads to higher infant and child mortality, increased susceptibility to infection and illness, reduced adult physical stature, and impaired cognitive abilities, all of which results in long-term economic losses to individuals and to Indonesian society. Intervention within the first 1,000 days of a child’s life is crucial for the prevention of the long-term impacts of stunting resulting from nutritional deprivation.

## A. Indonesia Faced Double Burden Malnutrition (DBM)

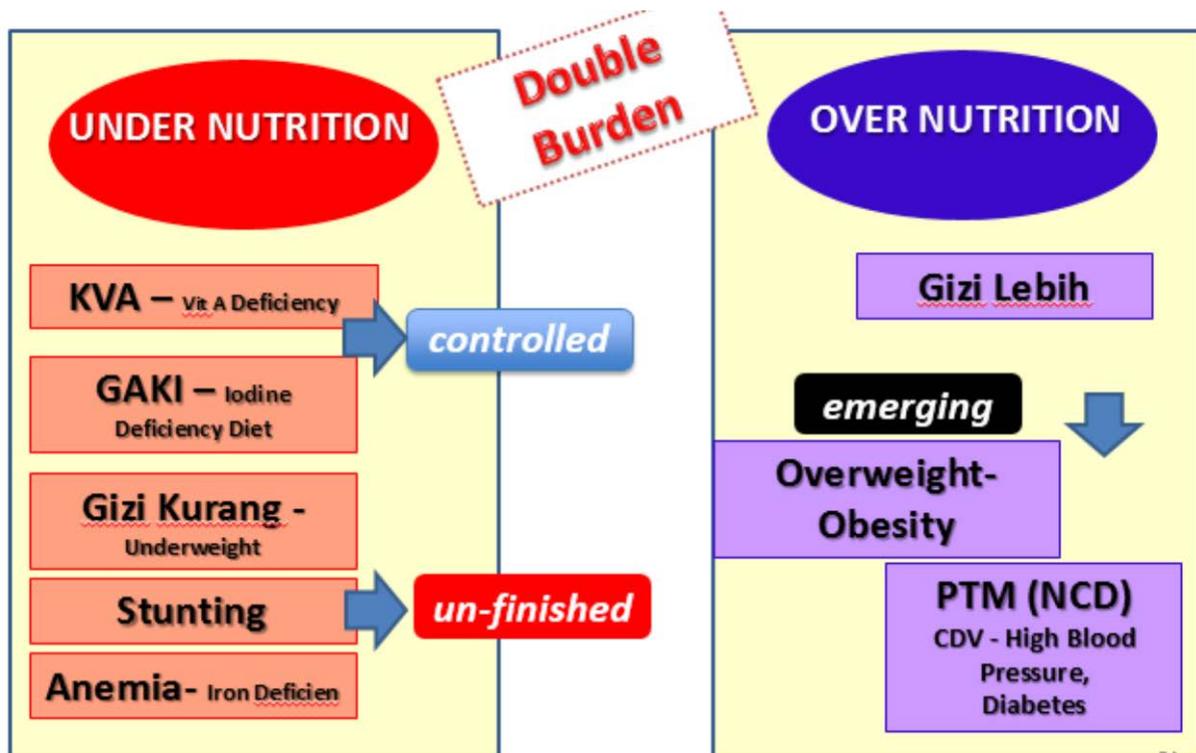


Figure. 3.1 (Source: GNR Dissemination at Bappenas by MOH and Prof Endang L Achadi)

The Double Burden of Malnutrition (DBM) is a first concept presented about a decade ago that means co-existence of malnutrition and nutritional deficiencies of macronutrients and micronutrients throughout life in populations, communities, families and even individuals alike. What is worrisome is the dimension of DBM throughout life, or the linkage between malnutrition in pregnant and fetal mothers with increased susceptibility to excess nutrients and dietary habits of non-contagious diseases in the future.

DBM is a global problem affecting rich and poor countries: 25% of the world's population is overweight, 17% of pre-school children are underweight and 28.5% have stunting (short), 40% of women of childbearing age suffer Anemia, and one-third of the global populations still suffer from iodine deficiency. Most low- to middle-income countries will be affected by DBM, with overweight populations increasing faster than the decline in underweight populations. Obesity has doubled globally in the last three decades, but in low- to middle-income countries, the increase has tripled in just two decades.

The impact of DBM is very serious and its manifestations can be seen throughout one's life. With overall development, better water supply and sanitation practices, and increased coverage of immunization, more malnourished children will have the chance to survive in the first two years of life. But for those who survive in this critical period, the damage caused by malnutrition in the early phase will have an impact for life. When obstacles to early height growth are followed by rapid weight gain, there is an increased risk of obesity and non communicable diseases (NCDs) associated with future dietary and cardiovascular disease. Non-communicable diseases are the cause of most deaths in the world, 80% of deaths in low- to middle-income countries.

The problem of DBM in Indonesia is very urgent. The existence of cases of overweight and underweight children in Indonesia is very apprehensive. Stunting is a major nutritional problem, and increasingly alarming given the presence of a relationship between stunting and the risk of non-communicable diseases in the future, which is currently the majority of the burden of disease in Indonesia. The links between the two are not fully understood or properly addressed by health workers and policymakers.

Indonesia gives priority to the problem of malnutrition especially "Malnutrition" in determining national nutrition situation. It seems that most nutritional problems have been overcome given the prevalence of malnutrition of under five children only 5.4%. Whereas a bigger problem is the fact that 36% of children under five have stunting [7].

#### MALNUTRITION PREVELENCE (%) BASED ON AGE IN INDONESIA

Categories of Malnutrition	Group of Age				
	< 5 years old	6-12 years old	13-15 years old	16-18 years old	>18 years old
<b>Stunting</b>	35.6	35.5	35.1	31.2	
<b>Wasting</b>	13.3	12.2	10.1	8.9	12.6
<b>Obesity</b>	14.0	9.2	2.5	1.4	21.7

Tabel 3.1. Prevelance of Manutrition in Indonesia (Source: Riskedas 2010)

The Indonesian Household Life Survey (IFLS), which represents 85% of the population, shows that over a period of fifteen years, the proportion of thin men and women has decreased significantly while the proportion of fat and overweight men and women increased almost doubled. This shows a decrease in the number of thin people and an increase in the number of obese people among Indonesian adults, just as in Indonesian children. The number of younger (<5 years) obese children is greater than the number of older (6-12 years) obese children, whereas in the last two decades, the number of pre-school children who were underweight decreased twice as much compared to the number of those who had stunting

## B. Focus On The First 1,000 Days

Why 1000 first day of life is important? The first thousand days of life is the golden period of a child to grow and develop optimally. Disruption that occurred during this period, especially proper nutrition will have an impact on the survival and development of the child permanently and long-term so it is more difficult to be repaired after 2 year old child.

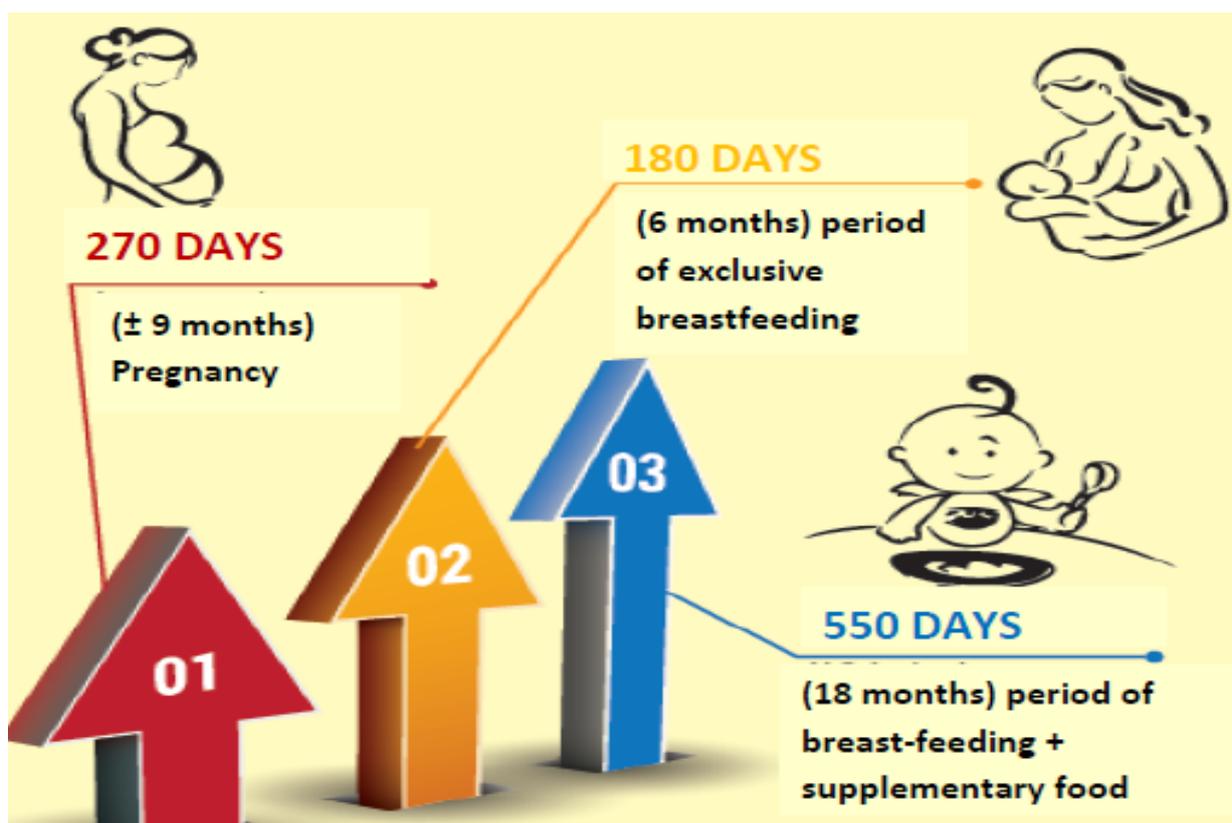


Figure 3.2 First 1000 days (Source:

Period of thousand days, 270 days and 730 days during her pregnancy on the life of the first baby born, is a sensitive period for the impact on babies during this period will be permanent and cannot be corrected. The impact not only on physical growth but also on mental development and intelligence, which in adults can be seen from the physical size is not optimal and the quality of work that are not competitive which resulted in lower economic productivity.

1. Brain cells development period. Children under two should be well nourished, since nearly 70% of brain cells development processes occur from the mother's pregnancy until the children's second birthday. Under nutrition in early age might cause certain damages to their brain's development.<sup>2</sup> Example: A severely stunted 3-years-old boy has reading ability 15 points lower than children with mild stunting, while a severely stunted 3-year-old girl has 11 points lower.
2. The stunting prevalence among infants 18-23 months reaches its highest during this first 1,000 days period (42.3%), due to the lack of nutrition and the low quality of food supplement.

### What's At Stake for Indonesia?

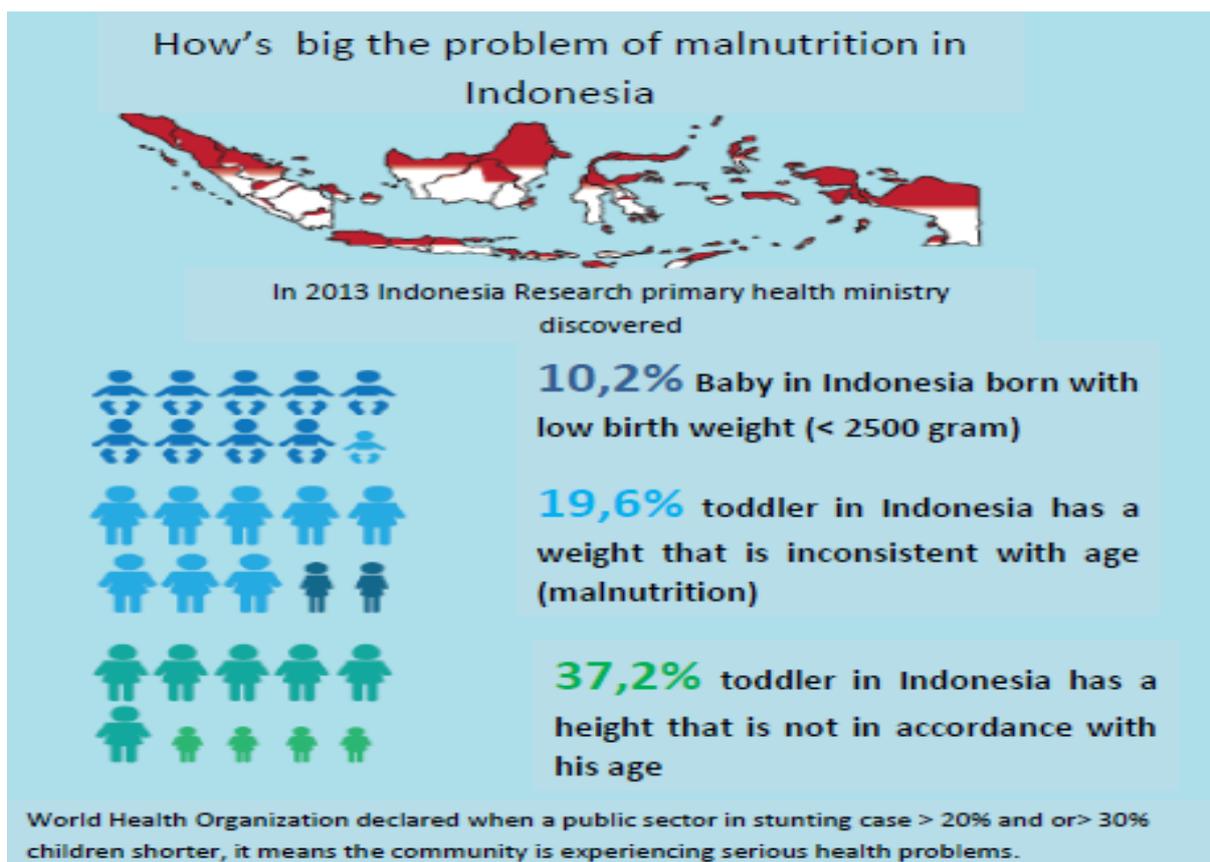


Figure 3.3 Malnutrition problem in Indonesia (Source:

1. Stunting is one of the best parameter for the quality of Indonesian human resources in the future. Stunting-related hindrances cause permanent damages.
2. Stunted children lose their maximum potential growth. Malnutrition at the early age cause irreversible damages to children's brain development, immunity system and physical development. As a result, stunted children might have learning difficulties, unsatisfactory results at school, and prone to diseases and infections.
3. Economic burden to the nation. Damage caused by under nutrition will increase the economic burden for the state because the people are not productive and the high amount of sick citizens escalate the national health cost.
4. Cognitive and physical damages due to under nutrition during first 1,000 days are irreversible.
5. Balancing national development strategies and policies with important achievement in nutrition can increase gross domestic product up to 2-3% each year and is able to cut the vicious cycle of poverty.
6. Women, children, and marginalized groups must borne the largest loss caused by stunting.
7. Under nutrition killed more than 3 million children each year. Around 200 million children suffer chronic under nutrition and have their growth permanently affected or stunted. At the end, families, societies and nations where these children grow up will always be trapped in cycle of hunger and poverty.

## Countries which have high prevalence *Stunting*, *Wasting*, and/or *Overweight* in toddler

**TABLE 4 COUNTRIES WITH OVERLAPPING STUNTING, WASTING AND OVERWEIGHT IN CHILDREN UNDER AGE FIVE**

Indicator	Number of Countries	Number of Children	Country List
Stunting	37.2%	68	Algeria, Argentina, Bangladesh, Benin, Bolivia, Cambodia, Cameroon, Central African Republic, Chad, China, Colombia, Congo, Côte d'Ivoire, Democratic Republic of Congo, DRC, Ecuador, Egypt, Ethiopia, Guatemala, Guinea, Haiti, India, Indonesia, Jordan, Kenya, Lao People's Democratic Republic, Liberia, Madagascar, Malawi, Mali, Mauritania, Myanmar, Namibia, Nepal, Niger, Nigeria, Palau, Philippines, Rwanda, Sao Tome and Principe, Sierra Leone, Sudan, Syria, Tajikistan, Tanzania, Timor-Leste, United Republic of Tanzania, Uzbekistan, Venezuela
Wasting only	6	68	Guyana, Oman
Overweight	12.1%	70	Algeria, Argentina, Bangladesh, Benin, Bolivia, Cambodia, Cameroon, Central African Republic, Chad, China, Colombia, Congo, Côte d'Ivoire, Democratic Republic of Congo, DRC, Ecuador, Egypt, Ethiopia, Guatemala, Guinea, Haiti, India, Indonesia, Jordan, Kenya, Lao People's Democratic Republic, Liberia, Madagascar, Malawi, Mali, Mauritania, Myanmar, Namibia, Nepal, Niger, Nigeria, Palau, Philippines, Rwanda, Sao Tome and Principe, Sierra Leone, Sudan, Syria, Tajikistan, Tanzania, Timor-Leste, United Republic of Tanzania, Uzbekistan, Venezuela
Stunting and wasting only	20	2,463	Bangladesh, Congo, Côte d'Ivoire, Democratic Republic of Congo, DRC, Guinea-Bissau, Haiti, India, Kenya, Lao People's Democratic Republic, Maldives, Mali, Mauritania, Myanmar, Namibia, Nepal, Niger, Nigeria, Palau, Philippines, Rwanda, Sao Tome and Principe, Sudan, Tajikistan, Timor-Leste, United Republic of Tanzania, Uzbekistan, Venezuela
Stunting and overweight only	45	468	Albania, Armenia, Azerbaijan, Benin, Bhutan, Botswana, Comoros, Djibouti, Egypt, Ethiopia, Guinea, Haiti, India, Indonesia, Jordan, Kenya, Lao People's Democratic Republic, Liberia, Madagascar, Malawi, Mali, Mauritania, Myanmar, Namibia, Nepal, Niger, Nigeria, Palau, Philippines, Rwanda, Sao Tome and Principe, Sierra Leone, Sudan, Syria, Tajikistan, Tanzania, Timor-Leste, United Republic of Tanzania, Uzbekistan, Venezuela
wasting and overweight only	70	70	Republic of Moldova, Thailand
Stunting, wasting, and overweight	17	468	Albania, Azerbaijan, Benin, Bhutan, Botswana, Comoros, Djibouti, Egypt, Ethiopia, Guinea, Haiti, India, Indonesia, Jordan, Kenya, Lao People's Democratic Republic, Liberia, Madagascar, Malawi, Mali, Mauritania, Myanmar, Namibia, Nepal, Niger, Nigeria, Palau, Philippines, Rwanda, Sao Tome and Principe, Sierra Leone, Sudan, Syria, Tajikistan, Tanzania, Timor-Leste, United Republic of Tanzania, Uzbekistan, Venezuela
Below cutoff for all three indicators	10	1,914	Cuba, Colombia, Germany, Jamaica, Jordan, Republic of Korea, Saint Lucia, Taiwan, United States, Venezuela
Total with data	117	5,842	
Missing data for at least one indicator	76		
Total	193		

source: indicator data are from UNICEF, WHO and World Bank (2014). Data are from 2007-2013. Population data are from United Nations (2013b).

Note: The cutoffs for placing countries in each indicator are: stunting > 10% and under-five overweight > 7% per cent. These cutoffs were selected because they are codified in the WHO (2010a) health significance by WHO (2010a).

Indonesia include to 17 countries, between 117 countries with three problems

### C. Indonesia Nutrition Profile

#### Summary of Nutritional Status and Priorities

The proportion of children under 5 who are stunted is 37%, with levels as high as 50% in some regions [5]. Among children in the lowest wealth quintile, 48% are stunted compared to 29% in the highest (poverty affects 11% of the population) (United Nations). Among children under 6 months of age, nearly a quarter are already stunted and nearly 20% are wasted. In addition, low birth weight reaches 24–27% in some regions. These data indicate that both wasting and stunting are influenced by prenatal factors in Indonesia, which are compounded by high rates of disease and poor infant and young child feeding (IYCF) practices, particularly delayed initiation of breastfeeding and low rates of exclusive breastfeeding.

To reduce stunting as well as overweight/obesity, which is on the rise in Indonesia, interventions need to focus on prevention of malnutrition during the first 1,000 days (from pregnancy through the first 2 years of life) and in adolescent girls,

due to the high rate of adolescent pregnancy. Specific areas of focus include ensuring adequate nutrition during pregnancy, reducing low birth weight, and improving IYCF practices.

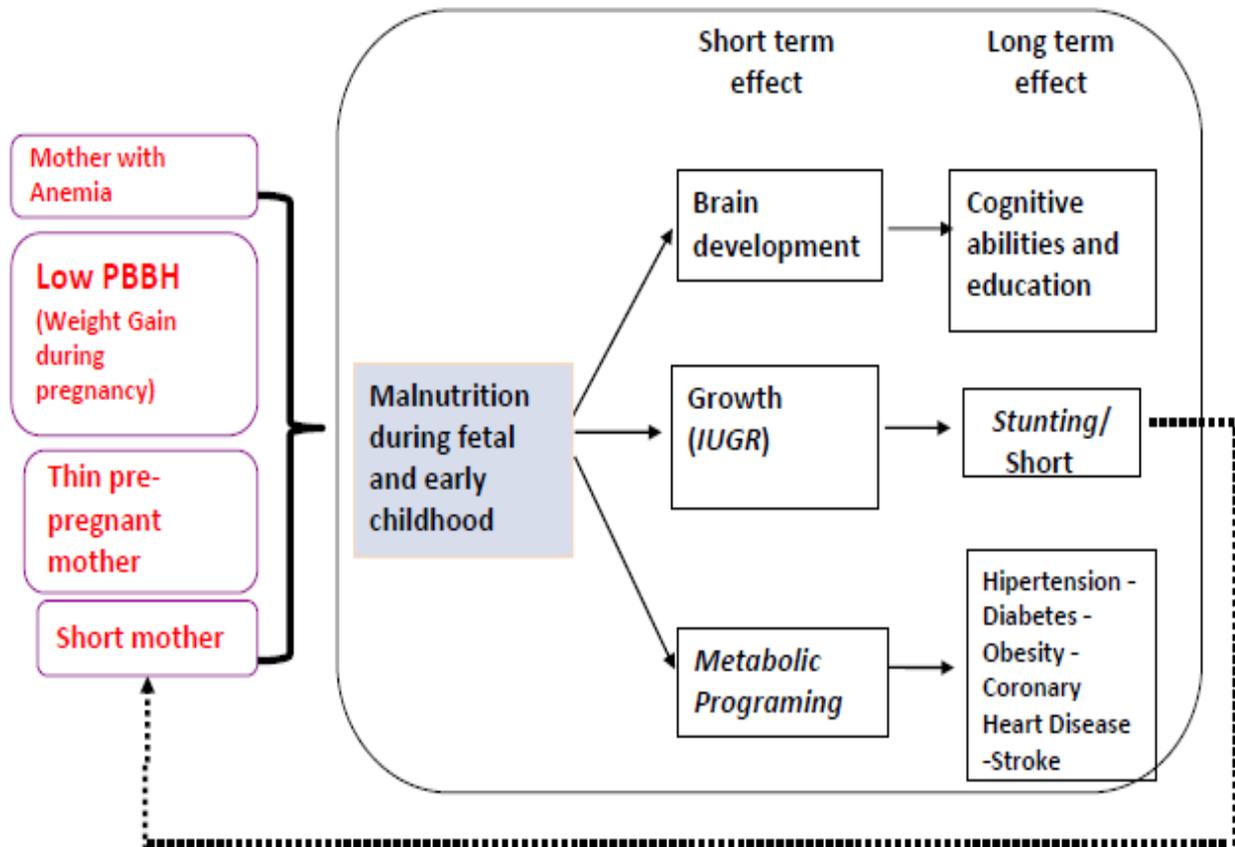


Figure 3.2. Effects of Malnutrition  
 (Source: Modification from Rajagopalan, S, Nutrition and challenges in the next decade, Food and bulletin vol.24 no.3, 2003)

### Stunting and wasting

Thirty seven percents of children under 5 years in Indonesia are stunted and 12% are wasted. However, there is large regional variation in stunting and wasting prevalence, for example, 58% of children under 5 are stunted in East Nusa Tenggara [7]. Both wasting and stunting are influenced by prenatal factors in Indonesia—of children 0–6 months of age, close to 25% are already stunted and close to 20% are wasted. Suboptimal IYCF practices are another significant contributor to both forms of malnutrition.

The 2012 Demographic and Health Survey (DHS) reports that 51% of infants do not begin breastfeeding within the first hour of life (34% do not begin in the first

day), 60% of newborns receive other liquids (“prelacteals”) before receiving breast milk, and only 41% of infants under 6 months are exclusively breastfed. Although most infants have begun complementary feeding by 6 to 8 months of age, dietary diversity and frequency of complementary feeding could be improved.

### **Overweight/obesity among women and children.**

Indonesia exemplifies a country experiencing the “double burden of malnutrition” as overweight among women, men, and children has been steadily increasing in recent years. As of 2013, a third of women over 18 years of age and a fifth of children 5–12 years of age were overweight or obese; in 2010, 14% of children under 5 were overweight/obese [8]. Malnutrition during the first 1,000 days is a major determinant of not only stunting but also subsequent obesity and noncommunicable diseases in adulthood [9], for example is anemia. In Indonesia more than a quarter of children under 5 and 37% of pregnant women are anemic [5]. In 2005, 28% of women of reproductive age were anemic, levels that declined from 1995 [10].

Maternal malnutrition and low birth weight. There are scant data on maternal nutritional status. Underweight was estimated to affect 12% of women of reproductive age and 22% of adolescents 15–19 years of age in the late 1990s/early 2000s [10,11]. The national level of low birth weight of 7% (as reported in the 2012 DHS), masks much higher incidence in certain regions, for example, 27% in Papua and 24% in Papua Barat [12].

Micronutrient deficiencies in Indonesia began vitamin A supplementation in the 1970s to combat vitamin A deficiency [10], essentially eradicating severe “clinical” deficiency, although “subclinical” deficiency is estimated to affect approximately 21% of children as of 2007 [13]. Nationally, the proportion of school-age children with inadequate iodine intake is low (16%) [14] and median urinary iodine concentration for school-age children is 229 ug/L, which is categorized as “more than adequate” according to WHO. However, there are pockets of localized iodine deficiency due to consumption of inadequately iodized salt [10].

<b>Iodine (Table 3.2)</b>	
Households consuming iodized salt (2007)/a	62.3 %
Iodine deficiency (Urinary Iodine Concentration <100ug/L) among school-age children (2003) /b	5.2 %
*Optimal UIE 100 - 199ug/L	
Source: a/ UNICEF State of the World's Children, b/WHO Global database on iodine deficiency	

Figure 3.3 Iodine (Source a/ UNICEF, State of the World's Children, b/ WHO Global database on iodine deficiency).

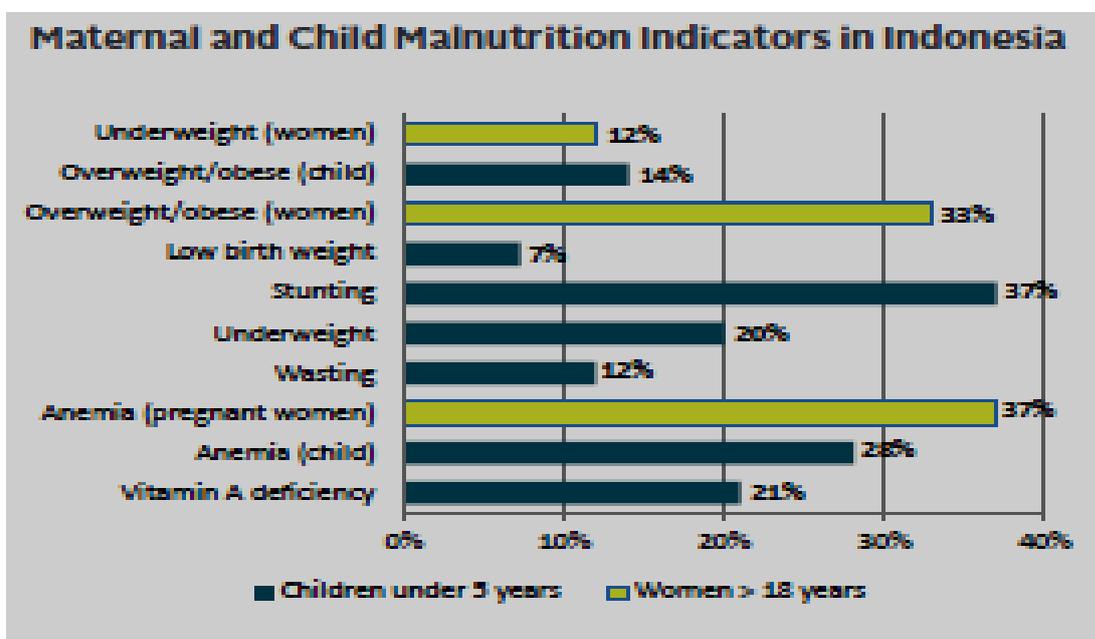


Figure 3.4 Maternal and Child Malnutrition Indicators in Indonesia

Sources : 2013 Riskesdas; overweight/obese (child): 2010 National Report on Basic Health Research; vitamin A deficiency; UNSCN 2010; low birth weight: 2012 DHS; under weight (women): 2001 National Household Health Survey.)\*

)\* Anemia (child) is for children 12-59 months and anemia (pregnant women) did not specify age group. Under weight (women) refers to women of reproductive age 15-49 years. The median urinary iodine concentration (UIC) for school-age children is 229 ug/L; the proportion of school-age children with low UIC (< 100 ug/L) is 16% (WHO 2007).

## Key Drivers of Maternal and Child Malnutrition in Indonesia

### Immediate and Underlying

- Suboptimal infant feeding practices, particularly significantly delayed initiation of breastfeeding, use of prelacteals, a short duration of exclusive breastfeeding, and low dietary diversity of complementary food.
- Childhood illness (particularly diarrhea and acute respiratory infections, which are the main causes of death among children under 5) and suboptimal care-seeking behaviors for illness.
- Maternal malnutrition (including anemia) and low birth weight.
- Suboptimal water, sanitation, and hygiene practices, including limited access to safe water, hygienic sanitation services to remove waste, and continued open defecation.
- Childbearing by 19 years of age for close to 1 in 4 women.
- Cultural practices that decrease dietary intake during pregnancy, contributing to insufficient maternal weight gain and low birth weight.
- Low vaccination coverage.

### Poverty in Indonesia

#### PROPORTION OF POVERTY IN EACH ISLAND IN INDONESIA PERIOD 2012- 2014

No	Island	2012		2013		2014	
		Total (thousand)	%	Total (thousand)	%	Total (thousand)	%
1	Sumatera	6.177,2	21,6	6.190,1	21,7	6.070,4	21,9
2	Java	15.882,6	55,3	15.546,9	54,4	15.143,8	54,6
3	Kalimantan	932,9	3,3	978,7	3,4	9729	3,5
4	Bali and Nusa Tenggara	1.989,6	7,0	1.998,1	7,0	2.004,5	7,2
5	Sulawesi	2.045,6	7,1	2.139,6	7,5	2.054,9	7,4
6	Maluku and Papua	1.626,8	5,7	1.700,5	6,0	1.481,4	5,3
	<b>Indonesia</b>	<b>28.594,7</b>	<b>11,66</b>	<b>28.553,9</b>	<b>11,47</b>	<b>27.727,8</b>	<b>10,96</b>

Tabel 3.2 Poverty in Indonesia 2012- 2014  
(Source: Badan Pusat Statistic (BPS), 2015)

### Stunting Prevalence by Economic Levels in Indonesia

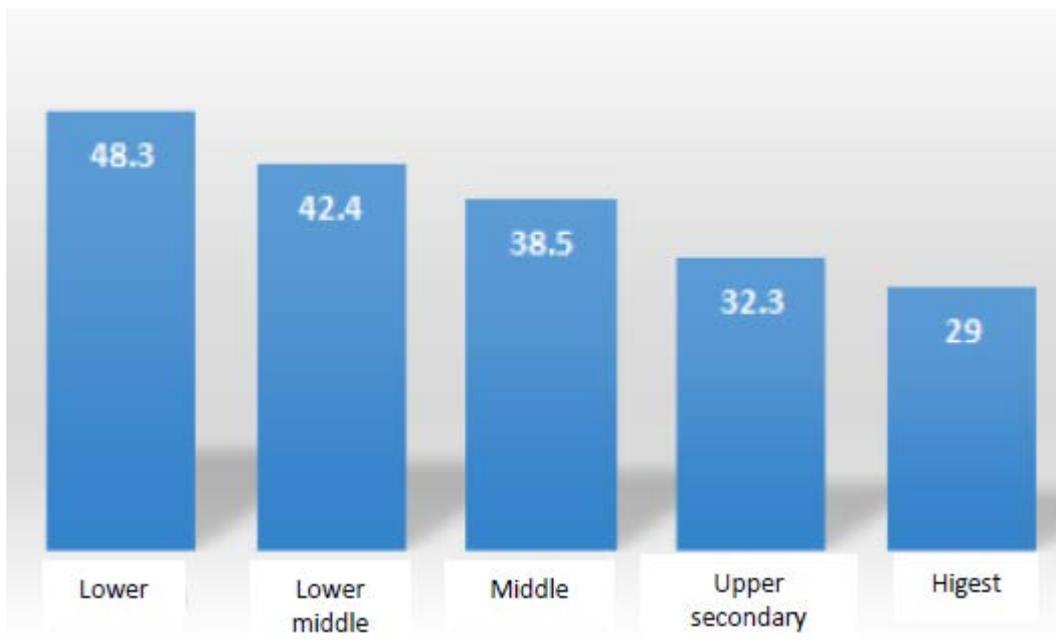


Figure 3.5 Stunting Prevalence by Economic Levels in Indonesia  
(Source: Risdendas 2013)

- Poverty that affects the lowest wealth quintile. The problem of poverty also needs to consider the level of depth and severity of poverty. The Poverty Depth Index is an average size of the disparity in spending of each poor on the poverty line.
- Weaknesses in nutrition governance, particularly: Deterioration in nutrition program service delivery caused by government decentralization and limited nutrition capacity/training at the district levels for implementation.
- Lack of a unified vision of what malnutrition is (too much emphasis on severe acute malnutrition and treatment, rather than chronic malnutrition and prevention) by policymakers, particularly at the district-level, and civil society.
- Limited data for key nutrition indicators for women and children, including anemia, underweight, and short stature among women, and little use of monitoring/evaluation data for decision making.
- Relative lack of importance (or awareness) placed on maternal malnutrition.
- Greater need for coordination across sectors, within sectors, and with donors.

<b>Maternal Health Indicators</b>	
Maternal mortality ratio (per 100,000 live births)	220
Total fertility rate (children per women)	2.6
Median age at first marriage (of women 25–49 years)	20.4
Median age at first birth (of women 25–49 years)	22.0
% of women 15–19 years who have begun childbearing by age 19	24.1
Median number of months since preceding birth (of women 15–49 years)	60.2
% of married women currently using any method of family planning	61.9
% of married women with an unmet need for family planning	11.4
% of women 15–49 years with live birth in the past 5 years receiving antenatal care from a “medically-trained” or “skilled” provider (doctor, nurse, midwife, and auxiliary nurse/midwife)	95.7
% of women 15–49 years with birth in past the 5 years who delivered in a health facility	63.2
% of women 15–49 years with birth in past the 5 years who delivered with a “medically-trained” or “skilled” provider (doctor, nurse, midwife, and auxiliary nurse/midwife)	83.1
<b>Maternal Nutrition Indicators</b>	
% overweight or obese (BMI $\geq$ 25 kg/m <sup>2</sup> ) (women > 18 years)	32.9
% anemic (pregnant: Hb < 11 g/dL; Pregnant non-pregnant: Hb < 12 g/dL) Overall	37.1 28
% of women with birth in the last 5 years given vitamin A supplementation after birth of last child	48.1
% of women with birth in the last 5 years given any iron supplementation during last pregnancy	75.5
% of women with birth in the last 5 years who took at least	32.7

90 days of iron supplementation during pregnancy of last child	
% of women with birth in the last 5 years who took deworming medication in last pregnancy	No data
% living in houses with iodized salt	77.1

Table 3.3 Maternal Health & Nutrition Indicators

Sources: 2012 DHS; maternal mortality: UNICEF 2012; overweight/obesity, anemia (pregnant), iodized salt: 2013 Riskesdas; anemia (non-pregnant): Atmarita 2005)

### Food Security; Diet Diversity; and Water, Sanitation, and Hygiene

Food Security Indicators	
Global Hunger Index (2013)	10.1 (serious level of hunger)
% of households with poor or limited food consumption (food insecure)	No data
% undernourished in total population (2011–2013)	9.1
Food supply (kcal/capita/day) (2009)	2,646
Depth of food deficit (kcal/capita/day) (2011–2013)	64
Diet Diversity Indicators	
% of dietary energy supply from cereals, roots, and tubers (2008–2010)	67
Average supply of protein from an animal source (grams/capita/day) (2008–2010)	16
Water, Sanitation, and Hygiene Indicators	
% of population with access to improved drinking water sources (2012)	75
% of population with access to sanitation facilities (2012)	71
% of population using appropriate treatment method for drinking water (2012)	69

Table 3.4. Food Security Indicators

(Sources: FAO 2013; Global Hunger Index: von Grebmer et al. 2013; food supply: FAOSTAT (<http://faostat3.fao.org/faostat-gateway/go/to/browse/FB/FB/E>); water, sanitation, and hygiene indicators: DHS 2012)

## **Government Policies and Program Environment: Needs and Challenges**

### **Policies**

Indonesia's commitment to reducing malnutrition, as evidenced by policies specific to nutrition, has been determined to be reasonably strong in past assessments [15]. The Ministry of Health Strategic Plan 2009–2014 includes nutrition as a main component, addressing underweight, overweight, anemia, and IYCF practices as part of the Programme for Community Nutrition Improvement [16]. In 2011, Indonesia committed to the Scaling Up Nutrition (SUN) Movement and demonstrated its commitment to tackling malnutrition by launching the national "First 1,000 Days of Life Movement."

The current National Plan of Action on Food and Nutrition (2011–2015) follows on a previous plan (2006–2010) and aims to reduce stunting by 5% by 2015. The national plan outlines nutrition activities that are not covered in the Programme for Community Nutrition Improvement (*ibid*). The main objectives of the National Plan of Action on Food and Nutrition, in addition to reducing stunting, include addressing wasting in children under 5 years, underweight, overweight, maternal anemia (including in adolescent girls), increasing rates of exclusive breastfeeding, improving coverage of key nutrition services.

### **Programs**

Indonesia implemented large-scale nutrition projects, such as the *posyandus* (integrated service posts), starting in the 1970s to provide community nutrition services including growth monitoring, supplementary feeding for growth-faltering children, and referrals to the health system, and to serve as distribution points for supplements (e.g., vitamin A) [15]. In recent years however, due to lack of funding, volunteer staff, and political support, many *posyandus* have become inactive.

### **Nutrition Improvement Strategy in Indonesia**

1. Strengthening Puskesmas and Posyandu, so that it can function effectively as a forum for participation and community empowerment in the field of health and nutrition through DESA SIAGA.

2. Improving community nutrition services that are equitable, affordable, quality and fair, and evidence-based; with priority on promotive - preventive efforts.
3. Increasing the financing of community nutrition, especially to realize the target of community nutrition improvement.
4. Increasing the development and empowerment of human resources health especially nutrition workers must equitable and quality.
5. Improving accountable, transparent and effective health management to strengthen decentralized health care responsibilities.

### **Puskesmas Basic Role**

1. The availability of nutritional consultation room	31.8%
2. Nutritionist	75.6%
3. Person in charge of nutrition program with appropriate background	71.5%
4. Giving MP-ASI in age 6-24 months	83.2%
5. Giving capsule Vit A	97.9%
6. Giving the infant PMT recovery GAKIN	78.5%
7. Weighing a toddler	98.1%
8. Training on growth monitoring	36.8%
9. Training of malnutrition management	36.7%
10. Training of community nutrition	12.1%
11. Getting money and feedback from Health Office regarding community nutrition program	51.4%
12. Puskesmas that have child care	30.8%

13. Underweight hospitalization of malnutrition	50.7%
14. Puskesmas treatment by involving nutrition personnel	40.5%
15. Puskesmas treatment that receive malnutrition training	24.1%
16. Meeting with health cadres	67.1%
17. Old cadre training activities	54.4%
18. The availability of a functioning immunization medical device (coolbox, vaccine, carrier, refrigerator)	40.1%
19. The availability of Nutrition Kit	33.6%

Table 3.4. Basic Duties of Posyandu  
(Source: Rifaskes 2011)

## Indonesia - Food and Nutrition Security Profiles

The levels of underweight and stunting remain persistently high in Indonesia, despite considerable increase in GDP per capita. Notable disparities exist between geographic areas and between wealth quintiles. Poor dietary diversity – low on protein and vitamins but high in carbohydrates – may be one determinant for this persistent gap. About one third of children aged 6-23 months do not meet the minimum meal frequency; one quarter do not achieve the minimum dietary diversity; and nearly half do not meet the recommended quality of diet. Because the typical diet is largely rice-based, efforts to promote the availability of adequate complementary foods, along with education on appropriate complementary feeding practices, should be considered. Indonesia has joined the global Scaling Up Nutrition (SUN) movement and has developed its own framework to scale up nutrition through a multisectoral approach.

Food Availability from 1990-2011 can be seen in the figure 3.5:

- Dietary Energy Supply (DES) increased 20%
- Animal-origin supply increased 65%
- Vegetal-origin products (mainly cereals) increased 17% and remained the major DES source

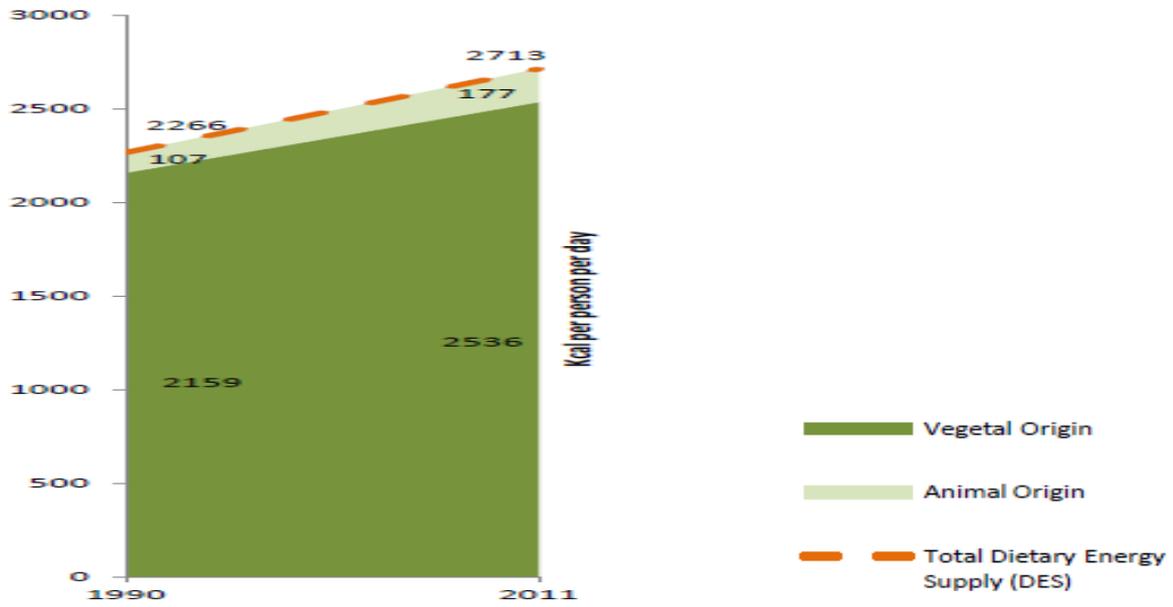


Figure 3.5 Food Availability from 1990-2011  
(Source: FAOSTAT FBS:2014 Update)

Undernourishment and Economic Growth from 1990-2012 can be seen in the figure 3.6:

- GDP increased 106%
- Undernourishment declined 59%

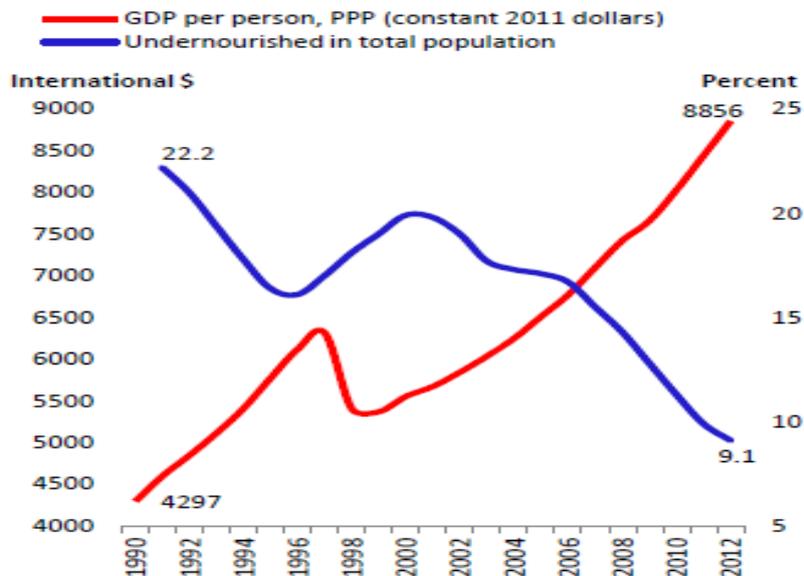


Figure 3.6 Undernourishment and economic growth  
(Source: GDP:WDI 2014/Undernourished:FAO FS1\_2013)

Children malnutrition based on figure 3.7:

- Stunting declined 15% from 2000 to 2010, but prevalence remains high
- Underweight declined 48% from 1992, but still stood at 18% in 2010
- Wasting levels were a serious concern, at 13% in 2010
- Overweight increased by a factor of 6 between 2000 and 2010
- Low birth weight is 9% in 2007

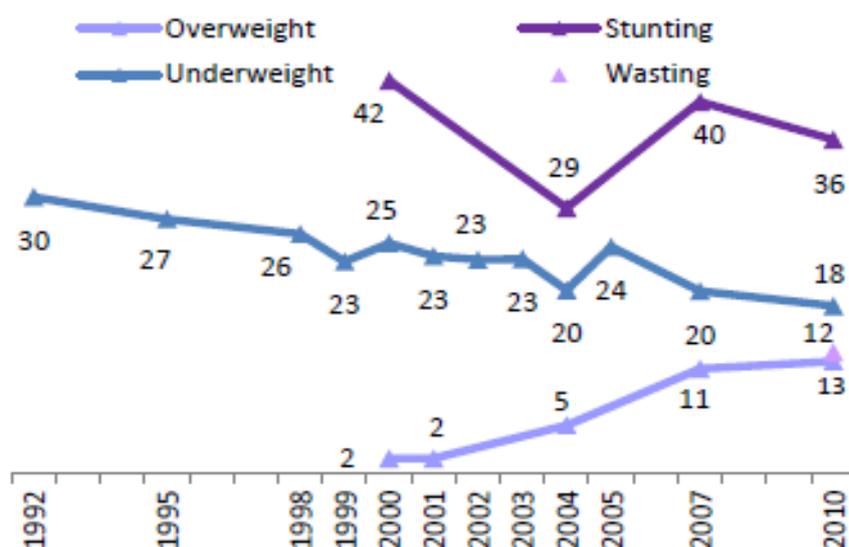


Figure 3.7. Child Malnutrition

(Source: IDN\_Basic Health Research\_2010/WHO Global Database on Child Growth and Malnutrition 2013)

Child Mortality From 1990 to 2012:

- *Under 5 mortality reduced 63%, however progress has stagnated in recent years and the achievement of the MDG target may be at risk*
- Infant mortality reduced 58%
- Neonatal mortality reduced 50%

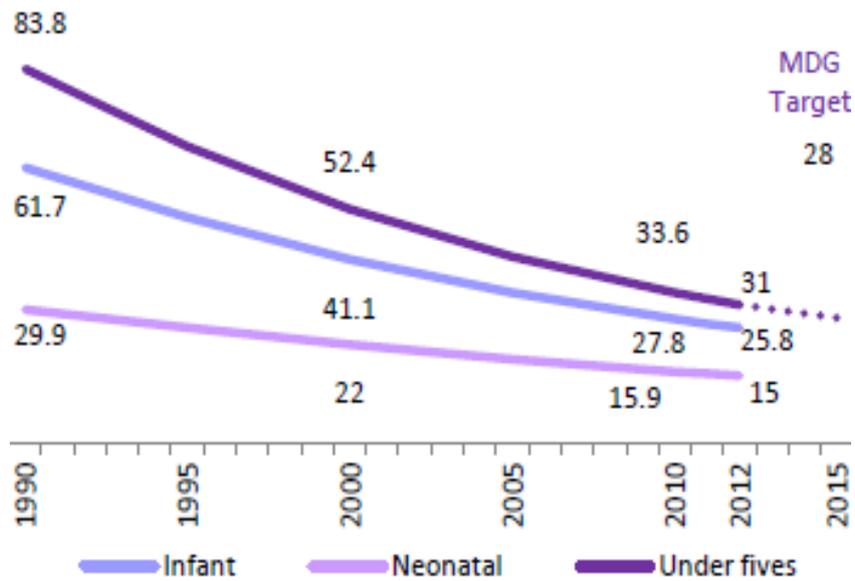


Figure 3.8 Child Mortality  
(Source: Inter-agency group for CME 2013)

Anemia prevalence:

- Anaemia is a severe public health issue, high among pregnant women (44%), non-pregnant women (33%) and under-5 children (45%).
- Deworming and iron supplementation can be effective for reducing anaemia in pregnant women as well as children
- 

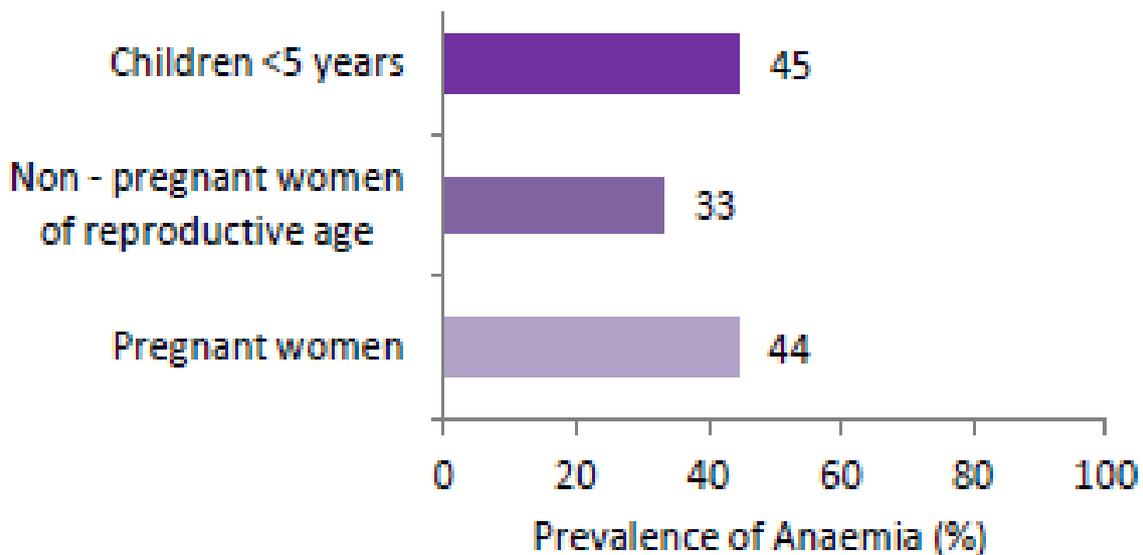


Figure 3.9 Anemia prevalence  
(Source: WHO Worldwide prevalence of Anaemia\_1993-2005)

Anthropometry (Table 1.1)		
Underweight women (BMI < 18.5 kg/m <sup>2</sup> )	-	-
Overweight adults (BMI ≥ 25 kg/m <sup>2</sup> )	13.4 %	2001
<i>* BMI values calculated using adult cut off points, population &lt; 20 should be analyzed using WHO growth reference for school aged children and adolescents</i>		
Proportion of infants with low birth weight	9 %	2007

Tabel 3.5 (Source:WHO BMI Database/ LBW DHS 2007 re-analysed by UNICEF 2009)

### Food Availability / Food Access

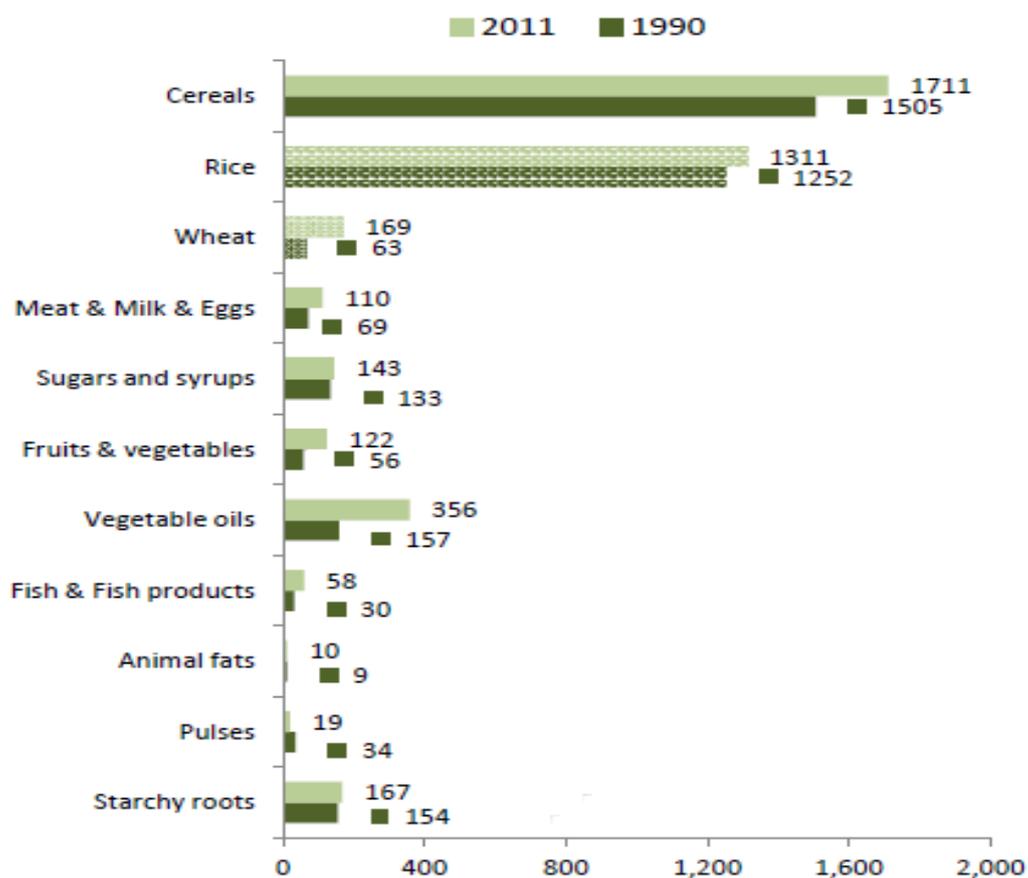


Figure 3.10 Food supply (Source: UN\_FAO Food Balance Sheets\_2014 Update)  
(Kcal/person/year) Total dietary energy supply= 2,713 (2011)

Economic access to food general and food inflation :

- Food inflation and general inflation are correlated in general in Indonesia.
- Families generally spend more than 36% of their income on food. While cereals contribute more than half (61%) of food intake, they affect only 11% of food expenditures at household level.

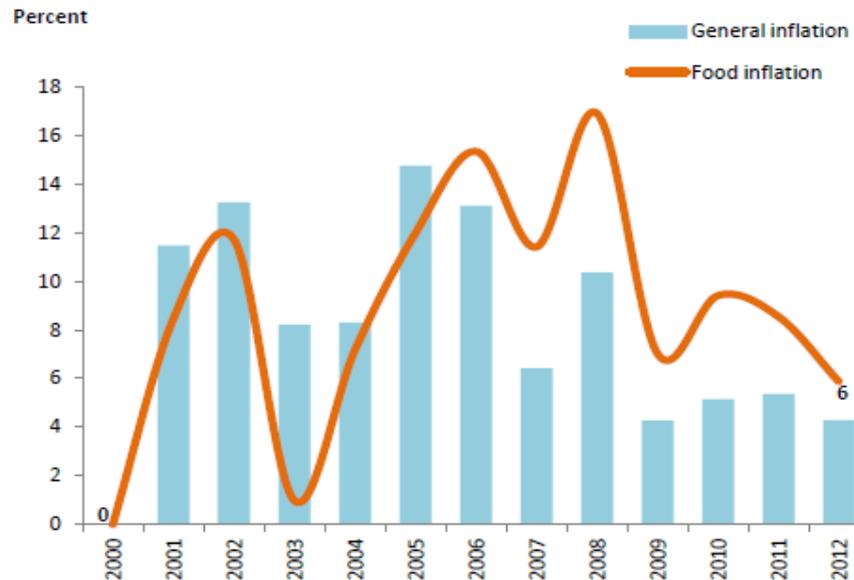


Figure 3.11 Economic access to food general and food inflation  
(Source: LLOSTAT Database Consumer Price Indices 2014)

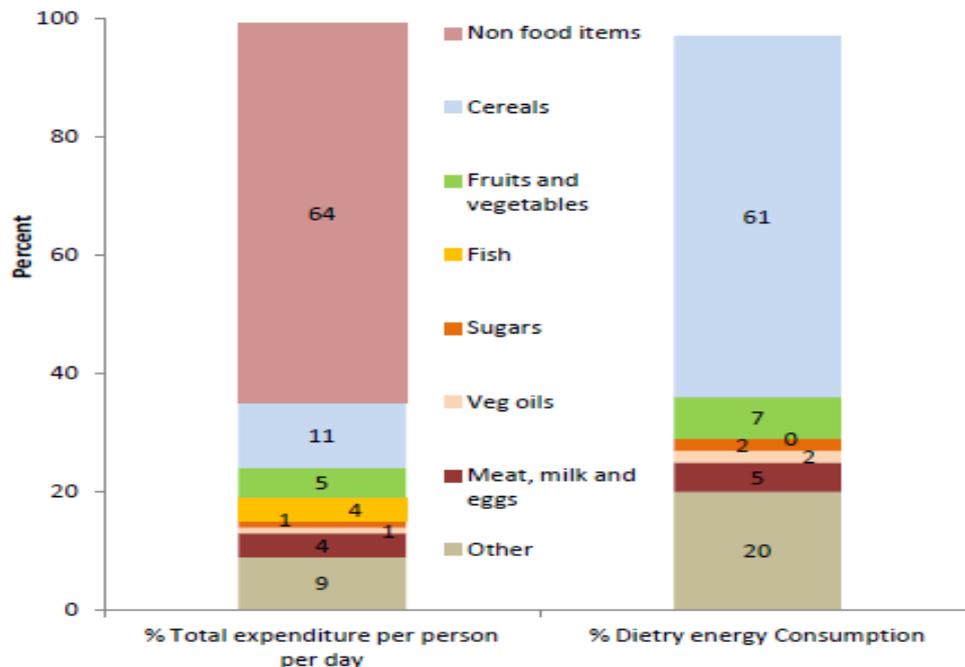


Figure 3.12 Share food expenditure  
(Source: UN\_FAORAP based on national HIES, ECS, SES, HLSS\_2013 Updated Indonesia)

## Food Utilization

Food utilization refers both to household preparation practices of foods, which influence nutrient content of consumed foods, and to the absorption of nutrients by the human body after consumption. Nutrient absorption in the gut is strongly influenced by health status, particularly the presence of diarrhoea. Hygienic environmental conditions related to improved water and sanitation are important determinants of health and infection incidence and prevalence. In Indonesia, water and sanitation conditions have improved during the past 20 years, resulting in a decrease in diarrhoea prevalence. These improvements may have contributed to the reduction in malnutrition among under-5 children, as shown in Fig 3.7. Malnutrition children.

## Water and Sanitation

Access to Improved Sanitation *from 1990 to 2012:*

- Access to improved sanitation increased 67% in 22 years .
- Disparities between rural and urban areas have continued. Only 46% of the rural population has access to improved sanitation, whereas 71% of urban dwellers have such access.
- 41% of people overall do not have access to improved sanitation

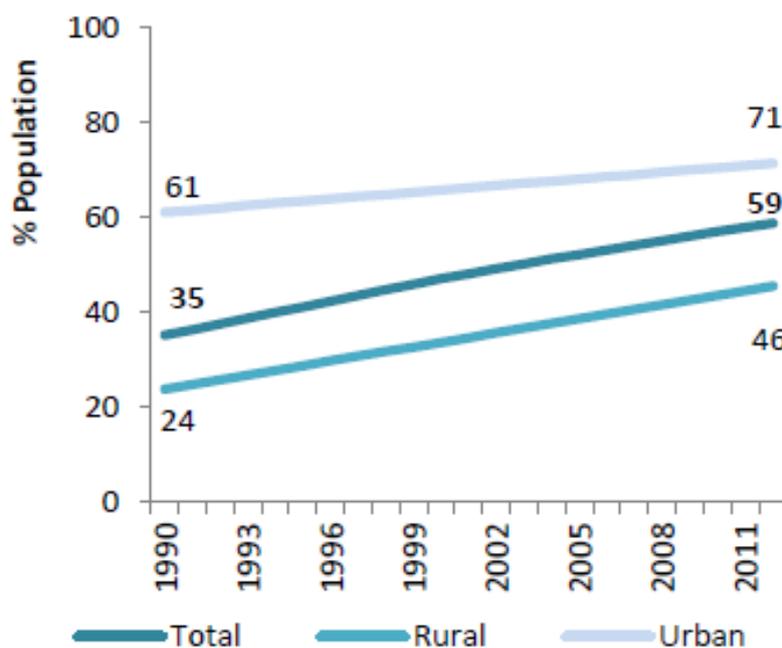


Figure 3.13 Access to Improved Sanitation  
(Source: WHO-UNICEF Joint Monitoring Programme 2014)

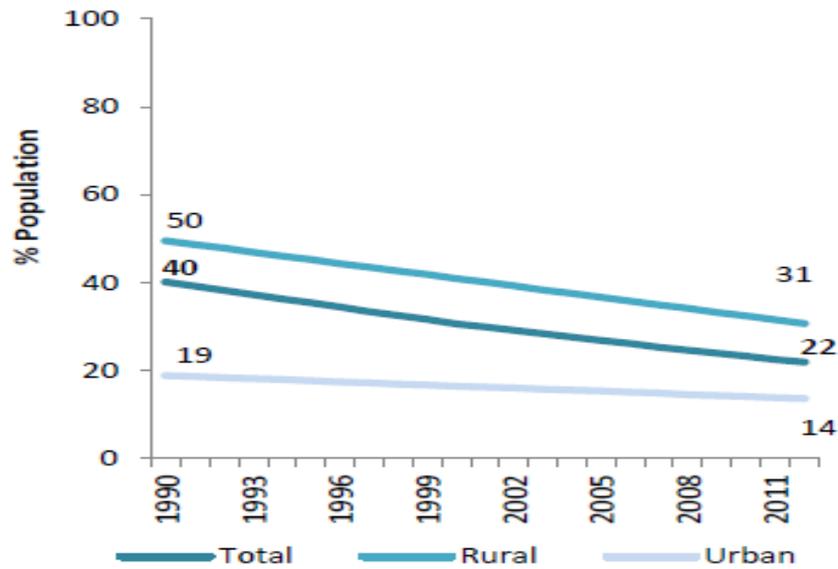


Figure 3.14 Open Defecation

(Source: WHO-UNICEF Joint Monitoring Programme 2014)

Access to Improved Water Sources from 1990 to 2012:

- Disparities in access to improved water sources between urban and rural areas have decreased, but remain an issue .
- Almost no progress has been made on urban coverage of improved water sources, which remained at 93%.
- At least 85% of people have sustainable access to improved water

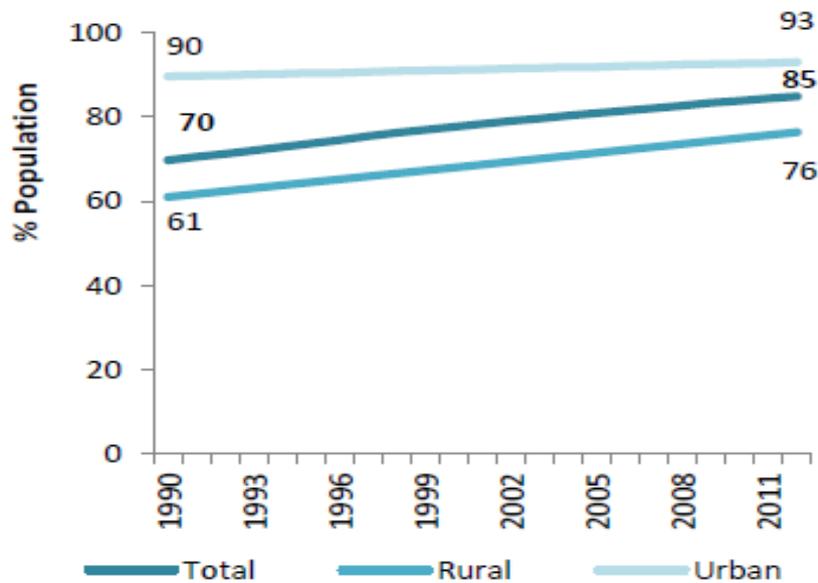


Figure 3.15 Access to Improved Water Source

(Source: WHO-UNICEF Joint Monitoring Programme 2014)

## Food Safety

### Diarrhoea

- Diarrhoea among young children is most common among the poorest wealth quintiles, reflecting disparities in improved sanitation as well as in general hygiene and food safety.
- None of the quintiles has a prevalence of diarrhoea among under-5 children of less than 10%

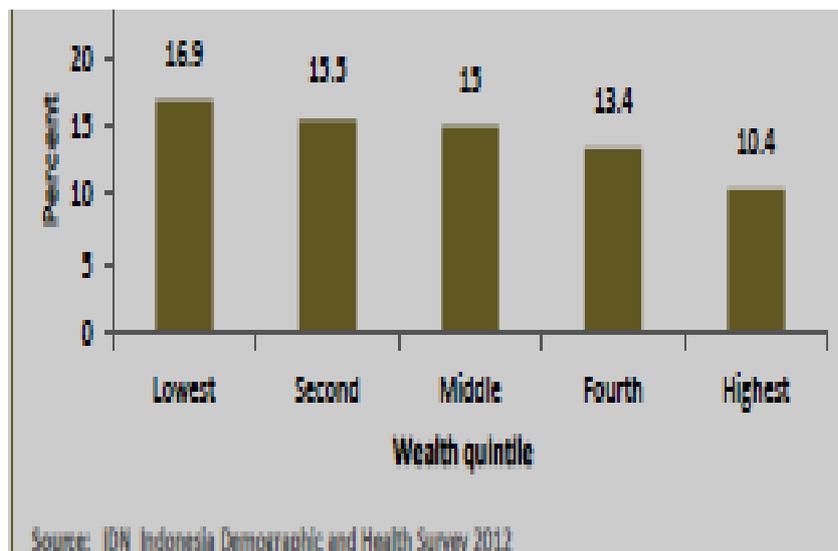


Figure 3.16 Diarrhoea

(Source: IDN (Indonesia Demographic and Health Survey 2012))

### Management of Diarrhoea

*No data are available on whether children receive zinc supplementation following an episode of diarrhoea*

### Zinc

Share of children under age 5 with diarrhoea receiving zinc treatment

### Existing policy framework

Zinc Supplementation and Reformulated Oral Rehydration Salt in the Management of Diarrhea

## Nutrition and Health

### Exclusive Breastfeeding

- Exclusive breastfeeding has decreased (6%) from 1991 to 2012. Only about four out of ten of infants younger than age 6 months are exclusively breastfed.

- Paradoxically, from 1994 to 2012 early initiation of breastfeeding increased by more than 5 times, Nevertheless less than one half of children received such early initiation.

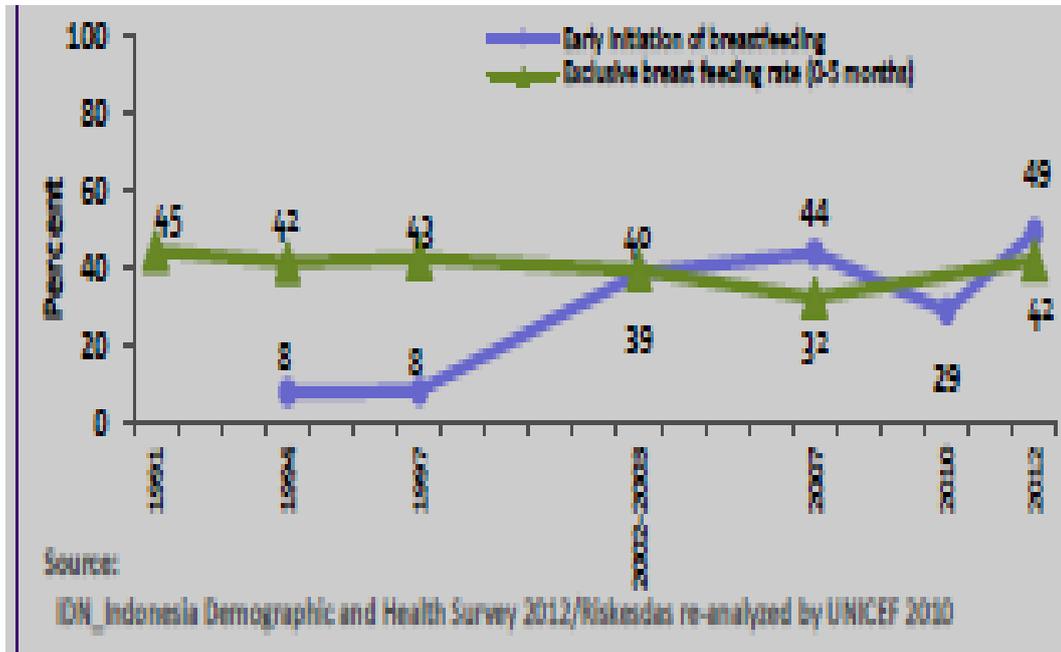


Figure 3.17 Exclusive Breastfeeding  
 (Source: IDN (Indonesia Demographic and Health Survey 2012/ Riskesdas re-analyzed by UNICEF 2010)

### Complementary Feeding

- Introduction of complementary feeding is timely for 91% of young children.
- 66% of children aged 6-23 months meet the minimum meal frequency.
- Meeting the recommended dietary diversity of diet remains a challenge for more than 4 out of 10 children.
- The Minimum acceptable diet is reached only by a third of infants

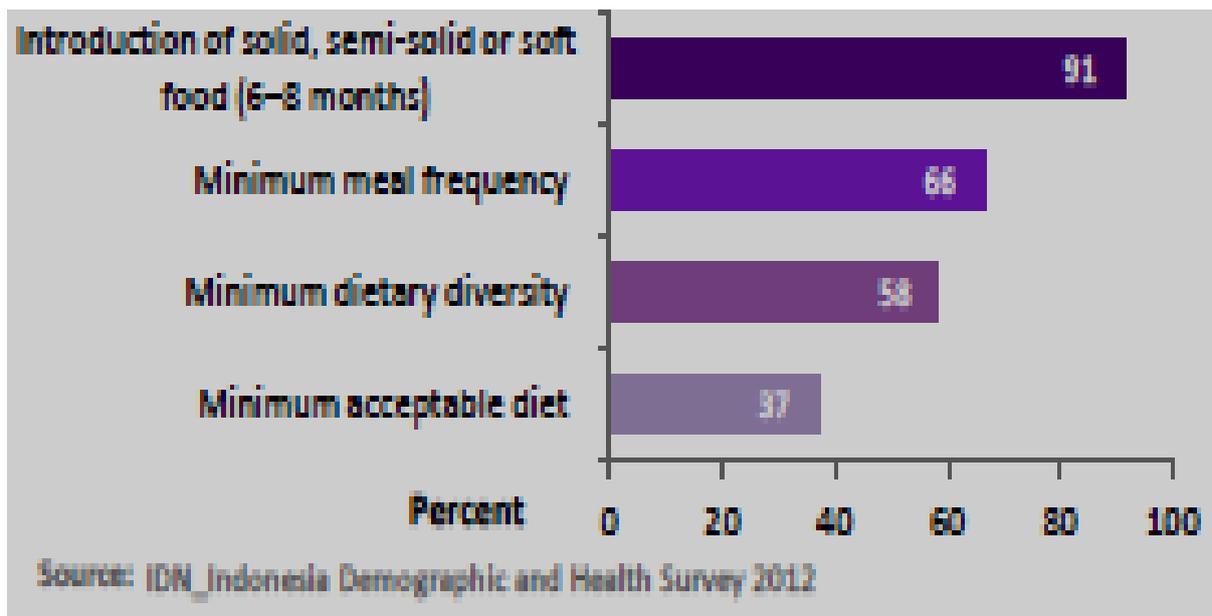


Figure 3.18 Complementary Feeding  
(Source: IDN (Indonesia Demographic and Health Survey 2012))

### Duration of Breastfeeding

- Duration and frequency of breastfeeding affect the health and nutritional status of both mother and child.
- Exclusive breastfeeding is recommended up to age 6 months, and continued breastfeeding with complementary feeding, is recommended from 6 months until age 2 years and beyond.

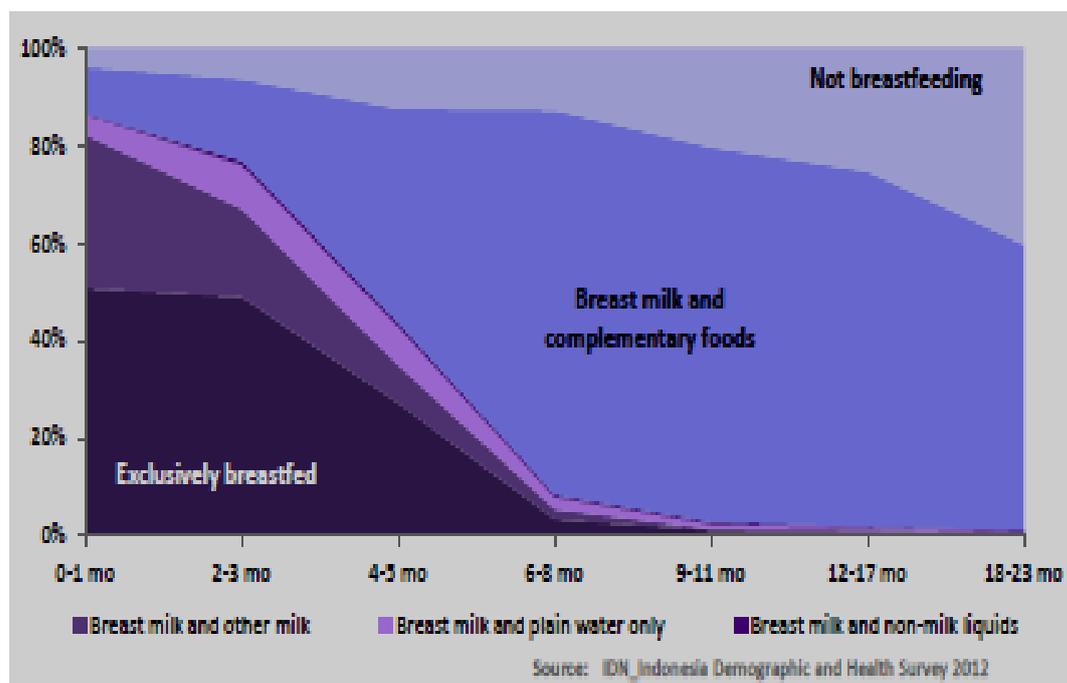


Figure 3.19 Duration of Breastfeeding  
(Source: IDN (Indonesia Demographic and Health Survey 2012))

## Child Malnutrition and Poverty

- Children in the wealthiest quintile have 56% less stunting deficits than children in the lower income quintiles

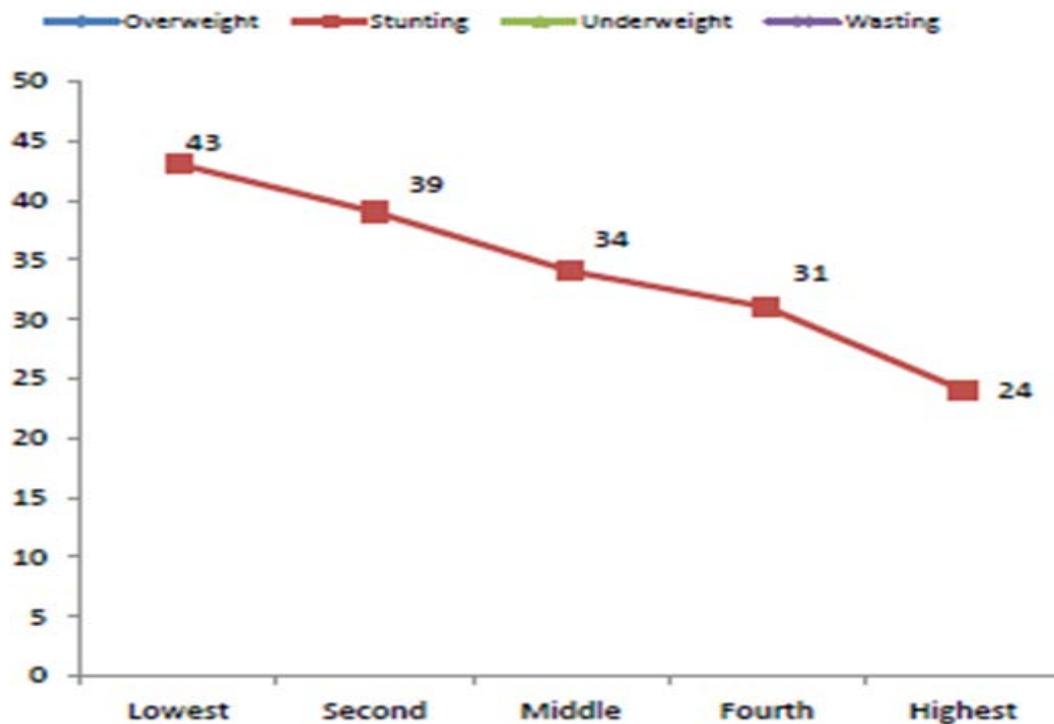


Figure 3.20 Child Malnutrition and Poverty

(Source: Improving Child Nutrition, The Achievable Imperative for Global Progress 2013/15, 2020)

## Vitamin A

- Successful Vitamin A supplementation (76%) is a likely contributor to the observed reductions in child mortality.
- Vitamin A deficiencies (20 % of pre-schoolers) remain a moderate public health concern, bordering on severe, and indicate that Vitamin A is still lacking in the daily diet.

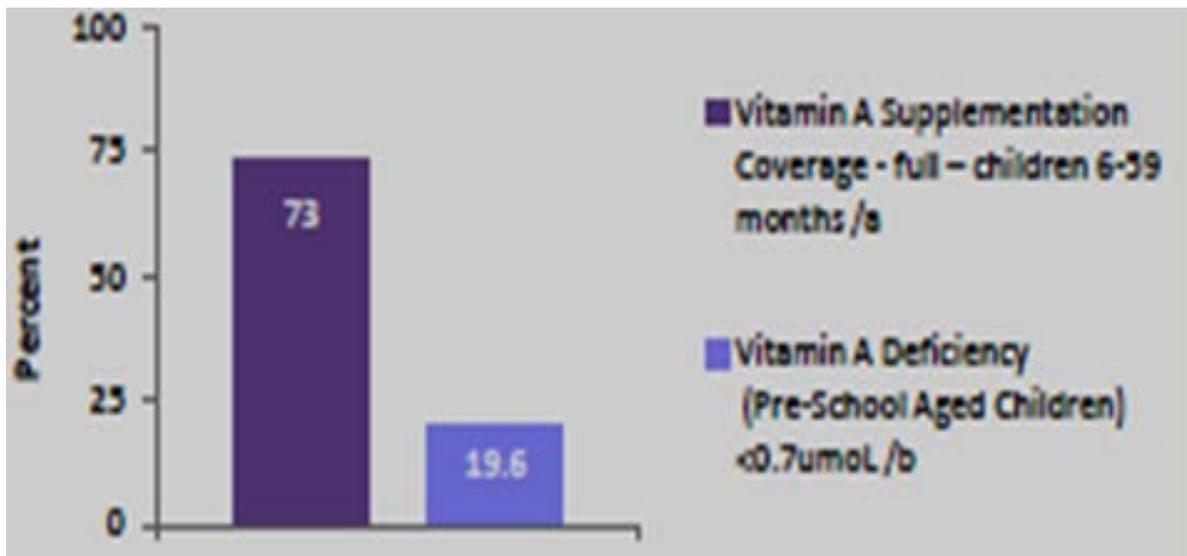


Figure 3.21 Vitamin A

\*) VAD is a severe public health problem if > 20% of preschool children (6-71 months) have low serum retinol (<math><0.7\mu\text{mol/L}</math>)

(Source a/ UNICEF, State of the World's Children 2014, b/ WHO Global prevalence of vitamin A deficiency in population at risk 1995-2005 report)

## Chapter VI

# The Relevance of Micronutrients to the Prevention of Stunting

“A definitive causal relation between vitamin A status and child growth has yet to be established”

### Vitamin A

Although numerous cross-sectional studies have linked vitamin A deficiency to a

greater risk of stunting, a definitive causal relation between vitamin A status and child

growth has yet to be established. Previous studies have found vitamin A supplementation

to either improve linear growth (Muhilal,1988), (Arroyave,1979) or to have no significant

effect. (Lie C,1993), (Ramakrishnan,1995). More recently, the effects of vitamin A

supplementation on stunting have been evaluated through a number of meta-analyses. In

a 2009 meta-analysis by Ramakrishnan and colleagues, 11 of 17 studies demonstrated

positive effect sizes for change in height following a vitamin A regimen.

However, the weighted mean effect size of the vitamin A intervention was not statistically significant (effect size = 0.08; 95% CI: -0.18,0.34), confirming the results from

a previous meta-analysis, which concluded that vitamin A supplementation alone is not an

effective strategy to improve longitudinal growth in children.(Ramakrishnan,1995). The potential for vitamin A supplementation to improve linear growth has been more clearly

described in children who were clearly vitamin A deficient and were experiencing growth

limitations because of the deficiency(Muhilal,1988),.( West KP,1997 – Hadi H,2000). In a

2000 study in Indonesian preschool children, the growth benefit from vitamin A supplementation was considerably higher in children with low serum retinol concentrations

(< 0.35 µmol/L).(Hadi H,2000)

Breast-feeding was also found to be protective against linear growth deficits

attributable to vitamin A deficiency in children six to 24 months of age living in regions

where subclinical vitamin A deficiency and stunting were prevalent. (Hadi H,2000)

However, in other at-risk populations, recurrent bouts of respiratory infection were observed to blunt the linear growth response to vitamin A supplementation. (Hadi H,2000)

Overall, the variable effects of vitamin A supplementation on linear growth indicate that

vitamin A may need to be considered as part of a group of coexisting factors that can modify growth.

“The results of studies on zinc supplementation have been mixed”

Zinc

Impaired linear growth is considered to be a well-known feature of zinc deficiency

among children. (Aggett,1995-Brown KH,2002) Despite the strong evidence linking zinc deficiency to impaired height-for-age, the results of studies on zinc supplementation have

been mixed. A 2002 meta-analysis by Brown and colleagues analyzing the effects of zinc

supplementation on the linear growth of prepubertal children found a statistically significant

effect on height (effect size = 0.350; 95% CI: 0.189,0.511), particularly in children less than

six months of age with lower initial height-for-age. (Brown KH,2002) These results were

confirmed in a 2009 review article by the same authors that included additional studies

(effect size = 0.170; 95% CI: 0.075,0.264) (Brown KH,2009). In contrast, a 2009 meta

analysis published by Ramakrishnan and colleagues demonstrated the opposite effect in

children under five years, indicating that zinc supplementation had a minimal and statistically insignificant effect on linear growth (n=43; effect size = 0.07; 95%CI: -

0.03,0.17).(Ramakrishnan,2009).

Most recently, a meta-analysis by Imdad and Bhutta confirmed Brown's results in

children children less than five years of age (effect size = 0.13; 95% CI: 0.04,0.21).(Imdad,

2011). The variability in results amongst the four meta-analyses has been the subject of much debate. Imdad and Bhutta initially attributed the inconsistency in results to differences in inclusion and exclusion criteria.(Imdad A, 2011). However, when changes were made to the criteria to better match those used by Brown *et al* and Ramakrishnan *et al*, there were no significant changes in the results or direction of the effect.(Ramakrishnan,2009; Imdad A, 2011).

It has also been suggested that improvements in baseline nutritional status from 2002 to 2009 may have contributed to the difference in results because of an overall lower prevalence of stunting. However, these changes would also be expected to affect the 2011 metaanalysis by Imdad and Bhutta, which was not the case. Using results from their meta-analyses, Imdad and Bhutta estimated that a dose of 10 mg zinc/day would be effective in increasing the linear growth in children under five by 0.37 (  $\square$  0.25) cm.(Imdad A, 2011). However, the authors also reinforced that zinc supplementation must be administered within the framework of a comprehensive approach including improved diet, exclusive breastfeeding, and practices of complementary feeding. (Imdad A, 2011).

The 2008 Lancet Maternal and Child Undernutrition Series similarly recommended zinc supplementation as an effective intervention to reduce stunting, based on evidence from Brown *et al*, along with more comprehensive strategies to improve child health. (Bhutta ZA, 2008). Strong evidence also links the use of zinc supplementation to the reduction of morbidity and mortality from infectious disease, particularly diarrheal diseases. (Zink Investigators, 2000;Baqui AH, 2002). The ability of persistent diarrhea to result in growth faltering (Scrimshaw NS, 1968) suggests a dual benefit from zinc supplementation.

A 2007 study tested the effects of a two week course of zinc supplementation on the growth of children with persistent diarrhea.(Roy SK, 2007). Zinc supplementation effectively reduced episodes of diarrhea and increased growth in more malnourished

subjects, demonstrating the positive effects of zinc supplementation in conditions of zinc

deficiency. (Roy SK, 2007) Similar to its effect on diarrheal disease, zinc supplementation

has also been shown to prevent respiratory disease, with additional efficacy in children

with stunted growth.(Shrimpton R, 2008).

### Determinants of child nutrition and interventions

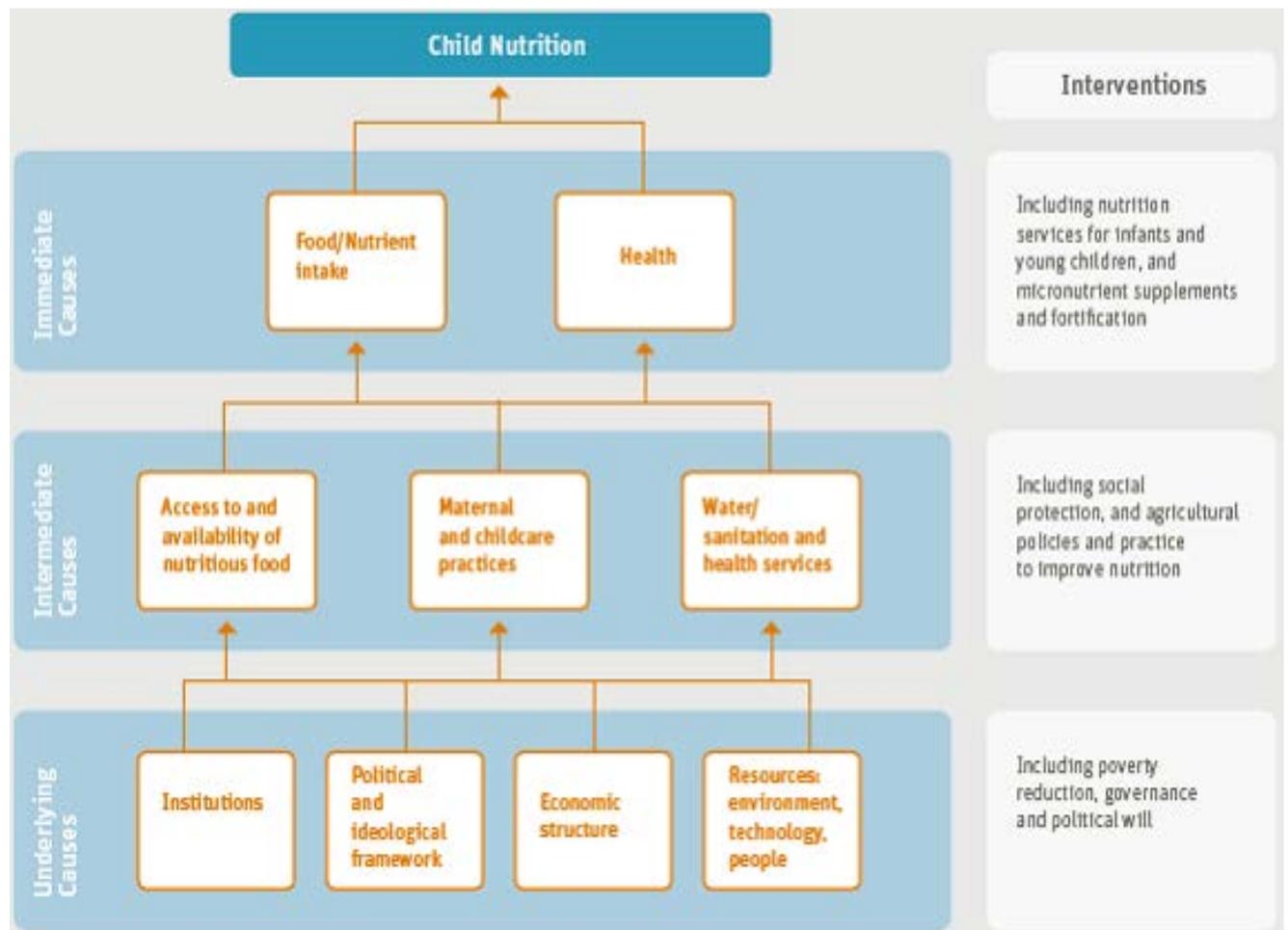


Figure 4.1

(Source: Adapted from UNICEF 1990, Ruel 2008 and World Bank (draft) 2011)

“The evidence supporting the potential role of multiple micronutrient interventions in the prevention of stunting is still evolving”

### Multiple micronutrient interventions

The association between several micronutrient deficiencies and impaired growth

has prompted the investigation of multiple micronutrient interventions, and their efficacy

compared to single nutrient supplementation efforts. It has been proposed that in populations with multiple micronutrient deficiencies, the effect of multiple micronutrient

supplementation on linear growth may be more significant than single nutrient supplementation. (Rosado, 1999). However, as with the zinc and vitamin A studies, the

results have been mixed, demonstrating that the prevention and reversal of stunting is

considerably more complex.

The 2009 meta-analysis by Ramakrishnan *et al* analyzed the effects of 20 multiple

micronutrient interventions, each of which contained a minimum of three micronutrients,

and 80% of which consisted solely of vitamin A, iron, and zinc. (Ramakrishnan, 2009).

While no significant effect on linear growth was observed following either vitamin A or

zinc interventions, the multiple micronutrient interventions had a small but statistically significant effect on height (effect size = 0.09; 95% CI: 0.008, 0.17).(Ramakrishnan,

2009). Two-way combinations between iron and zinc, vitamin A and zinc, and iron and

folic acid did not significantly improve linear growth compared to the placebo.

(Ramakrishnan, 2009). Overall, this study confirmed the results of a previous meta-analysis by Ramakrishnan and colleagues in 2004, which also found a significant positive

effect on height (effect size = 0.28; 95% CI: 0.16, 0.41) in five multiple micronutrient interventions. (Ramakrishnan, 2004). Additional intervention studies have supported the

effects of multiple micronutrient interventions on improved linear growth, particularly when zinc is included as part of the supplement. In a 1998 trial in Chinese children, a

multiple micronutrient supplement plus zinc was found to be significantly better at improving growth velocity compared to the zinc-only regimen. (Sandstead, 1998). Greater

increases in growth were also observed following the micronutrient only supplement compared to the zinc-only intervention, reinforcing the role of other micronutrients in supporting proper growth. (Sandstead, 1998). Imdad and Bhutta similarly found a

significant positive effect of multiple micronutrient interventions containing zinc on linear

growth (effect size = 0.13; 95% CI: 0.04,0.21); these effects became even more pronounced when studies on combined zinc and iron interventions were removed (effect

size = 0.19; 95% CI: 0.08,0.30), suggesting that co-supplementation of iron may diminish

the bioavailability of zinc due to common uptake pathways. (Imdad, 2011). While there is

considerable research investigating the effects of multiple micronutrient interventions on

promoting linear growth, the evidence supporting their potential role in the prevention of

stunting is still evolving. A 2011 study found a significant decrease in the prevalence of

stunting in both Nepal and Kenya following the administration of multiple nutrient powders

(MNP) in children aged six to 59 months. (Rah JH, 2012). The MNPs contained 15–16

micronutrients as per a WHO/World Food Programme/ UNICEF Joint Statement, and

were distributed alongside extensive social marketing campaigns. Given that prior trials

had demonstrated no significant benefit for MNPs in preventing stunting, the positive findings were potentially attributed to the extended duration of supplementation and the

inclusion of younger children who are at a higher risk for stunting.(Dewey KG, 2009). An

analogous set-up in Bangladesh demonstrated a significantly higher prevalence of stunting in children with a lower compliance rate (< 75% of distributed sachets), demonstrating a need to further clarify the effects of MNP on the prevention of stunting.

(Rah JH, 2012). Similarly, a 2005 study by Smuts and colleagues demonstrated that while

multiple micronutrient supplementation can effectively restore micronutrient deficiencies,

the intervention did not prevent growth faltering in South African infants (Smuts CN, 2005)

or improve growth and morbidity in Indonesian and Peruvian infants. (Untoro J, 2005;

Lopez de Romana, 2005).

## A. How to Prevent Stunting?

### SUN Movement Strategy



Figure 4.2 SUN Movement Strategy

(Source: SUN Movement Strategy & Roadmap 2016-2020)

The big challenge to improve the nutrition of Indonesian people is handling more demanding innovative and integrated, because it is dominated by mistaken factor of knowledge, attitudes and behavior and ingrained in society. Therefore it takes hard work to grow and breakthrough the knowledge, attitudes and behaviors that reflected awareness of good nutrition, among others, indicated by the pattern. Good food consumption in line with the implementation of regular physical activities. Knowledge, attitudes, and behaviors of food consumption patterns and physical activity should be the social norm that existence. So it can be more robust and actively growing society is continuing. The example is a movement by National Literacy Towards Human Nutrition Indonesia Prima, which initiated UN in the form of Scaling Up Nutrition (SUN) Movement, with focus on nutritional interventions 1,000 days of first life. The activities proven cost-effective to prevent and tackle malnutrition and stunting, and through the cooperation of stakeholders (Government, private, and community).

## SUN Movement Vision

By 2030, a world free from malnutrition in all its forms. Led by governments and supported by organizations and individuals – collective action ensures every child, adolescent, mother and family can realise their right to food and nutrition, reach their full potential and shape sustainable and prosperous societies.

## Stakeholders in the SUN Movement

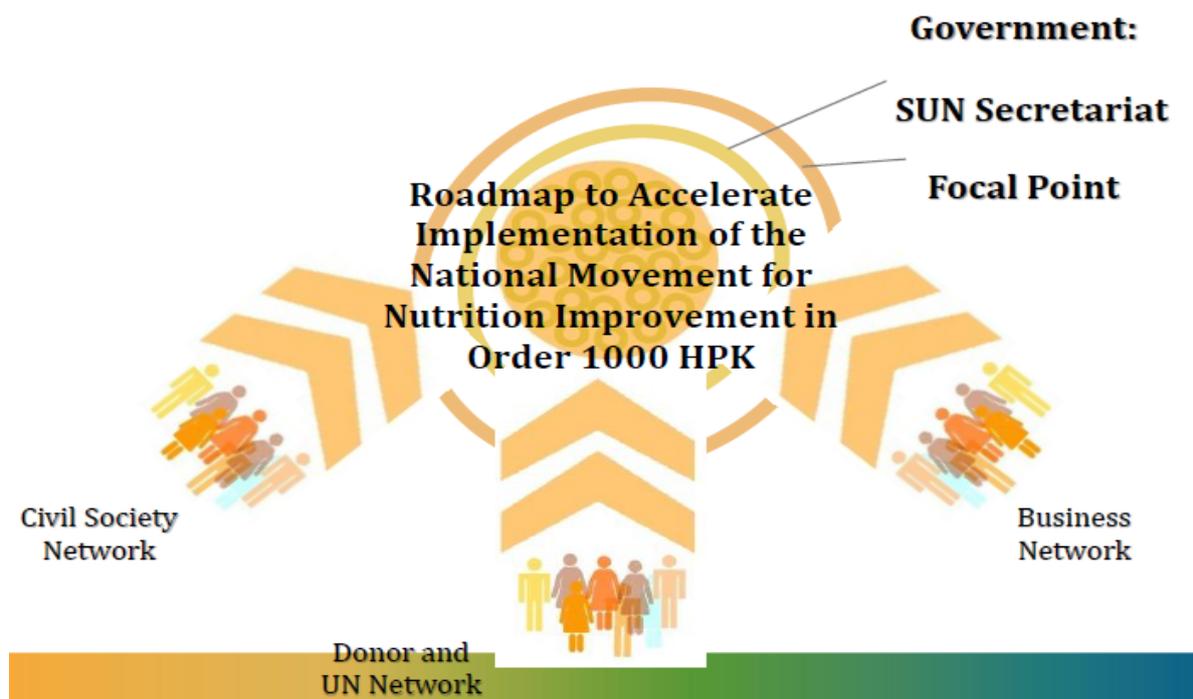


Figure 4.3 Stakeholders in the SUN Movement

(Source: SUN Movement Strategy & Roadmap 2016-2020)

Other attempts to improving the nutritional status are:

1. Pregnant women need adequate nutrient intake from food, nutrition supplements such as Fe tablets, with their health routinely monitored. They need to consume Fe tablets for 90 days, however, their compliance in Indonesia is only 33%.
2. Babies need exclusive breast milk in their first six months. Afterward, they need complementary food with sufficient quantity and quality.
3. The growth of children under five must be routinely monitored in local health centers to early detect any growth deficiency.

4. Access to clean water, sanitation facilities, and clean environment should be improved.

### **Sanitation and Hygiene for Maximum Children Growth**

In 28 July 2010 the United Nations (UN), held General Assembly discusses a resolution on access to clean water and sanitation as a human right. After over 122 countries voting support. This resolution and 41 countries abstained. Indonesia became one countries that support this resolution, so that Indonesia has acknowledged that water and sanitation is an integral part of human rights.

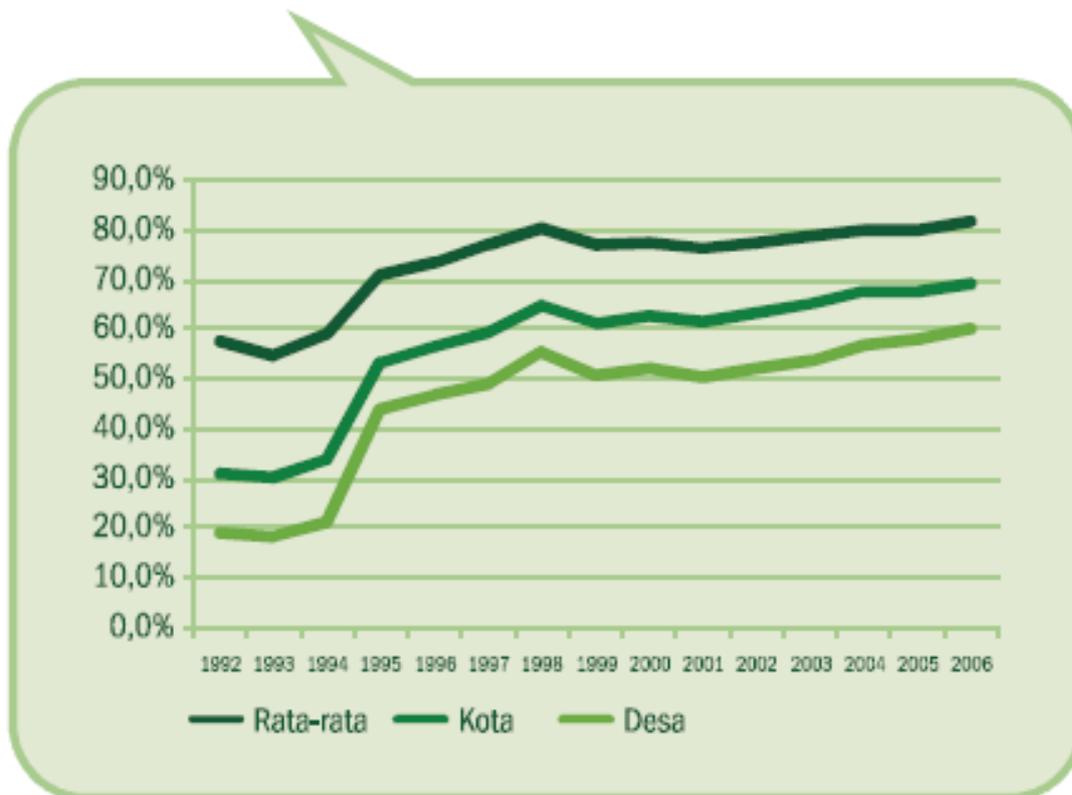
As part of the economic, social and cultural rights, the right of water demand greater state role in the fulfillment. The right of water can not be achieved in a minimalist state. Indonesia is one of the minimalist state. In the context of water resource indicator

very clear, environmental degradation such as deforestation, water pollution, exploitation of water resources, and the destruction of water resources infrastructure, encouraging market mechanisms in the management and provision of clean water, etc. The population's proportion with access of safe sanitation facilities (Source: BPS- Susenas, various years).

On 28 July 2010 United Nations hold The General Assembly discussed the resolution on access to clean water and sanitation as human right. After voting 122 countries support this resolution and 41 states abstained. Indonesia became one of the countries that support this resolution, so Indonesia has admitted that clean water and sanitation are an inseparable part of human rights.

As part of the social and cultural economic rights, the right to water demands is the responsible of the government. Water right can not be achieved in minimalist country such as Indonesia. In the context of water resources the indicator is clear such as environmental damage, deforestation, water pollution, exploitation of water resource, destruction of water resources infrastructure and encourage market mekanism in water supply management and supply.

Proportion of people with access to safe sanitary facilities.



Nutrition intervention alone is not sufficient to remedy stunting, because hygiene and sanitation is very influential for the health of pregnant women and growth of children. Moreover, children under two are very vulnerable to infections and diseases. Inadequate hygiene and sanitation practices, such as continuous exposures to human and animal manure, may cause chronic bacterial infection, which prevent the body to absorb nutrition.

The lack of quality hygiene and sanitation can also trigger guts disease called environmental enteropathy, which disturbs the energy for a child's growth and makes the body redistribute energy to fight against infections instead.<sup>8</sup> Another research finds that the more frequent a child experiences diarrhea episodes, she or he must face a higher potential of stunting.<sup>9</sup> Furthermore, when children are ill, usually they eat less, making their nutrition intake even lower than before.

Therefore, the growth of brain cells, which should be very rapid in a child's first two years, is also hampered. As the consequence, the threat of stunting is imminent for the child. Stunting will hampers the growth of cognitive skills, increases vulnerability to diseases, and lowers the level of competitiveness. In short, stunted children cannot fully grow and realize their potential.

Several researches show that the threat of stunting decrease once there is a focused intervention to hygiene and sanitation behaviours. Hygiene and sanitation interventions with 99% coverage is reported to reduce diarrhea by 30%, which in turns decrease stunting prevalence by 2.4%.<sup>10</sup>

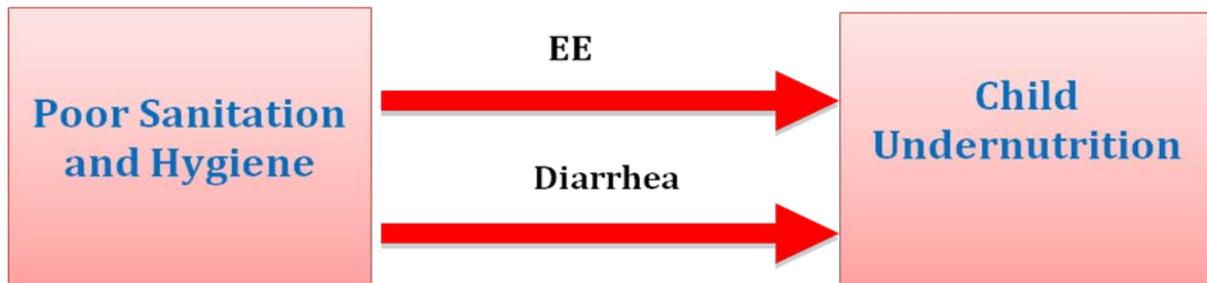
To cut the chains between low quality hygiene and sanitation with stunting, pregnant women and children must live in clean environment. Two main ways to maintain hygiene and sanitation is to stop open defecation and start to wash hands with soap.

**The sanitary conditions in Indonesia**



## Environmental Enteropathy

EE Theory: A major (if not primary) cause of child under nutrition is a subclinical condition of small intestine



Continued exposure: Mounts an immune response, stress levels rise and the body diverts nutrients away from growth towards fighting an infection

## Real Potrait

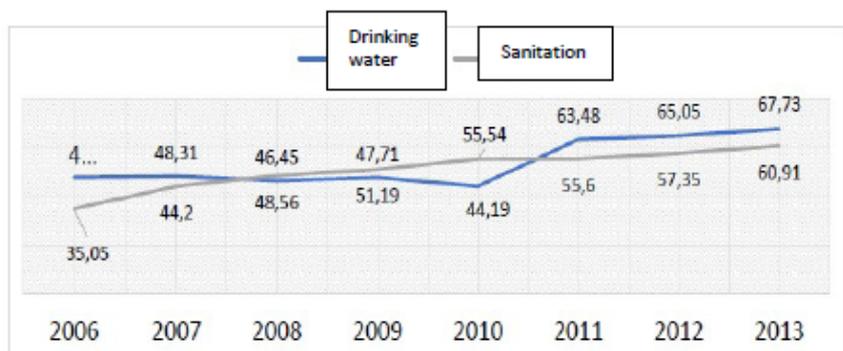
Indonesian Population in 2014

252 Million



**68,83 %**  
Good drinking water  
**61,04%**  
Good sanitation

5/28/2015  
Source: Susenas 2014 TW 1



Source: BPS. 2013

The number of people that need to be addressed towards universal access (2019) - 267 millions



Drinking water:  
96 million

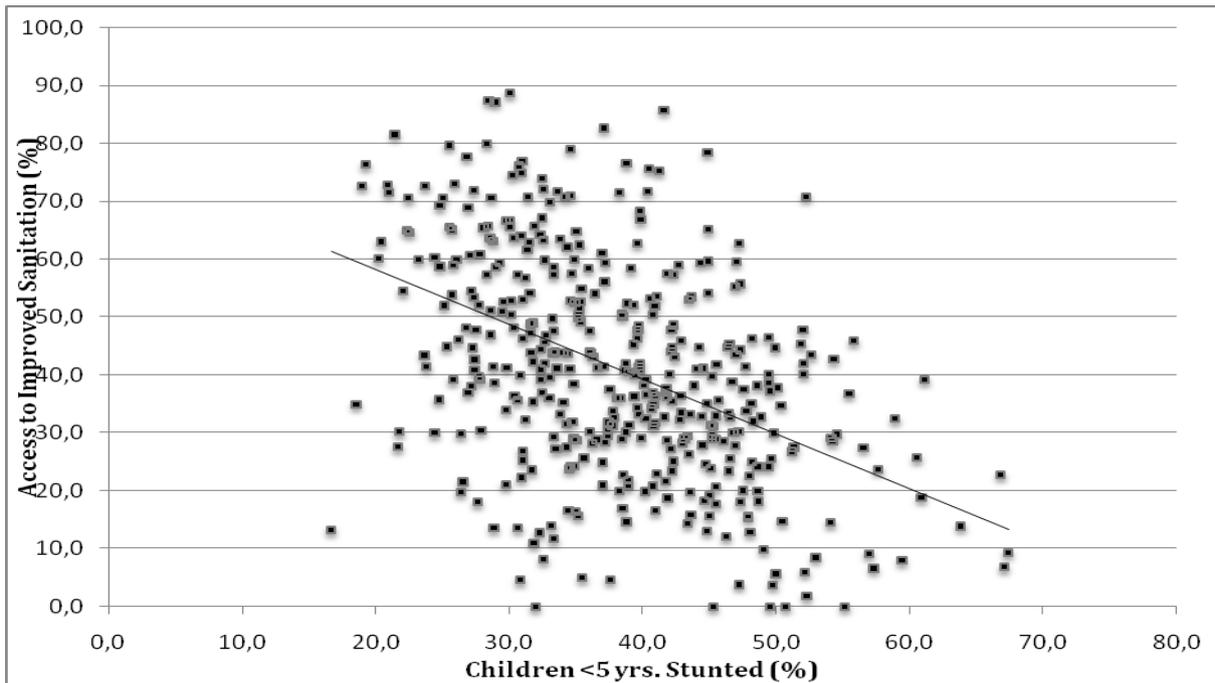


Sanitation:  
114 million

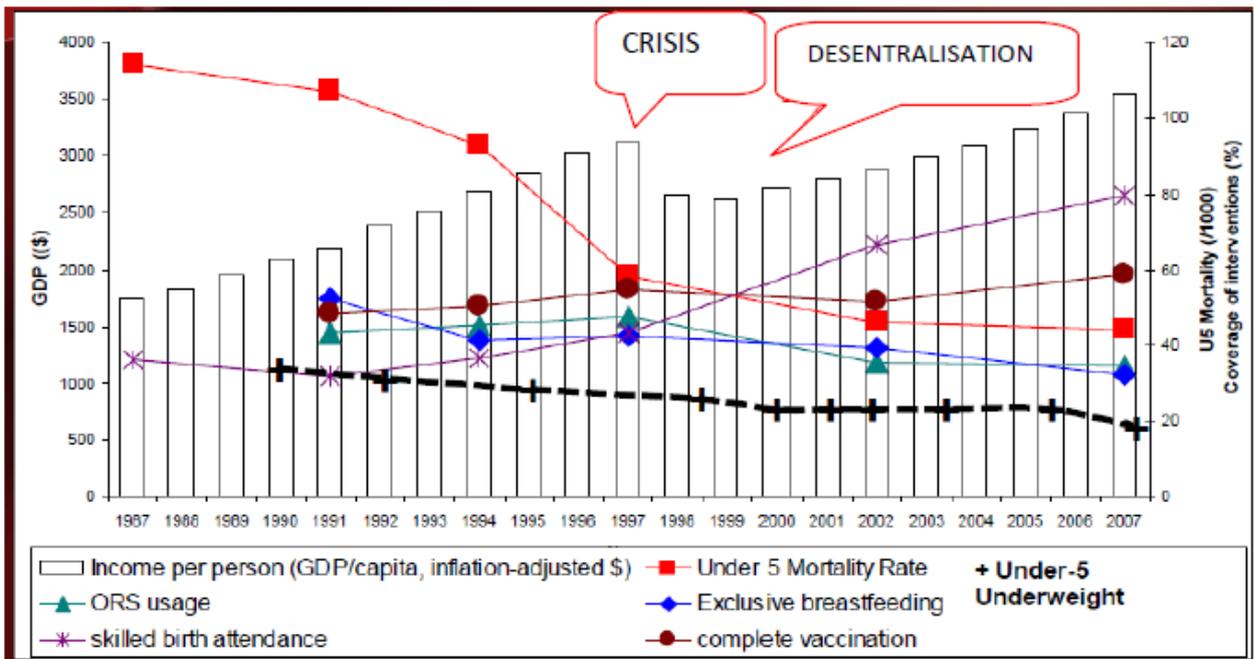
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(Source: Susenas 2014 TW 1)

## Relationship between Accesses of Adequate Sanitation vs. Stunting Cases



## GDP change trends and indicators of health and nutrition

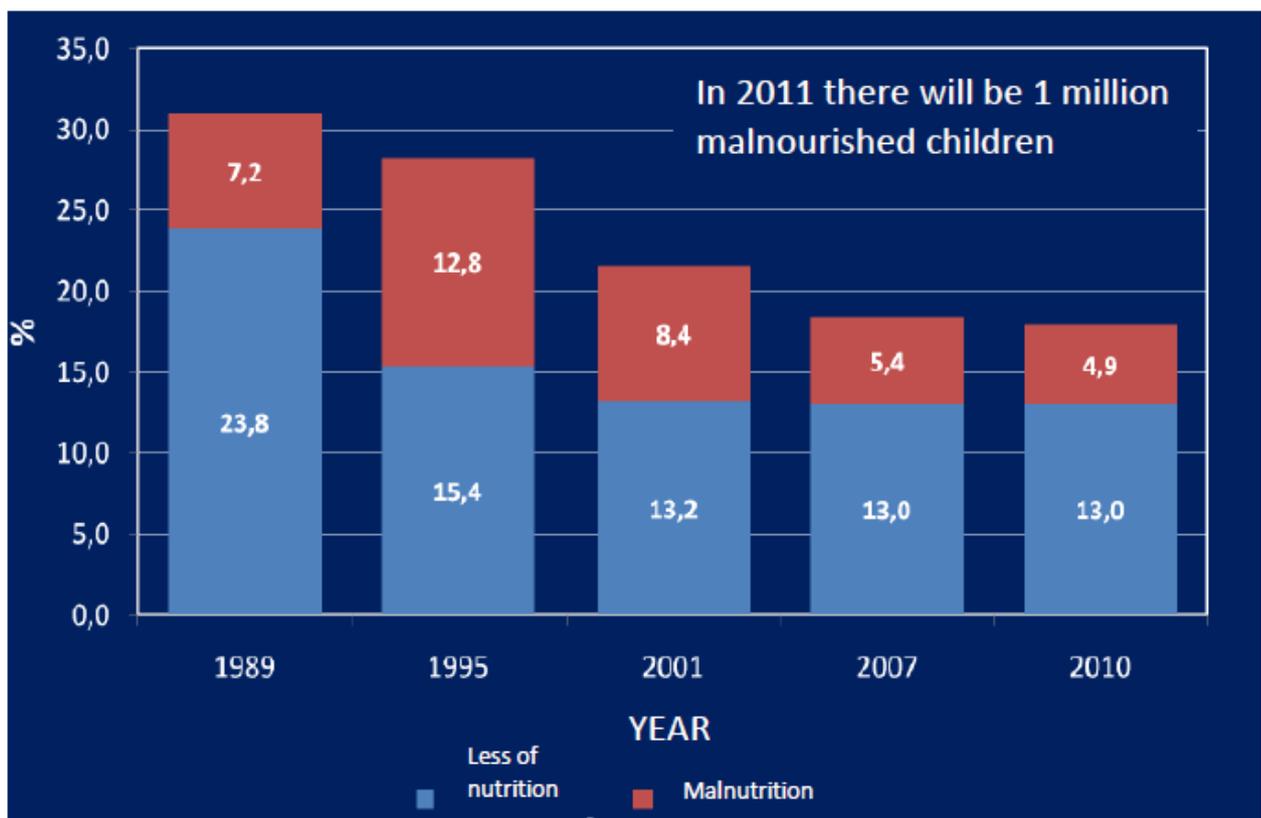


## STATUS OF PUBLIC NUTRITION

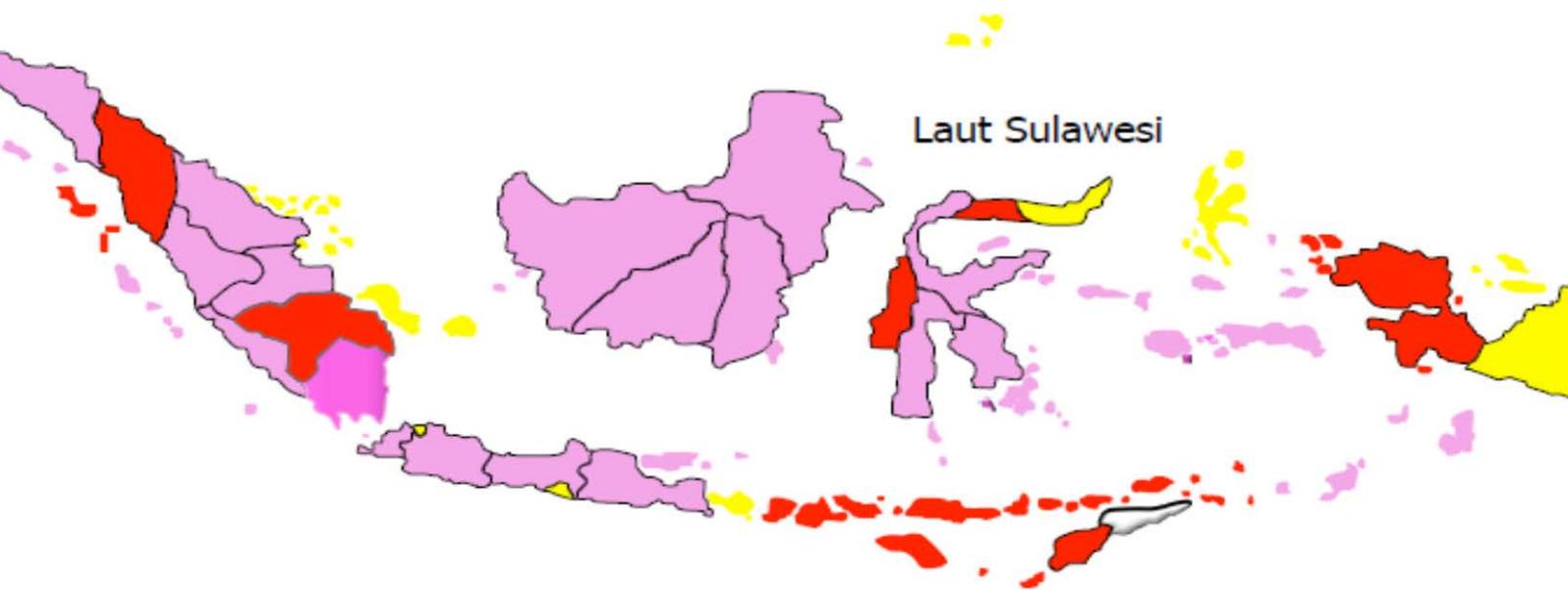
No	Indicator	Riskesdas 2007	Riskesdas 2010
1	The prevalence of children under short (stunting)	36,8	35,6
2	Women children under thin and very thin (stunting)	13,6	13,3
3	Women of reproductive age (15-45 years) encountered less chronic energy (KEK)	13,6	
4	The prevalence of babies born with low birth weight (BBLR)	11,5	11,1
5	The prevalence of infant experiencing obese	4,3	5,8
6	Prevalence of population aged above 18 years of age are obese (overweight)		11,7

The prevalence of malnutrition in children under five was 17.9 per cent consisted of malnutrition of 13.0 percent and 4.9 percent malnutrition

### Prevalence of Malnutrition Down



# Prevalence of Stunting in Indonesia by Province (Riskesdas 2010)



Indonesia: 35,6 %

0 200 400 km  
0 200 400 mm

November 25, 2014

Soekirman Kongres PERSAGI Jogya





The problem of malnutrition in 1000 HPK starts with deceleration or fetal growth retardation which known as IUGR (Intrauterine Growth Retardation). In developing countries, malnutrition in pre-pregnant and pregnant women have an impact on the birth of the child IUGR and LBW. IUGR conditions almost half relates to maternal nutritional status, namely body weight (BW) pre-expectant mothers are not in accordance with the mother's height or short stature, and weight gain during pregnancy (PBBH) less than it should be. Short-time mothers tend to age 2 are short on time when adulthood. The expectant mother will tend to give birth to short LBW infants (Victoria CG et al, 2008). If there is no improvement occurrence of IUGR and LBW will continue next generated, resulting in short children intergenerational issues.

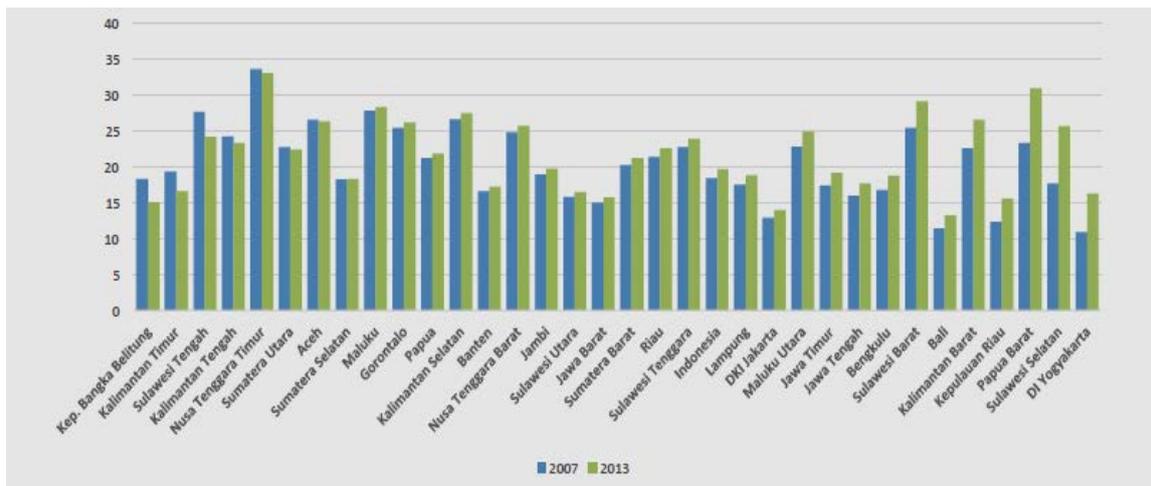
# CHAPTER VII

## UNFINISHED MDGs AGENDA IN HEALTH SECTOR

### GOAL 1 : STATUS OF PUBLIC NUTRITION

Disparity is wide enough in reducing the population suffering malnutrition among regions, where only a small fraction province succeeded in reducing the prevalence of children under five with malnutrition

The prevalence of underweight children by province, 2007 and 2013

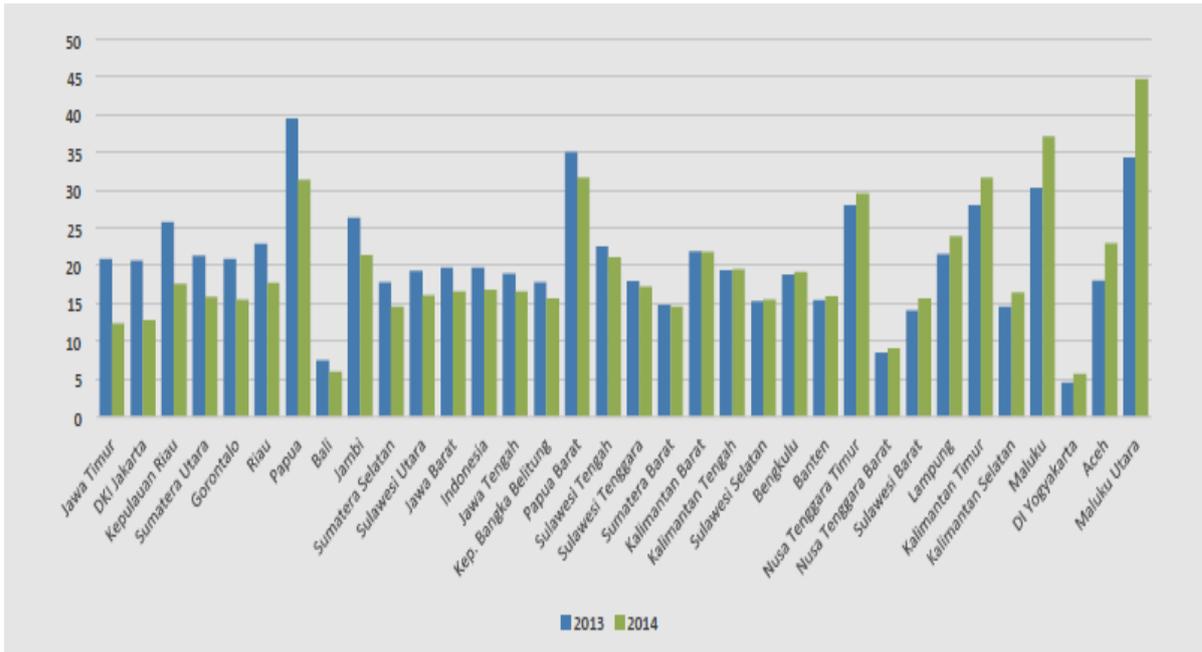


(Source: BPS, SDKI several years of publishing and MoH, Riskesdas 2007-2013)

In 2007 and 2013, there were 26 of 33 provinces that have not succeeded in reducing the prevalence of children under five years old with malnutrition, including Yogyakarta and South Sulawesi experienced an increase in underweight children respectively 48.62% and 45.45%.

Nutritional needs of the quantity of calories people tend to increase. Most of the area succeeded in reducing the proportion of people living below the minimum calorie intake 1400 Kcal / capita / day

The proportion of the population with calorie intake below minimum consumption levels - 1,400 Kcal / capita / day by Province, 2013 and 2014



(Source: BPS 2015)

In 2013 and 2014, there were 20 from the 33 provinces that succeeded in reducing the proportion of people living below the minimal calorie, where the province of East Java and Jakarta are areas that are quite successful in reducing respectively 40.74% and 38.12%.

Quality nutritional needs change although not in accordance with the targets.

### The prevalence of infant malnutrition, 1989-2013

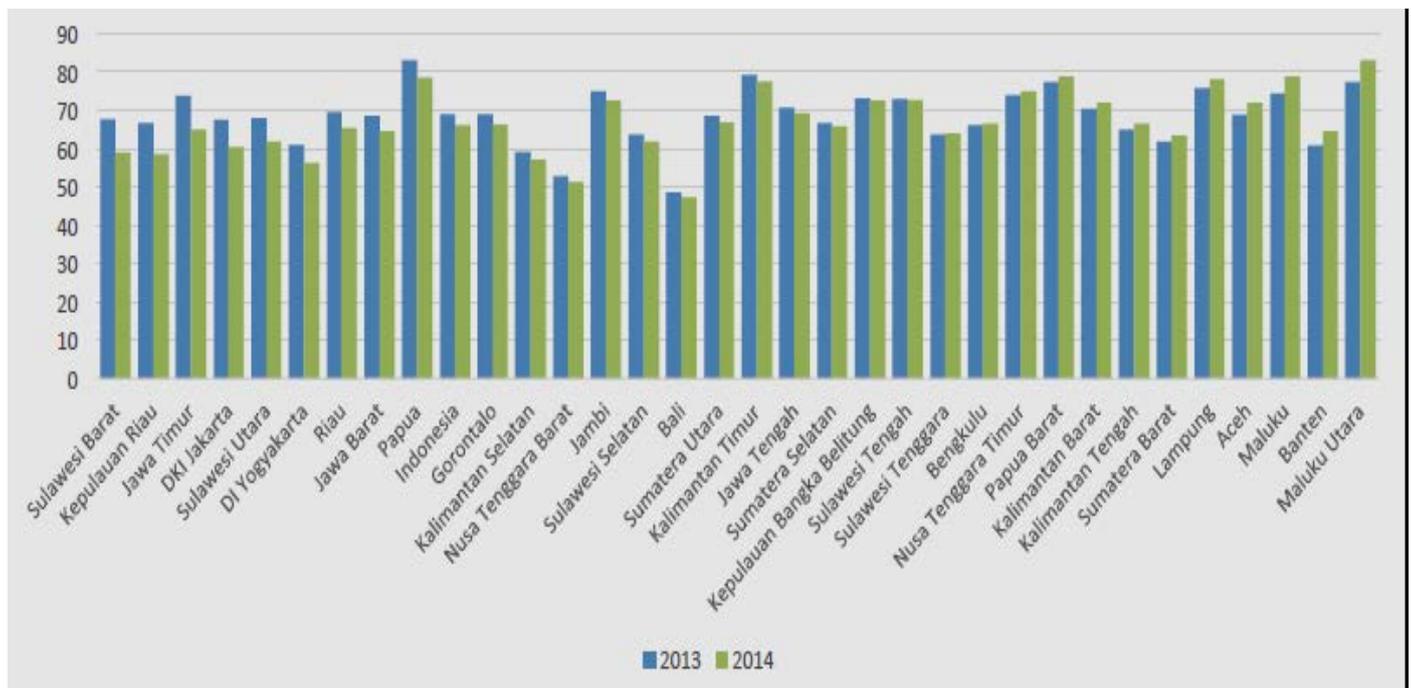


(Source : BPS, SDKI several years published and Ministry of Health, Riskesdas, 2007-2013)

Prevalence of underweight / malnutrition in country declined from 31% in 1989 to 19.6% in 2013. However, these achievements still need a serious effort to achieve the targets, is 15.5 % by 2015.

The nutritional needs of the population in terms of calorie intake quantity tends to increased. Most of the province is able to improve the adequacy of calories, by reducing the proportion of people living below the 2,000 kcal / capita / day.

The proportion of the population with calorie intake below minimum consumption levels - 2000 Kcal / capita / day by Province, 2013 and 2014

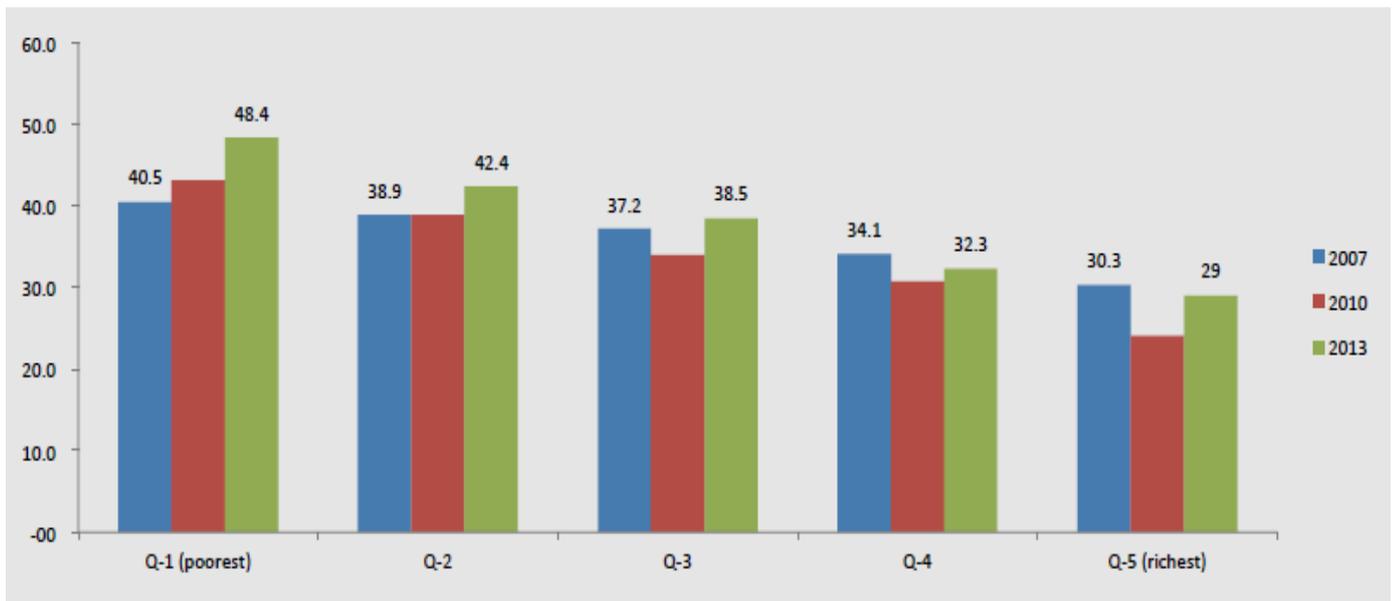


(Source : BPS, 2015)

In 2013 and 2014, there were 21 from the 33 provinces that managed to reduce the proportion of people living below the kalorin intake of 2000 Kcal / capita / day. West Sulawesi and Riau Islands are relatively successful in reducing the proportion of people living below the minimum calorie intake, while areas not yet succeeded in including the North Maluku province and Banten

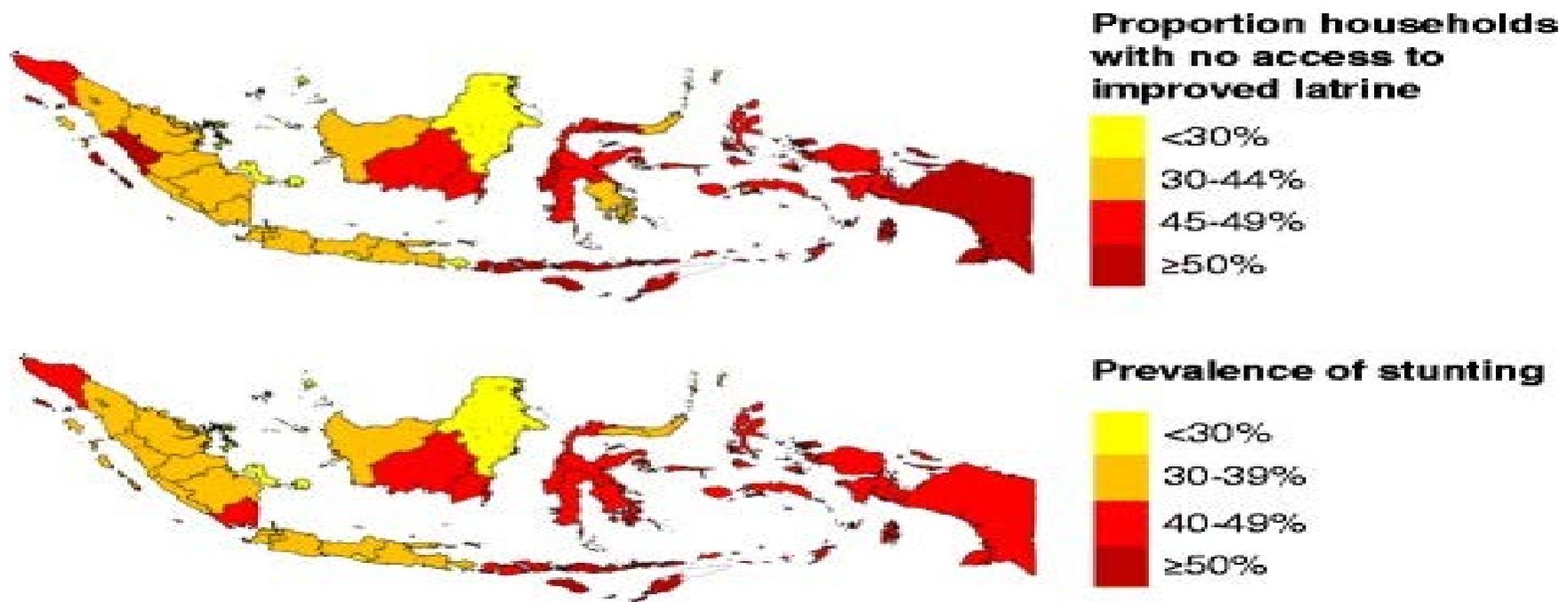
Tackling the challenges the starving: the nutritional quality in general has improved, but needs serious attention on the condition of short children (stunting) in the low-income group

## Comparison of stunting status according to expenditure group, 2007-2013



(Source : BPS, 2015)

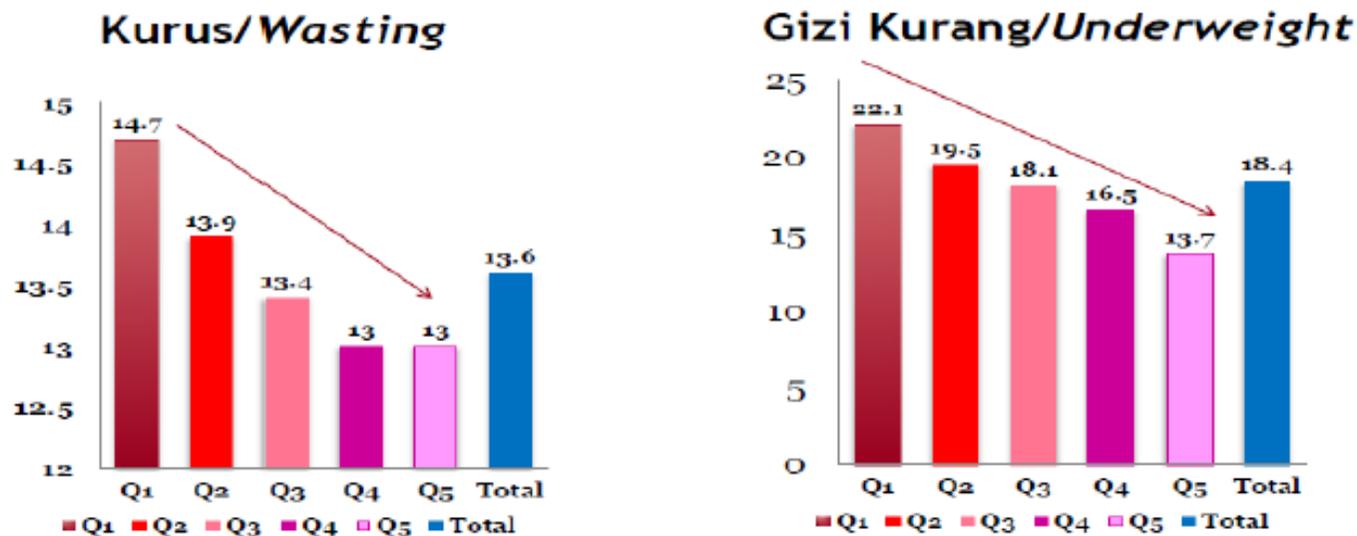
Stunting conditions increased significantly in the lower socio-economic groups. At the lowest expenditure quintile, an increase of people living in Stunting conditions, where in 2007 was approximately 40.5% to 48.4% in 2013



(Source:Basic Health Research Survey, Ministry of Health 2013)

The prevalence of wasting (body weight / height) & Underweight (body weight/ age) in Indonesian Children under five by quintiles, 2007

Source : Atmarita 2007

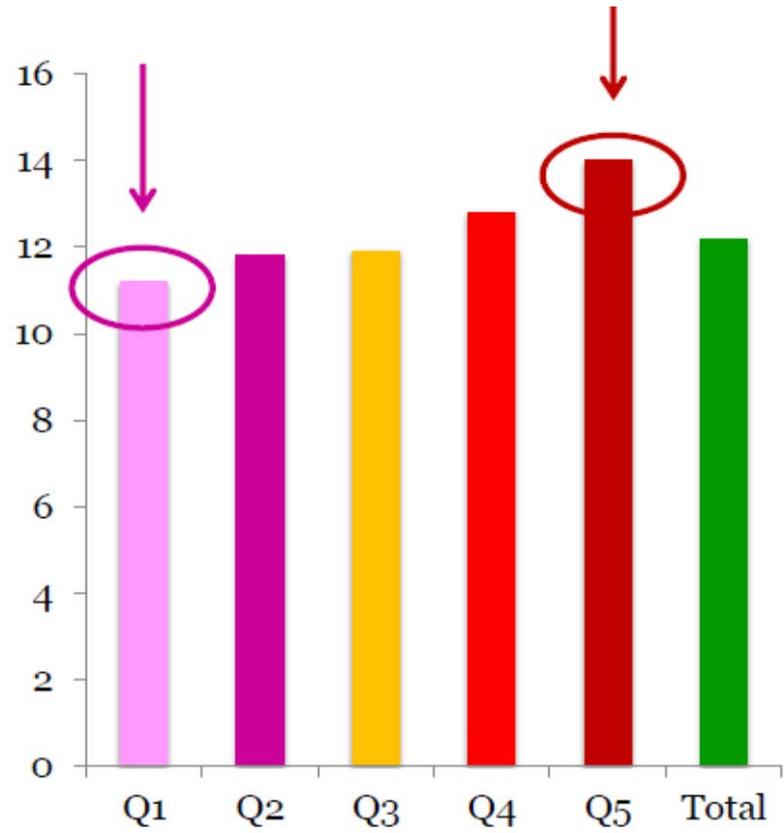


Malnutrition and underweight are more prevalent in low quintiles  
The differences between quintiles quite high

Prevalence of Overweight, among Children under five quintile 1 (the poorest) is quite high

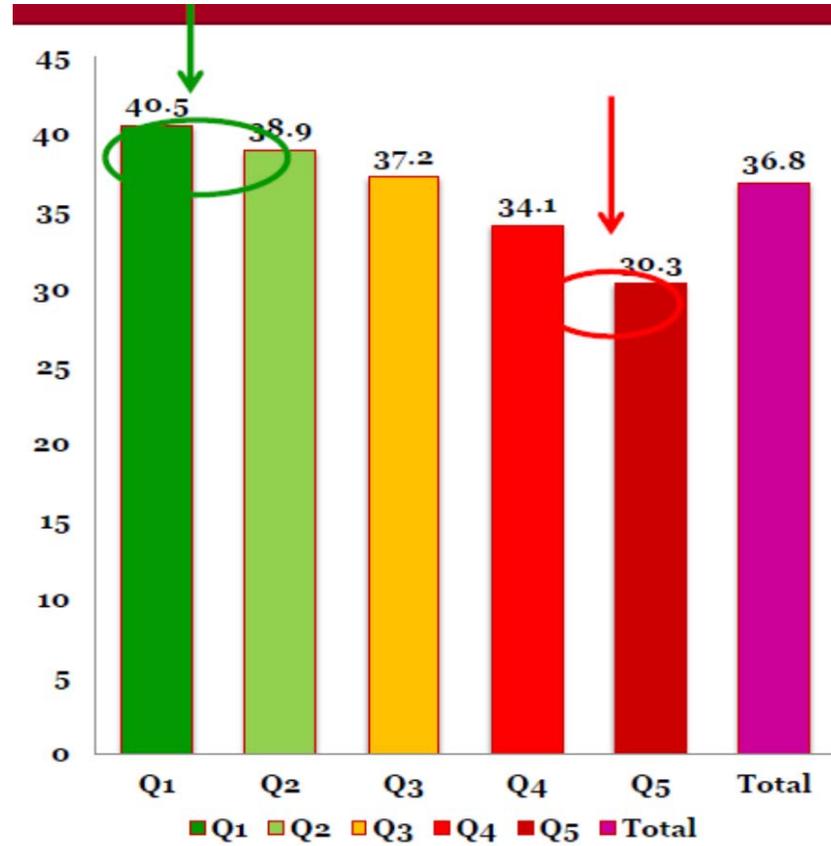
Overweight differences between who poorest and richest is not too big

Overweight is no longer a problem dietary habit



Source: Atmarita/ Riskesdas 2007

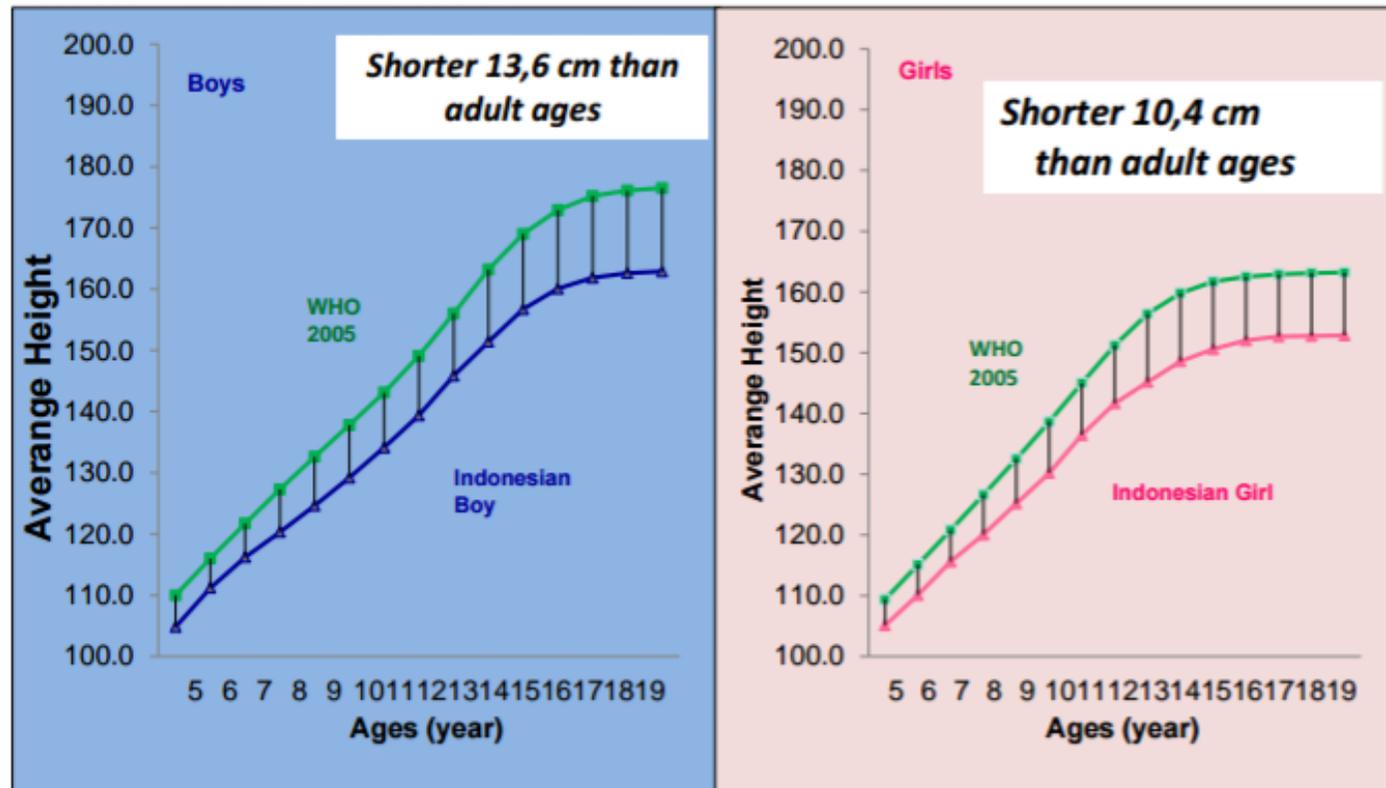
Children under five Stunting prevalence among the poorest groups is very high, but the richest group was also high, the difference between quintiles 1 and 5 approximately 10% (Risksedas 2007)



# Difference of Average Height Children 15-19 years (Riskesdas) with WHO standards in 2005

The differences of Average Height 15-19 years old (Riskesdas) with standard of WHO in 2005

Source: Atmarita 2007



Is the PTM solely due to changes in lifestyle?

- The prevalence of PTM increases and higher, and not so different between the poor and rich  
Do malnutrition in Toddlers caused by poverty?
- Under nutrition in children under five, mainly Stunting, is still very high in all quintiles, and higher in the poor
- Overweight on Toddlers grow, and on the poor is almost as high as the rich

Hypertension prevalence based on wealth quintile (*Riskesdas 2007*) →

Differences in Q1 (the poorest group) and Q5 (richest group) was only 2.5% (30.5% vs. 33%)

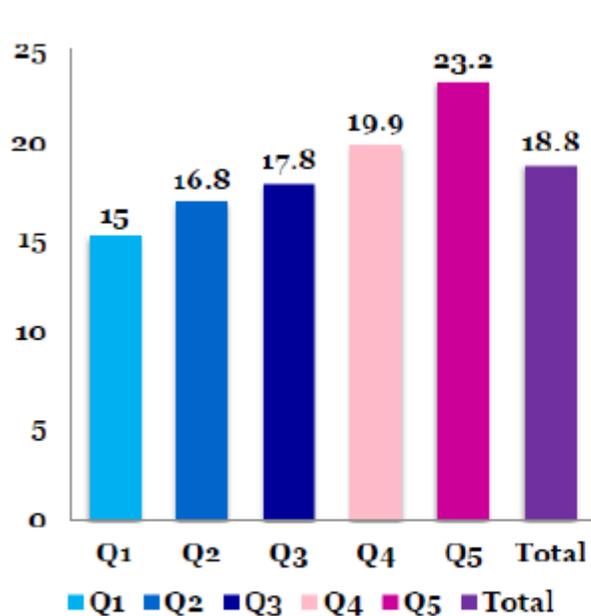
The prevalence of CVD (Coronary Heart Disease) by quintile of wealth (*Riskesdas 2007*) →

Different Q1 (6.8%) and Q5 (7.3%) only 0.5%

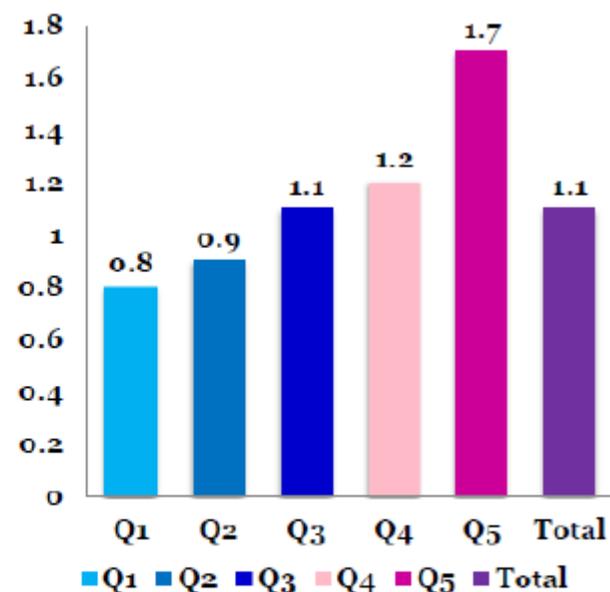
## Central Obesity Prevalence and Diabetes by wealth quintile, Riskesdas 2007

Source : DR. Atmarita

The differences of DM: Q5 twice Q1  
The differences of Central Obesity: Q5 2/3 higher than Q1



Central Obesity

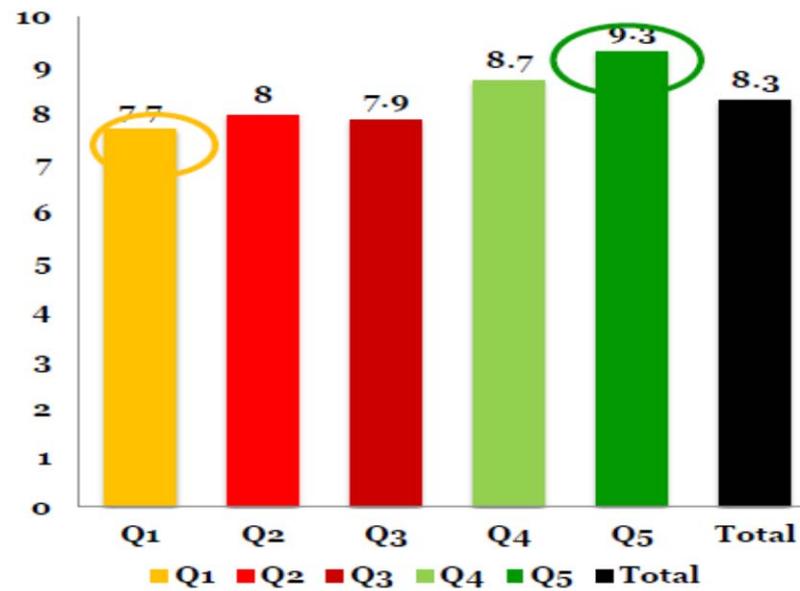


Diabetes

## Prevalence of Stroke (0/00) by quintile Riskesdas 2007

Prevalence of Stroke in the poorest quintile is quite high.

The difference between the richest and poorest quintile is not so significant



*Sumber: DR. Atmarita*

# **CHAPTER VIII**

## **THE WAY FORWARD**

### **Keeping the momentum**

SUN's second year proved that the energy around its launch was not a one-off event. The political momentum accelerated throughout 2011 and 2012, attracting a growing number of supporters in an increasing number of countries. International leaders have recognised the critical importance of investing in nutrition to ensure our future global health and wealth, and as a means of building resilience in times of climatic and economic turbulence.

But continued momentum cannot be taken for granted. It will need careful nurturing, both through consistent advocacy and messaging, but most importantly by proving that the SUN approach is working.

### **Demonstrating achievements**

Moving into 2013 and beyond, demonstrating achievements will increasingly become a focus of countries in the SUN Movement. It would be helpful if national authorities could indicate the extent to which actions supported through the Movement have helped them achieve measurable reductions in stunting, wasting and other indicators of under-nutrition.

National leaders – including Ministers of Finance – together with those who provide external resources (donors, development banks and foundations) – expect to see clear demonstration of what is being achieved, in terms of progress and impact. Stimulating effective action and achievements around nutrition is a long-term project. Those engaged in the SUN Movement understand the importance of managing their expectations as they focus on supporting countries to undertake time-consuming tasks critical for sustainability – such as building multi-stakeholder platforms, establishing common strategies and organizing both programmes and future investments around agreed frameworks for results.

### **Achieving results**

The new SUN strategy is central to achieving results, but its adoption by the Lead Group is far from the end of the story. The strategy will only acquire meaning in

its application in each SUN country- and that will require the maintenance of support and consensus amongst all SUN stakeholders. As nutrition starts to scale up, the difficulties of maintaining consensus are likely to increase. As new sources of financing are identified, debate is likely to grow over where those finances should be focused. And as the SUN Networks grow, new tensions may emerge between different stakeholder groups.

Meanwhile, as SUN's global scope grows, so will demands for validation of information and effective knowledge management. The new SUN Task Groups will help to that end, but ultimately the needs will only be met by spontaneous cooperation between participating countries and organizations.

This will not always be easy, but it is the only sound basis for sustainably scaling up nutrition. Despite these challenges, the pace of progress in 2012 bodes well for the future. The road will be hard, but under-nutrition is finally getting the attention it demands. The political will is there, and the evidence for effective action is coming in. That is already an historic achievement.

# Chapter IX

## The Commitment of Indonesian Government

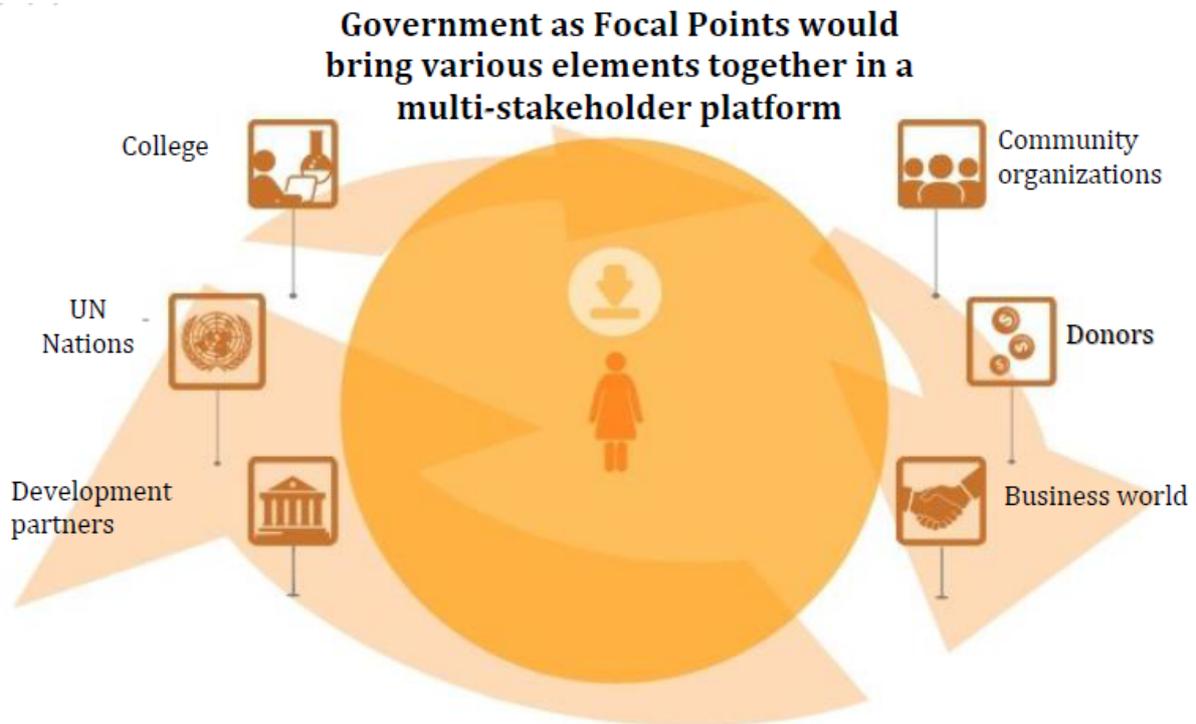


Figure 7.1

(Source: SUN Movement Strategy & Roadmap 2016-2020)

The government has committed to reduce stunting and improve sanitation standards. The National Mid-term Development Plan targets the stunting prevalence of children under five to be 32% in 2015. As the 2013 stunting prevalence is still 37%, the 5% decrease should be pursued in the near future. Indonesia also has a role in stunting prevention on the international level, by joining the Scaling Up Nutrition (SUN) Movement. SUN is a global movement with a principle that everyone has the right to adequate nutrition and food. SUN members come from various countries, civil society, the United Nations (UN), donor agencies, private sector, and researchers.

The movement is led by the SUN Movement Lead Group, with 27 members who were appointed by UN General Secretary Ban Ki-Moon in 2012. Indonesia is one of nine countries in the Lead Group, represented by Nina Sardjunani, the Deputy

Minister for Human Resources and Cultural Affairs of the Ministry of National Development Planning/National Development Planning Agency (Ministry of PPN/Bappenas). Sardjunani is also a member of Millennium Challenge Account – Indonesia (MCA-Indonesia) Board of Trustee.

In September 2012, the government launched the ‘First 1,000 Days of Life Movement’ in September 2012. The movement aims to accelerate nutrition improvement to enhance the livelihood of Indonesian children in the future. It involves various sectors and stakeholders to work together to reduce stunting prevalence and other under nutrition forms in Indonesia.

The government and other stakeholders have agreed on various specific nutrition intervention, or direct intervention, to prevent and cope with stunting, such as:

- Promotion of breast milk and its nutritious supplementary food,
- Distribution of tablets of iron, folic acid, multivitamin, and minerals for pregnant and breastfeeding women,
- Distribution of micronutrient supplement for children,
- Distribution of deworming medicine for children,
- Distribution of vitamin A supplement for children under five,
- Treatment for under-nourished children,
- Fortification of food with micronutrients such as vitamin A, iron, and iodine,
- Prevention and treatment of malaria for pregnant women and children.

In parallel, intervention is also conducted for other sectors that indirectly cause under nutrition, such as the environment, lack of access to quality health services, inadequate parenting, and food security problem in the households. The sensitive nutrition intervention, or indirect intervention, consists of:

- Intervention for healthy and clean life habits, such as washing hands with soap and clean water access improvement,
- Psychosocial stimulation for babies and children,
- Planned parenthood,
- Nutrition gardens in houses and schools,
- Food diversification,

- Quality maintenance of livestock and fisheries,
- Direct cash aid combined with other interventions such as micronutrient consumption and health and nutrition education.

The government is conducting the Sanitasi Total Berbasis Masyarakat (Community-led Total Sanitation/STBM), an approach to change hygiene and sanitation behavior through community empowerment based on triggering. The program aims to reduce diarrhea incidents and other environmental-based diseases related to sanitation and behavior. Three STBM strategy components are enabling environment, sanitation demand creation, and sanitation supply improvement. In September 2013, there are 14,189 villages that has done STBM. The number is expected to reach 20,000 villages at the end of 2014.

In terms of efforts in improving the nutrition of children under five namely exclusive breastfeeding, coverage of vitamin A capsules for children under 6-59 months, coverage of underfives weighing at posyandu and finding and handling malnutrition.

#### 1. Eksklusif Breastfeeding

Exclusive breast milk (ASI) based on Government Regulation no.33, 2012 is breast milk given to infants since birth for six months. Without adding and/ or replacing with other foods or beverages (except medicine, vitamins and minerals).

Breast milk (ASI) contains colostrum rich antibodies because they contain proteins for high immune and germ killers in high quantities so that exclusive breastfeeding can reduce the risk of death in infants. Colostrum with yellow color is produced on the first day until the third day. The fourth day until the tenth day of breast milk contains less immunoglobulin, protein and lactose but fat and calories is higher than colostrum with white color. In addition to containing food substances, breast milk also contains an enzyme in the form of a separate enzyme in the intestine. Formula milk does not contain enzymes so the absorption of food depends on the enzymes found in the baby's intestines.

According to Riskesdas 2013, the process of starting breastfeeding most occur in 1-

6 hours after birth (35.2%) and less than 1 hour (early breastfeeding initiation) of 34.5%. While the process began the lowest breastfeeding occurred at 7-23 hours after birth of 3.7%. Referring to the 2014 strategic plan target of 39%, the nationwide

coverage of exclusive breastfeeding in infants less than six months old by 55.7% has reached the target. By province, the coverage range of exclusive breastfeeding in infants aged 0-6 months was between 26.3% (North Sulawesi) to 86.9% (West Nusa Tenggara). Of the 33 provinces reporting, 29 of them (88%) succeeded in reaching 2015 strategic plan.

### Coverage of exclusive breastfeeding in infants 0-6 months based on Provinces 2015

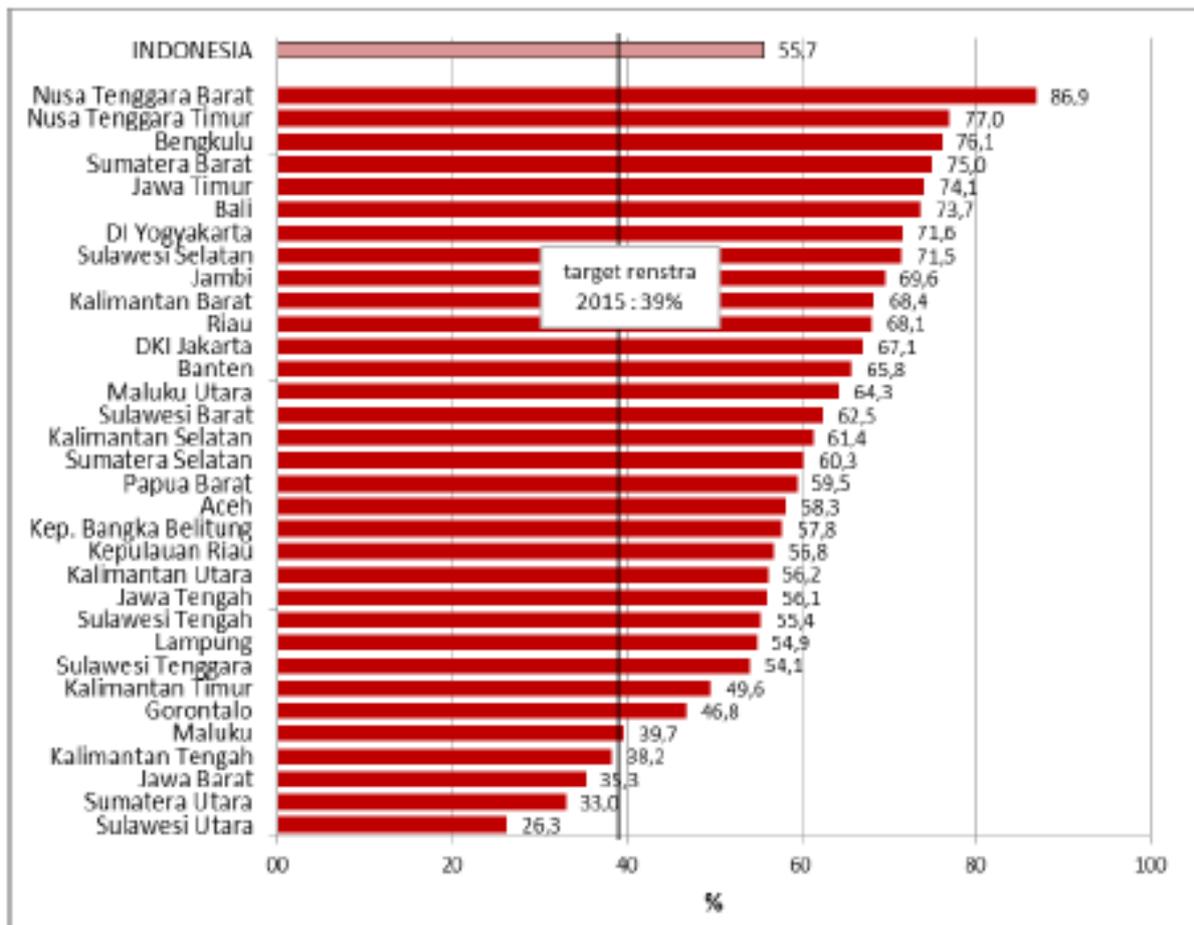


Figure 7.2

(Source: Directorate General of Public Health, Ministry of Health RI)

## 2. Scope Giving Vitamin A Capsule Age 6-59 Months

Vitamin A is one of the essential nutrients fat soluble, stored in the liver, and can not be produced by the body so it must be met from outside the body. Vitamin A deficiency (KVA) can reduce the immune system of children under five and increase the risk of illness and death. Vitamin A deficiency is also a major cause of preventable childhood blindness (

CHAPTER V FAMILY HEALTH | MINISTRY OF HEALTH RI).

In the attachment to Regulation of the Minister of Health Number 21 of 2015 stated That in order to reduce the risk of morbidity and mortality of children under five with vitamin A deficiency, the government administers Vitamin A activity in the form of a 100,000 IU blue vitamin A capsule for infants aged six to eleven months. A 200,000 IU red vitamin A capsule for children under age twelve up to fifty-nine months, and postpartum.

According to the Supplementation Management Guidelines of Vitamin A, supplementation Vitamin A is given to all children aged 6-59 months simultaneously through Posyandu. Usually in February or August in infants aged 6-11 months and February and August in children under 12-59 months.

In 2015 the coverage of Vitamin A in children 6-59 months in Indonesia up to 83.5%, slightly decreased compared to 2014 which total to 85.4%.

Thirty one provinces reporting, eleven provinces (35%) have achieved coverage of vitamin A 90%. The coverage of vitamin A in children under 5-65 months is the highest in Yogyakarta, around 98.8% and the lowest in North Sumatra is 53.2%.

## Coverage of Vitamin A Calculation on children (6-59 months) by Province in 2015

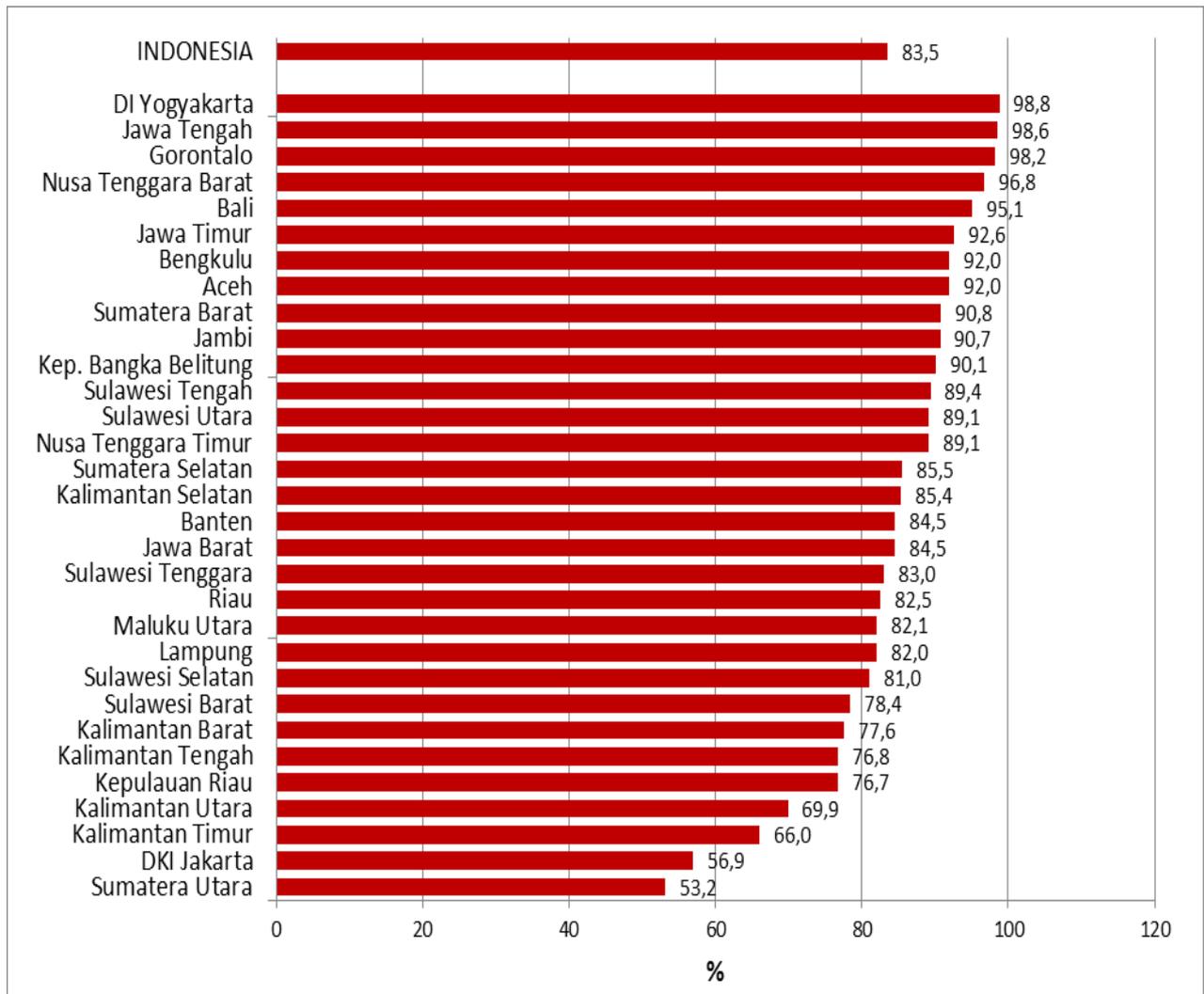


Figure 7.3

(Source: Directorate General of Public Health, Ministry of Health RI, 2016)

According to the target, coverage of vitamin A in infants 6-11 months 75.4% with a range of 16.4% (North Sumatra) to 99.3% (DI Yogyakarta). While the provision of vitamin A in children 12-59 months amounted to 84.9% with a range between 55.3% (DKI Jakarta) to 98.7% (DI Yogyakarta). The magnitude of coverage of Vitamin A is partly due to the geographical conditions and affordability of access to Posyandu sites in the distribution of Vitamin A. Provinces with high Vitamin A coverage. Coverage of balita weighing in posyandu is also high. Similarly, in contrast, provinces with low vitamin A coverage such as Papua and West Papua are

caused by the level of community participation in weighing of under-fives in posyandu (D / S) is also low due to geographic constraints.

Provision of Vitamin A capsules in the provinces of DKI Jakarta and North Sumatra very low due to incomplete recording and reporting. Not all activities in the area are reported, including sweeping activity of Vitamin A capsule by health personnel. The achievement of Vitamin A in infants, toddlers, and toddlers by province in detail can be seen in figure 7.3.

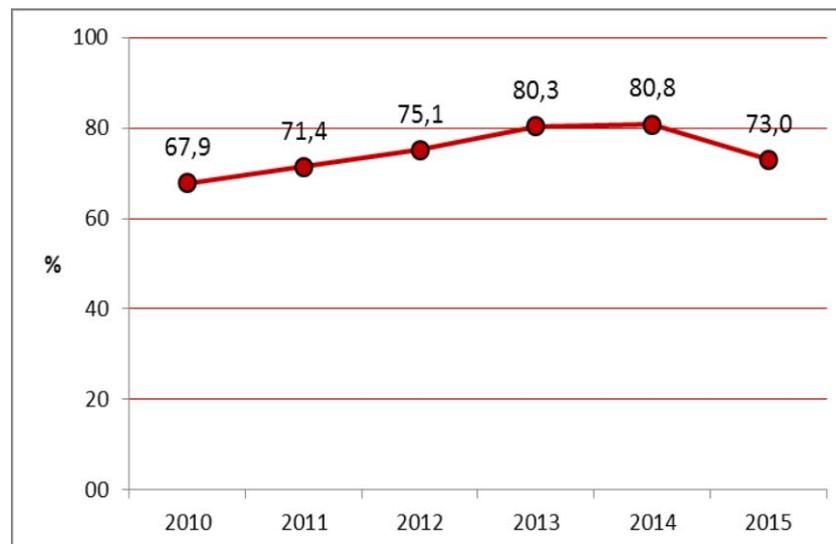
## 2. Coverage of Underfive Weighing at Posyandu (D/S)

The coverage of under five weighing at posyandu (D/S) is the number of balita weighed. In all posyandu reporting one working area at a certain time divided by time. Community participation in weighing of under-fives is very important in early detection of malnutrition and malnutrition cases.

By diligently weighing children under five, the growth of children under-five can be monitored intensively. So that if the child's weight does not rise or if found the disease will be able to immediately do recovery and prevention efforts so as not to become malnourished. The sooner found the handling of less nutrition cases or malnutrition will get better. Handling which is fast and appropriate in accordance with the malnutrition case of children will reduce the risk of death so that the number of deaths due to malnutrition can be suppressed.

Follow up of weighing outcomes other than counseling is also provision of food addition and nutritional supplements. Malnutrition can occur in all age groups but that needs to be more attention that is in the group of infants and toddlers. At that age of 0-2 years is a period of optimal growth (golden period), especially for fetal growth negatively affect the quality of future generation.

## TREND COVERAGE OF UNDER-FIVE WEIGHING (D/S) IN INDONESIA 2010-2015

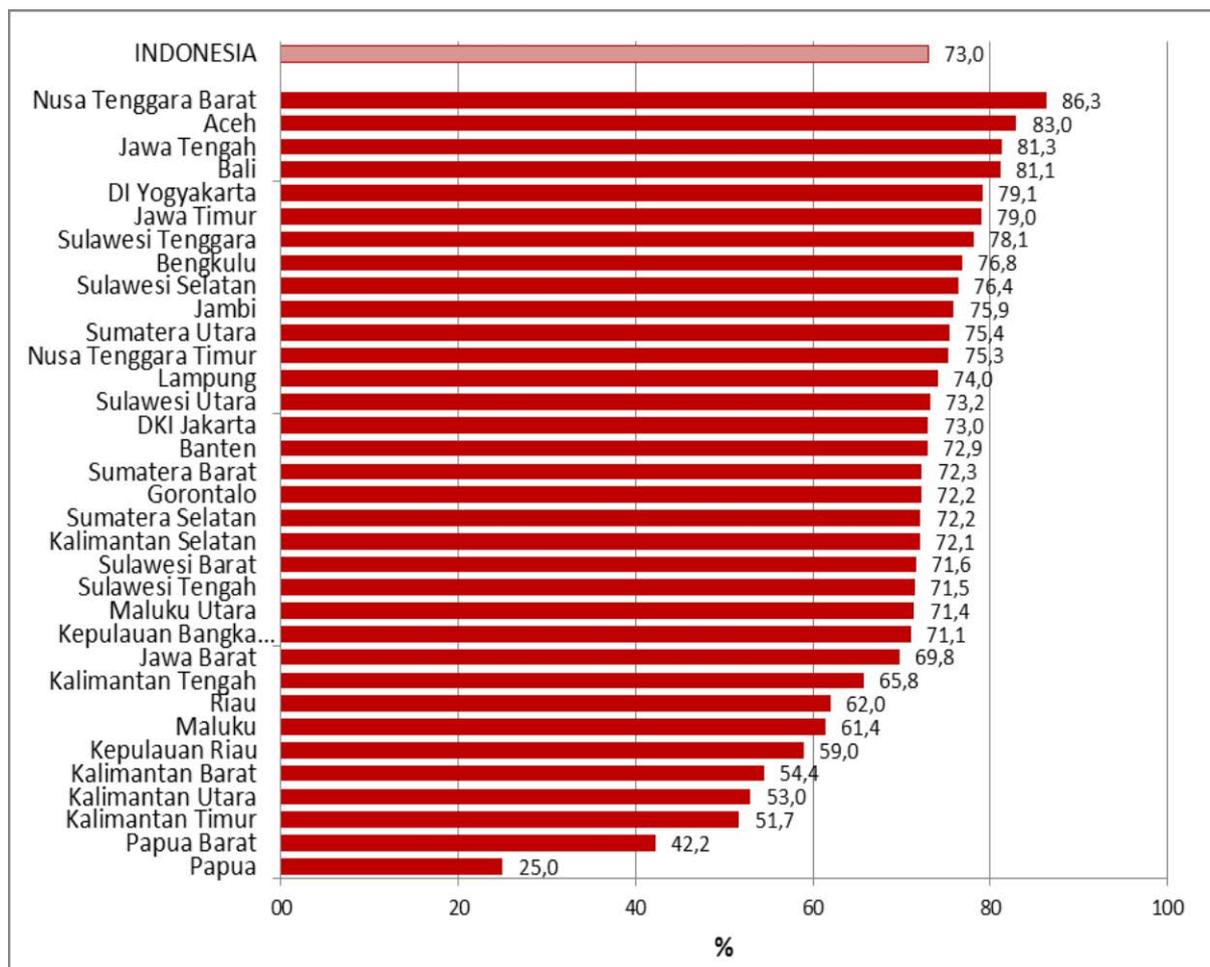


(Source: Directorate General of Public Health, Ministry of Health RI, 2016)

### Coverage of toddler weighing from 2010 to 2014 in Indonesia

tends to increase. But in 2015 there was a decrease to 73.0%, it is due in 2015 there is a shift RPJMN (National Medium Term Development Plan) 2015-2019 where there is development of program targets and the addition of new indicators related to Renstra Kemenkes. It impact to the coverage and target weighing under five in posyandu not well socialized.

## COVERAGE OF UNDER-FIVE WEIGHING (D/S) IN INDONESIA 2010-2015 BASED ON PROVINCES



(Source: Directorate General of Public Health, Ministry of Health RI, 2016)

### 3. Invention and Treatment of Malnutrition

Based on the weighing of children under five in posyandu, there were 26,518 malnutrition cases nationally. The malnutrition case is determined based on the weight calculation according to Zscore <-3 standard deviation (toddler is very thin). Meanwhile, according to Riskesdas 2013, the prevalence of very underweight nutrition in infants by 5.3%. If estimated against the number of under-five target (S) enrolled in the posyandu reporting (21,436,940) then the estimated number of malnourished children (very thin) is about 1.1 million people. Thus the discovery of malnutrition case malnutrition is still far compared Estimated cases of malnutrition in the community. Therefore, efforts are needed to increase community participation in weighing balitanya because the coverage of underfive weighing has not reached three quarters of the number of children registered in posyandu who report. While balita weighing activities conducted in posyandu expected to reach at least 80% and the rest can be achieved through sweeping (sweeping) by health workers to toddlers. In addition, improving the skill of Posyandu (cadre) officers to detect the nutritional status of toddlers also needs to be

improved. Efforts have been made to increase community participation in toddler weighing at posyandu Namely through cross-program and cross-sectoral cooperation, and involving the active role of the community in weighing under five.

#### 4. Energy Sufficiency Level

The level of energy sufficiency is the percentage of energy intake per person per day against the Recommended Energy Sufficiency (AKE) recommended for each age group and gender. AKE used is based on Permenkes Number 75 Year 2013 on the number of nutritional adequacy recommended for the Indonesian nation.

##### A) Population Proportion According to the Energy Sufficiency Classification

Classification of the energy adequacy level of the population nationally and province Described as follows:

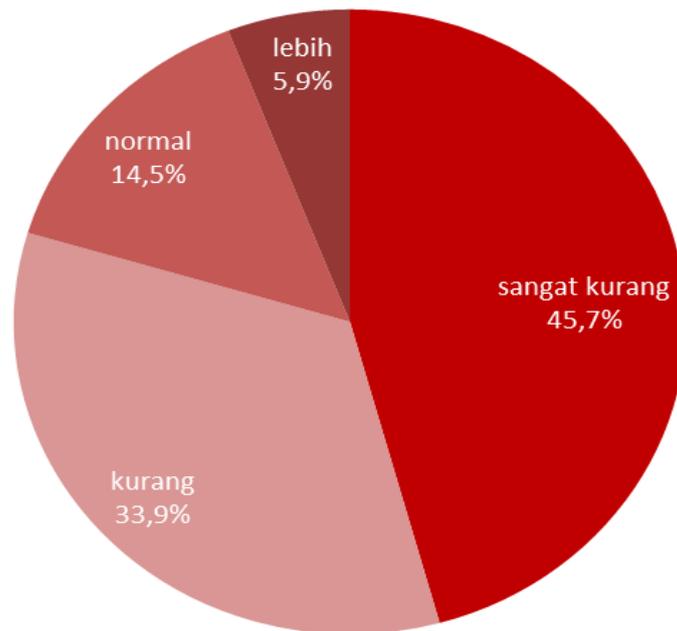
I. The minimum or very less energy sufficiency level of AKG (<70% AKE) means consuming less energy than 70% AKE

li. Energy sufficiency level less than AKG (70 - <100% AKE) means consuming energy between 70 to less than 100% AKE

lii. AKG or normal energy adequacy level (100 - <130% AKE) means consuming energy between 100 to less than 130% AKE

lv. The energy adequacy level greater than the AKG ( $\geq$ 130% AKE) means consuming energy equal to or greater than 130% AKE

POPULATION PROPORTION BY ENERGY CLASSIFICATION IN  
2014



(Source: Agency for Health Research, Ministry of Health RI, Total Dietary Studies 2014)

According to the Total Diet Survey of 2014, most of the population in Indonesia has a sufficiency level of energy that is very low and less than 79.6%, consisting of 45.7% of the population with very low / minimal energy adequacy and 33.9% of the population with less energy sufficiency.

Karakteristik	Sangat kurang	Kurang	Normal	Lebih
<b>Kelompok Umur</b>				
0-59 bulan	6,8	48,9	27,1	17,1
5-12 tahun	29,7	40,1	19,9	10,2
13-18 tahun	52,5	30,3	12,2	5,0
19-55 tahun	50,0	32,5	12,9	4,6
>55 tahun	44,6	33,5	15,5	6,3
<b>Jenis Kelamin</b>				
Laki-laki	44,7	34,3	14,9	6,1
Perempuan	46,7	33,4	14,1	5,8
<b>Tempat Tinggal</b>				
Perkotaan	42,4	34,8	16,1	6,9
Perdesaan	49,2	32,9	12,9	4,9
<b>Kuintil Indeks Kepemilikan</b>				
Terbawah	55,0	30,8	10,5	3,7
Menengah Bawah	48,9	33,6	12,6	4,9
Menengah	45,7	34,0	14,8	5,5
Menengah Atas	42,7	34,3	16,0	7,0
Teratas	39,4	35,8	17,1	7,7

(Source: Ministry of Health Research and Development Agency, Diet Study 2014)

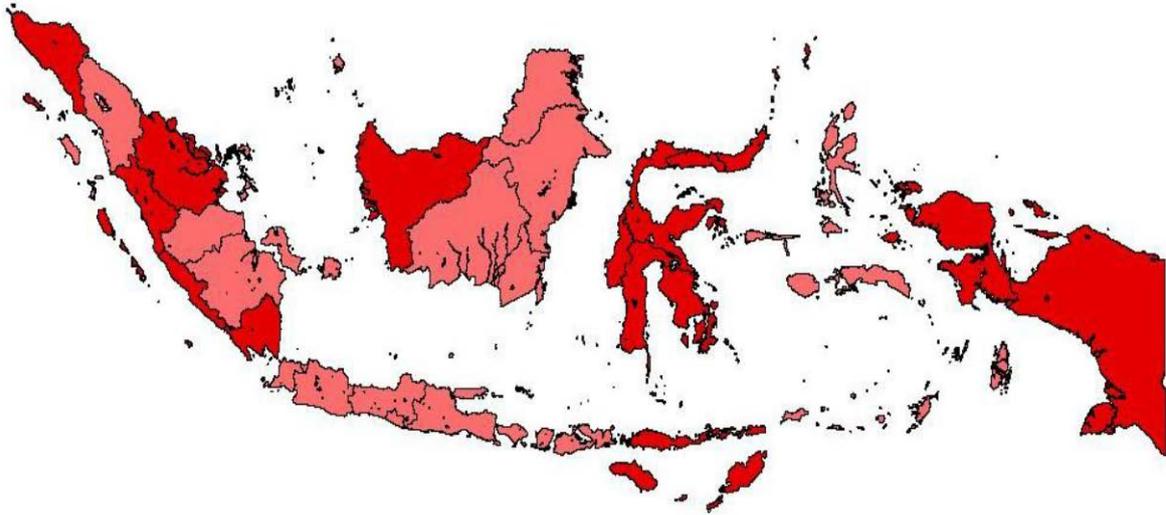
In the normal energy adequacy group, the higher the age group The lower the percentage of the population with normal energy adequacy levels. Except in the age group > 55 years. So is the case with normal energy sufficiency groups. And vice versa occurs in the group the level of energy sufficiency is very less. The pattern of urban population distribution by energy level group is equal to Which occurred in rural areas. The slight difference occurs in the magnitude of the numbers, In rural areas the percentage of the energy group is considerably less than urban. And conversely the percentage of groups of normal and more energy levels, More common in urban than in rural areas. The higher the quintile of the ownership index (the higher the economic level), the lower the proportion of the population with less energy sufficiency. The higher it is Quintile ownership index the higher the proportion of the population with normal and more energy sufficiency levels. There is no significant difference in the overall classification of energy adequacy levels in males and females.

B) Average Energy Sufficiency Rate in Toddlers Age 0-59 Months Nationally, the average energy intake of 0-59 months of age population in Indonesia Of 1,137 Kcal, higher than the recommended energy (1,118 Kcal). The average of urban energy intake (1,190 Kcal) is higher than that of In rural areas (1,081 Kcal). According to the level of energy adequacy, the average level of energy sufficiency of the

population

Age 0-59 months in Indonesia 101.0%, in urban 104.1% and in rural areas 97.7%.

ENERGY DEFERRED LEVEL ON THE AGE OF 0-59 MONTHS  
BY PROVINCE IN  
2014



(Source: Ministry of Health Research and Development Agency, Diet Study 2014)

A total of 18 provinces (55%) have an average population energy intake level Age 0-59 normal months. While the other 15 (45%) have an average level of energy intake less population. None of the provinces with an average level of energy intake are very or less. The average energy intake rate of 0-59 month high population is DKI Jakarta (114.4%) and lowest East Nusa Tenggara (92.3%).

#### 6. Protein Sufficiency Level

Protein adequacy rate is the percentage of protein intake per person per day To Sufficiency Protein (PPA) recommended for each age group and gender. The PPA used is based on Permenkes Number 75 Year 2013.

POPULATION PROPORTION BY CLOTIFICATION OF PROTEIN AND PROTEIN LEVEL CHARACTERISTICS IN 2014

Karakteristik	Sangat Kurang	Kurang	Normal	Lebih
Kelompok Umur				
0-59 bulan	23,6	10,6	11,5	54,2
5-12 tahun	29,3	16,1	14,7	39,9

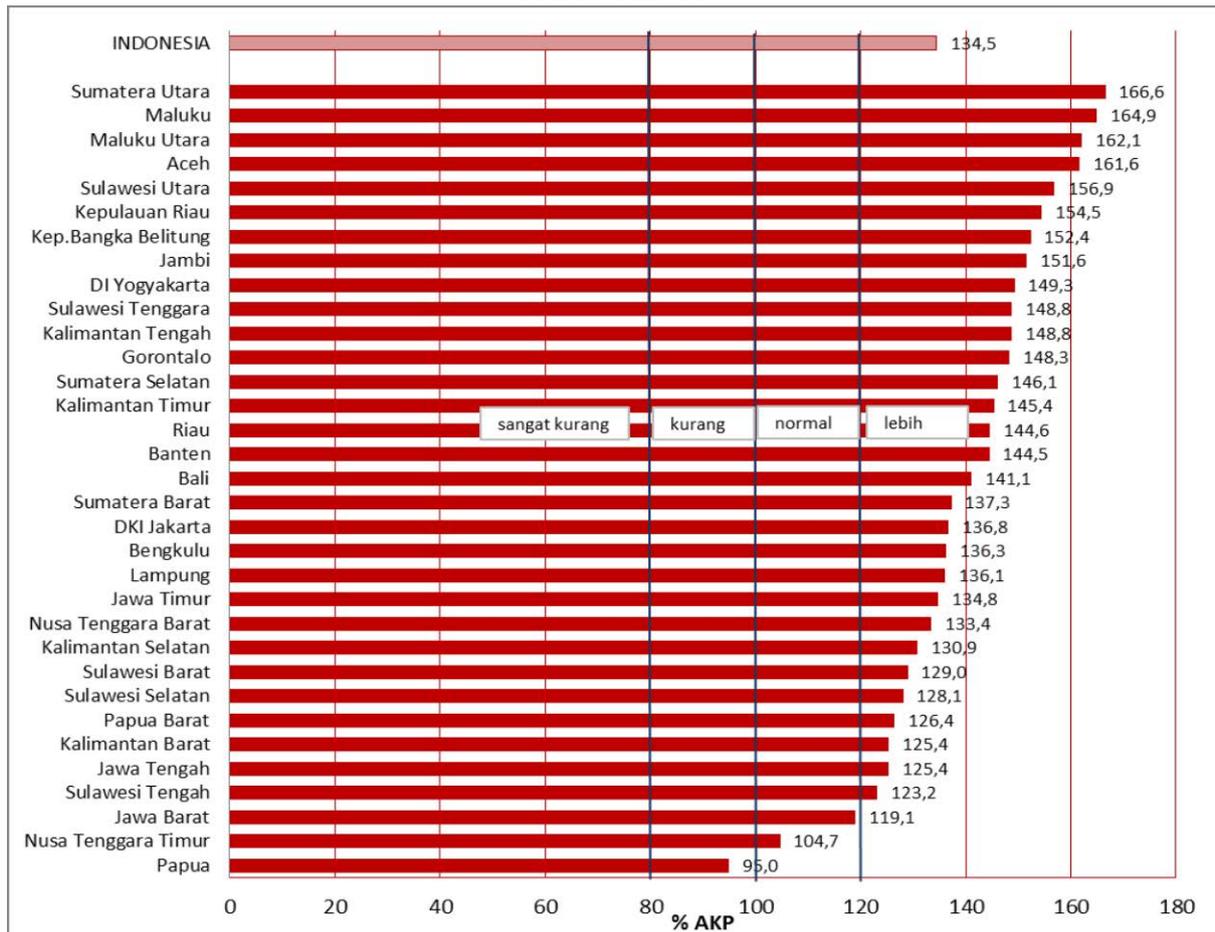
(Source: Ministry of Health Research and Development Agency, Diet Study 2014)

Mean of Protein Sufficiency Rate at Toddler Age 0-59 Month The average of PPA (gram) in each province is calculated based on PPA recommended according to age and sex and adjusted to sample structure in each province. Nationally, the average protein intake of 0-59 months old in Indonesia is 36.8 grams, above the PPA (25.5 grams). Higher protein intake in urban areas (39.2 grams) compared to rural (34.4 grams), both in urban and rural areas has reached 25.5 gram PPA.

According to the level of protein adequacy, the average level of protein sufficiency age group

0-59 months in Indonesia has exceeded the PPA of 134.5%. Of 33 provinces, only Papua with a sufficiency level of protein below 100% (95%). The mean protein adequacy rate in urban areas was higher (142.5%) than in rural areas (126.2%).

## RERATA TINGKAT KECUKUPAN PROTEIN PADA BALITA UMUR 0-59 BULAN TAHUN 2014



(Source: Ministry of Health Research and Development Agency, Diet Study 2014)

Only 2 provinces with average protein intake of 0-59 month normal population, namely West Java and East Nusa Tenggara. While the other 30 provinces have protein intake population 0-59 months of age more than 120% PPA.

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**Annex 1:  
Implementation of Breast-Milk Substitute International Code of Marketing**

<b>SUN Country</b>	<b>Legislation status of the Code</b>	<b>Scope of the Code</b>	<b>Implementation &amp; Monitoring Mechanism</b>
Bangladesh	Many provisions into law	0-24 months	Not functioning
Benin	Fully into law	0-12 months	Fully functioning
Burkina faso	Fully into law		
Ethiopia	Few provisions into law		(new law tabled)*
The Gambia	Fully into law		
Ghana	Fully into law	No age limit	Fully functioning
Guatemala	Fully into law		Fully functioning
Haiti	Drafted measures awaiting final approval		
Indonesia	Many provisions into law		
Kyrgyz Rep	Many provisions into law		
Lao PDR	Many provisions into law		(new law tabled)*
Madagascar	Fully into law	0-6 months	Partially functioning
Malawi	Many provisions into law		
Mali	Many provisions into law		
Mauritania	Still into law		
Mozambique	Fully into law	0-36 months	Partially -> fully functioning
Namibia	Drafted measures awaiting final approval		
Nepal	Fully into law		Not functionig
Niger	Many provisions into law	0-60 months	Fully functioning
Nigeria	Many provisions into law	0-36 months	Fully functioning
Peru	Fully into law	0-24 months	Fully functioning
Rwanda	Drafted measures awaiting final approval		
Senegal	Many provisions into law		
Sierra leone	Drafted measures awaiting final approval		
Tanzania	Fully into law	0-12 months	Fully functioning
Uganda	Fully into law		
Zambia	Many provisions into law	0-24 months	Fully functioning
Zimbabwe	Fully into law	0-60 months	Fully functioning

## ANNEX 2 :

### Maternity Legal Framework

SUN Country	Length of leave (Minimum recommended 14 weeks)	% of wages (Minimum recommended : 2/3 of previous earnings)	Source of funding of wage
Bangladesh	16 weeks  (24 weeks)*	100 %	Employer liability
Benin	14 weeks	100 %	50% Social Security  50% Employer
Burkina faso	14 weeks	100 %	50% Social Security  50% Employer
Ethiopia	90 days	100 %	Employer liability
The Gambia	12 weeks (6months)*	100 %	Employer liability
Ghana	14 weeks	100 %	Employer liability
Guatemala	84 days	100 %	2/3 Social security  1/3 Employer
Haiti	12 weeks	100 % for 6 weeks	Employer liability
Indonesia	3 month	100 %	Employer liability
Kyrgyz Rep	126 days	100 % first 10 days 10 times minimum wage for remaining days	State (employer pays and get refunded)
Lao PDR	90 days	100 %	Social liability
Madagascar	14 weeks	100 %	50% Social Security  50% Employer
Malawi	8 weeks	100 %	Employer liability
Mali	14 weeks	100 %	Social liability
Mauritania	14 weeks	100 %	Social liability
Mozambique	60 days	100 %	Employer liability

Namibia	12 weeks	100 %	Social liability
Nepal	52 days	100 %	Employer liability
Niger	14 weeks	50%	
Nigeria	12 weeks	50%	Employer liability
Peru	90 days	100 %	
Rwanda	12 weeks	100 % first 6 weeks 20% remaining 6 weeks	Employer liability
Sierra leone	12 weeks	100 %	Employer liability
Senegal	14 weeks	100 %	Social liability
Tanzania	84 days	100 %	Social liability
Uganda	60 days	100 % first month	Employer liability
Zambia	12 weeks	100 %	Employer liability
Zimbabwe	16 weeks	100 %	Employer liability

**Data Source:** Maternity at work: a review of national legislation / International Labour Office, Conditions of Work and Employment Branch. Second edition. - Geneva: ILO, 2010

\*Complementary information provided by country when different from source

### **ANNEX 3: Status of Flour Fortification**

<b>SUN Country</b>	<b>Status of flour fortification WHEAT</b>	<b>Status of flour fortification MAIZE</b>
Bangladesh	Voluntary	
Benin	Planning	Reported no fortification
Burkina faso	Planning	Reported no fortification
Ethiopia	Planning	Being considered
The Gambia	Reported no fortification	Reported no fortification
Ghana	Mandatory	
Guatemala	Mandatory	
Haiti	Mandatory	
Indonesia	Mandatory	
Kyrgyz Rep	Mandatory	
Lao PDR		
Madagascar	Reported no fortification	Reported no fortification

Malawi	Planning	Voluntary
Mali	Mandatory	
Mauritania	Mandatory	
Mozambique	Planning	
Namibia	Voluntary	Voluntary
Nepal	Mandatory	
Niger	Planning	
Nigeria	Mandatory	
Peru	Mandatory	Mandatory
Rwanda	Planning	
Sierra leone	Voluntary	Voluntary
Senegal	Mandatory	Reported no fortification
Tanzania	Mandatory (finalized)	
Uganda	Voluntary	Voluntary
Zambia	Voluntary	Voluntary
Zimbabwe	Voluntary	Voluntary

**ANNEX 4:  
Policy and legislation framework for scaling up nutrition**

<b>SUN Country</b>	<b>Updated nutrition policy and strategy in place</b>	<b>Updated sector policies and strategies with relevance to nutrition</b>	<b>Costed nutrition plans</b>
Bangladesh	Action plan (2011 – 16)	Yes	Being finalised
Benin	Yes (2009)	Yes	Yes
Burkina faso	Yes (2010 – 15)	Yes	Yes
Ethiopia	Yes (2008-13); being updated	Yes	Yes
The Gambia	Yes (policy 2010-20; plan 2011-15)	Yes	Yes
Ghana	Policy (2011) being finalised	Yes	No
Guatemala	Yes (2009-12); “zero Hunger” (2012)	Yes	Yes
Indonesia	Yes (2011-15)	Yes	Being developed

Kyrgyz Rep	Action Plan II (2012)	Yes	Being developed
Lao PDR	Yes (since 2009)	Yes	No
Madagascar	Action plan II (2012)	Yes	Yes
Malawi	Yes (since 2009)	Yes	Yes
Mali	Policy (2011) being endorsed	Yes	No
Mauritania	Yes (up to 2015)	Yes	Yes – investment case being developed
Mozambique	Yes (2011-15)	Yes	Yes
Namibia	Yes (since 2010)	Yes	Yes (advocacy tool)
Nepal	Yes (updated 2012)	Yes	Yes
Niger	Yes (policy 2012-21; plan 2011-15)	Yes	Yes
Nigeria	Yes (2004), new policy being developed	Yes	No
Peru	Yes (2006); being updated 2012 under MDIS	Yes	Yes
Rwanda	Yes (2010-13)	Yes	Yes
Sierra leone	Implementation plan (2012) being finalised	Yes	Being finalised
Senegal	Yes (2002-11), Strategic plan 2012-17) being updated	Yes	Being updated
Tanzania	Yes (up to 2015)	Yes	Being finalised
Uganda	Yes (2011-16); Food and Nutrition Bill being enacted	Yes	Yes
Zambia	Yes (2011-15)	Yes	Yes
Zimbabwe	Yes (strategy 2011-13)	Yes	Yes

**Buku**

# **Scalling Up Nutrition The Future of Indonesia**



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