Achieving Food & Nutrient Security to Fight Against Double Burden of MalNutrition in Indonesia

Elviyanti , MSc.
World Food Programme, Indonesia

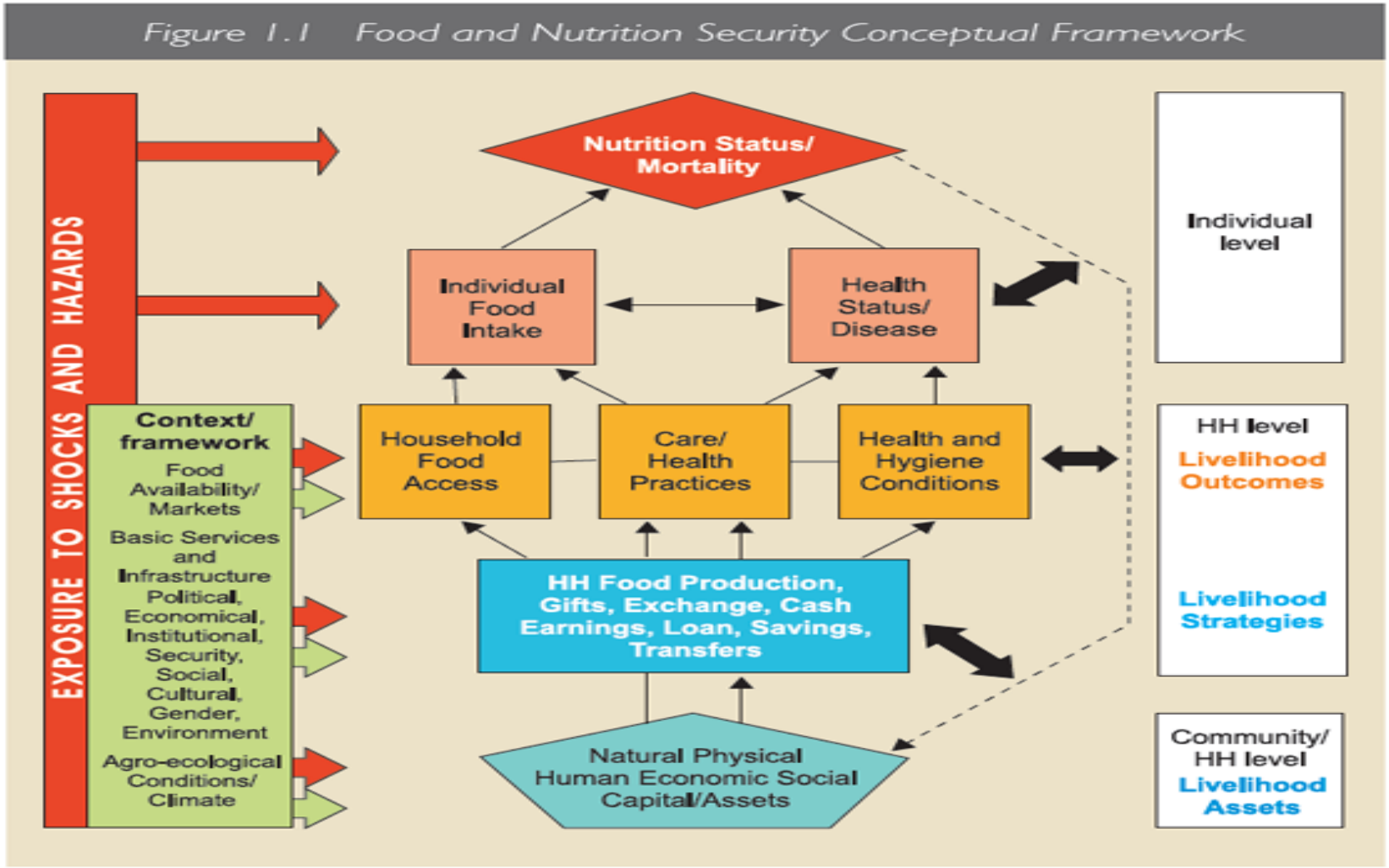
Indonesia

237 million population

- **Emerging low middle income country**
- **G20 member**
- **The largest ASEAN economy**
- **One of the Asia's most vibrant and decentralized democracies**
- **Largest Muslim population**

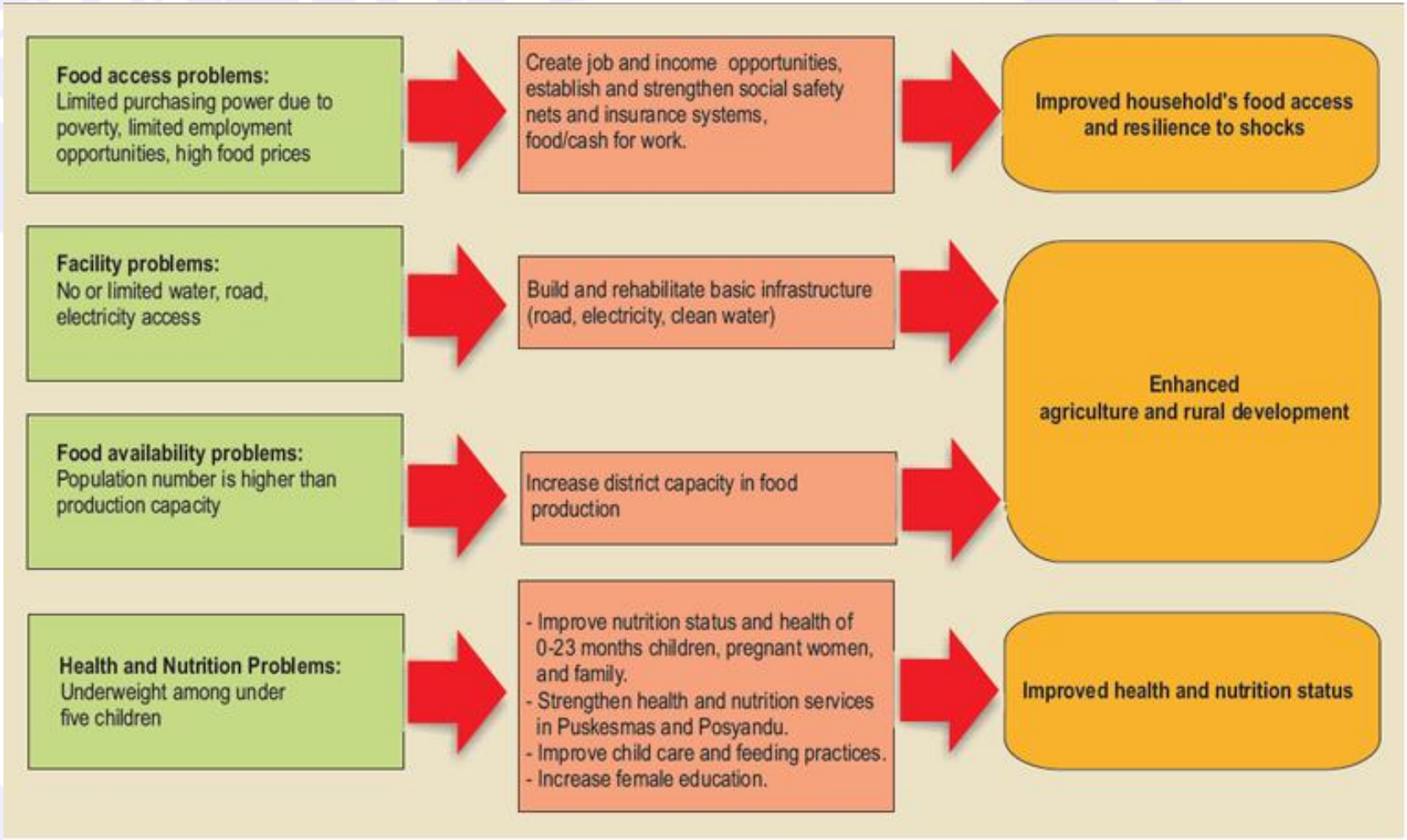
- Large nutritional disparities prevail, particularly in the eastern part of the country
  - Underweight 18%
  - Stunting 35.6%
  - Wasting 14.3%
- 25 millions Indonesian are food insecure
- Prone to recurrent natural disaster and increasingly impacted by climate change

Food and Nutrition Security Conceptual Framework



Source: WFP, January 2009

Intervention Framework to Improve Food and Nutrition Security



Food Security

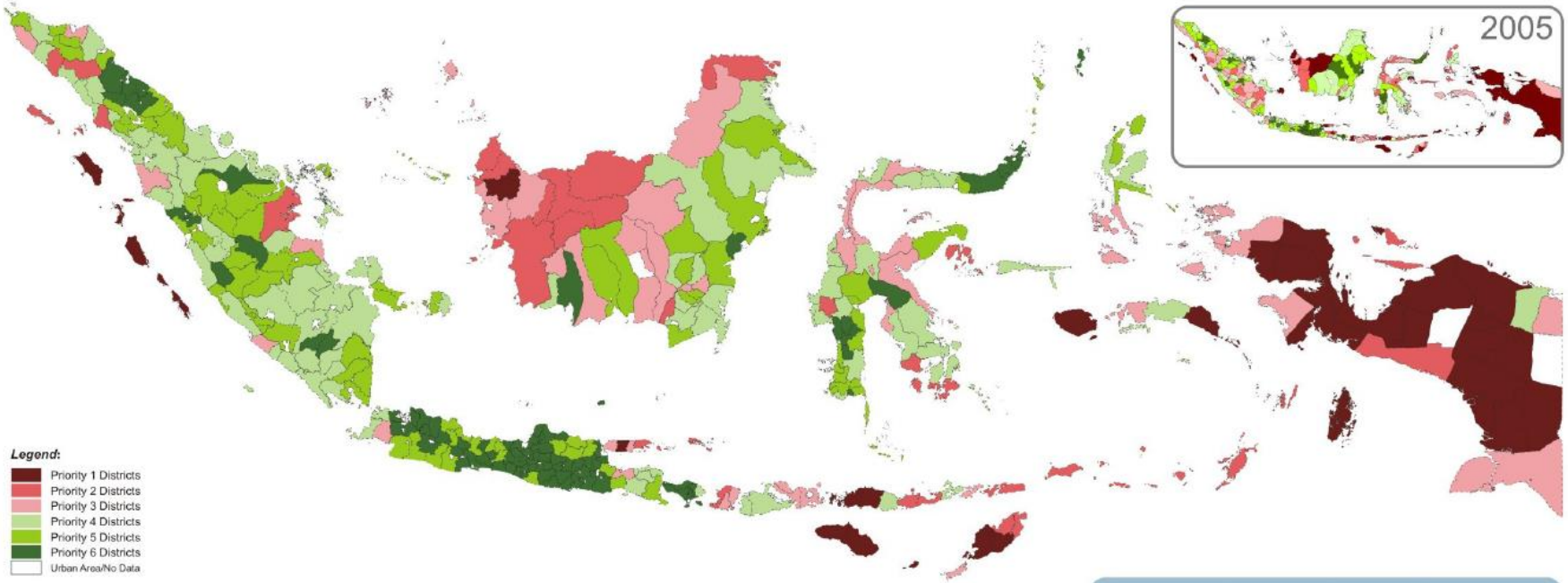
- The World Food Summit of 1996 defined food security as existing “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life”
- The concept of food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences
- Food security is built on three pillars:
  - Food availability: sufficient quantities of food available on a consistent basis.
  - Food access: having sufficient resources to obtain appropriate foods for a nutritious diet.
  - Food utilization: appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation

Food Security (UU No. 7 1996)

- Food Security as a condition when all people in the households have sufficient food at all time, represented as sufficient quantity and quality of food is safe and achievable conditions
- The increase in food needs is faster than the increase in rate food production
- The high rate of population growth in Indonesia is another challenge in fulfilling food needs
  - According to International Food Policy Research Institute, total food production globally increases only about 1 to 2 percent per year, while total world population increases approximately 4%

Food Security and Vulnerability Atlas of Indonesia

The collaboration between Food Security Council (FSC) and World Food Programme (WFP) brings us the Food Security and Vulnerability Atlas (FSVA) of Indonesia which covers 346 rural districts and 32 provinces. FSVA serves as a tool for evidence-based decision making in targeting and planning actions for food and nutrition security.



WFP

wfp.org

DEWAN KETAHANAN PANGAN

http://foodsecurityatlas.org/idn/country

9 Indicators of Composite Food Security Index:

Dimensions of Food Security:

1. Food Availability
2. Food and Livelihoods Access
3. Food Utilization
4. Vulnerability to Transient Food Insecurity

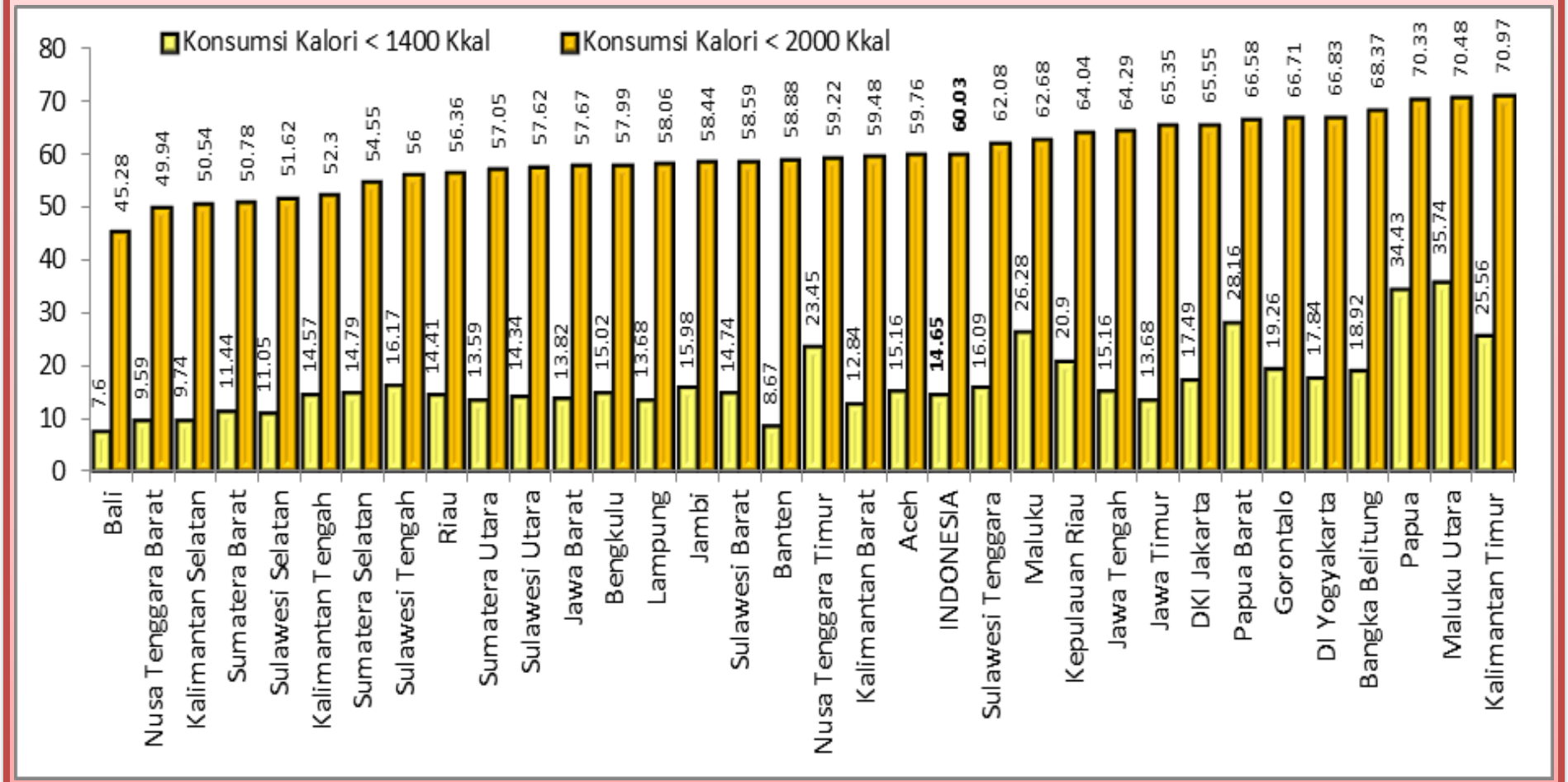
Key findings :

1. Agricultural output is growing at a high rate (about 3.5% per year during 2004-2007) and reached 4.8% in 2008;
2. 94% of households had access to the nearest health facilities located within five km;
3. 21% of households did not have access to improved drinking water;
4. The national female illiteracy rate was 12.89%. The highest illiteracy rate was in Papua (32%), NTB (27%) and Bali (21%) provinces;
5. Higher underweight was found in NTT, Maluku, Kalimantan Selatan, NAD, Sulawesi Barat and Gorontalo provinces;
6. Out of 346 districts, 100 districts are ranked as higher priority based on The Composite Food Security Index; and
7. Among 100 districts of Priorities 1-3 in the FSVA 2009, 38 are newly established districts.

Recommendations:

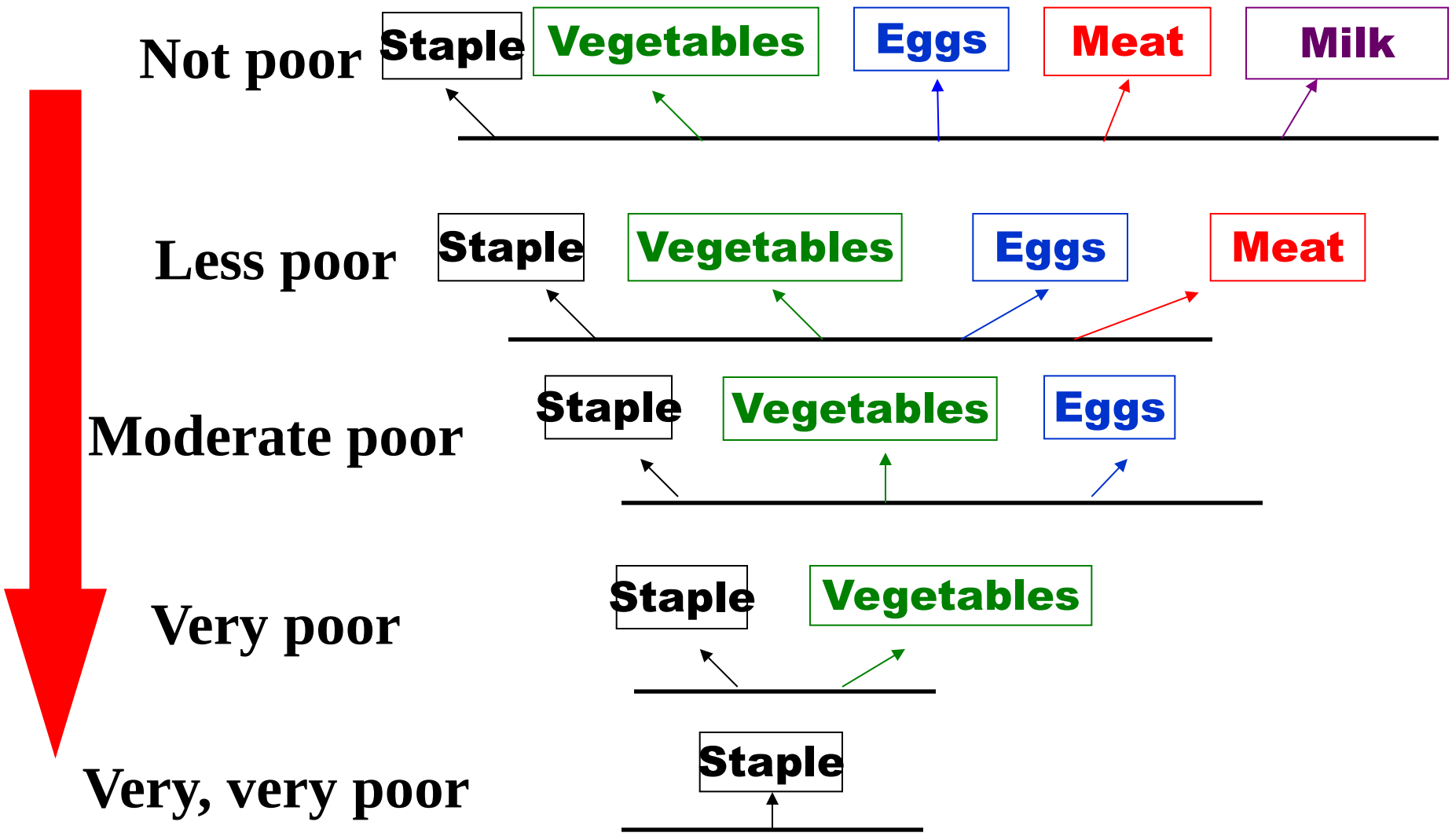
1. Improve food production to fulfill the food requirement in the country by improving agricultural infrastructure, natural and environmental resources and institutional capacity to manage food stocks at local level.
2. The Government's policies and programmes in poverty reduction should be directed to the control of natural resources exploitation with attention on security and the preservation of natural environment and needs to maintain its focus on pro-poor economic growth.
3. Climatic Change Adaptation will be one of the key factors for sustainable improvements in food and livelihood access of the vulnerable households.
4. The nutrition strategies should focus on nutritionally vulnerable groups, including under two years old children and pregnant and lactating women
5. Develop district and community level contingency plans for natural disaster in disaster prone districts

PROPORSI PENDUDUK DENGAN ASUPAN KALORI < 1.400 KKAL DAN < 2.000 KKAL TAHUN 2011



Sumber Data : Susenas 2011

Poor → less dietary diversity



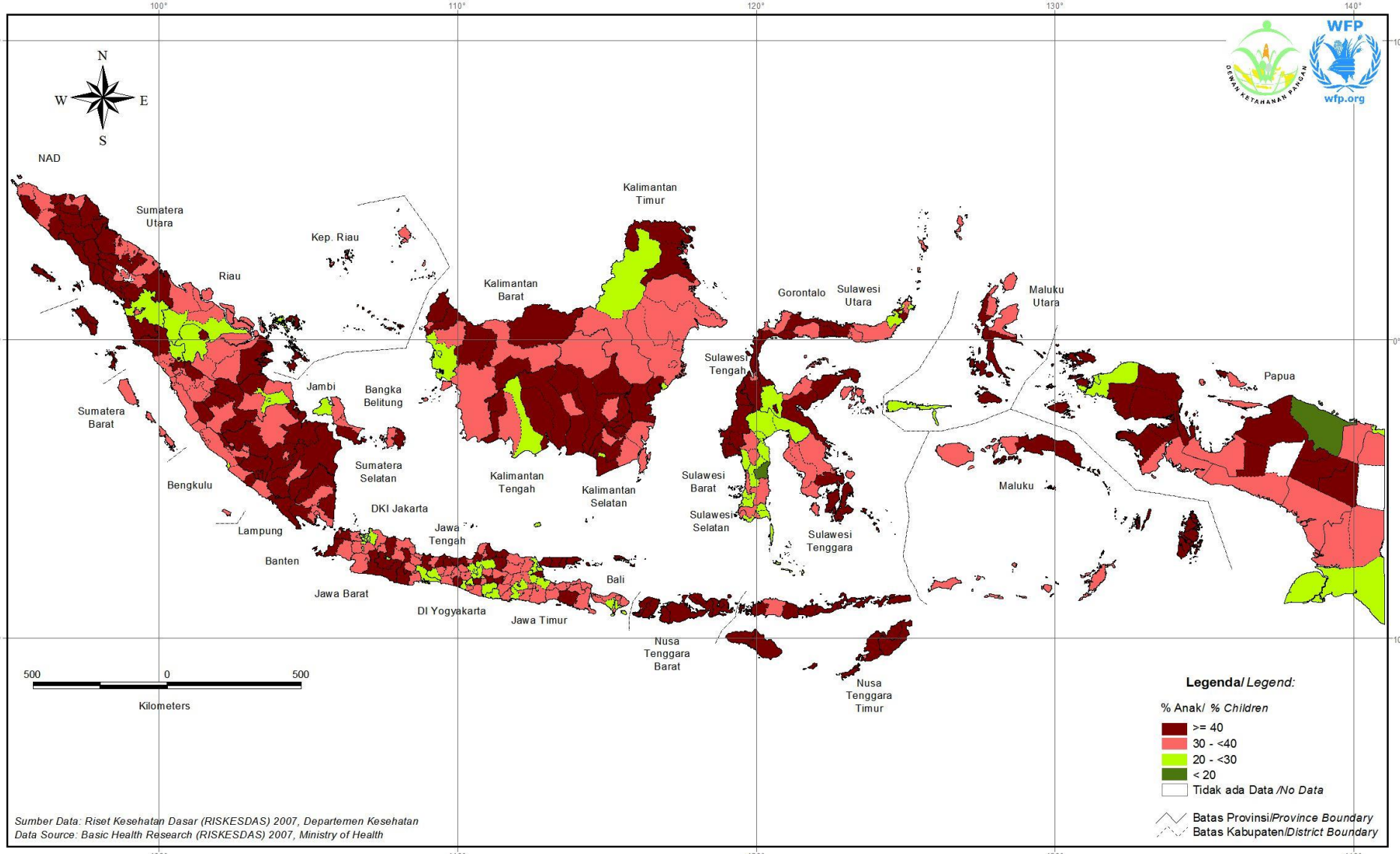
Chronic malnutrition - stunting

- **Growth faltering**
- **Children are smaller and shorter but appear to be normal**
- **Starts in utero, growth failure in a child that occurs over a slow cumulative process as a result of an inadequate nutrition and/or repeated infections.**
- **Stunting is measured by the height-for-age index.**
- **Country level prevalence varies 23% - 58%**

Acute under-nutrition - Wasting

- **Growth failure as a result of a recent rapid weight loss or failure to gain weight.**
- **It can be both related to lack of protein and energy (macronutrients), but also to a lack of micronutrients (vitamins and minerals).**
- **Wasted children are extremely thin.**
- **Wasting is measured by the weight-for-height index.**

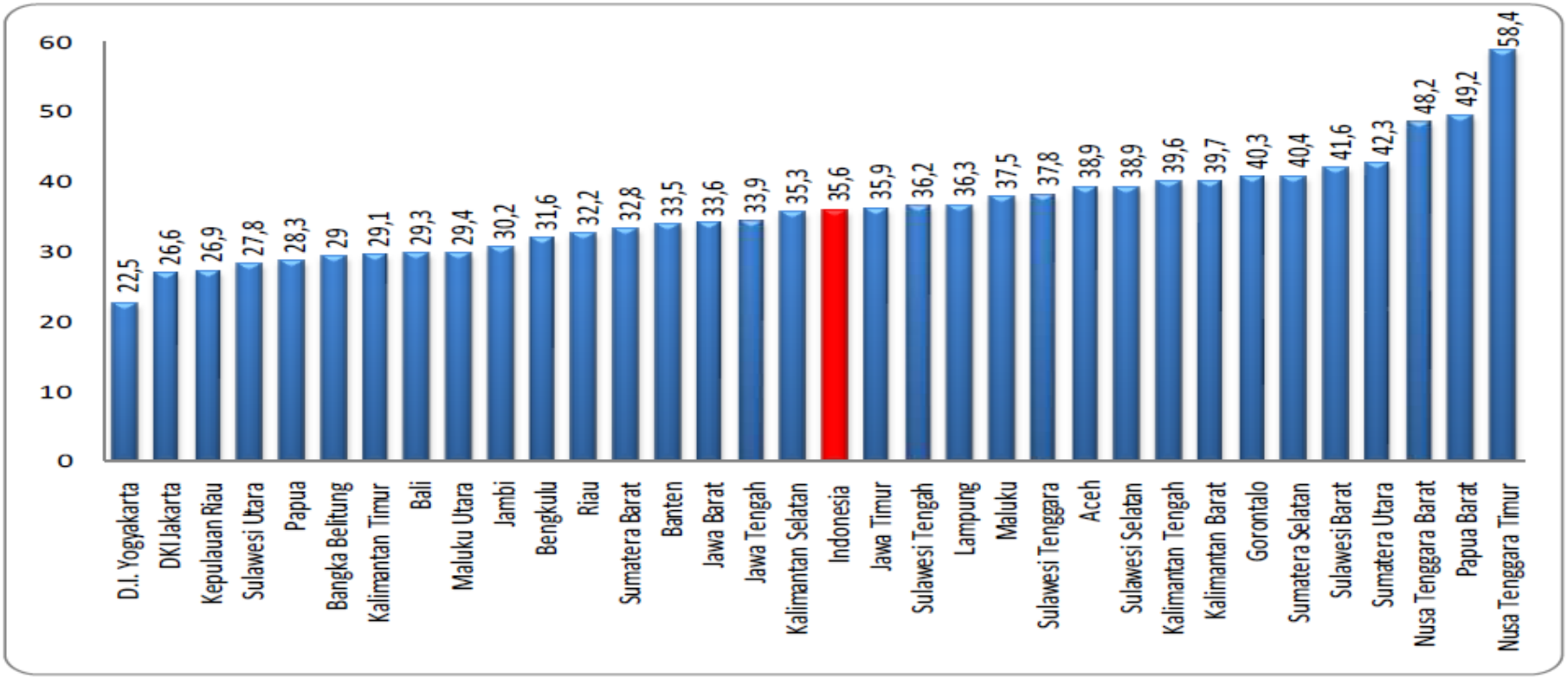
Peta 4.4/*Map 4.4*
Tinggi badan Anak (< 5 Tahun) di Bawah Standar
Children (< 5 Yr.) Stunting



Sumber Data: Riset Kesehatan Dasar (RISKESDAS) 2007, Departemen Kesehatan
Data Source: Basic Health Research (RISKESDAS) 2007, Ministry of Health

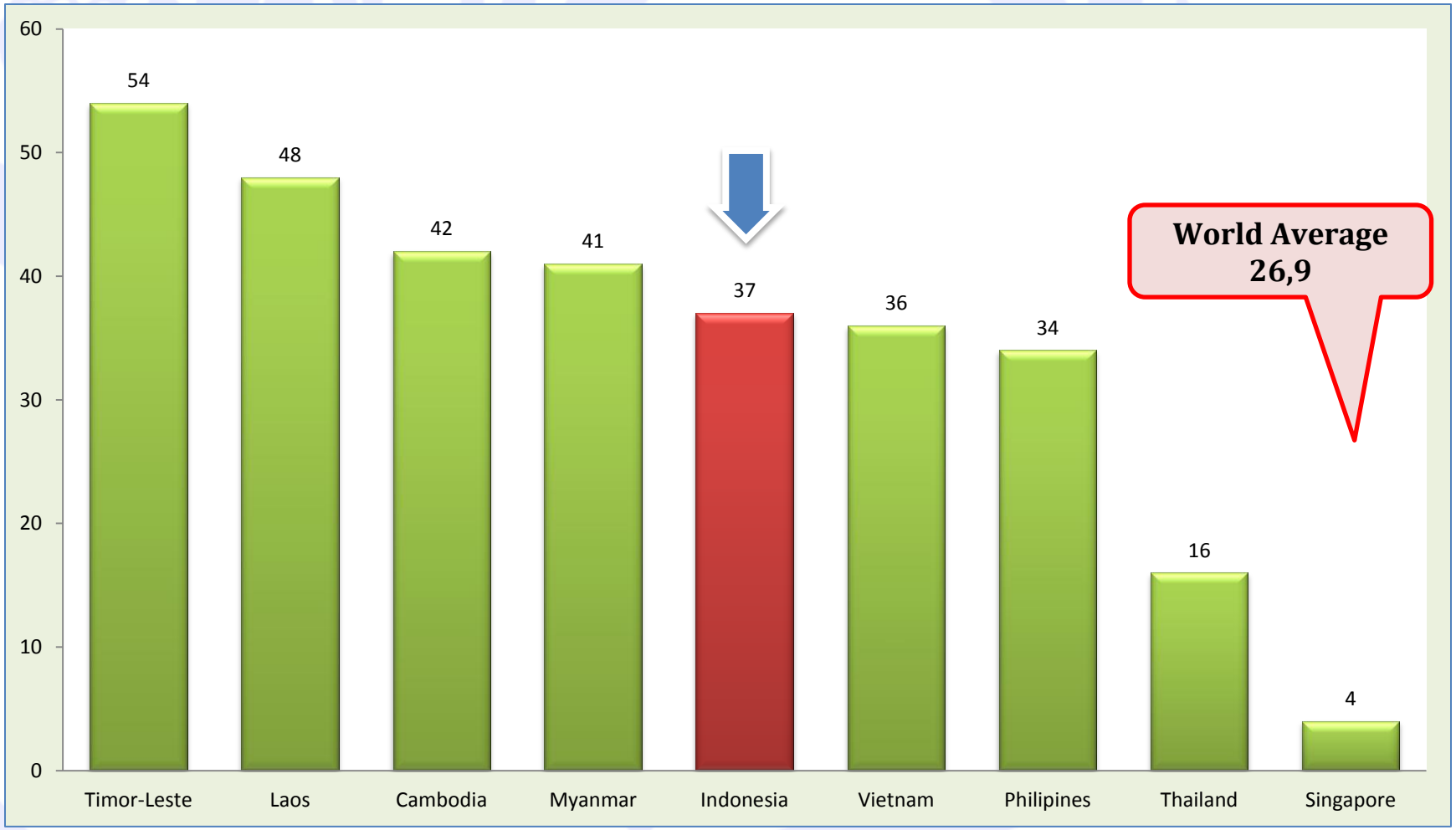
PREVALENCE OF STUNTING AMONG CHILDREN UNDER FIVE IN INDONESIA

(Riskesdas 2010)



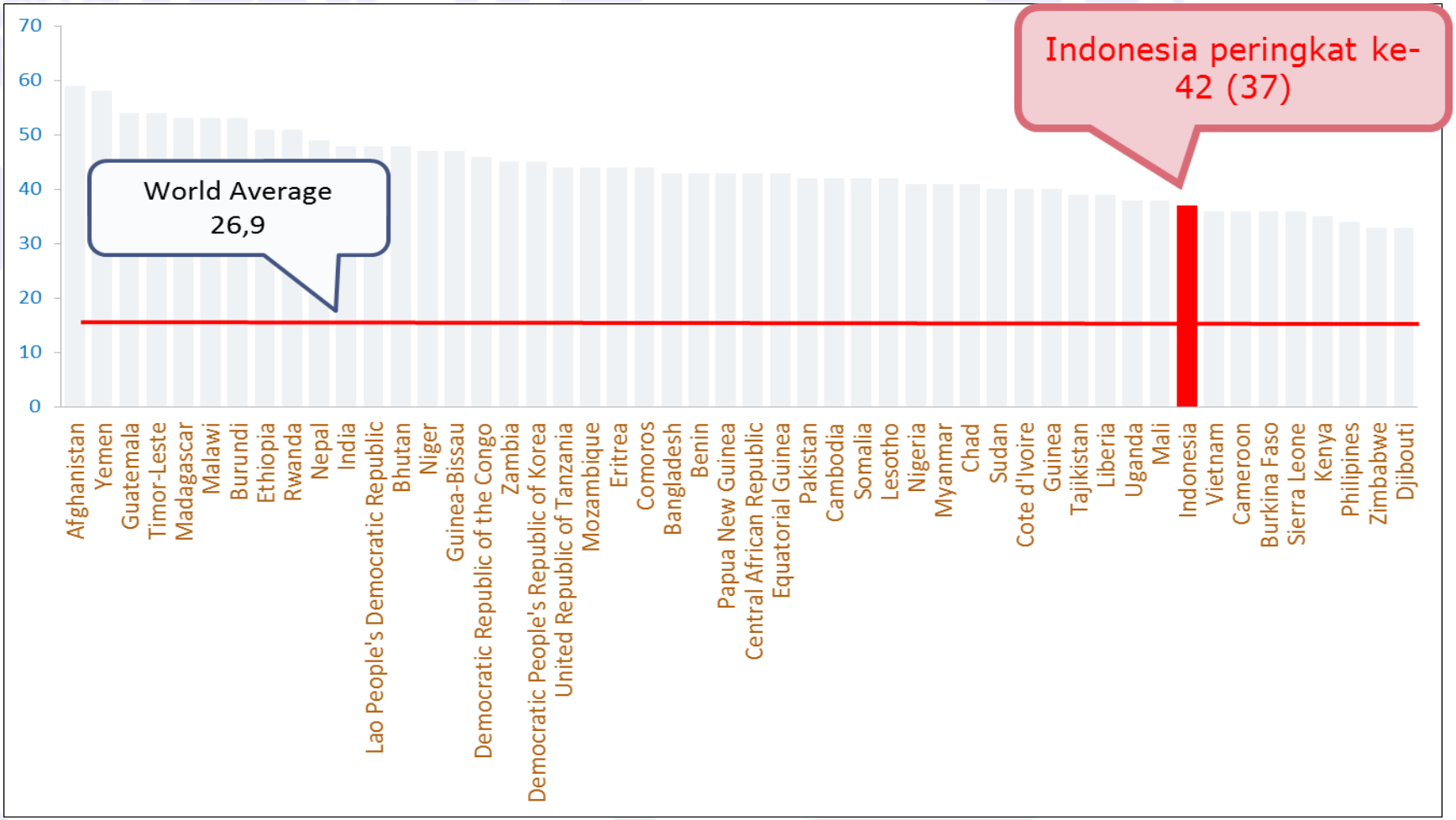
Prevalence Stunting in ASEAN Countries

(Year 2003-2008)



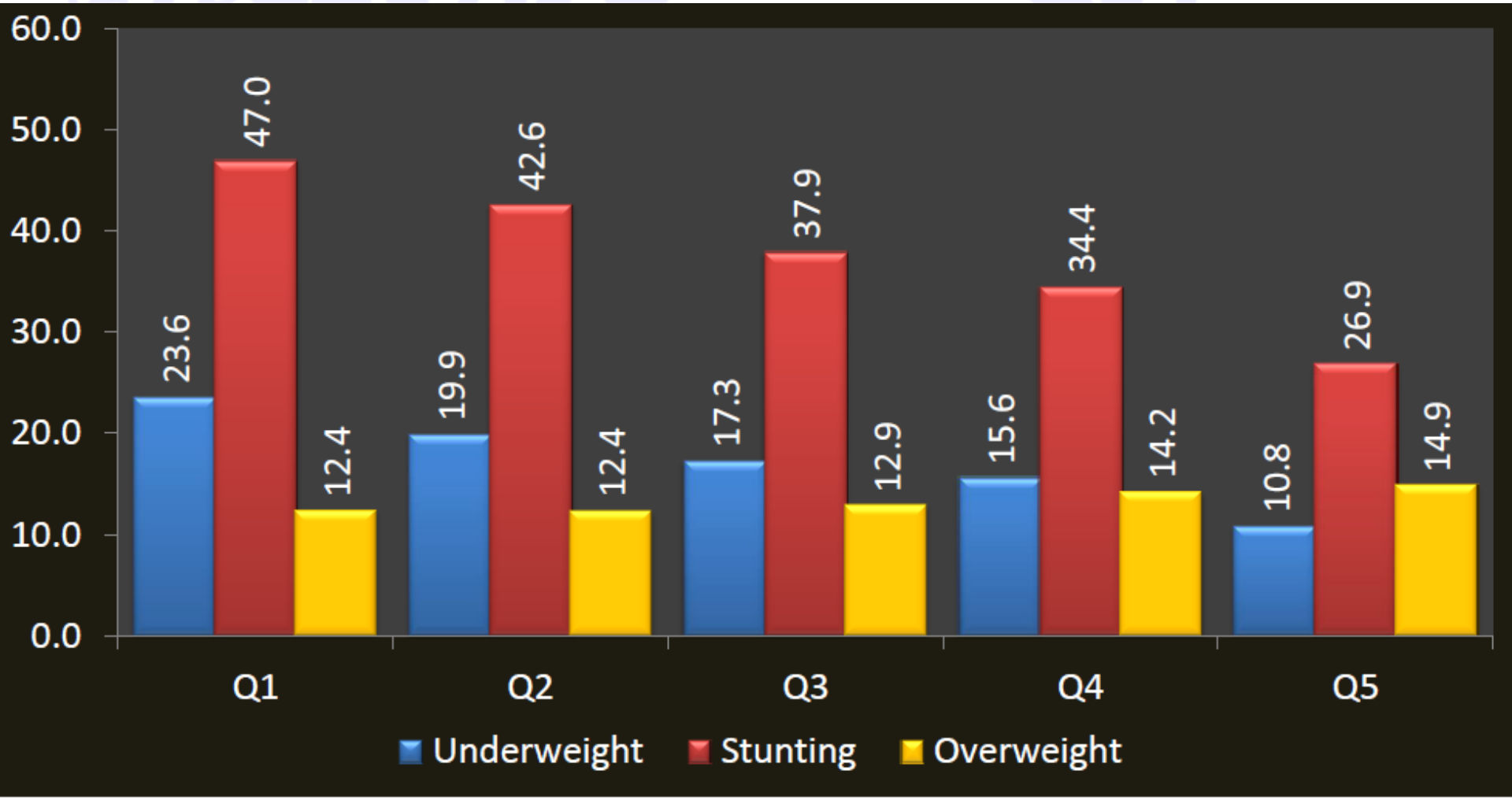
Prevalence of Stunting among 50 countries

(Tahun 2003-2008)



Sumber : UNICEF 2009

Prevalence of Malnutrition by Socio-economic status in Indonesia (Riskesdas, 2010)

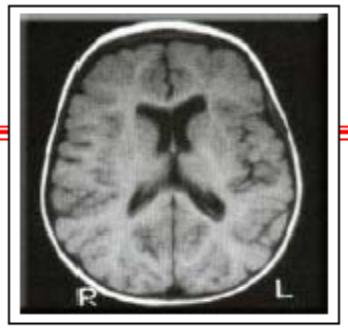


Damage Suffered in Early Life Leads to Permanent Impairment

- Undernourished children are more likely to become short adults and to give birth to smaller babies
- Evidence links stunting to cognitive development, school performance and educational achievement
- Poor fetal growth or stunting in the first 2 years of life leads to reduced economic productivity in adulthood
- Child's height for age is best predictor of human capital

Impact of nutrition and health towards brain's growth and development

Malnutrition & infection



Well nourished & healthy

"Otak Kosong" or Empty Brain is permanent
"Irreversible loss of opportunity"

Smart child—Life in all its Fullness
Quality Human Resource

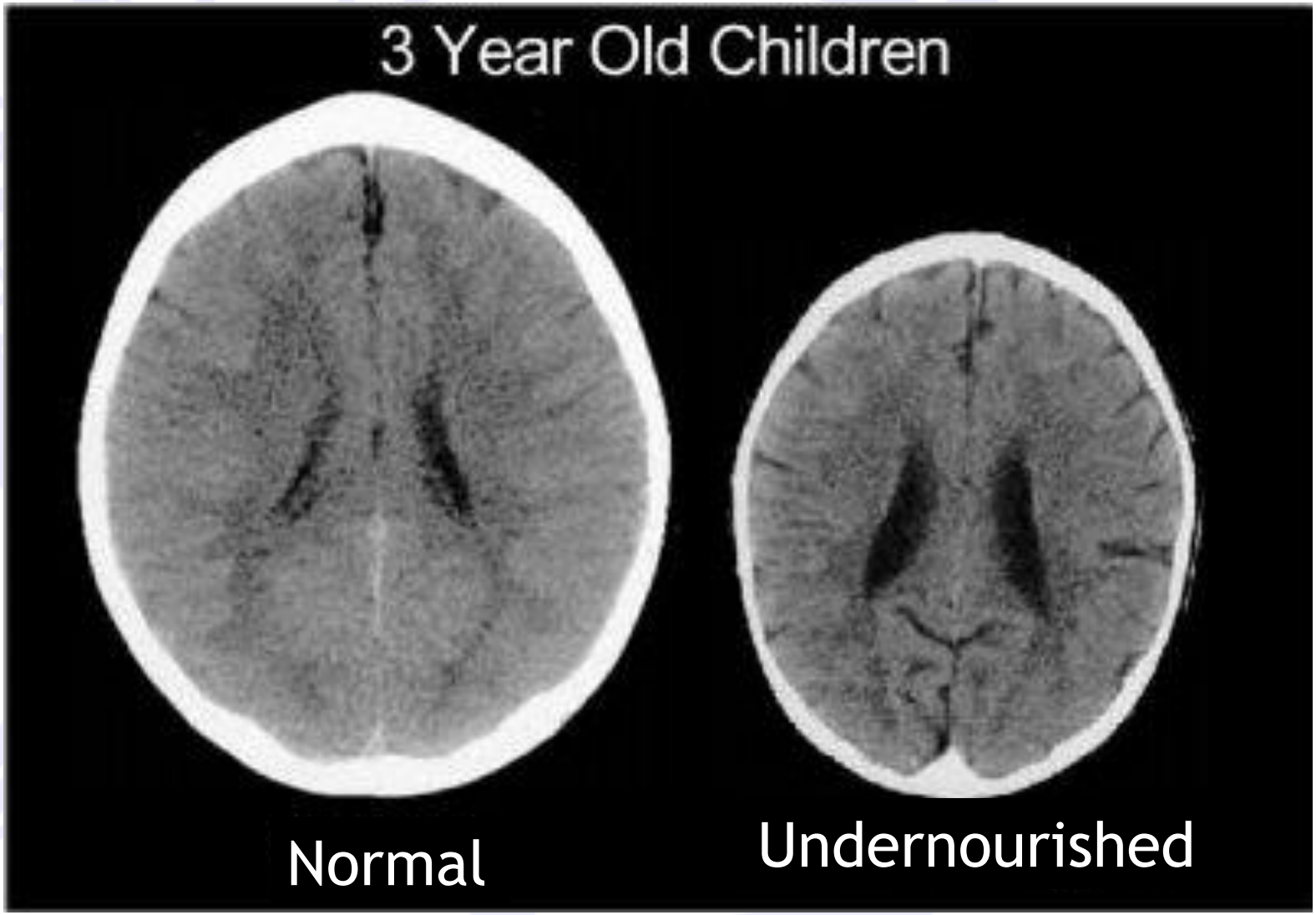
LOST GENERATION
(Labor)

Higher Income
(>7% more)

Burden

Resource

By: Prof. Ascobat Gani



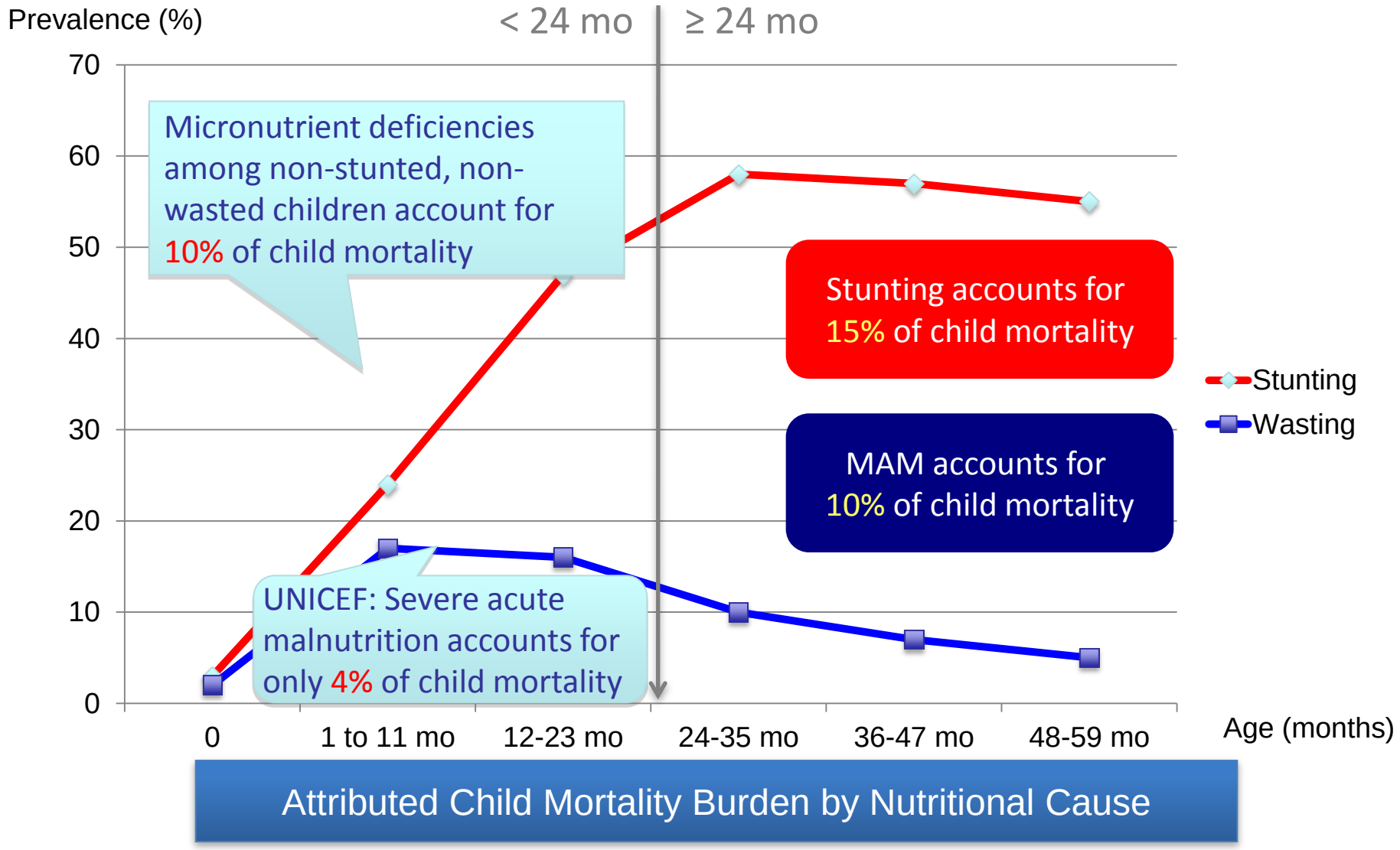
http://www.feralchildren.com/image.php?if=figures/perry20021

Brain Development

Normal

Malnourished

Saving lives: Wasting, Stunting, Micronutrient Deficiencies and Risk of Dying



Source: Ethiopia Demographic and Health Survey (2011); Lancet Nutrition Series, 2008

The Consequences of Stunting (Lancet 2008)

- Chronic Diseases: Children who are undernourished in the first 2 years of life and who put on weight rapidly later in childhood and in adolescence are at high risk of **chronic diseases** related to nutrition

- The window of prevention = the first 1000 days = from conception to 24 months

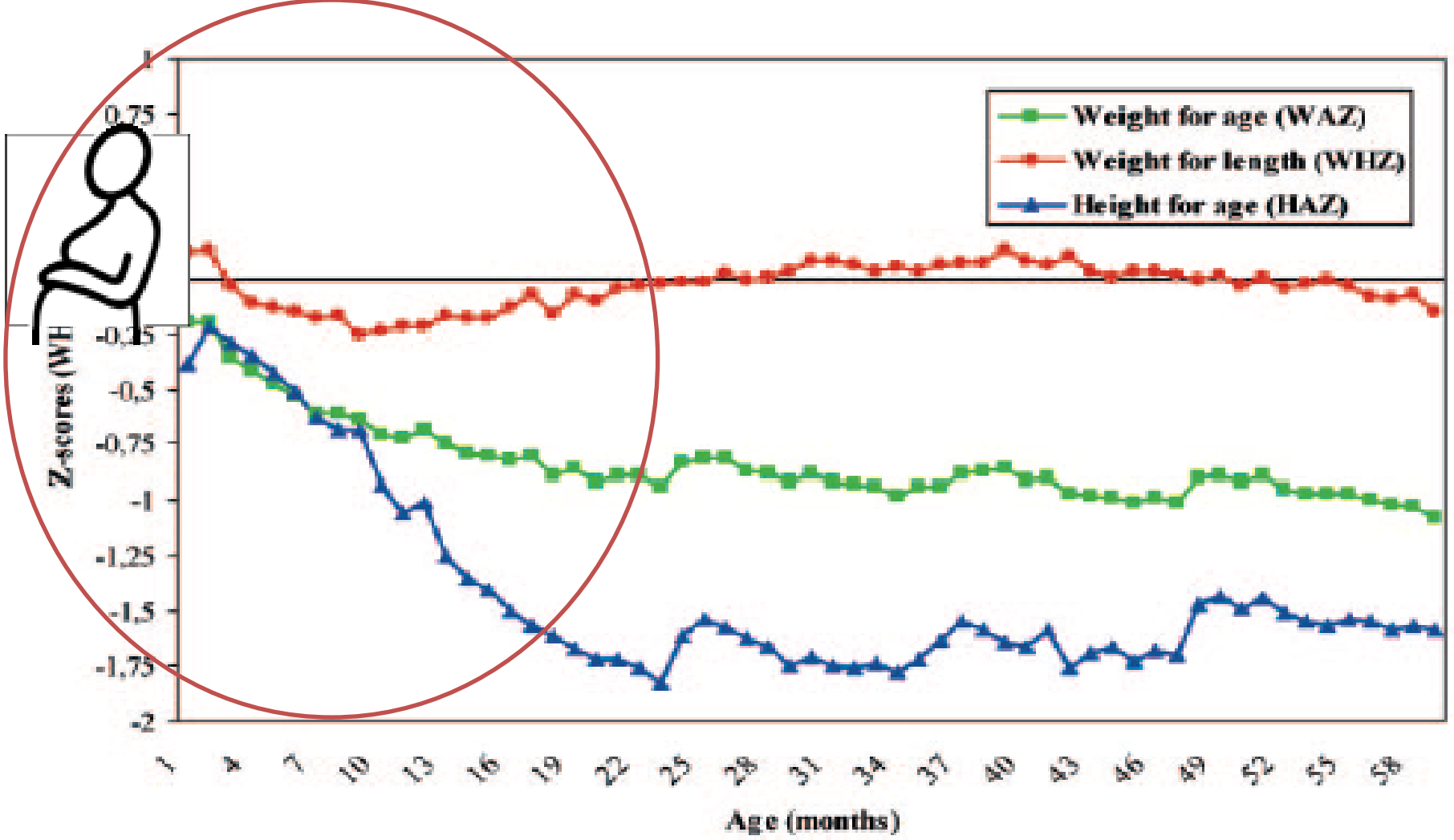


FIGURE 1

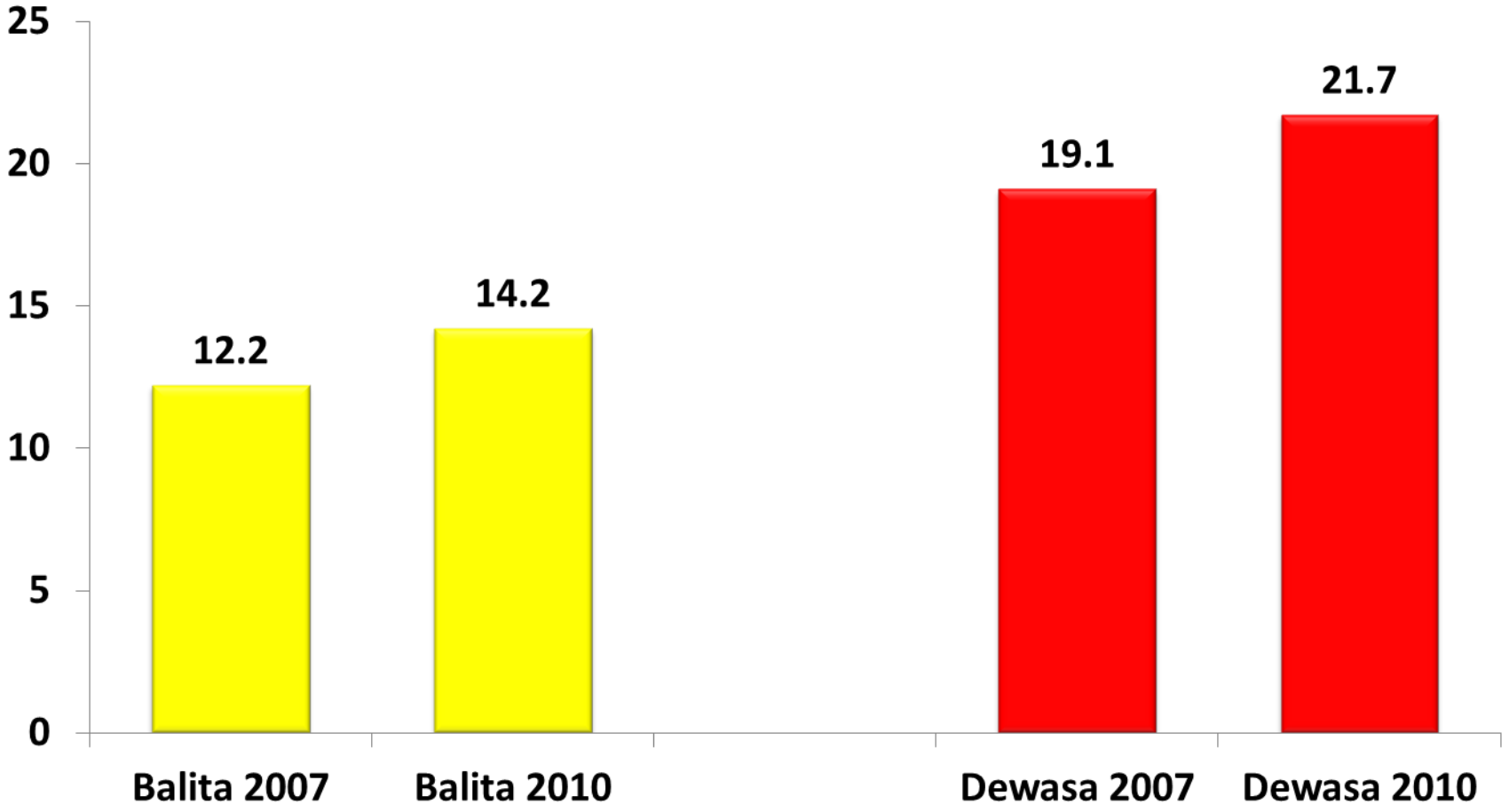
Mean anthropometric *z* scores according to age for all 54 studies, relative to the WHO standard (1 to 59 months).

Worldwide Timing of Growth Faltering: Revisiting Implications for Interventions

Cesar Gomes Victora, Mercedes de Onis, Pedro Curi Hallal, Monika Blössner and Roger Shrimpton

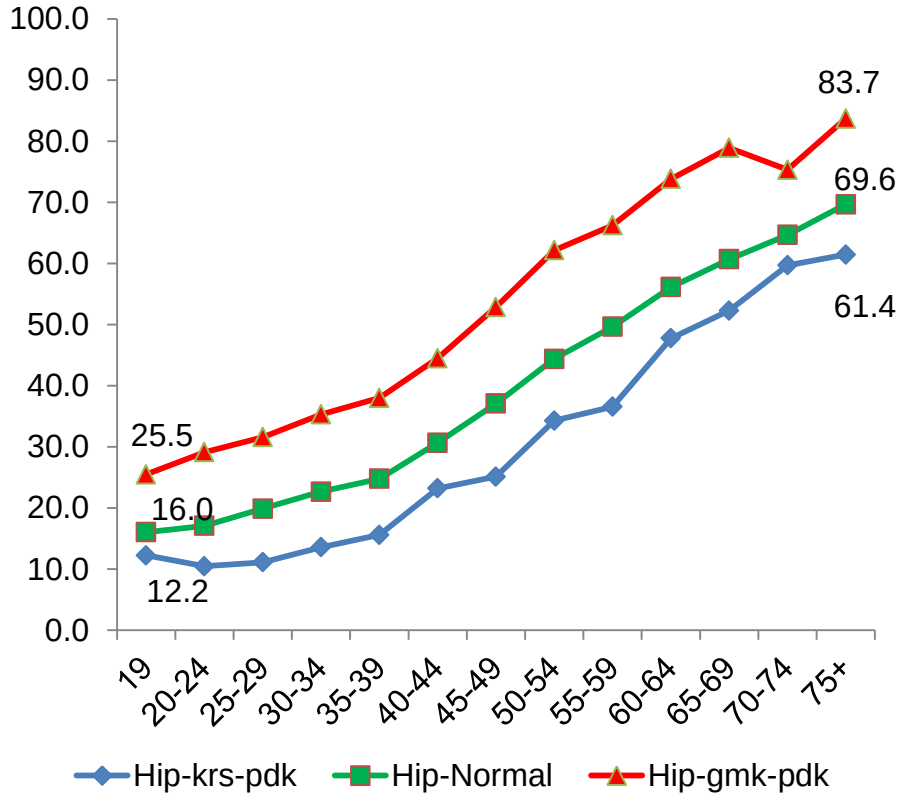
Pediatrics 2010;125;e473-e480; originally published online Feb 15, 2010;

Prevalence of Over Nutrition among Children Under Five and Adults in Indonesia

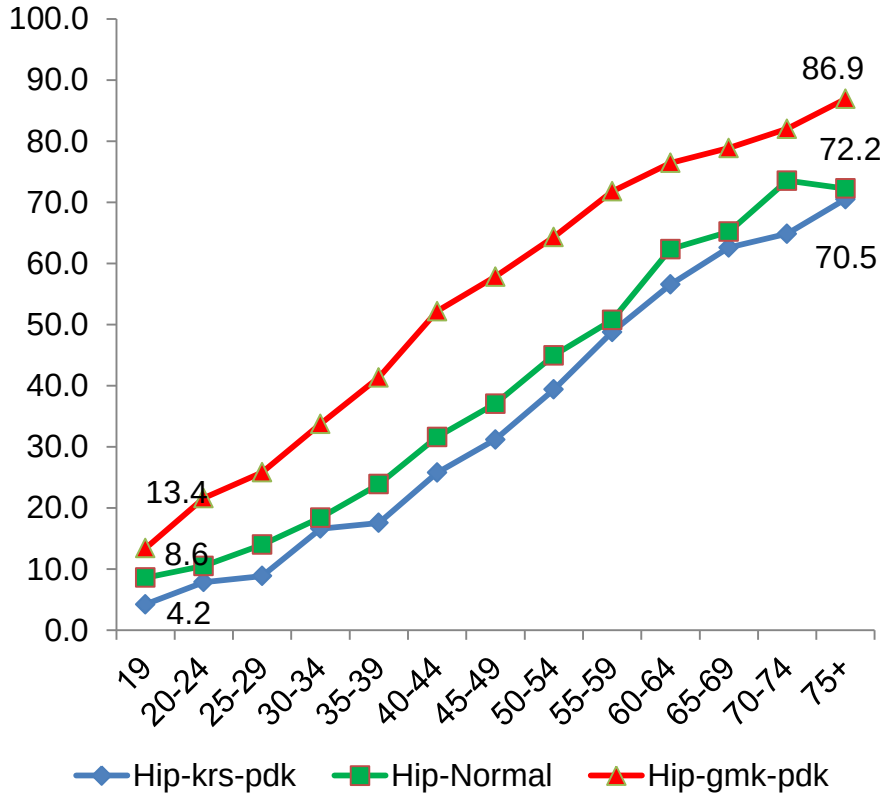


Prevalence of Hypertension & Nutrition Status by age groups and gender, Riskesdas 2007

Male

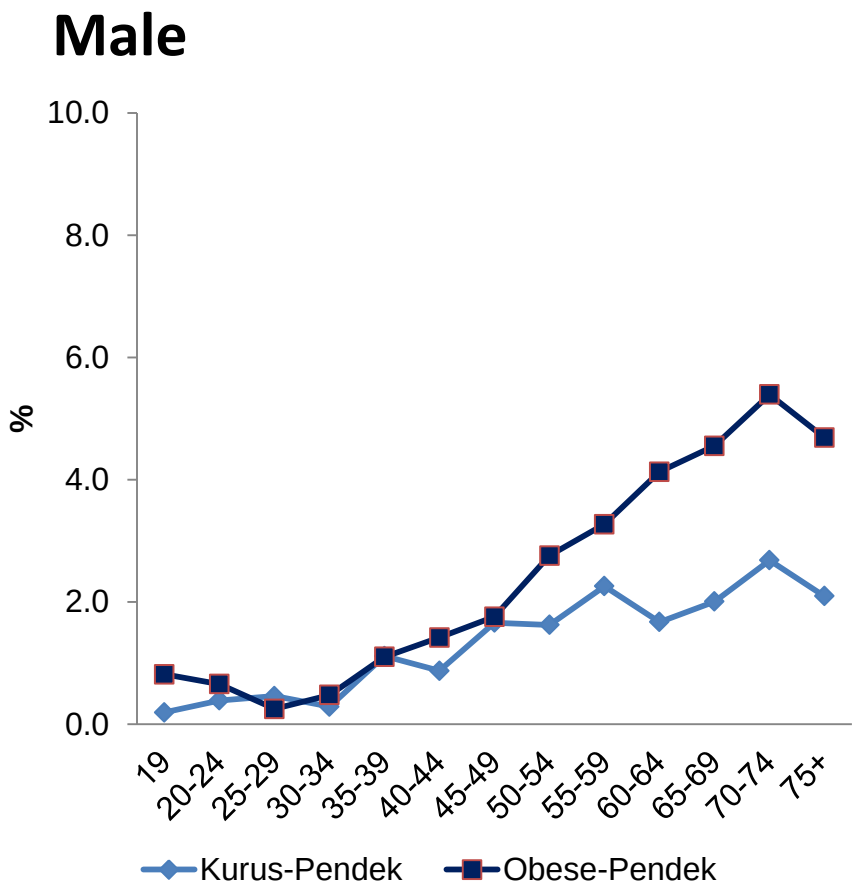


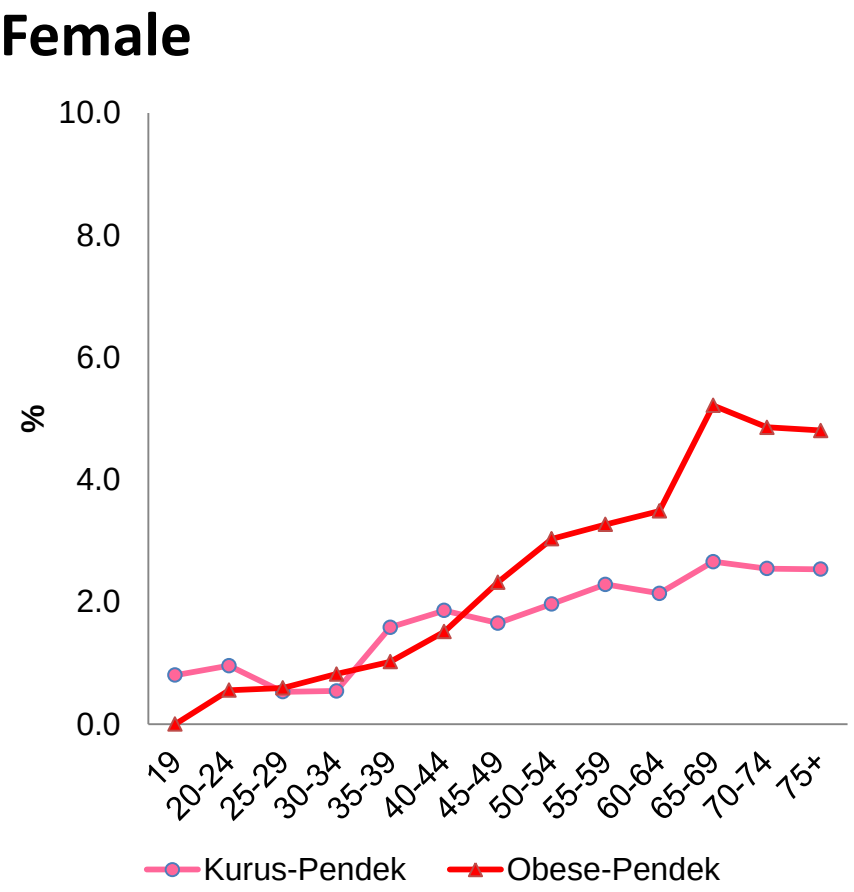
Female



Atmarita, Balitbangkes

Prevalence of CVD*) & Nutrition Status by age groups and gender, Riskesdas 2007



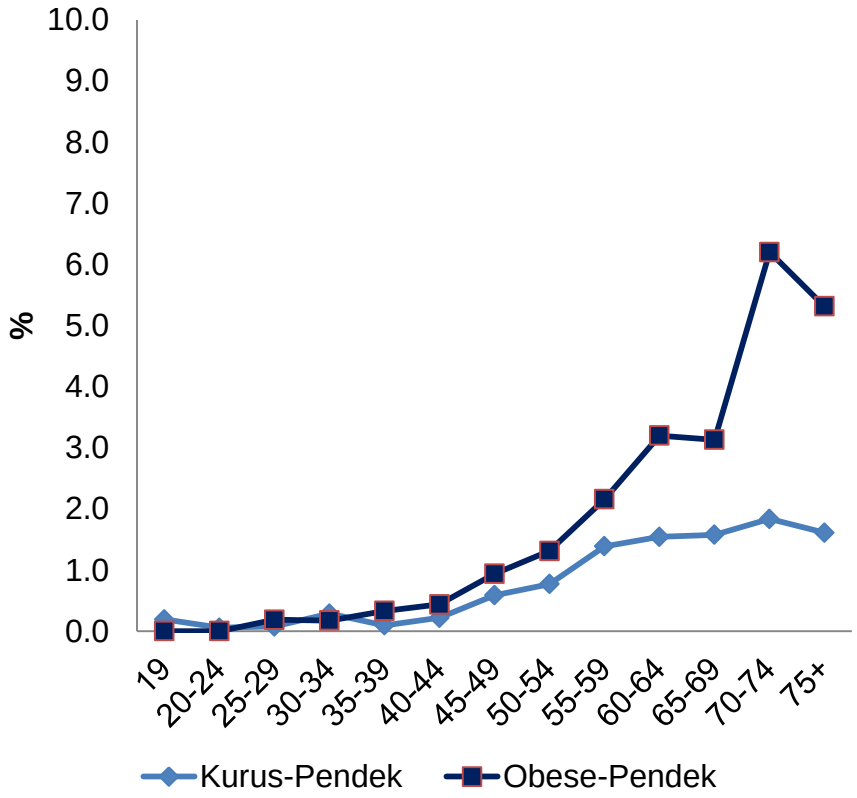


*) subject reported that he/she has been diagnosed CVD

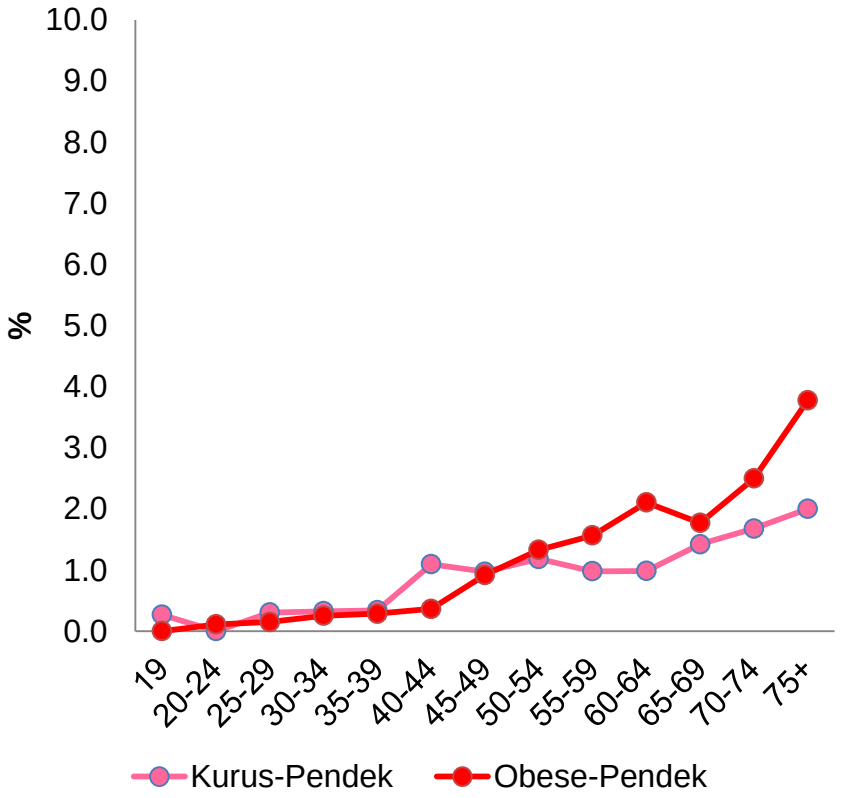
Atmarita, Balitbangkes

Prevalence of Stroke*) & Nutrition Status by age groups and gender, Riskesdas 2007

Male



Female

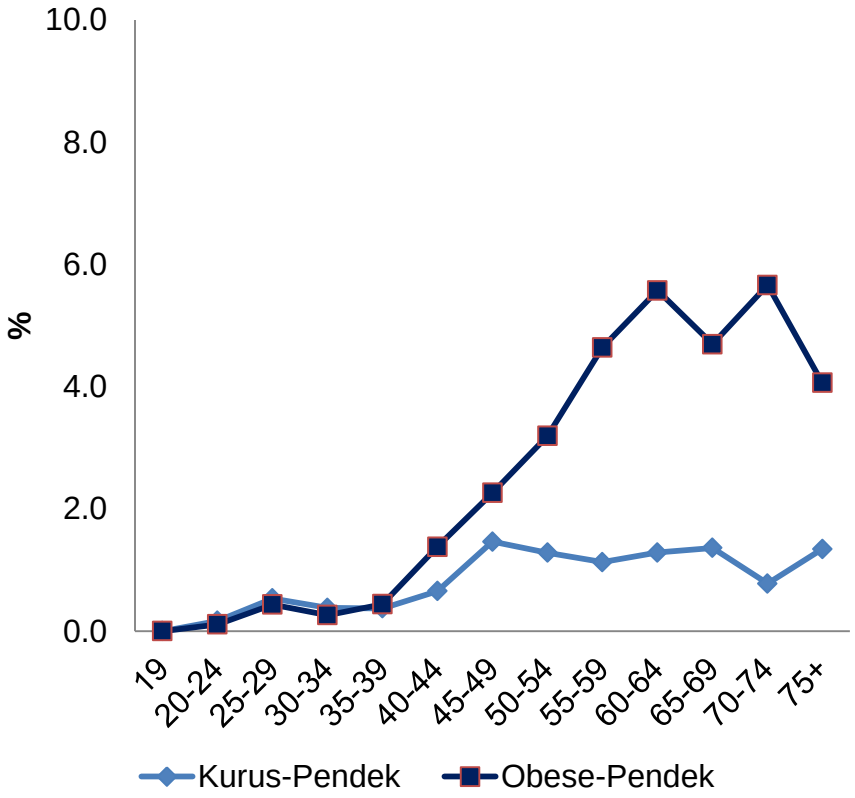


*) subject reported that he/she has been diagnosed Stroke

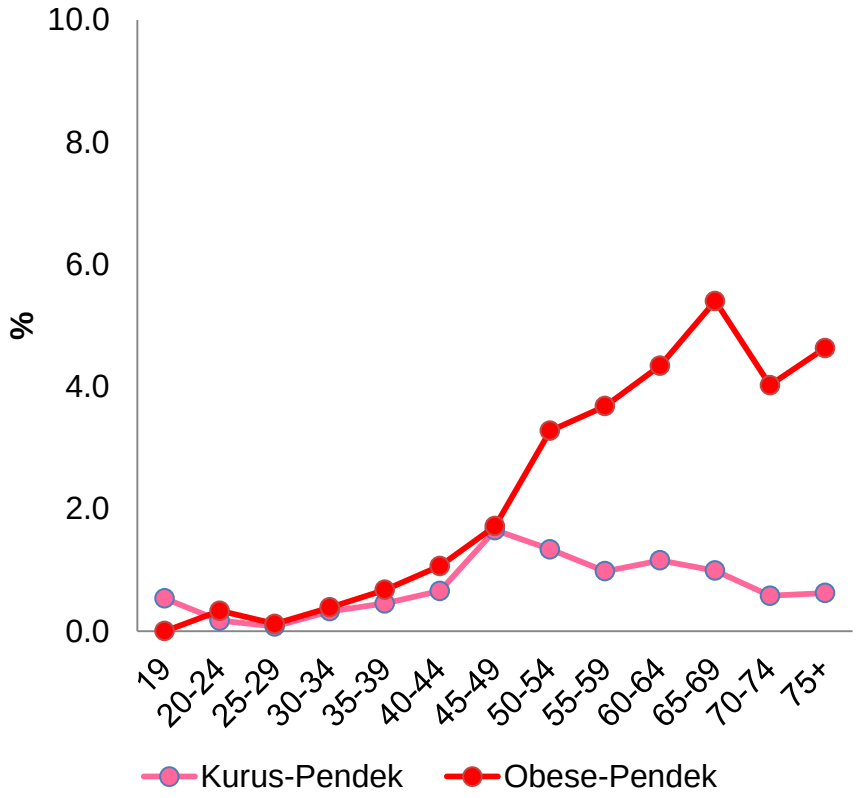
Prevalensi DM*) & Status Gizi

menurut Kelp.Umur & Jenis kelamin, Riskesdas 2007

Laki-laki



Perempuan



*) Sampel yang menjawab Ya, pernah didiagnosis Penyakit kencing manis (DM)

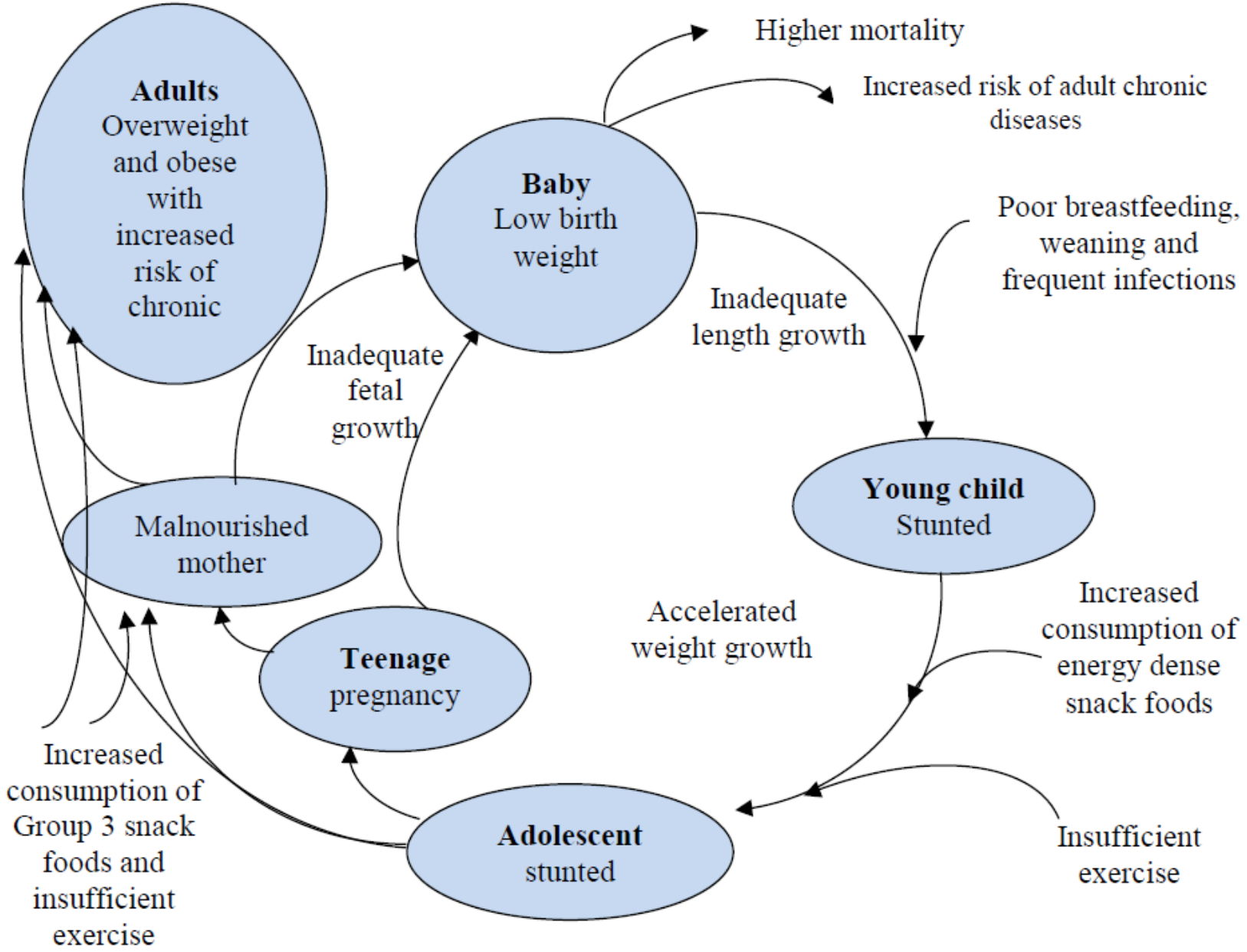
Atmarita, Balitbangkes

What is the DBM?

- **THE DBM is a new concept (James 2000),** recognizing that most countries have to deal with undernutrition and overnutrition problems which are affecting individuals in the same population across the life course.

The DBM can occur: In the same population; In the same population group (e.g. women); In the same household; In the same individual

Figure 15. The Double Burden of Malnutrition: Causes and Effects across the Life Course

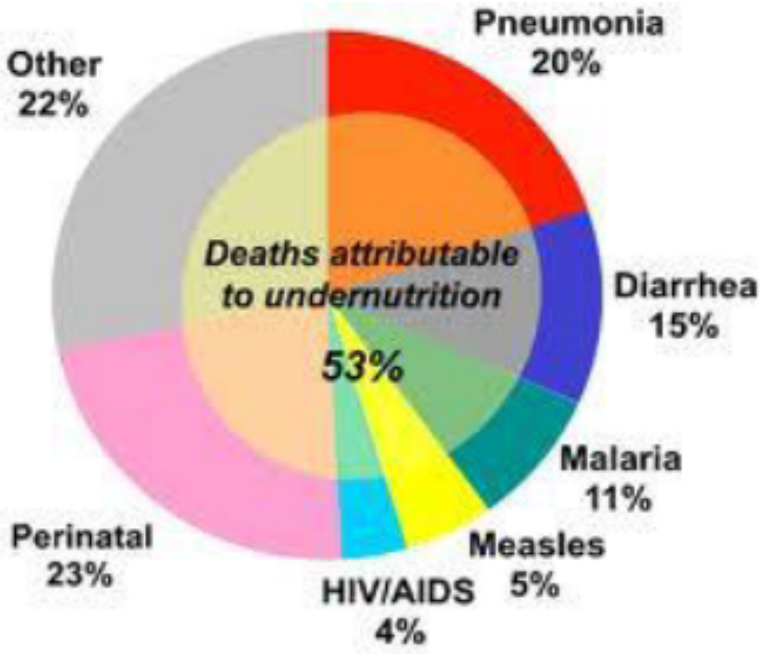


The consequences of the DBM

- Early life undernutrition causes a large proportion of young children to die, mostly from infectious diseases

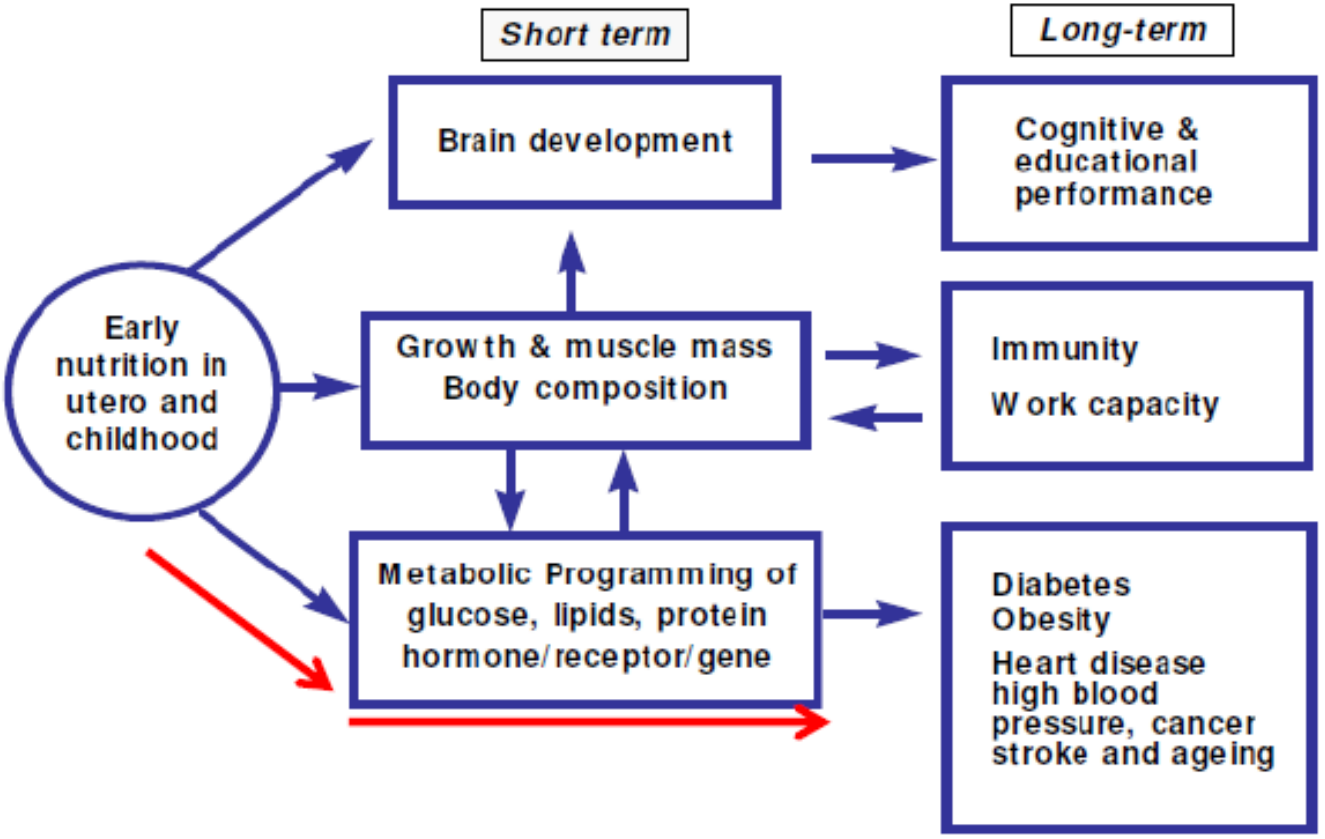
- Among those that survive, their life long capacity to resist disease, to carry out physical work, to study and progress in school, are all impaired.

- Survivors of are more likely to suffer from diet related non-communicable diseases



What are the consequences of DBM?

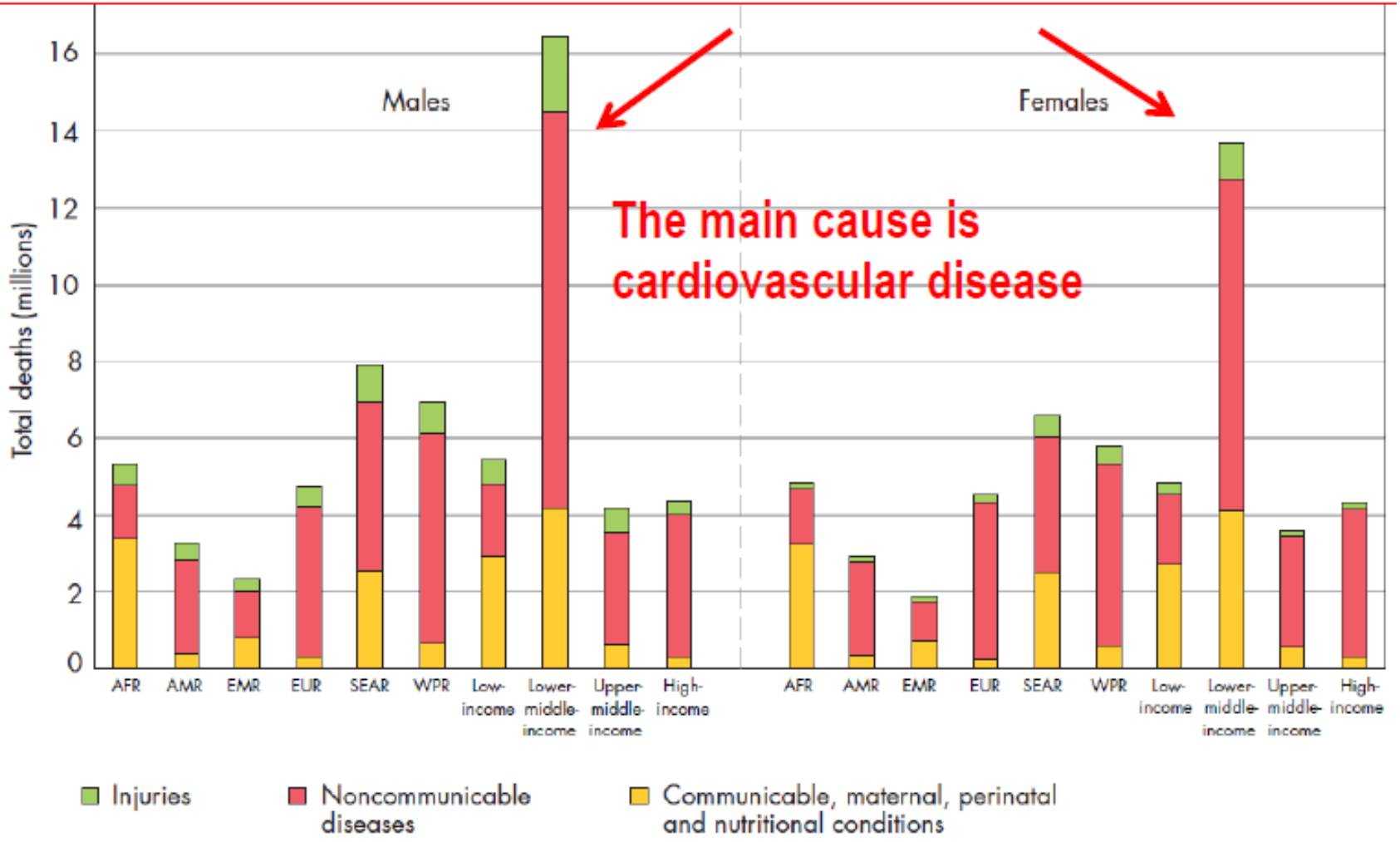
Early life undernutrition increases the risk of later life overnutrition through "metabolic programming"



THIS IS THE "CONCERN" IN LMICS

The consequences of the DBM

Most NCD deaths already occur in LMICs



What are the solutions for the DBM? A programme framework

Stage of life course	Direct interventions	DBM paper
Conception to birth	• Micronutrient (Iron/folate) supplements • Balanced protein energy supplements* • Deworming • Reduction of household/cigarette smoke • Presumptive radical treatment for malaria* • Insecticide-treated bed nets*	• salt Iodization • Iron fortification
Young Children (0-2 and 3-5 years)	• breastfeeding promotion, • appropriate complementary feeding promotion • Hand washing and hygiene interventions • young child supplementation with vitamin A and zinc, • management of severe acute malnutrition	
Children (5-18 years)	• **School based** ○ providing healthy meals ○ promotion and provision of daily physical exercise ○ Weekly iron supplements/ deworming	
Adulthood (18+yrs)	• **Medical service provider** counselling on healthy diet • **Worksite encouragement** to exercise and eat healthy foods	

Lancet Nutrition Series Package for MCU (Bhutta et al 2008)
* depending on local circumstances

Reviews of evidence on diet and nutrition causes of obesity.
-Swinburn et al 2004.
- Gortmaker et al 2011 Lancet Obesity Series 4

Stage of life course	Indirect interventions	Page 29 of DBM paper
Conception to birth	• Prevent child marriage and teenage pregnancies • Conditional cash transfer programmes (with nutrition education)	• Educational campaigns • Fiscal food policies ○ Food subsidies ○ fat/sugar taxes ▪ Transport and urban planning
Young Children (0-5 years)	• Code of marketing of breastmilk substitute • Conditional cash transfer programmes (with nutrition education)	
Children (5-18 years)	• No vending machines or junk food sales • No advertising of food aimed at children	
Adulthood (18+yrs)	• Food labelling ○ Nutrition signposting ○ Control food claims	

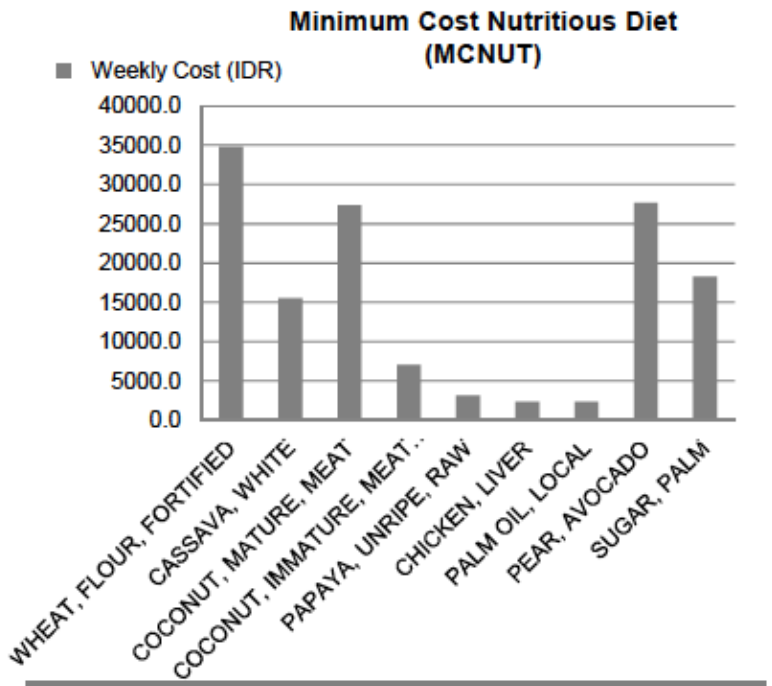
Four Overarching Pillars of the DBM Nutrition Policy Framework

Sector	Pillar			
	Sustainable Food Security	Food Safety	Healthy Life style	Nutrition
Health		•Catering •Food Standards	•Healthy eating •Exercise •Family planning	•Supplementation •Education •Surveillance
Public Works	•Rural roads •irrigation	•Water and sanitation	•Bicycle lanes	
Agriculture	•Food Production (seeds, fertilizers)	Food standards		•Nutrition education
Education	•School Gardens •School meals		•Physical exercise •Life skills	•Nutrition education
Social Security	•Food Access (cash transfers)			
Industry and Commerce	•Food availability (manufacture and marketing)	•Food standards		•Food Fortification

Cost of Diet

- Cost of the Diet method applies linear programming to calculate the minimum cost of a nutritious diet based on locally available foods + their prices
- Linking economic access to poor nutritional outcomes

Example of minimum cost diet for a family of 4 in NTT



165,515 IDR (18.40 USD) for a family of 4 (excluding child 12-23 m) without preferences…

What is the "Minimum Cost Nutritious Diet"?

A *theoretical* diet, fulfilling all nutritional needs of a specific age group at the lowest possible cost, based on local foods. This diet is theoretically possible to eat.

NOT what people are actually eating, NOR what they are supposed to eat

Calculations are based on *linear optimization* done by the Excel solver function

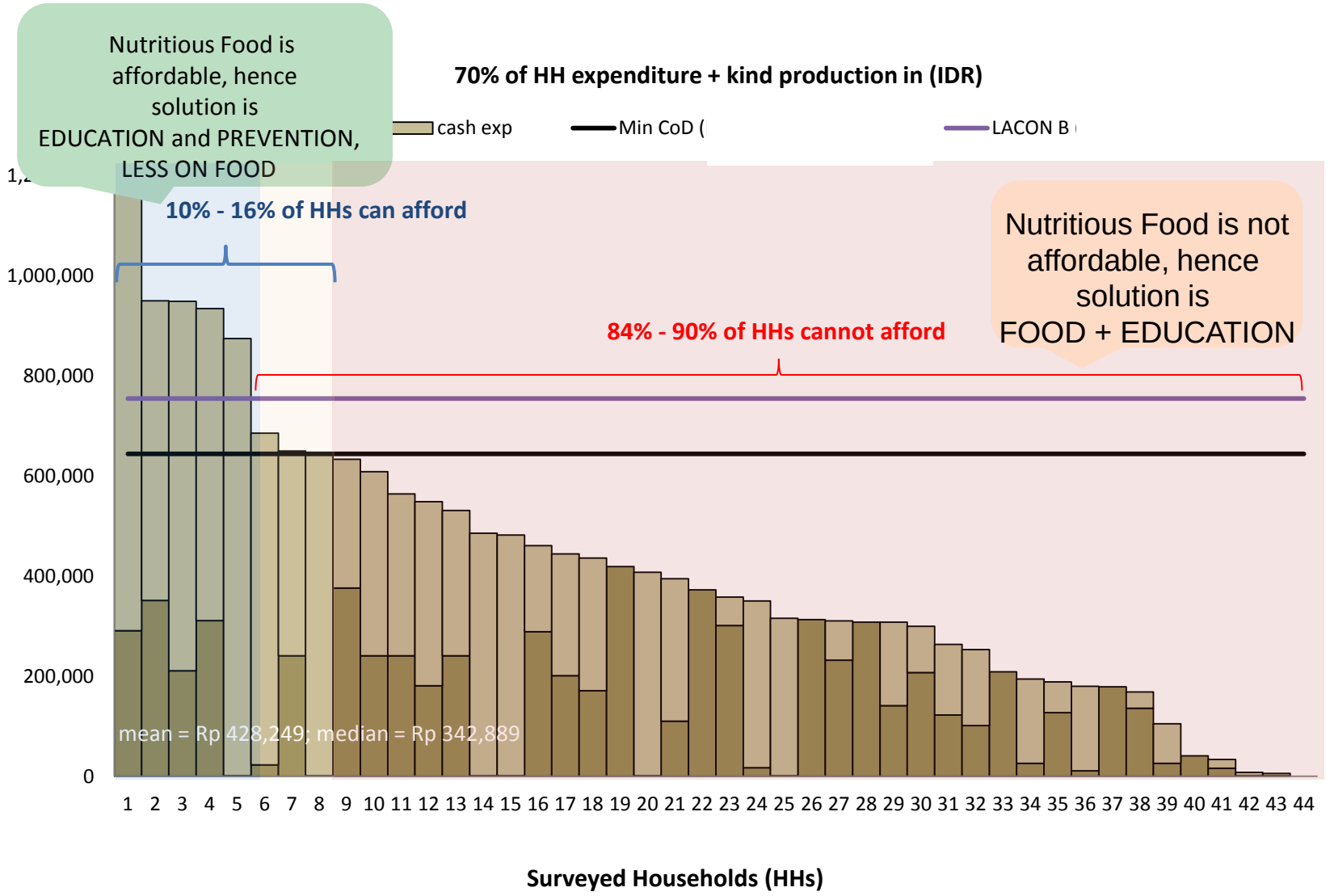
Source: Pilot Food Security and Nutrition Monitoring System in Indonesia, TTS, April, 2011, n=50; WFP CoD Analysis in TTS, 2011.

Results of piloting CoD in Indonesia

- Cost of nutritious diet (Rp/wk) – 2011/12 + affordability, based on Susenas data

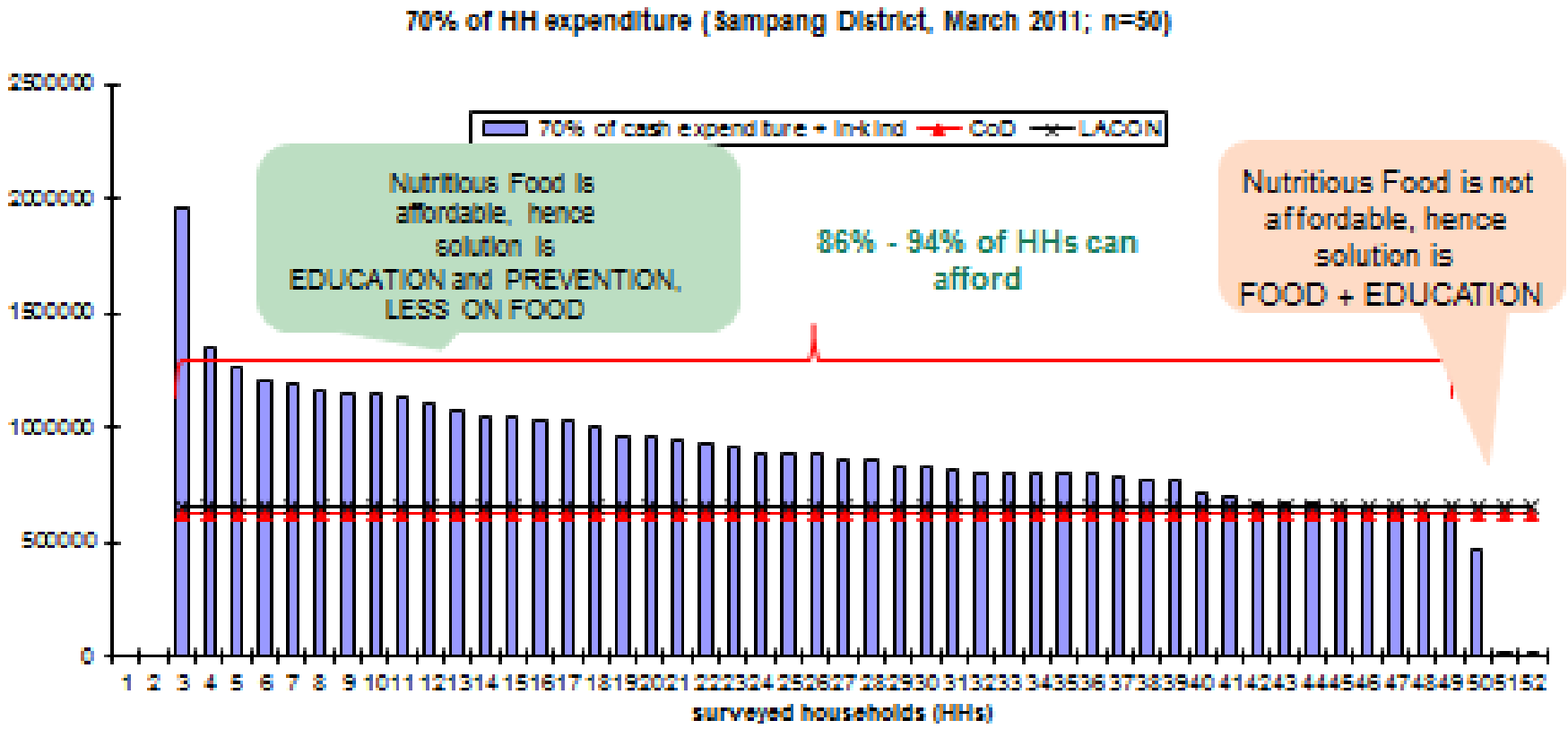
	TTS	Sampang	Surabaya	Brebes
Child 6-23 mo	16,796	10,446	13,587	11,550
Other family members (3)	196,015	126,071	141,430	131,264
Total hh	212,812	136,518	155,017	142,814
% can afford – food expenses	25	59	80	69
% can afford – 70% of total expenses	20	63	92	73

Results indicate that in TTS between 84% and 90% of all HHs are not able to afford a Minimum Cost Nutritious Diet



Source: Pilot Food Security and Nutrition Monitoring System in Indonesia, TTS, April, 2011, n=50; WFP CoD Analysis in TTS, 2011.
Note: Household Size: 5 members, including 1 child 12-23 months

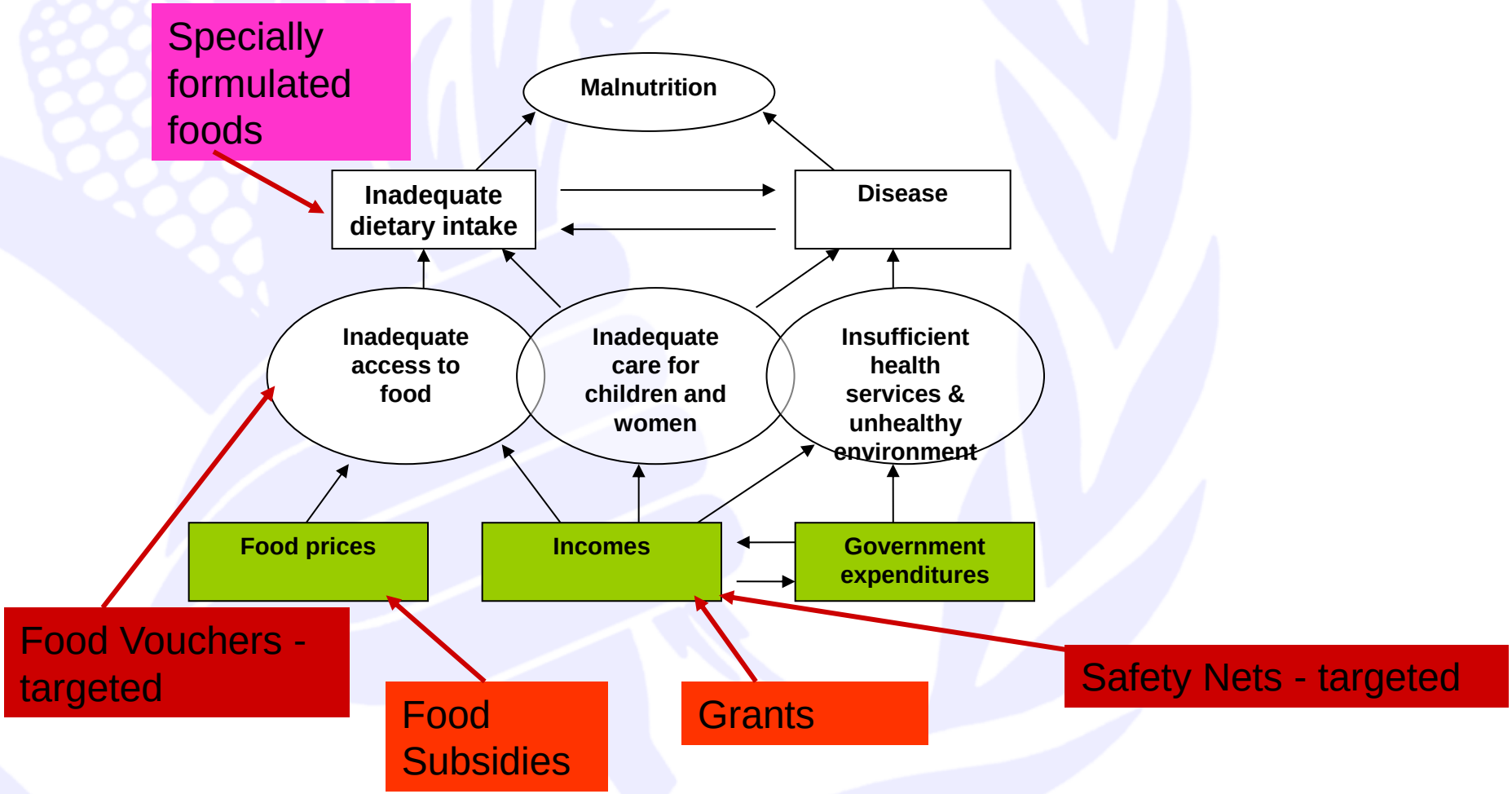
First results indicate that in Sampang between 86% and 94% of all HHs are able to afford a Minimum Cost Nutritious Diet



CoD pilot Indonesia

- This tool gives good impression of economic aspects + constraints for nutritious diet
- Strategies & programs should also take into consideration:
  - NE + BCC – to stimulate best choices
  - Food preferences – what do people like & do
  - Expenditure pattern – how is extra cash used
- Different context + options in different places – local decision making

Options when people cannot afford a diet that meets nutrient requirements



Nutrition Sensitive **Nutrition Specific**

Impact of social transfers on malnutrition

Social transfer programmes can have important effects on poverty, hunger and nutrition. These effects occur through various channels; an essential one is increased cash via social transfers that enables poor people to access more and better-quality food.

Yes, but specific questions:

- Can cash transfer close the nutrient gap for young children?
- What is impact of cash transfer on child undernutrition?
- How much cash should & can be provided?
- Is cash spent on nutritious foods?
- Do available foods contain the most appropriate mix of nutrients?

Community and International Nutrition

Food-for-Work Programs in Indonesia Had a Limited Effect on Anemia[1]

Regina Moench-Pfanner,[†2] Saskia de Pee,[†] Martin W. Bloem,[†**] Dorothy Foote,[*] Soewarta Kosen,[‡] and Patrick Webb[††]

Helen Keller International, [*]Jakarta, Indonesia, [†]Singapore, and [**]New York, NY; [‡]National Institute for Health Research and Development, Jakarta, Indonesia; and [††]United Nations World Food Programme, Rome, Italy

J Nutr 2005; 135: 1423-9.

- Food, vouchers or cash supports household and likely improves diet
- But, extent to which nutrient needs of specific groups are met varies and hence the impact on nutritional status varies

Study of impact of social transfer on malnutrition in Niger Epicentre/MSF & WFP

- Just protecting the child – child-specific food is likely better than equivalent amount as cash (±10 euro/mo)

- Support to vulnerable households –include specific nutritious foods for vulnerable groups (u2, PLW)

Scaling Up Nutrition

What is the SUN?

- *Focused on the importance of thousand days*

- SUN is a multi-stakeholder movement focused on increasing prioritization, resources and action to reduce global child undernutrition and promotes the scale up of nutrition specific and sensitive approaches through country-lead and coordinated approaches. SUN website: www.scalingupnutrition.org.

- The SUN Framework & Roadmap (2010) outlines the strategies for addressing child undernutrition through coordinated, multi-stakeholder and country-lead approaches to scaling up nutrition specific and sensitive interventions.

- Direct nutrition specific interventions include: increasing intake of vitamins and minerals for mothers /young children (and all with food fortification), promoting good nutrition practices (breast feeding, complementary feeding, hygiene), therapeutic feeding for malnourished with special foods.

31 SUN Countries

- Bangladesh
- Benin
- Burkina Faso
- Burundi
- Ethiopia
- Gambia
- Ghana
- Guatemala
- Haiti
- Indonesia
- Kenya
- Kyrgyzstan
- Lao PDR
- Madagascar
- Malawi
- Mali
- Mauritania
- Mozambique
- Namibia
- Nepal
- Niger
- Nigeria
- Peru
- Rwanda
- Senegal
- Sierra Leone
- Tanzania
- Uganda
- Yemen
- Zambia
- Zimbabwe

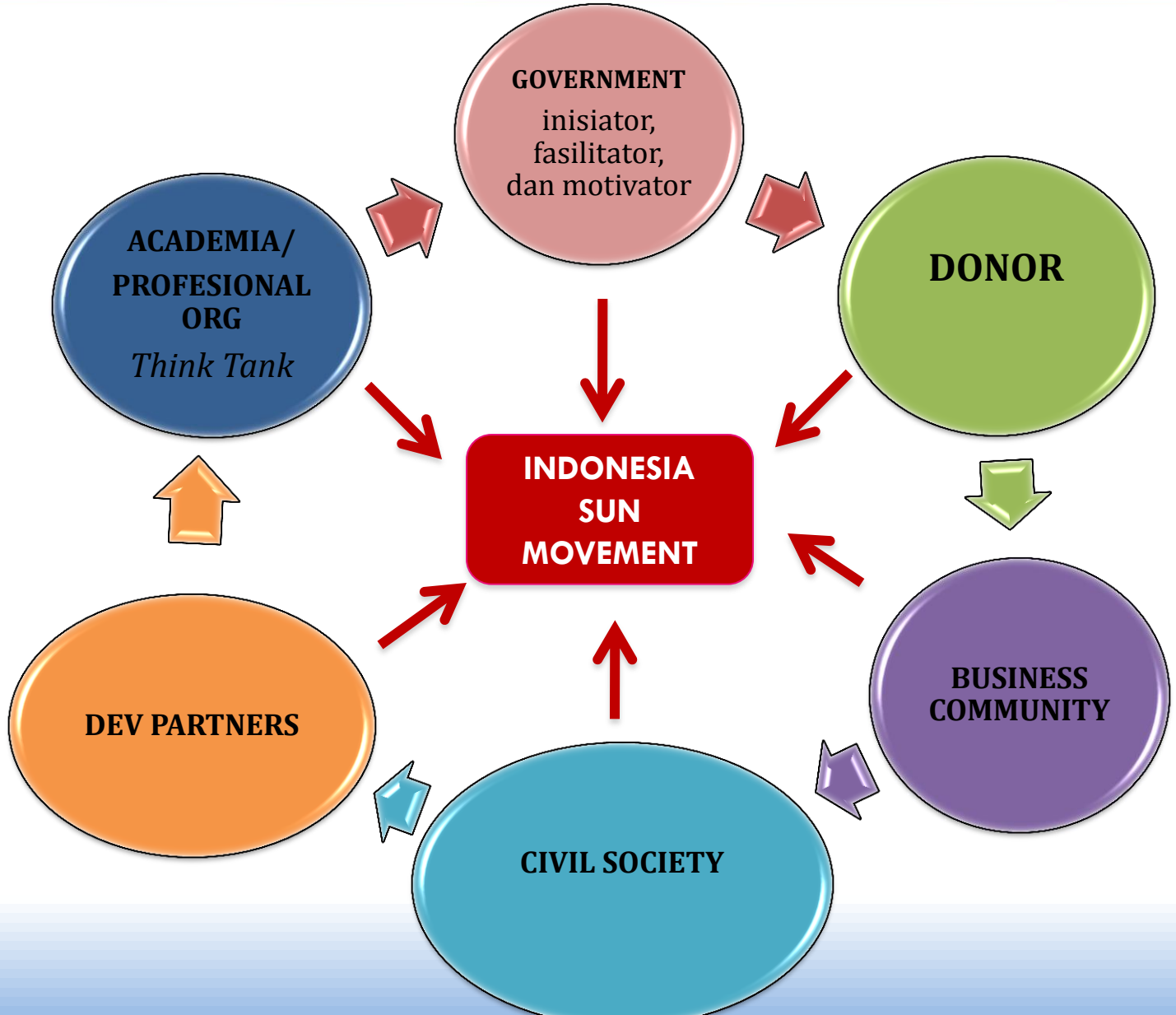
What countries agreed in 2012

1. 40% reduction of the global number of children under 5 who are stunted
2. 50% reduction of anemia in women of reproductive age
3. 30% reduction of low birth weight
4. No increase in childhood overweight
5. Increase exclusive breastfeeding rates in the first 6 months up to at least 50%
6. Reducing and maintaining childhood wasting to less than 5%

World Health Organization

KEMENTERIAN PPN/
BAPPENAS

SUN MULTI STAKEHOLDERS



Conclusions

- The nutritional status of the Indonesian people has steadily improved over time but large disparities between provinces
- The rapidly emerging of double burden of malnutrition need to be addressed to avoid increased NCD and economic lost.
- Improvement of complementary feeding through strategies such as counseling about nutrition for food-secure populations and nutrition counseling, food supplements, conditional cash transfers, or a combination of these, in food-insecure populations could substantially reduce stunting and related burden of disease.
- Indonesia is so diverse. Ensuring food security for all has been the top priority for the GOI. There has been constant need to improve geographical targeting of more vulnerable areas for food and nutrition security related interventions.

Conclusions

- Monitoring the consequences of high food prices for access to food, nutritional status and health among different target groups in different areas of the country is necessary to enable policy makers to undertake appropriate and specific action to limit the devastating impact of food an nutrition security on health and productivity among the population

- Social safety nets (SSN) provide an income transfer to vulnerable households. To maximize impact on nutrition – complement the transfer with special nutritious products for specific target groups (u2, PLW)

- Slowing population growth is essential in achieving food and nutrition security

Reference:

- R Shrimpton and C Rokx, 2012. The Double Burden of malnutrition. World Bank.
- MW Bloem, S de Pee, LT Hop, NC Khan, A Laillou, Minarto, R Moench-Pfanner, D Soekarjo, Soekirman, JA Solon, C Theary, and E Wasantwisut. 2013. Key strategies to further reduce stunting in Southeast Asia: Lessons from the ASEAN countries workshop . Food and Nutrition Bulletin
- G Baldi, E Martini, M Catharina, S Muslimatun, U Fahmida, A Jahari, Hardinsyah, R Frega, P Geniez, N Grede, Minarto, M. W. Bloem, and Saskia de Pee. 2013. Cost of the Diet (CoD) tool: First results from Indonesia and applications for policy discussion on food and nutrition security. Food and Nutrition Bulletin
- www.foodsecurityatlas.org

Thank you!
Terima Kasih!