POLICY BRIEF

The philanthropy's crucial role in alleviating stunting in Indonesia through research funding: A policy brief [version 2; peer review: 2 not approved]

Jenny Morasa¹, Fahrul Nurkolis², Bezaliel R. Narasiang³, Jodi Visnu⁴, Nelly Mayulu⁵, Nurpudji Astuti Taslim⁶, William Ben Gunawan⁷, Matthew Nathaniel Handoko⁷, Hardinsyah Hardinsyah⁸-¹¹

¹Financial Accounting, Faculty of Economics, Sam Ratulangi University, Manado, North Sulawesi, 95115, Indonesia
²Biological Sciences, State Islamic University of Sunan Kalijaga, Yogyakarta, Yogyakarta, 55281, Indonesia
³Faculty of Medicine, Sam Ratulangi University, Manado, North Sulawesi, 95115, Indonesia
⁴Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Yogyakarta, 55223, Indonesia
⁵Clinical Nutrition, Faculty of Medicine, Hasanuddin University, Makassar, South Sulawesi, 90245, Indonesia
⁶Chair, Indonesian Clinical Nutrition Physician Association, Makassar, South Sulawesi, 11470, Indonesia
⁷Nutrition Sciences Department, Faculty of Medicine, Diponegoro University, Semarang, Central Java, 50275, Indonesia
⁸Applied Nutrition, Faculty of Human Ecology, IPB University, Bogor, West Java, 16680, Indonesia
⁹President, Federation of Asian Nutrition Societies, Bogor, 16680, Indonesia
¹⁰President, Food and Nutrition Society of Indonesia, Bogor, West Java, 16680, Indonesia
¹¹Council Member, Southeast Asia Probiotics Scientific and Regulatory Experts Network, Petaling Jaya, Selangor, 46150, Indonesia

First published: 17 Mar 2022, 11:321
https://doi.org/10.12688/f1000research.110405.1
Latest published: 01 Nov 2022, 11:321
https://doi.org/10.12688/f1000research.110405.2

Open Peer Review

Approval Status  ×  ×

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>version 2 (revision)</td>
<td>01 Nov 2022</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>view</th>
<th>view</th>
</tr>
</thead>
<tbody>
<tr>
<td>version 1</td>
<td>17 Mar 2022</td>
<td></td>
</tr>
</tbody>
</table>

1. Innocent Baltazar Mboya, Lund University, Lund, Sweden
Kilimanjaro Christian Medical University College, Moshi, Tanzania
2. Udin Saripudin, Universitas Islam Bandung, Bandung, Indonesia

Any reports and responses or comments on the article can be found at the end of the article.
The challenges associated with these issues are: (1) Stunted research and innovation are still left behind, (2) The availability of data and the lack of transparency, (3) Subpar performance in relation to philanthropists, (4) Inconsistent legal definitions and a lack of industry-specific guidelines, (5) Inadequate law enforcement, (6) Local leaders must engage in evidence-based advocacy, (7) Philanthropists have limited opportunities to learn.

**Keywords**
Philanthropy, stunting, research funding, policy brief, Southeast Asia
**Amendments from Version 1**

Revision made to this article refer to the reviewers’ constructive comments as follows:

1. Improvements to a more specific title, “Indonesia”.
2. Improvement of Abstracts, especially in the Recommendations section.
3. Improvements to the Introduction, Policy and implications, Recommendations and Conclusions that are more appropriate.
4. Added captions for Figure 1 to make it easier to understand.
5. Lastly, improvement of shared data by referring to the reviewer’s comments.

Any further responses from the reviewers can be found at the end of the article.

**Introduction**

Stunting is defined as being short in stature according to age. The cause of stunting is the unfulfillment of nutrient requirements for growth over an extended period, specifically between conception through the first 24 months of life (Bloem et al., 2013). Although the direct cause of stunting is easily understood, the risk factors are complicated, such as illness, infant feeding method, hygiene and sanitation, and clean water accessibility (Rosyati et al., 2018). Stunting causes not only short stature but also interferes with crucial functions of the human body, including the process of brain development and the immune system (Bloem et al., 2013). According to UNICEF, the proportion of stunting in 2020 in Southeast Asian countries is high, exceeding 20%, except for three countries (Brunei, Singapore, and Thailand) (UNICEF, 2021).

Health is consistently among the top categories receiving philanthropy donations (Schneider et al., 2008). Philanthropy is a term used to describe the love of mankind and objective acts for a charitable cause and public purpose (Sulek, 2010), or in other words, voluntary action for the public good (Barman, 2017; Payton, 1988). Philanthropic activities are now considered as strategic giving with an integrated and patterned goal (van Aaken & Buchner, 2020; Saia et al., 2003). Southeast Asia has an unparalleled result in economic growth, along with many challenges that may hinder the growth of philanthropy (Anand et al., 2014). One of them is the environmental gap that supports the implementation of philanthropy activities (known as the global philanthropy environment index) in Southeast Asian countries (Indiana University, 2022).

One of the embodiments of love by philanthropists is to provide research funding for researchers both in developing and developed countries. Funding research, such as community-based health intervention trials is very important to support researchers to conduct a study and produce evidence bases that can be used in preparing programs, especially in the field of health, more specifically for handling stunting. Programs in developing countries should emphasize and be based on evidence bases produced by researchers. However, in developing countries it is very difficult to conduct research, given the lack of funding for research and worse, the lack of supporting laboratory facilities. This is in line with what Rochmyaningsih (2016) revealed that developing countries need funding for researchers to maximize evidence base, especially in stunting research. It is hoped that this policy brief can open opportunities for Southeast Asian countries to further get research funding for stunting through philanthropists.

**Policy and implications**

The World Health Assembly has approved global nutrition goals, including a 40% reduction in stunted children under the age of five by 2025. It is possible to meet the needed expenditure objective for reducing stunting, but it would necessitate large-scale coordinated investments and a supportive enabling environment (Shekar et al., 2017). Recent evidence found that charitable funding plays a crucial role in funding research, which showed philanthropic foundations, trusts, and charities as an important source of research funding (Kundu & Matthews, 2019; Murciano-Goroff, 2015; Sussex et al., 2016). Encouraged by the growing role of philanthropic actors in international development cooperation and as partners in achieving the Sustainable Development Goals (SDGs) agenda in Southeast Asia, philanthropy also has a role to play in fostering more inclusive growth (Sciortino, 2017) and maybe an innovative way to address social, health, and environmental issues (Barman, 2017). A new analysis of a few South-East Asian countries’ high- and middle-level economies recognizes recent constructive initiatives and the likelihood that the region’s philanthropic sector might advance in favorable ways. Nevertheless it is a difficult task; since tax laws are either neutral or ineffectual in motivating generosity. There are few chances for the charitable-minded to acquire the skills required to address complicated societal issues, and the collaborations between civil society groups and donors that enable each other’s capacities are rare (Anand et al., 2014). Several constraints were identified, including a lack of data availability and transparency; insufficient benefits related to income and inheritance taxes; ambiguous legal definitions, and lack of policies specific to the sector, such as no legal distinction between grant-giving and grant-seeking foundations (true even in the Philippines); poor enforcement of laws when they do exist (as in the case of mandatory CSR in Indonesia); and limited learning opportunities for donors. All countries in Southeast Asia, as well as the rest of Asia, scored below the global average.
on the three main indicators: civil society organizations; tax policies; and also cash and in-kind goods’ mobilization across borders (Adelman et al., 2015).

The policy that is intended to reduce the prevalence of stunting in Indonesia is published in presidential decree number 72 of 2021 regarding the acceleration of stunting reduction. The objectives of the decree are to decrease stunting prevalence, improve the quality of preparation for family life, ensure the fulfilment of nutritional intake, improve parenting, improve access and quality of health services, and improve access to drinking water and sanitation. There are five strategic pillars in the acceleration of stunting reduction, one of them being the convergence improvement of specific and sensitive intervention of stunting within the government bodies. The other pillar is the strengthening and improvement of system, data, information, research, and innovation. Based on the pillar mentioned, it is known that direct and non-direct nutrition-related efforts were made to address stunting and its underlying causes, including efforts in research and innovation (Peraturan Presiden Nomor 72 Tahun 2021 Tentang Percepatan Penurunan Stunting, 2021). Researchers play a vital role in implementing one of the strategic pillars of the Indonesian Presidential Decree number 72 of 2021. They conduct research or assessments regarding the implementation of stunting reduction and prevention. The researchers evaluate the impact and the effectiveness of the program at local and global levels. The researchers can also conduct experiments regarding new intervention methods (Kementerian Koordinator Bidang Pembangunan Manusia dan Kebudayaan, 2018). The sources of funding for the program are the national or provincial or district revenue and expenditure budget and other legal fund sources allowed by the laws and regulations. The other sources of funding include CSR, individual donors, and group donors (Kementerian Koordinator Bidang Pembangunan Manusia dan Kebudayaan, 2018; Peraturan Presiden Nomor 72 Tahun 2021 Tentang Percepatan Penurunan Stunting, 2021).

The acceleration of the stunting reduction programs has reduced the prevalence of stunting. The prevalence of stunting reduced from 36.8% in 2007 to 27.7% in 2019. However, the prevalence raised to 37.2 in 2013% but eventually reduced to 30.8% in 2018. On the other hand, the treatment coverage of stunting has increased from 63.92% in 2018 to 66.08%. The percentage of children under five receiving exclusive breastfeeding also increased, from 44.36% in 2018 to 69.62% in 2020. The number of mothers giving birth to low-birth-weight babies also decreased from 13% in 2018 to 11.32% in 2019, however, the numbers raised slightly to 11.37% in 2020. The program seems to be working well by achieving the numbers mentioned above, yet the utilization of research to address the problem seems to be below the expected levels.

A descriptive analysis of the data (see underlying data) showed that Indonesia has a lower GPEI than the average GPEI of Southeast Asian countries (0.317 < 0.339), as well as a lower RDE than the average RDE of Southeast Asian countries (0.230 < 0.645). There was a potential linkage between GPEI, SP, and RDE in the representation of Southeast Asian

![Figure 1. Comparison of GPEI, SP, and RDE in Southeast Asian countries.](image1.png)
countries, as presented in Figure 1. To further analyze the correlation between GPEI – SP and RDE – SP, a normality test was performed on the data using Shapiro-Wilk (since the number of samples is < 20) on SPSS 26.0 (Statistical Package for the Social Sciences) software. Based on the result in Table 1, all variables were distributed normally, so correlation analysis will be based on parametric statistics using Pearson correlation.

Correlation analysis reveals that there is an insignificant negative and medium correlation between GPEI and SP (Table 2); while there is a significant negative and strong correlation between RDE and SP (Table 3). This analysis highlights that the first important step in reducing the estimated stunting proportion is to increase the budget for research and development expenditure, as Singapore and Thailand have done.

**Recommendations**

The multi-sectoral collaborations are without doubt key players in the acceleration program of stunting reduction. The stunting reduction acceleration program, if supplemented with higher RDE and open policies that support philanthropy acts in Indonesia, would contribute to improving the efficiency in reducing stunting through adequate funds and investments. As evidenced by Singapore and Thailand, a higher national budget that focuses on R&D and supportive environment as indicated by GPEI may prove to reduce stunting prevalence estimates, since adequate funds may lead to more evidence-based and practical research, not only at innovation stages. The same recommendations can also be considered by Vietnam, Myanmar, and Philippines which could be beneficial to improve the GPEI and reduce the

---

**Table 1.** The result of the normality test of variables using Shapiro-Wilk.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Global Philanthropy Environment Index</td>
<td>.293</td>
<td>6</td>
</tr>
<tr>
<td>Estimated stunting proportion</td>
<td>.228</td>
<td>6</td>
</tr>
<tr>
<td>Research development expenditure</td>
<td>.231</td>
<td>6</td>
</tr>
</tbody>
</table>

*This is a lower bound of the true significance.
*Lilliefors significance correction.

**Table 2.** Correlation test between GPEI (Global Philanthropy Environment Index) and SP (stunting proportion).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pearson correlation</th>
<th>Estimated stunting proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Philanthropy Environment Index</td>
<td>1</td>
<td>-.425</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.401</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Estimated stunting proportion</td>
<td>-.425</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.401</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

**Table 3.** Correlation test between RDE (research development expenditure) and SP (stunting proportion).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pearson correlation</th>
<th>Estimated stunting proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research development expenditure</td>
<td>1</td>
<td>-.961</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Estimated stunting proportion</td>
<td>-.961</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>
incidence of stunting. Attention needs to be directed in proposing major changes in law and policy which regulate the allocation of research-development expenditure, which will initiate the creation of a supportive environment for philanthropy acts regarding stunting. Challenges to these issues would include: (1) Stunted research and innovation are still left behind, (2) The availability of data and the lack of transparency, (3) Subpar performance in relation to philanthropists, (4) Inconsistent legal definitions and a lack of industry-specific guidelines, (5) Inadequate law enforcement, (6) Local leaders must engage in evidence-based advocacy, (7) Philanthropists have limited opportunities to learn.

Conclusions
Despite efforts of the Indonesian government to improve health research support, there are a great deal of challenges faced by philanthropic organizations attempting to provide assistance as a contribution for the public interest. Developing countries need funding for researchers to maximize the evidence base, especially in stunting research. The above analysis explains how the importance of philanthropic presence contributes to reducing the prevalence of stunting in Indonesia, which is supported by the results from some Southeast Asian countries. This short policy is expected to open up opportunities for Indonesia to receive more research funding from philanthropists.

Data availability
Underlying data
The data used in the policy brief (Figure 1) were based on Southern & Southeastern Asia Region Report 2018 by Indiana University-Purdue University Indianapolis (https://globalindices.iupui.edu/doc/summary-asia-pacific.pdf); Stunting Survey Estimates 2018 by UNICEF (https://data.unicef.org/wp-content/uploads/2019/04/JME_Country_Estimates_April_2021_v3.xlsx); and Research & Development Expenditure of Philippines, Indonesia, Singapore, Thailand, Vietnam, and Myanmar (https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS?locations=PH-ID-SG-TH-VN-MM&start=2018). We collected the data from trusted or legal database platforms. Indonesia, Philippines, Singapore, Thailand, Vietnam, and Myanmar were chosen to represent Southeastern Asia for the global philanthropy environment index survey. Because of that, we also collected the estimated stunting proportion and research and development expenditure from these 6 countries in order to compare the available data.


Data is available under the terms of the Creative Commons Zero “No rights reserved” data waiver (CC0 1.0 Public domain dedication).

CRediT (Contributor Roles Taxonomy)

Jodi Visnu, Nelly Mayulu, Nurpudji Astuti Taslim and Hardinsyah: Supervision, Validation, Writing – Original Draft Preparation, Writing – Review & Editing.

Acknowledgement
We would like to thank all those who have contributed. Also, To Indiana University-Purdue University Indianapolis (https://www.iupui.edu); Stunting Survey Estimates 2018 by UNICEF (https://data.unicef.org); and Research & Development Expenditure of the Philippines, Indonesia, Singapore, Thailand, Vietnam, and Myanmar (https://data.worldbank.org), which has provided supporting data in this article. Hopefully this Policy Brief can be a reference for government officials in developing countries, philanthropists and officials of non-government organizations.

References
Publisher Full Text
Publisher Full Text
PubMed Abstract | Publisher Full Text


Nurkolis F: RAW Data for The Philanthropy’s Crucial Role in Alleviating Stunting in Southeast Asian Countries through Research Funding: A Brief Policy. figshare. Dataset. 2022. Publisher Full Text
Open Peer Review

Current Peer Review Status: ❌ ❌

Version 1

Reviewer Report 09 September 2022

https://doi.org/10.5256/f1000research.122007.r146976

© 2022 Saripudin U. This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Udin Saripudin
Universitas Islam Bandung, Bandung, Indonesia

The paper does not provide a comprehensive picture of the policy and the context of its implementation in a way that is accessible to the general reader, because it discusses health issues but the analysis does not touch the health aspect.

Discussion of the implications is not presented clearly and accurately and is not supported by the current literature, the literature is too little and the data sources are not taken from primary data from the Ministry of Health of each country studied.

The recommendations have not yet addressed the root of the problem, because stunting convergence has become a cross-sectoral government policy.

Does the paper provide a comprehensive overview of the policy and the context of its implementation in a way which is accessible to a general reader?
No

Is the discussion on the implications clearly and accurately presented and does it cite the current literature?
No

Are the recommendations made clear, balanced, and justified on the basis of the presented arguments?
No

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** Economic development, community empowerment

I confirm that I have read this submission and believe that I have an appropriate level of
expertise to state that I do not consider it to be of an acceptable scientific standard, for reasons outlined above.

Reviewer Report 10 August 2022

https://doi.org/10.5256/f1000research.122007.r145880

© 2022 Mboya I. This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Innocent Baltazar Mboya id
1 Department of Clinical Sciences, Lund University, Lund, Sweden
2 Department of Epidemiology and Biostatistics, Institute of Public Health, Kilimanjaro Christian Medical University College, Moshi, Tanzania

This policy brief seeks to highlight critical issues related to the availability of funding for stunting research in Southeast Asia. More emphasis is given to philanthropic work across the globe and how that can be channeled to research and development in alleviating stunting in developing countries. The following comments may help improve the quality of this policy brief.

Abstract
1. Item 6 of the recommendation paragraph is not stated as a challenge (given the context of the preceding sentence but as the author's recommendation.

Introduction
1. The second paragraph has already defined Philanthropy. The extension of this definition in the third paragraph (comparing with CSR) seems to deviate from the aim of the policy brief, which is to create a strong case for funding stunting research.

2. In the last paragraph, the second sentence starts by saying "Funding this research...". It would be good to specify the type of research being referred to.

3. Please add space between the word "what" and "Rochmyaningsih (2016)".

4. The author's focus is on stunting research. However, as they have properly indicated, the risk factors for stunting are multifactorial. The introduction does not highlight critical issues related to stunting and why should funding be directed to this issue in Southeast Asia. For instance, why not on nutritional interventions that might have a spill-over effect? In addition, why emphasize funding beyond multi-sectoral collaboration/initiatives both nationally and internationally? Should this be acknowledged instead?

Policy and implications
1. Please simplify the sentence stating with "A new analysis of Indonesia's, the Philippines', Singapore's, and Thailand's high- and middle-level economies..." as it is very long.

2. This policy brief seeks to highlight issues and recommendations relevant to the Asian context, why only describe the Indonesian policy at the beginning of the second
3. It is unclear in the following sentence what the authors are describing/ referring to; “This means that direct and non-direct nutrition-related efforts were made to address stunting and its underlying causes, including efforts in research and innovation”.

4. "Researchers play a vital role in this program." What program is being referred to here? The same applies to the next few sentences for which without clarity it becomes difficult to understand the key message/ policy issues being communicated.

5. The third paragraph presents data on stunting trends, but it is not clear for which country. However, given the citation, it seems the data are for Indonesia. Nevertheless, there is an over-representation of policy and data from Indonesia and not Southeast Asia. If the interest is to highlight policy issues and recommendations in indicated Southeast Asian countries, then the data and such issues should reflect the overall context. Should the burden of stunting not have been presented in the introduction with a focus on the Southeast Asian Countries? In addition, the same paragraph contains information on exclusive breastfeeding and low birth weight. Why are these relevant here? What critical policy issues does this paragraph highlight?

6. Figure 1: Label the y-axis (both primary and secondary). Also, what are the y-axis units? Add the corresponding values in each bar. Please provide a clear description to aid in understanding the results of this figure.

7. For the shared data, what are the values in column I? Column H is empty, hence can be deleted.

8. For your analysis, why not consider a meta-analysis approach? Based on the results/ your data, what has been the overall contribution of the R&D expenditure in Singapore and Thailand on reduced stunting prevalence? How much of that is directly related to increased funding?

9. Lastly in this section, consider highlighting the key policy issues and implications.

**Recommendations**

1. The first sentence still points out Indonesia. The title is about Southeast Asian countries as mentioned several times in this manuscript. If the interest is only in Indonesia, then that should be clear from the beginning.

2. What do the authors mean by this sentence; “Attention needs to be directed in proposing major changes in the allocation of research-development expenditure”? The same sentence is also in the abstract.

3. Item 6 is stated differently from the abstract. Please see the comments in the abstract section above and align these together.

4. The second sentence is referring to the program in Indonesia while the case is being made about Southeast Asia. Please provide more specific descriptions or make it even clear that this policy brief is specific to the Indonesian context.
5. How relevant are the "program" and recommendations to other countries in similar settings?

Conclusion
1. The first sentence mentions the "government", which is probably referring to Indonesia and not Southeast Asian countries.

Does the paper provide a comprehensive overview of the policy and the context of its implementation in a way which is accessible to a general reader?
No

Is the discussion on the implications clearly and accurately presented and does it cite the current literature?
No

Are the recommendations made clear, balanced, and justified on the basis of the presented arguments?
Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Public Health

I confirm that I have read this submission and believe that I have an appropriate level of expertise to state that I do not consider it to be of an acceptable scientific standard, for reasons outlined above.