Populasi

Poverty and Women's Education as Determinants of Stunting and Health Rights in Riau Province

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Abstract

The right to health can be fulfilled by eliminating the threat of stunting, which is primarily influenced by two major variables, poverty and the low level of education among women aged over 15. This paper analyzes the relationship between poverty, the duration of women's education, and the prevalence of stunting in Riau Province. Women's formal education has proven to play a critical role in reducing stunting rates by enhancing knowledge about nutrition and health. Poverty which entraps families becomes the main barrier to accessing education. A qualitative research method was employed, with data gathered through interviews, literature reviews, journals, and relevant media sources. The results indicate that basic literacy and numeracy skills acquired by women in school increase their awareness and capacity to prevent and manage stunting, thereby positively impacting the future of their children.

Keywords: education awareness, literacy skills, nutrition knowledge, poverty barrier, qualitative study

Introduction

Qori'ah (2012) highlights that discussing poverty means confronting a serious and persistent challenge faced by many countries around the world. Despite longstanding efforts, poverty remains a deeply rooted issue which development programs and projects continuously strive to alleviate. Yet, defining poverty is far from straightforward. While it is often simplistically linked to hunger, poverty is, in fact, a complex and multifaceted condition. Witt, as cited by Qori'ah (2012), emphasizes that poverty remains one of the greatest challenges confronting humanity today. Understanding poverty requires looking beyond income alone—it demands a broader lens that includes economic hardships, social exclusion, political marginalization, and the impact of governmental policies.

When studying poverty, it is crucial to delve deeply into the specific contexts of different groups and regions. This is because poverty manifests in diverse ways—shaped by cultural, geographic, and social factors unique to each community. Boltvinik, as cited in Qori'ah (2012), emphasizes that an individual's or group's circumstances should be interpreted in relation to the fundamental needs considered essential for survival. This relativity means that poverty cannot be measured by a single yardstick, but requires context-sensitive indicators and multidimensional frameworks.

Maxwell's (1999) distinction between actual and potential poverty adds further depth to this understanding. Actual poverty describes the immediate experience of deprivation, whereas potential poverty points to the risk of falling into poverty in the future. This duality underscores the need for programs which not only aim to lift people out of current poverty, but also work preventatively to reduce vulnerability and the likelihood of future poverty. Poverty is inherently linked to structural inequalities; it intersects with social divisions, gender disparities, and uneven development patterns, demanding holistic and nuanced approaches.

In Riau Province, poverty's impact is felt strongly, especially in how it influences women's educational attainment—an important determinant of child health outcomes like stunting. Studies have consistently shown that lower levels of maternal education are linked to higher risks of child stunting, as women with limited schooling often lack access to essential knowledge about nutrition, hygiene, and healthcare practices (Rahmawati, et.al., 2022; Torlesse, et.al., 2016). Achieving equitable development in line with the Sustainable Development Goals hinges on promoting gender equality and ensuring women have access to education. Educated women are better positioned to support family well-being, economic security, and community progress.

According to the Indonesian Ministry of Health, as cited by Auliailahi and Oginawati (2020), clean and healthy living behaviors reflect a family's collective care and responsibility toward personal and public health. When clean living practices are nurtured starting at the household level, they become the foundation for greater health knowledge and active participation in community health initiatives. Families that grasp the importance of health practices are better equipped to protect their members from environmental health risks and disease.

In Riau Province, the implementation of Clean and Healthy Living Behavior (CHLB) remains inconsistent. Data from the Riau Provincial Health Profile (2016) reported that only 47.3 percent of households met national CHLB criteria, with the highest compliance in Pelalawan Regency (75.9 percent) and the lowest in Pekanbaru City (24.7 percent) (Health profile of Riau Province, 2016; see also Auliailahi & Oginawati, 2020). A study conducted in Muara Fajar, Pekanbaru (a community near a final disposal site or TPA), found that empowering families through integrated health service posts (known and popular as Posyandu) volunteers significantly improved CHLB practices.

This is particularly important in preventing conditions, such as diarrheal diseases, which remain a common health burden linked closely to poor environmental sanitation and limited access to clean water. In Riau Province, many families face significant challenges securing clean water due to inadequate infrastructure—a direct consequence of poverty. The intricate relationship between poverty, limited educational opportunities, and uneven health knowledge distribution presents a critical barrier to reducing stunting and improving overall community health. This interconnectedness poses a significant barrier to improving child health. It requires multisectoral interventions that address poverty's structural roots.

Literature Review

The intersection of women's issues and their social environment has been examined from multiple perspectives in previous research. Studies by Rameez (2018), Krause, et.al. (2018), and Alzuabi (2016) demonstrate that women's active participation in social development, particularly in health and education sectors, significantly benefits community well-being. Their findings collectively emphasize that women's

involvement is critical to achieving sustainable development goals related to social equity and health outcomes. However, most studies focus on broad social contexts, often overlooking local cultural constraints, particularly in regions like Riau.

Rogan (2016) emphasizes that patriarchal social and cultural norms profoundly influence women's welfare, often restricting their access to education and participation in family decision-making. This dynamic is evident in Riau, particularly in Kampar Regency, where qualitative research found that mothers of stunted children often attribute the condition to heredity, reflecting deep-rooted cultural beliefs and limited maternal understanding of nutrition and health (Suyanto, 2024). National surveys echo this pattern, with Hall, et.al. (2018) reporting that two-thirds of rural Indonesian mothers had never heard of stunting, and many misattributed its causes, underscoring the knowledge gap shaped by socio-cultural constraints. Evidence shows that women's empowerment—through education, economic participation, and community advocacy—can significantly mitigate stunting, with maternal knowledge and behaviors directly explaining over 30.0

percent of stunting cases and exerting additional indirect influence through child-related factors (Achmad, 2024; Santosa, et.al., 2025). Furthermore, women's bargaining power within households is positively associated with improved child nutritional status and reduced stunting prevalence (Astari, et. al., 2024). Broader analyses confirm that low maternal education, rural residence, and socio-cultural constraints are among the most significant determinants of stunting in Indonesia (Beal, et.al., 2018; Ariyanti & Hazmi, 2015), while highlighting a lack of subnational research examining how these cultural mechanisms operate differently across urban and rural settings in provinces, such as Riau.

Figure 1 illustrates stunting prevalence trends in Indonesia, in Riau Province, and Pekanbaru City from 2013 to 2023, based on data from Basic Health Research (BHR) and associated nutrition surveys. The stunting trend in Pekanbaru shows a clear long-term decline, but with intermittent reversals, especially in 2019 and 2022. This suggests that while interventions have had an impact, they may have inconsistent implementation or coverage.
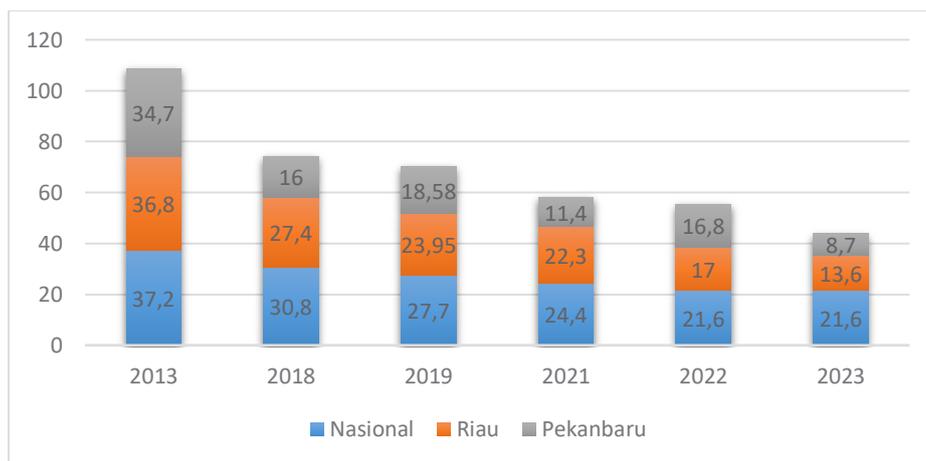

Figure 1 National Stunting Prevalence Data, Riau Province, Pekanbaru City, 2013-2023

Source: Basic Health Research (BHR), Indonesian Nutrition Status Survey (INSS), Indonesian Health Survey (IHS)

While there is an encouraging decline across all areas, stunting rates in Riau and particularly in Pekanbaru remain above national averages. This persistent disparity underscores the influence of underlying social determinants—such as women's education and poverty—which differ regionally. The reviewed literature acknowledges the important role of women's education in improving child health outcomes, but lacks detailed exploration of its interplay with localized cultural and economic barriers specific to Riau's urban and rural settings. This suggests an urgent need for more context-specific studies which focus on how education and empowerment strategies can be tailored to effectively address stunting within these communities.

Further, several scholars establish that education equips women with literacy and health knowledge, increasing their capacity to promote healthier behaviors within families (Abuya, et.al., 2012). Educated women tend to marry partners with better socioeconomic status and provide children with healthier environments, which contributes directly to reducing stunting prevalence. However, few studies address how these factors interact in areas with persistent gender inequality. This gap underpins the rationale for the present study. motivates the present study to investigate these intersections comprehensively, aiming to contribute actionable insights for policy and community interventions.

Overall, prior research establishes a clear connection between women's education, social environment, and child health outcomes, but regional socio-cultural factors and poverty present persistent challenges requiring further investigation. This study positions culturally responsive educational strategies as key to tackling stunting in Riau's unique socio-economic landscape.

Methods

This study uses a qualitative method to explore the relationship between poverty, women's education, and stunting in Riau Province. This method is appropriate to understand the social and economic conditions which influencing the fulfillment of the right to health in the context of gender equality. The data in this study consists of primary and secondary data which are used to support each other.

Primary data were collected through semi-structured interviews with selected informants using purposive sampling. A total of 18 informants were involved, consisting of 10 women aged over 15 years, 5 health workers (such as midwives and nutrition staff), and 3 community leaders. The informants were chosen based on their relevance to the topic and their experiences related to education, poverty, and child health. Interviews were conducted both directly and by phone, depending on the availability and location of the respondents.

Secondary data were obtained from relevant literature such as journal articles, government reports, and official documents. These include national and regional health surveys, the Food Security and Vulnerability Atlas (FSVA) 2024, BPS reports, and the Health Profile of Riau Province. The secondary data were used to provide context and strengthen the interpretation of the primary data.

The data analysis used thematic analysis by referring to the steps proposed by Braun and Clarke (2006), starting from data familiarization, coding, theme identification, reviewing, and interpretation. The analysis was carried out manually by reading the interview transcripts repeatedly and identifying themes related to education barriers, poverty, clean water access, and stunting prevention. These themes were then connected to data from official reports and statistical sources to give a broader view.

In this study, secondary data also played a role in supporting the analysis. Statistical data related to stunting prevalence, women's education, and access to clean water were presented in the form of visuals, such as bar charts and maps. These visualizations were used to show regional disparities and strengthen the arguments in the qualitative findings.

To ensure the validity of the data, the researcher used triangulation by comparing the interview results with secondary data sources. In addition, member checking was carried out by confirming some interpretations with several informants, and peer discussion was done to reduce interpretation bias. This process was important to ensure that the findings represent the actual situation in the field.

This method is in line with the objectives of the research, which aims to explore the connection between poverty, gender inequality in education, and stunting, and how these affect the fulfillment of the right to health in Riau Province.

Findings and Discussion
Poverty and Its Consequences: Food Insecurity

Poverty is more than a lack of income, it is a multidimensional issue which affecting health, education, and overall quality of life. As Rapanna (2017) explains, poverty is a root cause of a cascade of health problems, especially for vulnerable groups, such as pregnant women, breastfeeding mothers, children, and the elderly. These impacts were heightened by the 1997 Asian financial crisis, which left a lasting mark, including in provinces like Riau. However, the national narrative must be sharpened by focusing more directly on the local context.

In Riau Province, poverty continues to be a significant issue, particularly in areas where residents struggle to meet basic nutritional needs. This condition exacerbates malnutrition, weakens immune systems, and increases the prevalence of diseases, particularly among children. Many impoverished households also lack access to adequate health services and clean water. Poor sanitation and untreated illnesses increase the risk of infectious diseases such as diarrhea and typhoid, reinforcing a vicious cycle of poor health and poverty. These conditions are particularly harmful to women and children, as limited access to healthcare and poor nutrition directly affect maternal and child health outcomes.

Poverty also restricts educational opportunities. Many children from low-income families are forced to leave school to support their households, especially in rural areas of Riau. This is particularly burdensome for girls, who may face additional barriers such as early marriage or domestic responsibilities. A lack of education among women over the age of 15 is closely linked to heightened food vulnerability at the community level. As such, the gendered impacts of poverty should be made more explicit, as women are both central to food security and disproportionately affected by its absence.

The extent of poverty in Riau can be seen in the following figures. In 2019, the number of poor residents reached 490.72 thousand, slightly decreasing to 483.39 thousand in 2020. This rose again to 500.81 thousand in 2021 before falling to around 485 thousand in 2022 and 2023. Districts like Kuantan Singingi and Kepulauan Meranti saw gradual reductions in poverty, while Indragiri Hulu and Pekanbaru experienced increases. Notably, Rokan Hulu, Kampar, and Rokan Hilir consistently recorded the highest numbers of poor residents, with Rokan Hulu rising from 72.21 thousand in 2019 to 74.38 thousand in 2023.
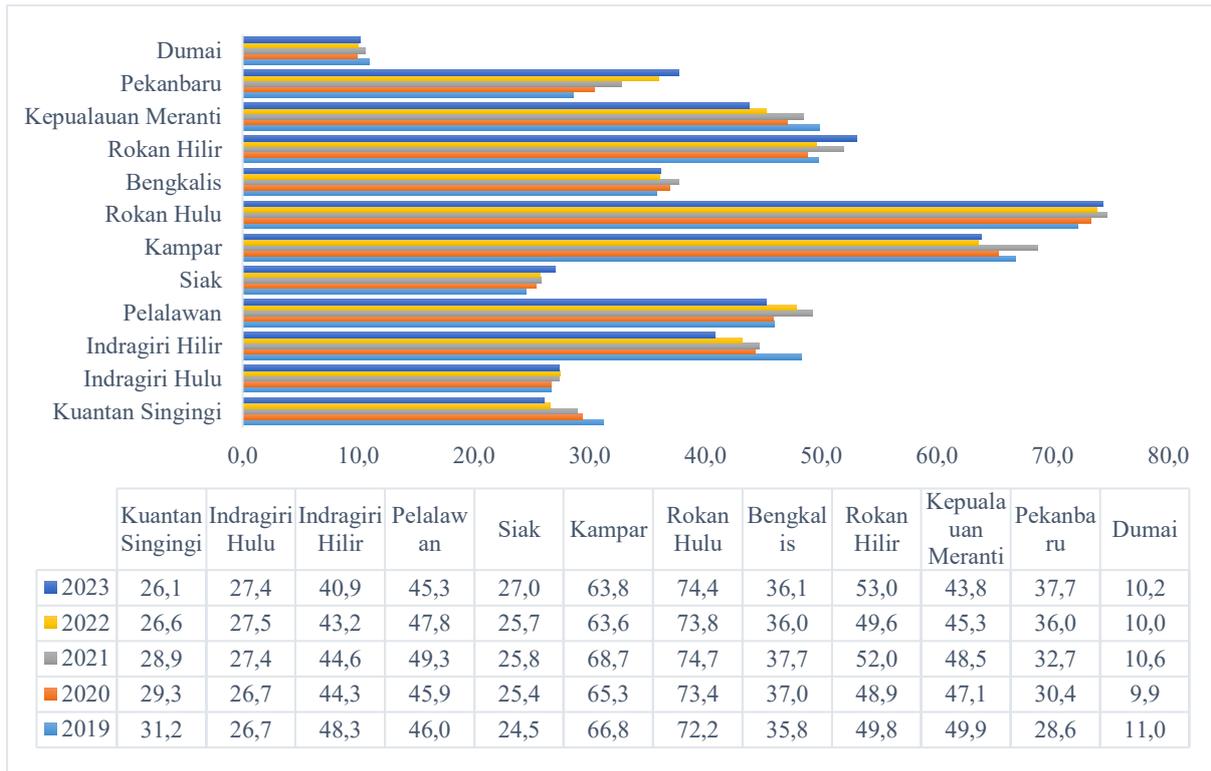
Figure 2 Percentage of Poor Population by Regency/City, 2019–2023 (Thousands of People)

	Kuantan Singingi	Indragiri Hulu	Indragiri Hilir	Pelalawan	Siak	Kampar	Rokan Hulu	Bengkalis	Rokan Hilir	Kepualauan Meranti	Pekanbaru	Dumai
2023	26,1	27,4	40,9	45,3	27,0	63,8	74,4	36,1	53,0	43,8	37,7	10,2
2022	26,6	27,5	43,2	47,8	25,7	63,6	73,8	36,0	49,6	45,3	36,0	10,0
2021	28,9	27,4	44,6	49,3	25,8	68,7	74,7	37,7	52,0	48,5	32,7	10,6
2020	29,3	26,7	44,3	45,9	25,4	65,3	73,4	37,0	48,9	47,1	30,4	9,9
2019	31,2	26,7	48,3	46,0	24,5	66,8	72,2	35,8	49,8	49,9	28,6	11,0

Source: Riau Province Central Statistics Agency, 2024

These figures suggest that while some progress has been made, poverty remains a major challenge in certain areas, especially where infrastructure and services are lacking. The persistence of poverty has direct implications for food insecurity, which is increasingly a spatial issue tied to local governance and service access.

According to the Food Security and Vulnerability Atlas (FSVA) of Riau Province 2024, 172 sub-districts were assessed for food vulnerability. Of these, nine sub-districts (5.23 percent) fell within priority levels 1 to 3, indicating varying degrees of food vulnerability, while the remaining 94.76 percent were in priority levels 4 to 6, considered food secure. There were no sub-districts in the most severe category (priority 1), but two sub-districts (1.16 percent)—Kuala Indragiri and Concong in Indragiri Hilir—were classified as priority 2 (vulnerable), and seven sub-districts (4.06 percent) were labeled as priority 3 (moderately vulnerable).

The priority 3 sub-districts included, Pucuk Rantau (Kuantan Singingi), Perhentian Raja (Kampar), Tebing Tinggi (Kepulauan Meranti), Rokan IV Koto and Pendalian IV Koto (Rokan Hulu), Tanah Merah and Kateman (Indragiri Hilir). The table below presents a summary of sub-districts categorized under Priority 1 to 3, based on indicators of food insecurity, education, and clean water access, highlighting the most vulnerable areas across Riau Province.

Table 1
Table of Sub-districts by Food Security Priority Levels in Riau Province (2024)

Priority Category	Number of Sub-districts	Sub-district and Regencies
Priority 2 (Highly Vulnerable)	2	Kuala Indragiri, Concong (Indragiri Hilir Regency)
Priority 3 (Moderately Vulnerable)	7	Pucuk Rantau (Kuantan Singingi), Perhentian Raja (Kampar), Tebing Tinggi (Kepulauan Meranti), Rokan IV Koto & Pendalian IV Koto (Rokan Hulu), Tanah Merah & Kateman (Indragiri Hilir)
Total Priority 1–3	9	
Priority 4–6 (Moderately Secure to Highly Secure)	163	Distributed across the province, with high concentrations in: Bengkalis, Dumai, Pekanbaru, Pelalawan, Siak, Indragiri Hulu
Total Sub-districts in Riau	172	

Source: Processed by author from FSVA Riau Province 2024, SAE and Susenas (BPS, 2024)

A key recommendation is that central and regional governments target these sub-districts for urgent food security interventions, particularly the two sub-districts in priority 2. Integrating poverty and food security data would strengthen the analysis further. For instance, sub-districts with high poverty rates often overlap with food vulnerability zones. A clearer example—e.g., "Kecamatan Kateman in Indragiri Hilir has both high poverty and is classified as priority 3 in food vulnerability"—would help readers see the spatial overlap between poverty and food insecurity.

The FSVA data, derived from variables including food consumption per capita, morbidity rates, access to clean water, and female education levels, was analyzed to classify the sub-districts into six priority levels. The majority of sub-districts fall into priority 6 (highly food secure), particularly in Bengkalis, Dumai, and Pekanbaru, where 100 percent of sub-districts are in this category. In Kuantan Singingi, 80 percent are in priority 6, though it still includes some sub-districts in priority 3. Other regencies, such as Kepulauan Meranti and Rokan Hulu, show more mixed classifications, with substantial portions of sub-districts in priority 3.
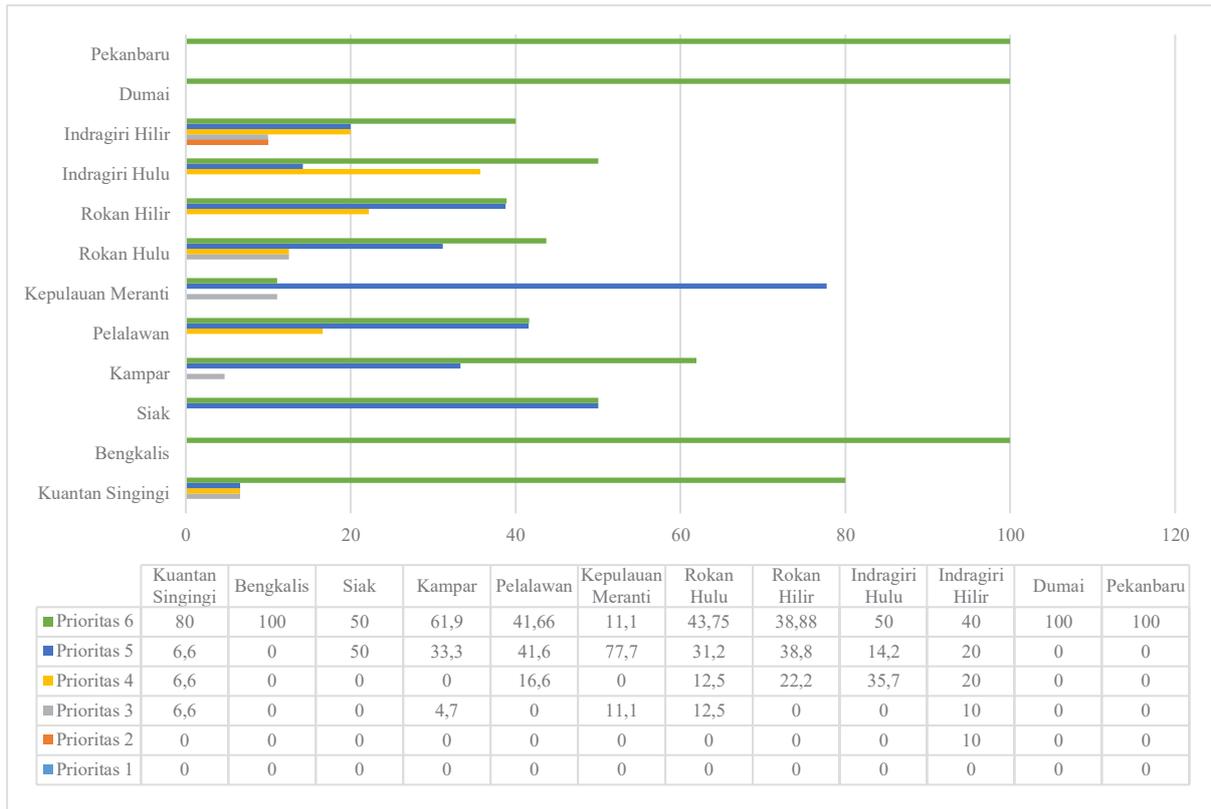
	Kuantan Singingi	Bengkalis	Siak	Kampar	Pelalawan	Kepulauan Meranti	Rokan Hulu	Rokan Hilir	Indragiri Hulu	Indragiri Hilir	Dumai	Pekanbaru
Prioritas 6	80	100	50	61,9	41,66	11,1	43,75	38,88	50	40	100	100
Prioritas 5	6,6	0	50	33,3	41,6	77,7	31,2	38,8	14,2	20	0	0
Prioritas 4	6,6	0	0	0	16,6	0	12,5	22,2	35,7	20	0	0
Prioritas 3	6,6	0	0	4,7	0	11,1	12,5	0	0	10	0	0
Prioritas 2	0	0	0	0	0	0	0	0	0	10	0	0
Prioritas 1	0	0	0	0	0	0	0	0	0	0	0	0

Figure 3 Percentage of Sub-Districts Based on Priority Groups Per District (by Percent)

Source: Analysis source by FSVA Riau Province 2024

Indragiri Hilir deserves special attention as it contains 10% of sub-districts in both priority 2 and 3, indicating more acute vulnerability. On the other hand, regencies like Indragiri Hulu, Siak, Pelalawan, and Kampar mostly fall within moderately to highly secure categories (priority 4–6), suggesting relatively better food security.

While Riau Province as a whole shows a trend toward improved food security, spatial disparities persist. Targeted and gender-sensitive interventions in sub-districts with lower priority rankings will be essential to closing this gap. By addressing poverty, improving access to education for women, and enhancing clean water infrastructure, policymakers can improve food resilience and reduce vulnerability in the most affected areas.

Poverty and Its Consequences: The Landscape of Low Female Education in Riau Province

Husein, et.al. (2021) reveals that the Indonesian government's women empowerment programs, aimed at reducing poverty, primarily focus on marginalized women from extremely resource-poor families. These initiatives target economic inequality within broader poverty dimensions, especially through increasing women's participation in the workforce—one of the key indicators of the Gender Inequality Index. The Indonesian government has undertaken efforts to promote equal opportunities for women by ensuring their rights, enabling development participation, and guaranteeing equitable outcomes.

According to Our World in Data (2015), women in developing countries comprise two-thirds of the world's illiterate

population, largely due to restricted access to education. This is not just a consequence of poverty—it is a key factor in its persistence, especially for women. Globally, approximately 1.3 billion people live below the poverty line, and women make up the majority. Their lack of access to education limits their knowledge of nutrition, sanitation, and health care, increasing household health risks and deepening vulnerability. These gaps ultimately reduce productivity and reinforce intergenerational cycles of dependency.

The gendered disparities in education observed globally are also evident in Riau Province, where their impacts manifest in comparable ways. Women in low-income regions around the world often face compounded vulnerabilities as a result of limited educational access, and this pattern is similarly reflected in Riau—particularly in regencies such as Indragiri Hilir—where low levels of female education contribute to broader social and economic challenges.

In Riau Province, poverty across multiple regencies remains a major barrier to female education. The entrapment of poverty significantly limits women's opportunities for schooling, which in turn affects health, economic mobility, and food security. According to the 2024 Riau Province Food Security and Vulnerability Atlas (FSVA), which used Small Area Estimation (SAE) based on the 2024 National Socioeconomic Survey, the average years of schooling among women over 15 varies considerably. Concong Sub-district in Indragiri Hilir has the lowest average at 5.53 years, while Bina Widya in Pekanbaru reaches 14.30 years.
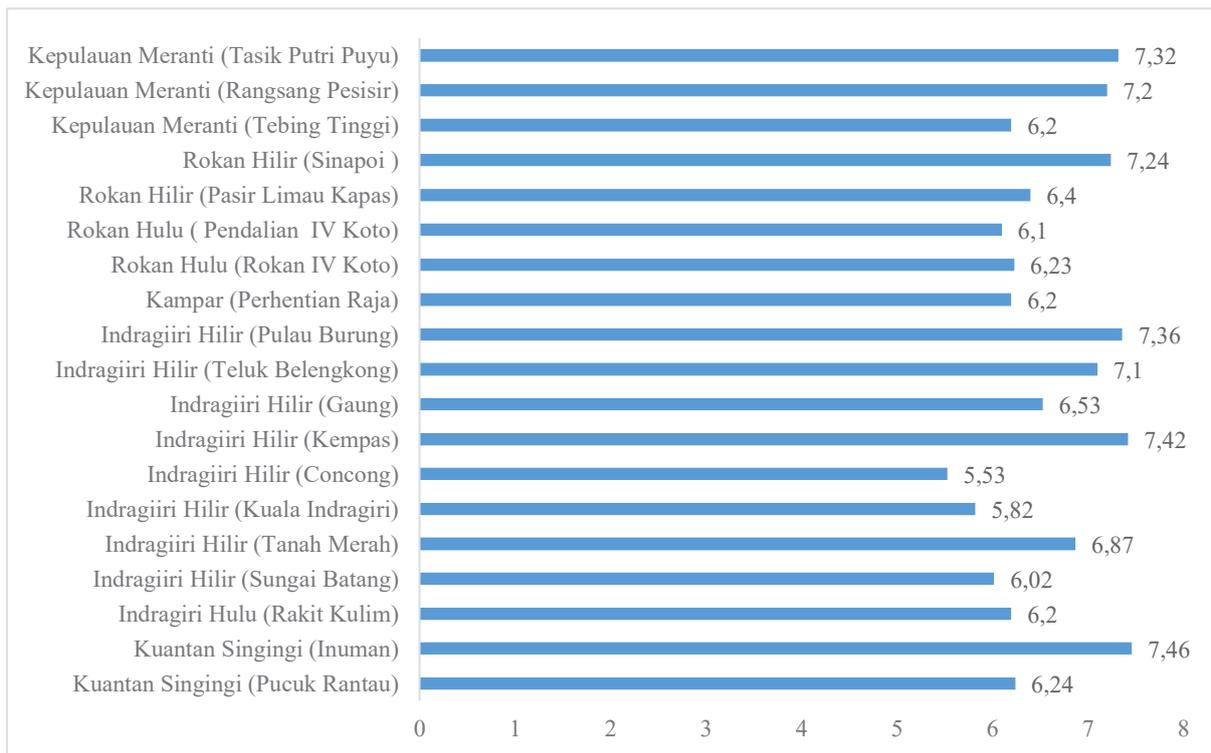

Figure 4 Average Years of Schooling for Women Over 15 Years Old in Vulnerable Sub-District Groups (Priority 1–3) in Riau Province, 2023

Source: SAE (Small Area Estimation), Susenas 2024

The figure 4 indicates that low average years of schooling for women (less than 7.5 years) are prevalent in 19 sub-districts across seven regencies, including: two sub-districts in Kuantan Singingi, one in Indragiri Hulu, eight in Indragiri Hilir, one in Siak, one in Kampar, two in Rokan Hulu, two in Rokan Hilir, and three in Kepulauan Meranti.

The implications of low educational attainment—particularly in areas like Concong, where women receive less than six years of schooling—are significant. Without at least basic education, women may lack the literacy needed to understand health and nutrition information, reducing their capacity to care for their families. This limitation can also exclude them from formal labor markets, pushing them into informal work with low income and no protection. The result is not only reduced economic independence, but also increased child malnutrition, higher maternal mortality, and limited social mobility across generations.

The 19 sub-districts mentioned are classified under Priority 1 to 3 in the FSVA categorization. This priority classification is based on a composite index of food insecurity indicators, including nutritional status, access to clean water, morbidity rates, and female education levels. Sub-districts in Priority 1 are extremely vulnerable, while those in Priority 3 face moderate food insecurity and limited access to key services.

A notable pattern is that eight out of the 19 sub-districts with the lowest female educational attainment are located in Indragiri Hilir Regency. Several local factors may contribute to this: Indragiri Hilir is characterized by a dispersed rural population, limited transportation infrastructure, and seasonal flooding, which affects access to schools. Cultural norms may also contribute to early marriage and the prioritization of male education. These barriers create a localized context where female education is particularly difficult to advance.

The educational attainment of women—especially mothers—has profound impacts on child health. Abuya et al. (2012) and Glewwe (2009) explain that formal education provides mothers with health-related knowledge, improves their ability to seek appropriate care, and increases their acceptance of modern health practices. Moreover, women with higher education are more likely to enter stable employment, marry better-educated partners, and raise children in healthier environments. Husein, et.al. (2021) emphasize that education is a core element of the Sustainable Development Goals (SDGs), specifically under Goal 5: Gender Equality. UNESCO calls for universal and equitable access to education by 2030.

If references, such as Solazzo (2018) and Hrynkow (2018), are to be retained, their relevance to the Riau context must be clarified. For instance, while Solazzo discusses inequality in the U.S., the comparison underscores how income inequality—whether in developed or developing regions—always constrains women's access to essential services. Similarly, Hrynkow's reference to Vandana Shiva's ecofeminism can be used to argue that the intersection of environmental degradation and patriarchal systems also affects rural Indonesian women, who are often responsible for water collection, food provision, and caregiving under resource-scarce conditions.

In development policy, women are increasingly recognized as essential drivers of progress. Broad access to education for women not only improves individual well-being but also benefits families and communities. The Ministry of Women's Empowerment and Child Protection emphasizes the importance of gender mainstreaming, which requires intersectoral coordination to ensure women benefit from development equitably. Beyond policy, community movements and economic initiatives are also key to changing attitudes and creating structural changes.

The Portrait of Stunting in Children in Riau Province

In the health domain, the gap between men and women in terms of socioeconomic status and access to care remains a pressing issue. The World Health Organization (WHO, 2017) reported that Indonesia's main public health burdens are concentrated in the productive age group (15–60 years), where many women face barriers in accessing prenatal, delivery, and postpartum services. These barriers are not only due to geographical or infrastructural limitations but are also rooted in economic hardship, gender norms, and unequal decision-making power. Consequently, maternal health outcomes suffer, increasing the risk of child stunting, a chronic condition that hinders physical and cognitive development in early life.

According to Claudia, et.al. (2018), using World Bank data, and Firman, et.al. (2022), roughly one in three children under five in Indonesia experiences stunting. Stunting reflects prolonged malnutrition and poor living conditions. It affects not only physical stature, but also learning capacity and long-term income potential. Booth (2023) explains that while Indonesia has seen economic growth, provinces like Riau still experience deep-rooted economic and health inequalities. Economic fragility at the household level reduces access to nutritious food and healthcare, making children more vulnerable to stunting.

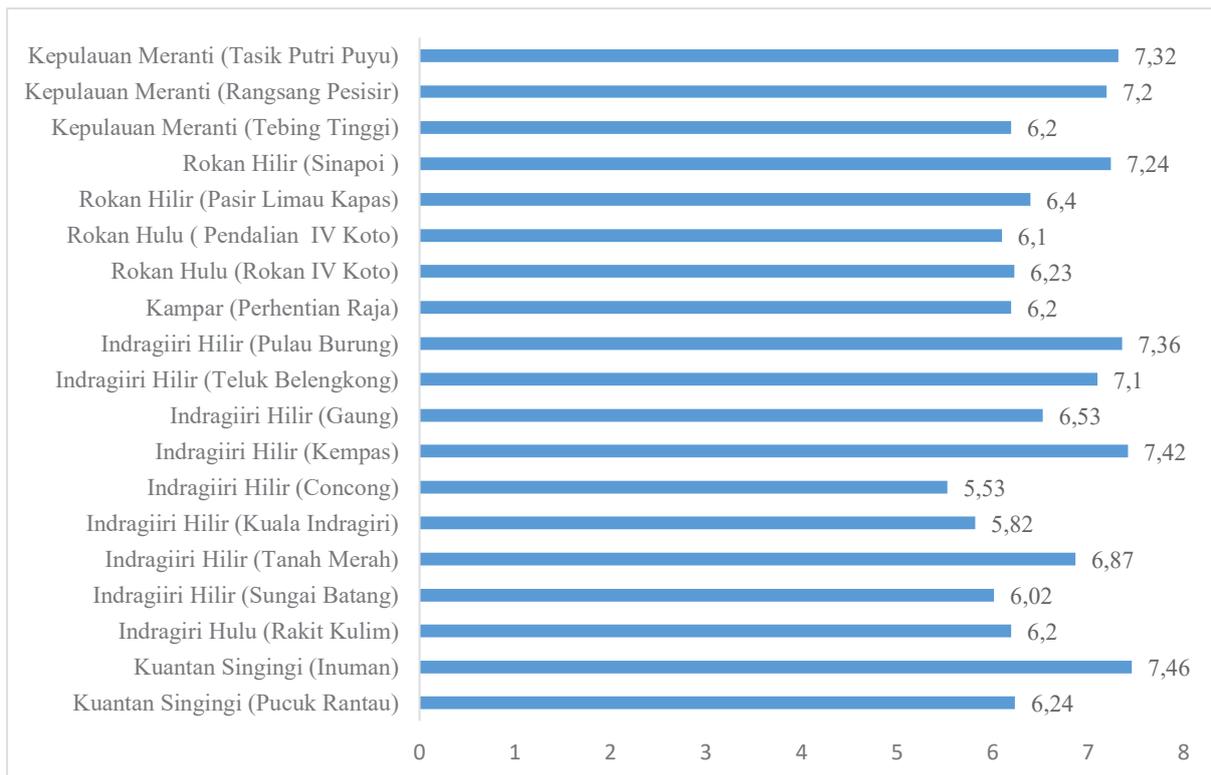This situation is illustrated in the following figure.

Figure 5 Indonesia Health Survey (SKI) 2023 and Stunting Prevalence Target for 2024 in Riau Province

Source: Indonesian Health Survey (IHS)

In 2023, Riau Province recorded a stunting prevalence of 13.6 percent, with a reduction target of 12.38 percent in 2024.

However, data from certain areas presents ambiguity. For instance, Pekanbaru City shows a stunting prevalence of 8.7 percent

in 2023, yet a target of 16.6 percent for 2024. This seeming increase may reflects a change in measurement and reporting standards following the adjustment of national targets rather than an actual policy goal to increase stunting. Without clarification, such data may lead to misinterpretation that the government is tolerating worsening conditions.

Some districts are pursuing steep reductions. Kuantan Singingi aims to drop from 23 percent to 13.09 percent, and Kepulauan Meranti from 19.6 percent to 13.75 percent. Kampar's target appears to rise from 7.6 percent to 14.32 percent, which again suggests the need for further clarification or data reconciliation. Areas like Indragiri Hilir (18.8 percent), Bengkalis (17.9 percent), and Rokan Hilir (16.6 percent) aim to bring rates below 17 percent, demonstrating a strong commitment, though challenges remain in achieving these ambitious targets.

Gender plays a critical role in this issue. Women often manage family nutrition and care. Their limited access to clean water and health education reduces their capacity to ensure child health. Thus, addressing stunting must include empowering women with better access to healthcare, sanitation, and nutrition resources.

Poverty and lack of clean water create a double burden. Poor households struggle not only to afford food, but also to secure safe water, leading to repeated illnesses that further impair nutrient absorption. Sutomo, et.al. (2021) note that unsafe water contributes to dehydration and infections. The Ministry of Health (2012) emphasizes that unsafe water directly worsens public health. These recurring illnesses prevent children from absorbing essential nutrients, aggravating malnutrition.

Water access is also a gendered issue. Women and girls often bear the burden of fetching water, sometimes from unsafe or distant sources. This task affects their health and education and limits time for income-generating activities. Sutomo, et.al.

(2021) stress that clean water must be a guaranteed right, accessible to all—especially in public services like schools and clinics. Ensuring water access empowers women, improves family health, and supports national nutrition goals.

Indonesia's struggle with water access stems from historical underinvestment in infrastructure. Diarrhea, a common illness linked to contaminated water, remains prevalent and deadly, especially among children. Improving water systems is a critical health intervention—not just infrastructure. It enhances hygiene, reduces disease, and supports better nutrition outcomes.

Using clean water in households reduces the spread of disease. The United Nations (2021) asserts that to meet SDG 6.1, water must be not only free of harmful substances, but also available and accessible for all. Contaminated water impairs nutrient absorption by damaging the gut. This means even when food is available, the body cannot use it effectively. DKP and WFP (2009) and Sofiati (2010) found that areas lacking clean water have higher malnutrition rates due to frequent illness and weakened immunity.

Solutions must include improving sanitation and hygiene alongside clean water access. DKP and WFP (2015) and Kavosi, et.al. (2014) showed that clean water and sanitation help restore gut health and improve nutrition. This approach is essential for public health strategies aimed at reducing stunting.

According to the 2024 FSVA report using BPS SAE data, some subdistricts in Riau have 100% of households without clean water access. This includes Sungai Batang, Kuala Indragiri, Concong, Gaung, and Mandah in Indragiri Hilir, and Pulau Merbau in Kepulauan Meranti. These areas lack access to safe sources such as piped water, protected wells, and boreholes. At the other end, some areas show 0 percent lacking clean water, including Teluk Belengkong (Indragiri Hilir), Koto Gasib

(Siak), Bonai Darusalam (Rokan Hulu), Rantau Kopar (Rokan Hilir), and Sail and Pekanbaru Kota (Pekanbaru City). The next figure presents data on clean water access by sub-district.
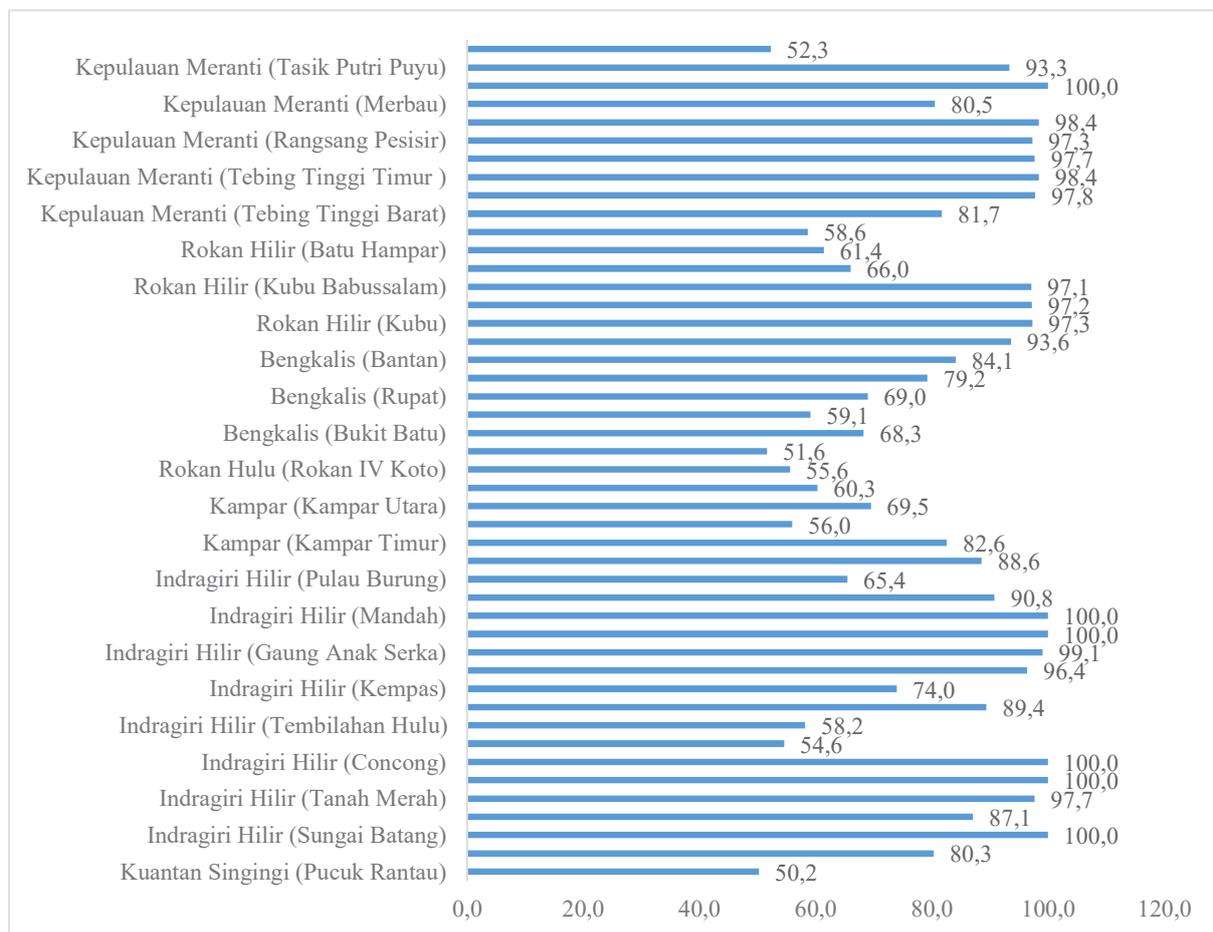

Figure 6 Percentage of Households Without Access to Clean Water by Subdistrict for Vulnerable Groups (Priority 1 to 3) in Riau Province, 2023

Source: SAE (Small Area Estimation), Susenas 2024

Visual data show that many subdistricts, especially in Indragiri Hilir, Kepulauan Meranti, and Bengkalis, face critical water shortages. These are not isolated cases—they reveal systemic problems. Areas with 80–100 percent of households lacking water are particularly concerning. Lack of water disrupts hygiene, increases disease risk, and hampers children's growth and development.

Water scarcity also reinforces social inequality, as the poorest communities suffer the most. The consequences go beyond health—they affect education, income, and opportunity. Water scarcity also reinforces social inequality, as the poorest communities suffer the most due to their limited ability to adapt or invest in alternative water sources. In these contexts, the absence of clean water disproportionately affects daily routines—children miss school to help collect water, women spend hours traveling long distances to unsafe sources, and entire households are forced to prioritize water collection over income-generating or educational activities. This not only interrupts the educational continuity of children, particularly girls, but also restricts adults from pursuing stable employment or entrepreneurial opportunities. Inadequate

water access increases reliance on informal labor and deepens the economic precarity of already vulnerable groups. Over time, this compounds social disparities: households with better access to water enjoy better health, greater productivity, and more stable incomes, while those without fall further behind. Thus, water scarcity is not only a symptom of poverty—it is an active driver of long-term inequality, shaping who gets to participate in social and economic progress.

To address this, the government must prioritize high-risk areas for infrastructure upgrades and water system expansion. Investments must be sustainable and involve community participation. Fixing water access is not only about survival—it is about dignity and long-term development.

In summary, reducing stunting in Riau requires integrated strategies that link clean water, sanitation, poverty alleviation, and gender equality. Women's roles in health and caregiving make them central to successful interventions. Ensuring equitable access to health and water resources is essential to break the cycle of stunting and poverty.

Conclusion

The government has designated stunting reduction as a national priority program, integrated into the 2022–2024 National Medium-Term Development Plan (NMTDP), with an ambitious target to decrease stunting prevalence from 27.6 percent in 2009 to 14 percent by 2024. This policy is reinforced by Presidential Regulation No. 72/2021 on Accelerating Stunting Reduction, which provides guidelines for ministries/agencies, provincial and district/city governments, village governments, and other stakeholders to implement coordinated interventions.

These efforts reflect the government's strong commitment and attention to addressing the multidimensional issue of stunting. However, analysis reveals that tackling stunting cannot rely solely on

policy but requires a more holistic and integrated approach. A fundamental pillar to strengthen is poverty alleviation, as economic constraints directly affect communities' access to nutritious food and quality healthcare. Additionally, expanding women's access to quality education is a crucial factor. Female education not only raises awareness of nutrition and health but also improves overall family welfare.

Moreover, adequate access to clean water and sanitation must be a strategic component of interventions aimed at accelerating stunting reduction. Data indicates that disparities in clean water access remain a primary obstacle in several areas within Riau Province, increasing the risk of diseases that exacerbate children's nutritional status. Therefore, government interventions and policymaking must consider socioeconomic factors, education, and basic infrastructure availability—such as clean water—to ensure stunting reduction efforts are effective and sustainable.

Overall, accelerating stunting reduction demands strong synergy among various sectors and levels of government, alongside active community participation. A multisectoral, evidence-based approach should underpin these interventions to ensure measures are not merely short-term but address the root causes of stunting. Thus, the stunting reduction targets can be optimally achieved, positively impacting the quality of Indonesia's human resources in the future.

References

Abuya, B., Ciera, J., & Kimani-Murage, E. (2012). "Effect of Mother's Education on Child's Nutritional Status in The Slums of Nairobi". *BMC Pediatrics*, 12(1), 1-12. https://doi.org/10.1186/1471-2431-12-80

Alzuabi, A. Z. (2016). "Sociopolitical Participation of Kuwaiti Women in the Development Process: Current State

and Challenges Ahead". *Journal of Social Service Research*. https://doi.org/10.1080/01488376.2016.1153738

Booth, A. (2023). "Health Challenges in Indonesia". *Journal of Community Medicine and Health Solutions*, 4, 007-009.

Badan Pusat Statistik Provinsi Riau. (2024). *Data Statistik Provinsi Riau*. https://riau.bps.go.id

Children's Prize Foundation. (2021). "Why Water is a Basic Human Need". Children's Prize Foundation. https://childrensprize.org/

Claudia, R., Subandoro, A., & Gallagher, P. (2018). "Aiming High: Indonesia's Ambition to Reduce Stunting". The World Bank. https://documents.worldbank.org/curated/en/750031531750788363/Aiming-High-Indonesia-s-Ambition-to-Reduce-Stunting

Departemen Kesehatan Republik Indonesia. (2012). Keputusan Menteri Kesehatan Republik Indonesia nomor 907/Menkes/SK/VII/2002 tentang syarat-syarat dan pengawasan kualitas air minum. Departemen Kesehatan RI.

Firman, W., & Utomo, A. (2022). *In sickness and in health: Diagnosing Indonesia*. ISEAS Publishing.

Hrynkow, C. (2018). "Situating Earth Democracy: Vandana Shiva on Agroecology, Contemporary Politics and Resilience". *Political Studies Review*, 16(3), 205–216. https://doi.org/10.1177/1478929918756915

Husein, S., Herdiansyah, H., & Saraswati, P. L. G. (2021). "An Ecofeminism Perspective: A Gendered Approach in Reducing Poverty By Implementing Sustainable Development Practices in Indonesia". *Journal of International Women's Studies*, 22(5), 157-170.

Kavosi, E., Amirkhani, M. A., & Sharifi, H. (2014). "The Effects of Access to Safe Water nd Sanitation On Nutritional Status In Children Under Five Years Old". *Public Health Nutrition*, 17(5), 905-912. https://doi.org/10.1017/S1368980013000621

Kementerian Pemberdayaan Perempuan dan Perlindungan Anak Republik Indonesia. (2018). Laporan Tahunan Pemberdayaan Perempuan dan Perlindungan Anak. https://www.kemenpppa.go.id

Maxwell, S. (1999). "The Meaning and Measurement of Poverty". *ODI Poverty Briefing* No. 3. http://www.oneworld.org/odi/briefinf/pov3.htm

McMahon, M. (1997). "From the Ground Up: Ecofeminism and Ecological Economics". *Ecological Economics*, 20, 163-173. https://doi.org/10.1016/S0921-8009(96)00081-9

Ministry of National Development Planning of the Republic of Indonesia. (2017). *Dissecting Poverty and Inequality: The Latest Data Releases*. BPS Indonesia.

Our World in Data. (2015). "Literacy Rate of Young Men and Women". Retrieved from https://ourworldindata.org/literacy

Perkins, P. E. (2007). "Feminist Ecological Economics and Sustainability". *Journal of Bioeconomics,* 9, 227–228. https://doi.org/10.1007/s10818-007-8022-8

Qori'ah, G. C. (2012). "A Discourse of Poverty in Indonesia". *Jurnal ISEI Jember*, 2(1), 45-58.

Rapanna Patta, A. (2017). "Poverty Reduction Policy Toward Strengthening Economic Society in Indonesia". *International Journal of Innovative Science and Research Technology*, 2(5), 11-17.

Rahmawati, R., Yani, A., & Oktaviana, I. (2022). "Maternal Education as a Determinant of Stunting Among Children Under Five: Evidence from Indonesia". PLoS ONE, 17(7), e0269312. https://doi.org/10.1371/journal.pone.0269312

Rameez, A. (2018). "Political Participation of Women in Local Governance: A Case Study of Selected Local Government Bodies in Eastern Sri Lanka". *Journal of Asian and African Studies*. https://doi.org/10.1177/0021909618770183

Rogan, M. (2016). "Gender and Multidimensional Poverty in South Africa: Applying the Global Multidimensional Poverty Index (MPI)". Social Indicators Research. https://doi.org/10.1007/s11205-015-0937-2

Shiva, V. (2002). *Staying Alive: Women, Ecology and Development*. Zed Books.

Small Area Estimation (SAE), Susenas. (2024). *Data Estimasi Wilayah Kecil*. Badan Pusat Statistik Indonesia. https://bps.go.id

Solazzo, A. L. (2018). "Different and Not Equal: The Uneven Association of Race, Poverty, and Abortion Laws on Abortion Timing". *Social Problems*. https://doi.org/10.1093/socpro/spy014

Torlesse, H., Cronin, A. A., Sebayang, S. K., & Nandy, R. (2016). "Determinants af Stunting in Indonesian Children: Evidence From a Cross-Sectional Survey Indicate a Prominent Role for The Water, Sanitation and Hygiene Sector in Stunting Reduction". *BMC Public Health*, 16(1), 669. https://doi.org/10.1186/s12889-016-3339-8

Witt, M. (1998). "Der Fondo de Inversión Social – Ein effizientes entwicklungspolitisches Instrument zur Bekämpfung der Armut in Bolivien?" *Göttinger Studien zur Entwicklungsökonomie,* 6. Vervuert.

WHO. (2017). "State of health inequality Indonesia (interactive visualization of health data) 2017". *World Health Organization.* https://www.who.int/data/health-inequality