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Close the Gap: Accelerating Post-pandemic Recovery through Social Justice

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Abstract

Socioeconomic disparities run deep in the Philippines, but the COVID-19 pandemic further exacerbated these inequities. Globally, there is a renewed sense of urgency to break these inequities and place social justice at the front and center of the post-COVID recovery. Social justice is about redressing power imbalances, assuring the protection of equal access to liberties, rights, and opportunities, and distributing the benefits, risks, and costs among peoples across generations. In this paper, we have examined the disproportionate impacts of the COVID-19 pandemic in the following sectors: health, labor and education, and environment. We have examined deep-seated structural and systems challenges that could explain these disparities. Avenues for insightful discourses and genuine reforms are needed to address concerns on human capital development and social protection and environment resilience and climate change.

Keywords: social justice, inequality, COVID-19, social protection, labor, education, health, environment, resilience

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Close the Gap: Accelerating Post-pandemic Recovery through Social Justice

Valerie Gilbert T. Ulep, Ma. Christina F. Epetia, and Sonny N. Domingo[1]

1. Background

Socioeconomic disparities run deep in the Philippines, but the COVID-19 pandemic has further exacerbated these inequities. Marginalized groups were disproportionately affected by the pandemic, compromising access to necessities and social cohesion. The pandemic was thought to be a "great equalizer", but emerging studies show otherwise. Vulnerable populations such as women, the elderly, displaced migrants, informal sector workers, and cultural minorities bore the brunt of the pandemic (Goldin and Muggah 2020; Perry et al. 2021; Decerf et al. 2021).

The negative effects of the pandemic cut across sectors. During the initial stages of the pandemic, employment rates precipitously declined with informal sector workers tormented by no-work and no-pay arrangements. The health system was tested to its limit, especially in deprived areas with limited supply-side capacity. The quality of education was compromised because of the prolonged closure of face-to-face classes. This suggests the significant learning loss of children and the youth, especially those from low-income households. Cultural minorities were further isolated and socioeconomically disadvantaged.

In this report, we argue that the extreme and disproportionate impacts of the pandemic reflect the deep-seated structural inequities. COVID-19 has led to a renewed sense of urgency to break the structural inequities to address the pandemic and prepare for future shocks. Hence, social justice should be the front and center of the post-COVID-19 recovery plan.

This report is divided into five (5) sections. Section 2 is a critical assessment of evidence on the disproportionate impact of the pandemic on the poor and vulnerable. Section 3 outlines the structural inequities in the country that could explain the large disproportionate impact of the pandemic. Section 4 thinks through the concept of social justice and how this translated into national policies. Lastly, Section 5 highlights the inequities in three (3) thematic areas: health, labor and education, and climate and environment.

2. Disproportionate impacts of the pandemic

As of June 2022, the World Health Organization (WHO) has reported more than 500 million confirmed SARS-COV infections with 6 million deaths (WHO 2022). Epidemiologic studies suggest that the elderly and people with underlying chronic conditions have higher risk of acquiring the disease (Mueller et al. 2020). However, emerging studies suggest that socio-economic circumstances are important determinants of infection. Informal settlers, labor migrants, and ethnic minorities are more at risk (OECD 2020b; WHO 2021; Jaljaa et al. 2022). Underlying medical conditions, such as obesity and diabetes, which are consistent predictors of COVID-19 mortality and morbidity, are driven by socio-economic circumstances (Abrams and Szefler 2020).

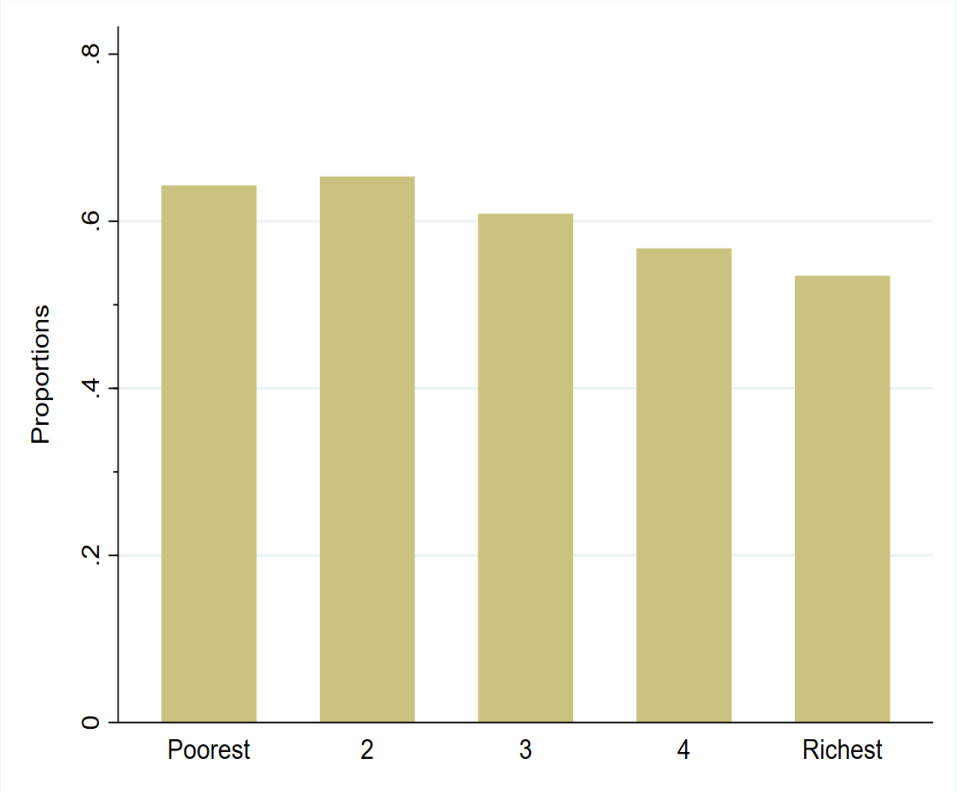
1 V. Ulep and S. Domingo are Senior Research Fellows, respectively. C. Epetia is a Research Fellow.

In the Philippines, the burden of non-communicable diseases (NCDs) is fast growing in poor communities of the country (Ulep et al. 2020). Lastly, the disproportionate effects of the pandemic cut across sectors. The impacts on education, labor, and other facets of society were unequal as well.

2.1. Impact on poverty

The pandemic had an unprecedented impact on the economy. In 2020, the domestic economy precipitously declined by almost 10%, one of the deepest recessions in the post-war era. During the same period, poverty incidence climbed by 1.5 percentage points, from 16.6% in 2018 to 18.1% in 2021, erasing years of progress in reducing poverty. Most Filipinos recorded a decline in income, but the decline was more severe among poor households (see **Figure 1**).

Figure 1. Proportion of Philippine households reporting reduced income, 2020

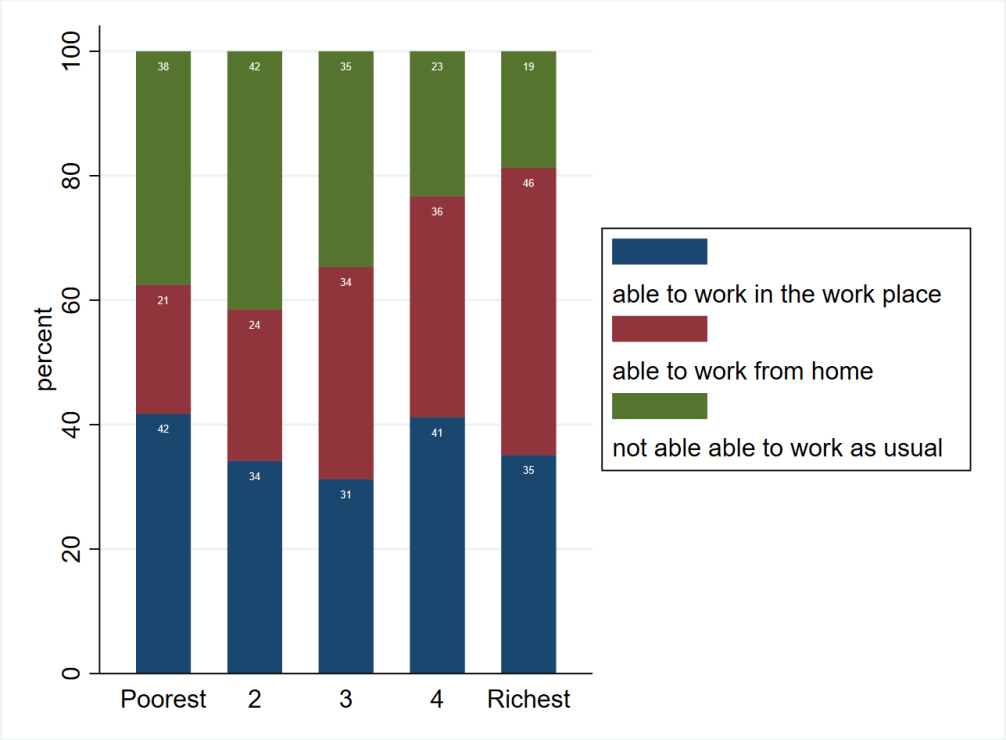


Source: Analysis of World Bank's HFPS data

2.2. Impact on labor and employment

The jobs of million Filipinos were severely affected by the pandemic. Unemployment rate reached a record-high of 18% during the first quarter 2020 (PSA, 2020). Because of high informality among the poor, the socio-economic gradient of labor force participation during the height of the pandemic was glaring. Even those who were fortunate to retain employment, the ability to cope was different. About half of the employees in the richest quintile could work from home and reduce their risk of infection, but this was not the case for the poorest quintile. Because of their working arrangements and conditions, poor households had higher risk of getting infection (see **Figure 2**).

Figure 2. Work arrangement of Filipino employees, 2020



Source: Analysis of World Bank's HFPS data

Women were more likely to lose their job during the pandemic. This occurred not only because they overrepresent the industries that were hardest hit, but because women are more vulnerable to being dismissed from jobs (ILO 2021). Women were likely to lose their job compared to men, which put them more at risk of poverty (Lavado et al. 2021). About a third of Filipino women had lost their informal sector employment during the height of the pandemic (Khullar 2021). The limited social protection schemes in the informal sector leave workers, especially women, more vulnerable to economic shocks.

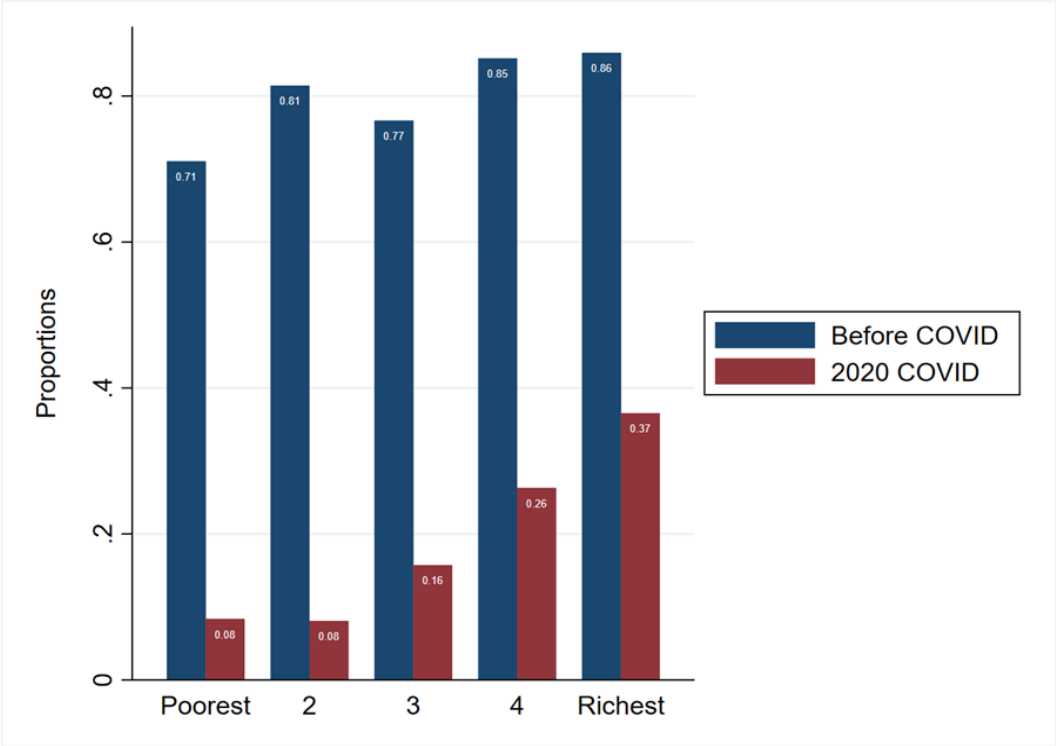
During the pandemic, while unemployment rates increased for both sexes, the feminization of domestic work gravely placed the burden on women (UN Women https://www.unwomen.org/en/news/stories/2020/9/feature-covid-19-economic-impacts-on-women2020; ADB 2021; OECD, 2020a). Even before the pandemic, policy attention has always been needed to address the low labor participation among women, which is driven by gender stereotypes. Women's work is often attributed to domestic and reproductive roles, while men are associated with economic and productive work (Gabegan and Gaddi 2019). In the Philippines, most of the unpaid labor related to housework falls on the shoulders of women (Bayudan-Dacuycuy 2020). Women are bound to care not only for the children at home but even for the sick and elderly.

2.3. Impact on learning outcomes

The Philippines is one of the countries that took the longest time to start in-person classes. The prolonged school closure translates to staggering learning losses with unprecedented economic and social costs. While schools in the Philippines have shifted to distance learning, it comes with

challenges. Students were less likely to engage in active learning, and those from low-income households have limited access to e-learning resources (Cho et al. 2021; UNICEF 2021). Paper-based modules, which most children from poor households have access to, have questionable effectiveness. **Figure 3** shows the large variation in school participation by socio-economic status during the first year of the pandemic.

Figure 3. School participation by socio-economic status, Philippines, 2019 and 2020

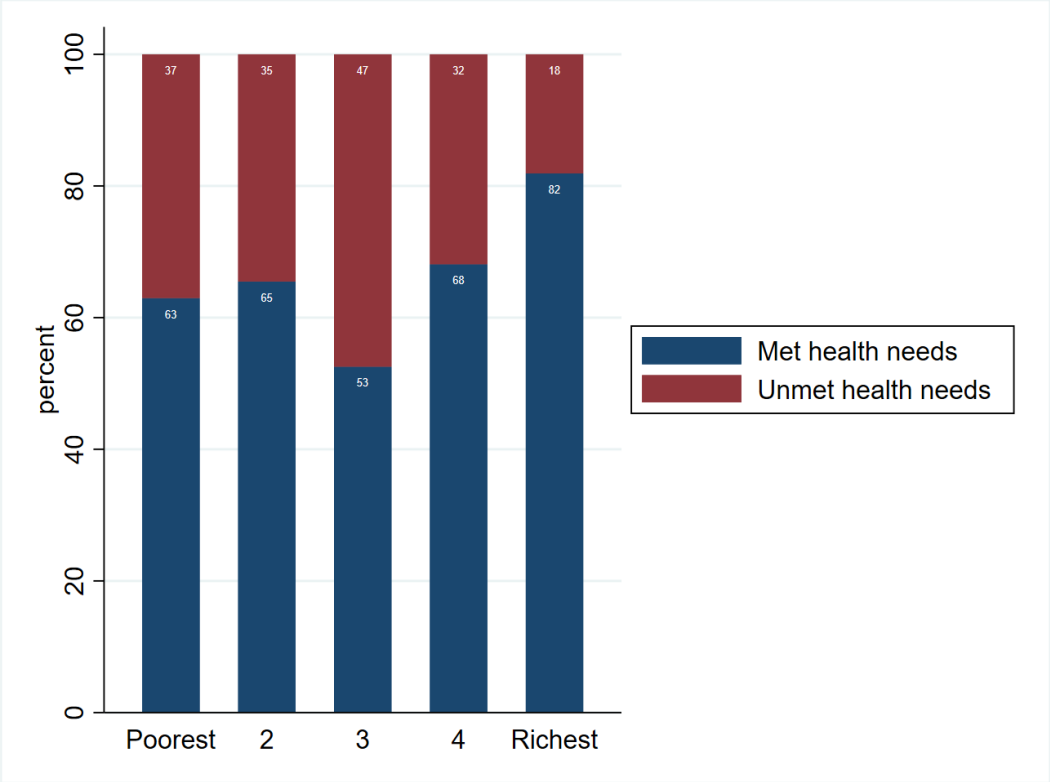


Source: Analysis of World Bank's HFPS data

2.4. Impact on health and well-being

The pandemic has disrupted healthcare services. While most Filipinos experienced challenges in accessing healthcare especially during the height of the pandemic, the impact was more severe among the poor and vulnerable. **Figure 4** shows that during the height of the pandemic, almost 40% of Filipinos from the poorest quintile reported unmet need for healthcare compared to only 16% among their richest counterparts.

Figure 4. Share of unmet need of healthcare, Philippines, 2020



Source: Analysis of World Bank's HFPS data

The sharp decline in access to health services was striking among vulnerable populations, particularly among children (Ulep et al. 2020) and women (Marquez et al. 2020). Women had difficulty accessing sexual and reproductive health services, which increased the risk of infant and maternal deaths (Marquez et al. 2020). In addition, social isolation has resulted in a unique challenge to their emotional development and mental health, especially among the youth (Malolos et al 2021).

Malnutrition increased during the height of the pandemic, which exacerbated the perennial problem of chronic malnutrition. About 62% of Filipino households experienced moderate to severe food insecurity affecting mostly the poor, and coverage of critical health and nutrition interventions significantly declined as well (CPBRD 2021). The compounding impact of school closure, lack of access to nutrition and decline in healthcare access will have an unprecedented impact on the overall well-being of children.

3. Structural inequities

We argue that these disparities in human capital indicators are attributed to structural drivers, such as (1) precarious working conditions and poor living and learning conditions, (2) growing income inequality, and (3) eroding democratic political processes and institutions. These structural drivers interact with socio-economic class, ethnicity, gender, and education level exacerbating social vulnerabilities.

3.1. Precarious working conditions

The pandemic has revealed that precarious work conditions interact with the socio-economic class, gender, and other socio-demographic factors. People in precarious working conditions have limited access to social protection, and their low wages hinder them from affording basic needs, such as sufficient quality food, water and sanitation, and housing. In the Philippines, a sizable portion of the labor force remains in the informal sector. Informal workers are more likely to be females, youth, and with less formal education (ILO 2002). In general, productivity in the informal sector is low, which explains the low wages. Also, informal sector workers are in a more vulnerable position. They are offered no legal protection, such as minimum wage, working hours, and comprehensive safety and health benefits (ILO 2002).

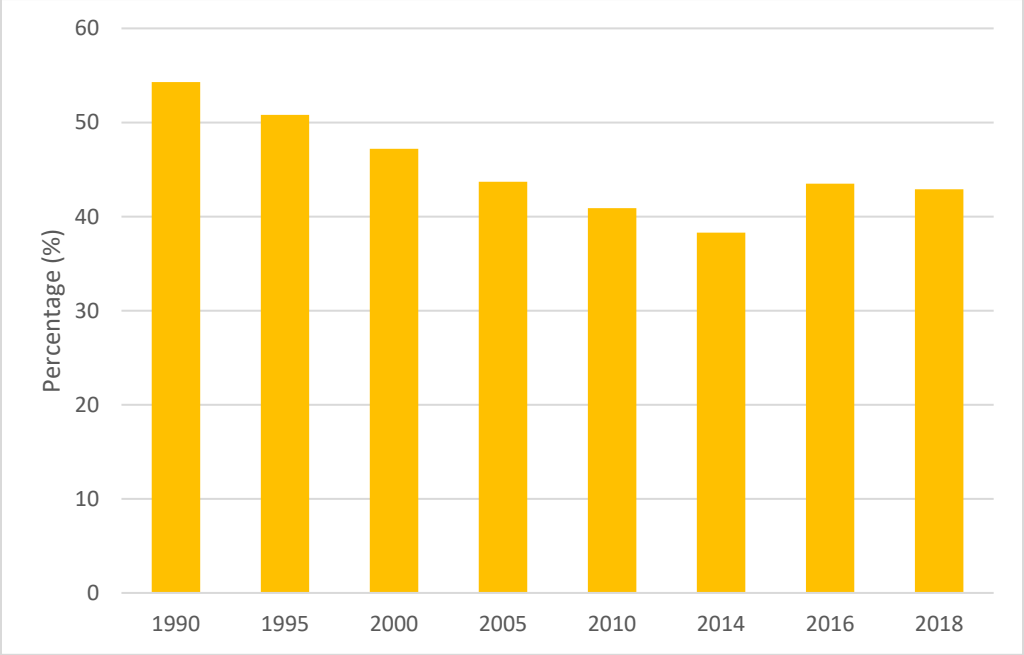
While the share of the informal sector in the past decades is decreasing, an emerging form of work using e-commerce and digital platforms is expected to increase (Gomez 2022). They work as independent employees, rather than regular, formal, and contracted employers. However, the challenge remains for these emerging forms of work, that is, access to a wide range of social protection schemes.

The crisis brought by the pandemic made informal sector workers, particularly women more vulnerable to job losses and poverty (Lavado et al. 2021; Khullar 2021). While social protection measures introduced during the pandemic, such as tax relief, cash transfers, unemployment benefits, and food and nutrition assistance, have been inadequate. The government faced administrative and logistical challenges including leakages and a lack of systems to efficiently distribute subsidies (Albert 2020).

3.2. Poor living conditions

Poor living conditions are a strong determinant of health. Infant survival, the most sensitive measure of population health, is higher in areas with poor access to water and sanitation (Gunther and Gunther 2010; Headi and Palloni 2019). It is strong predictor of injuries and violence (Goodhand 2001). Crowding increases the risk of getting infectious diseases (Shannon et al. 2018; Tornee 2004; Harling 2014) and mental health (Mangrio 2018; Riva 2014). It also increases the negative effects of natural disasters (McCallin and Scherer 2015). In the Philippines, around 1.5 million families are informal settler families of which 40% are in Metro Manila (Singh and Gadgil 2017). This suggests that many Filipinos have limited access to improved water and sanitation facilities and barely enjoy public safety.

Figure 5. Percentage of the Urban Population Living in Slums[2] in the Philippines



Source: Authors' anlaysis; World Bank Data (for Various Years)

Crowding increases the spread of COVID-19 infection (von Seidlein et al. 2021). The government imposed physical distancing policies. However, a large proportion of the population cannot adhere to these public health protocols because of the limitations of the physical environment. The government prioritized hygiene and handwashing, but the lack of universal access to basic services, such as clean water and sanitation facilities, makes it challenging to perform these protocols.

3.3. Learning conditions

The Philippine education system is in crisis. The country is lagging in most education outcome indicators. The country has consistently performed poorly in international assessments such as the Program for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS). In TIMSS, the Philippines ranked last among 58 countries in mathematics and science for Grade 4 students (Mullis et al. 2020). The national assessment test or NEAT, validates the poor performance of Filipino learners. While data is limited to examining the socio-economic differentials in educational performance, large disparity across socio-economic status is expected. Studies suggest a strong relationship between socio-economic standing and school performance and country-level ecologic studies show that PISA scores are correlated with education spending (Thomson 2018).

Education is critical for human and economic development. It is the single most important determinants of health outcomes and well-being (Zajacova and Lawrence 2018). People with

[2] "A slum household is defined as a group of individuals living under the same roof lacking one or more of the following conditions: access to improved water, access to improved sanitation, sufficient living area, housing durability, and security of tenure, as adopted in the Millennium Development Goal Target 7." (World Bank Metadata Glossary, n.d.)

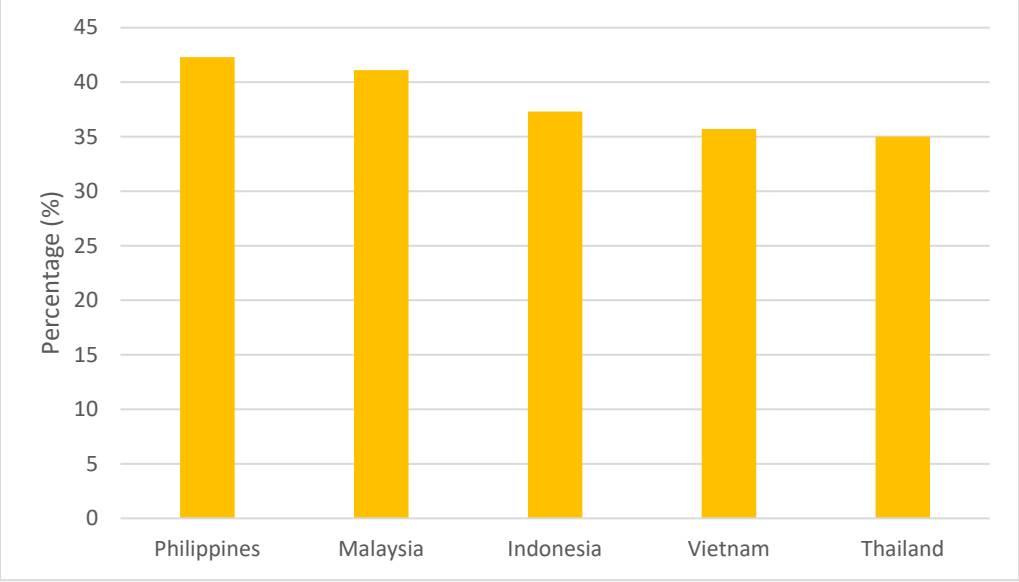
formal education have lower levels of morbidity, mortality, and disability (Raghupathi and Raghupathi, 2020).

The COVID-19 pandemic exacerbated the education crisis in the country. The shift to distance learning has resulted in unprecedented learning loss among the youth, which would have implications on future human capital. These learning losses hit the poor the hardest, as they have relatively limited capacity to adjust to new learning modalities and have been exposed to poorer quality education even before the pandemic. With the slow resumption of face-to-face classes, public schools are less ready to accommodate children safely because of physical and environmental limitations to adhere to public health protocols, such as proper ventilation and hygiene (Magsambol 2022). Additionally, lower income households do not have the same access to learning due to the lack of access to resources, such as gadgets, the internet, or mobile data (Cho et al. 2021; UNICEF 2021).

3.4. Growing income inequality

Income inequality or the gaps in the distribution of wealth among members of a population is a long-standing problem in the Philippines. The country has the highest level of Gini coefficient (a measure of income inequality) among ASEAN's largest economies at 42.6% in 2018.

Figure 6. Gini coefficient in ASEAN Countries



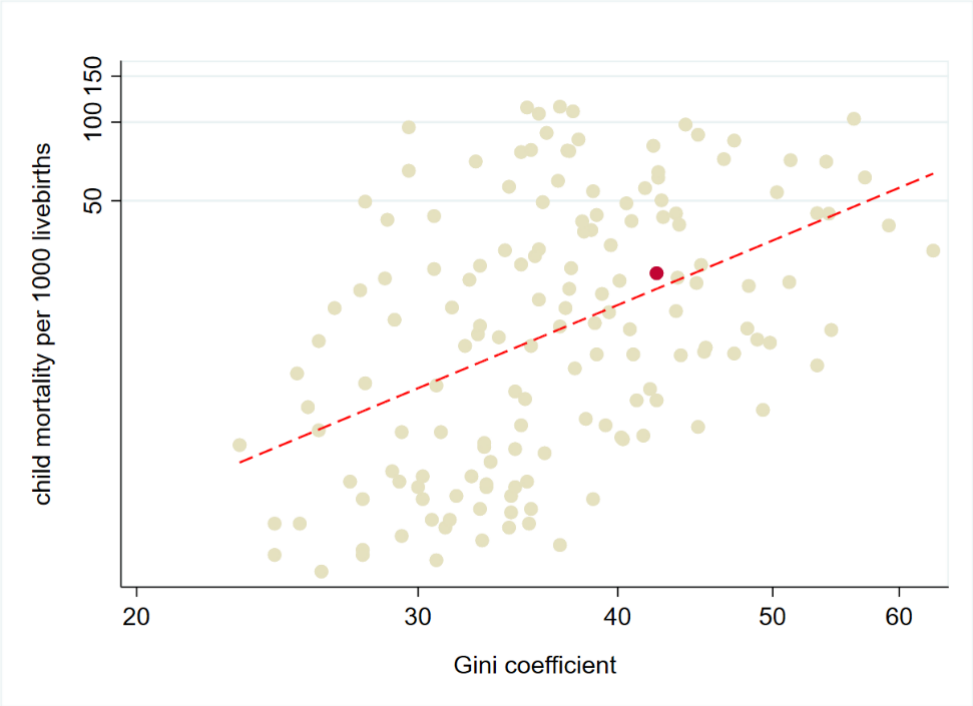
Source: Authors' analysis; World Bank Data (for Various Years)

An equal society is vital for social cohesion and economic mobility.[3] In recent decades, there is a growing empirical study suggesting that income inequality is a major determinant of health rather than average income (i.e., GDP per capita). Hence, achieving inclusive growth has benefits on health well-being. A reduction in child mortality, for example, improves health sector performance and translates to concrete and inclusive economic growth. Reducing inequality could lead to

[3] The relationship of Gini coefficient and economic mobility aka the "Great Gatsby" curve. He highlighted the deteriorating economic mobility in a backdrop of worsening income inequality.

mutually reinforcing outcomes. Lowering inequality results in better health and well-being, which leads to sustainable growth. Higher income inequality could lead to lower income groups not having the financial capacity to pay for adequate and adequate healthcare, or even cause them to forego care. A small rise in the income of poor households have a bigger impact on health than an equivalent rise in income for the rich (Pickett and Wilkinson, 2015).

Figure 7. Gini coefficient and child health



Source: Analysis of World Bank Data; red dot is Philippines

3.5. Eroding democratic political processes and institutions

Extreme public health measures have disproportionately affected the rights of vulnerable populations. Restrictions of women have severely disrupted the sexual and reproductive rights of women particularly access to reproductive health services. Also, prolonged lockdowns have led to increase in domestic and sexual violence. During the height of the pandemic, the Philippine National Police reported 27% decline in reported cases of domestic violence (Valdez et al. 2022) despite increase in internet queries associated with violence against women by 63% (Valdez et al. 2022).

Furthermore, actions were taken that compromised democratic processes such as slowing down of courts, increasing surveillance, and restricting freedom of assembly. Institutional processes that instill fairness and transparency were challenged. While the government has adopted utilitarian and egalitarian frameworks in prioritizing life-saving drugs and vaccines (i.e., roll-out the vaccine first to those immuno-compromised, elderly, and urban poor), leakages and elite capture are reported to be rampant. During the first year of the vaccine roll-out when vaccine was scarce (December 2021), the vaccine coverage of all-adult populations in mega-cities has already reached

90%, but the nation-wide coverage for senior citizens despite being a priority group remains at 50% (DOH 2021).

The pandemic highlighted the variable leadership competence of local governments and the quality of policy choices whether they truly reflect the interest and voice of the people. In the Philippines, pursuit of more substantive political empowerment has proven elusive. The political landscape has experienced a disproportionate concentration of elected political offices in less than two hundred families, one of the highest levels of dynastic concentration among functioning democracies (Rivera 2016).

4. Social justice and post-pandemic recovery

The COVID-19 pandemic has led to a renewed sense of urgency to break these structural inequities. Scholars have urged government to reinforce social justice the front and center of the post-COVID- recovery plan. Governments have identified the following policy areas where social justice could be realized in the post-pandemic era.

- Given the socio-economic disruptions brought by the pandemic, the government needs to rethink the sustainability of current economic models and structures. For example, moving towards stakeholder capitalism, reforming labor, and education arrangements, exploring fairer taxation, and investing in universal social protection programs such as healthcare for all.

- Reinforce the needs of the most excluded segments of the population. This includes strategic support for vulnerable populations, particularly informal sector workers, women, indigenous peoples, and even the middle-class.

- Renew commitment to climate and environmental justice. During the long-term lockdowns, many have found appreciation with the environment. This includes the desire for everyone to have physical space and mental space to think, and the desire to protect groups prone to environmental injustice.

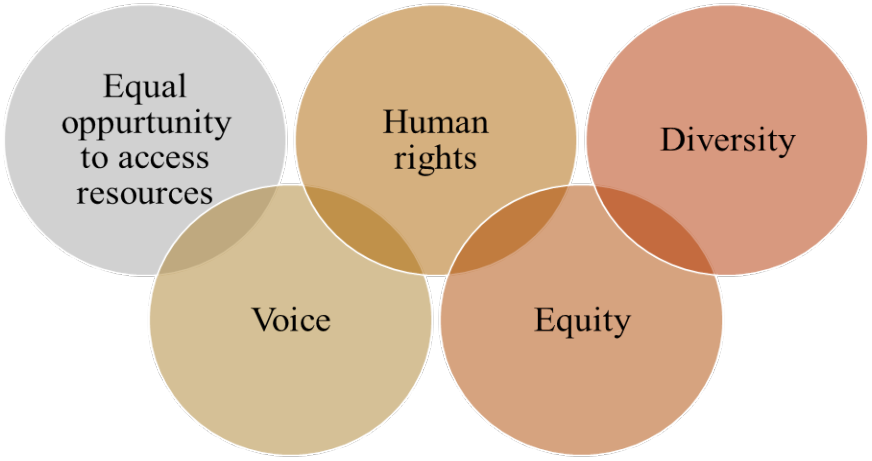
- Facilitate international cooperation and veer away from nationalism. This includes equitable global sharing of life-saving drugs and vaccines, and robust disease surveillance.

- Renew the commitment to protect civic freedom (e.g., access to information, demand for accountability).

4.1. The theoretical underpinnings of social justice

The concept of social justice has a long history. It emerged during the Industrial Revolution in the 1800's to achieve a more egalitarian society and reduce exploitation of vulnerable groups. At present, social justice is used to reinforce human rights and advocate for the improvement of the lives of the segment of the population who are socially and economically disadvantaged because of their gender, age, income, ethnicity, and other characteristics. The goal of social justice is to redistribute wealth and allocate resources to vulnerable groups. Social justice is understood as the fair distribution of the fruits of economic growth. The following are the key pillars of social justice.

Figure 8. Pillars of social justice



- Equal opportunity to access resources

Everyone should have access to resources to have equal footing in life. Governments typically provide human capital resources, such as healthcare, nutrition, and education to ensure the citizens have the same opportunity to succeed.

- Equity

Equity means how a specific population's needs are addressed to have the same outcomes as the general population. Part of social justice is to promote equity-advancing interventions and equity-based allocation practices and developing policies that reduce systematic barriers that deter a particular group from improving their outcomes.

- Voice

Voice is a mechanism for members of society to take part in decision-making processes of the government, such as broad-based consultation and bottom-up budgeting.

- Diversity

Some groups have more barriers because of their socio-cultural and economic background. Labor discrimination because of one's gender, physical attributes, age, and ethnicity is deeply-entrenched in society. Part of social justice is to develop policies and laws that prohibits such discriminatory practices and mandates diversity.

- Human Rights

Human rights are vital to societies that respect the civil, economic, political, cultural, and legal rights must be upheld.

4.2. Social justice in the Philippines

The concept of social justice is not something new in the Philippines. The 1987 Constitution frames the promotion of social justice as a commitment to create equitable opportunities, reduce social-economic and political inequalities, and remove cultural inequities. In Article 13 of the 1987 Constitution of the Philippine Republic. Sections 1 and 2 state the following:

"The Congress shall give highest priority to the enactment of measures that protect and enhance the right of all the people to human dignity, reduce social, economic, and political inequalities, and remove cultural inequities by equitably diffusing wealth and political power for the common good";

"The promotion of social justice shall include the commitment to create economic opportunities based on freedom of initiative and self-reliance" (1987 Const. Art. 1).

Furthermore, social justice is the bedrock of many international declarations, in which the country is signatory, such as the Charter of United Nations, the Universal Declaration of Human Rights, the International Covenants on Human Rights, the Copenhagen Declaration, and the UN Millennium Declaration among others. These declarations push for equality in political and civil rights, particularly in eliminating all forms of discrimination and allowing for equal access to opportunities and acceptable living conditions. Social justice is adopted in the country's development blueprints – the Philippine Development Plan (PDP) 2017-2022, and the *Ambisyon Natin 2040*. The latter serves as a planning pillar that will steer the country towards the goal of having strongly rooted, comfortable, and secure life by 2040. It envisions equitable income distribution from broad-based economic growth, and resilience of the poor against shocks.

5. Thematic areas

While social injustice manifests in almost all facets of society, we have identified three (3) sectors to reinforce the concept: (1) health infrastructure, (2) labor and education, and (3) environment.

5.1. Labor and education

Despite recording robust economic growth prior to the COVID-19 pandemic, realizing inclusive growth remains a challenge in the Philippines amid low human capital development. The World Bank (2021a) estimates that the Human Capital Index in the Philippines in 2020 averages to 0.52, which implies that a typical Filipino child born in 2020 is expected to achieve only 52 percent of their potential human capital by the age of 18. Low education and skills among vulnerable workers and scarcity of productive job opportunities also cause in-work poverty in the Philippines (Rutkowski 2015). Disaggregating education and labor outcomes, however, reveals disparities between socioeconomic and demographic groups, as individuals with better endowments and resources are more likely to achieve better human capital outcomes. In turn, people who have achieved better human capital outcomes tend to obtain better employment in terms of stability, security, and wages.

The COVID-19 pandemic has exacerbated the preexisting inequities in education and labor. While widespread and extensive, the adverse effects of the COVID-19 have been asymmetric with the already disadvantaged and vulnerable groups experiencing larger learning, job, and income losses

5.1.1. Inequities in education

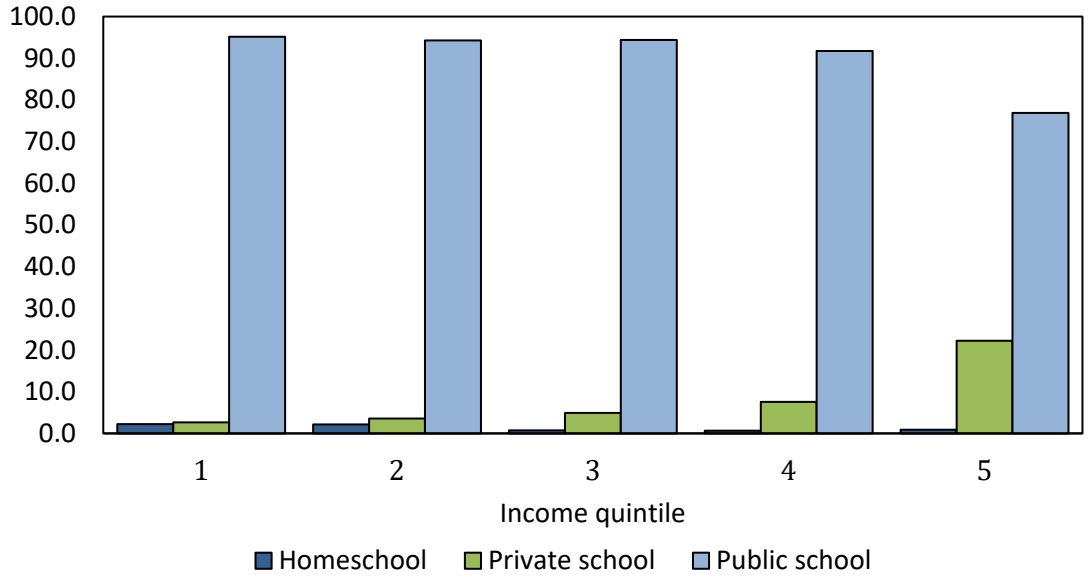
Although the average educational level has risen in the Philippines, the quality of education has been deteriorating over time (King 2020). The learning gap is wide given that the learning-adjusted years of schooling (7.5 years) is much lower than the expected years of schooling (12.9 years) by age of 18 (WB 2021a). Poor schooling outcomes are also reflected in the dismal performance of the Philippines in the latest international standardized exams as the country ranked at the bottom of the 2018 Programme for International Student Assessment (PISA) and in the 2019 International Results in Mathematics and Science (TIMSS).[4] Improved school enrollment in the country appears to have not necessarily translated to an equivalent increase in human capital. This observation is usually seen in developing countries where there is evidence that children learn much less than the goals of the official curriculum; i.e., a mismatch between the level of classroom instruction and student learning levels (Glewwe and Muralidharan 2016).

However, the levels of education quality and student learning appear to significantly differ between school types and between socioeconomic levels. The basic education system in the Philippines predominantly consists of public schools, but the share of students attending private schools steeply increases with income quintile (**Figure 9**). Students in private schools obtained markedly higher average scores in the PISA 2018 compared to the students in public schools (King 2020). Also, there is a strong positive relationship between socioeconomic status and achievement in the PISA 2018 and TIMSS 2019 among Filipino students (Besa 2019; Mullis et al. 2020). The learning gap is thus likely larger for the socioeconomically disadvantaged groups.

While a global learning crisis has been looming even before the COVID-19 pandemic amid unequal access to quality learning (UNESCO 2013), it is projected to worsen as schools closed to in-person learning during the pandemic, resulting in reduced human capital acquisition. The literature attributes learning loss to the loss of previously acquired knowledge and the loss of expected learning that could have taken place if there were no school closures (WB, UNESCO, and UNICEF 2021). Past studies find that school closures, whether scheduled or unanticipated, lead to decreased student performance (e.g., Cooper et al. 1996; Marcotte and Hemelt 2008). Moreover, disruptions at larger scales are discovered to result in lower educational attainment and earnings in the long run, since the likelihood of dropping out of school increases (e.g., Ichino and Winter-Ebmer 2004; Meyers and Thomasson 2017). As the school disruptions due to the COVID-19 pandemic is more extensive than what is empirically observed in the past, global learning and earning losses are projected to be substantial with losses expected to increase as school closures lengthen and effectivity of mitigation measures such as remote learning decreases (Azevedo et al. 2021). The loss in human capital of the current generation of students will curtail overall labor productivity and hamper economic recovery.

[4] Among 79 participating countries in the PISA 2018, the Philippines ranked last in reading and second to the last in mathematics and science. Among 58 participating countries in the TIMSS 2019, the Philippines ranked last in mathematics and science. Average mathematics and science scores also declined from 2003 to 2019.

Figure 9. Share of children aged 5-17 years old attending school by monthly income quintile and school type (2020, %)



Note: Quintile 1 refers to the poorest quintile, and quintile 5 refers to the richest quintile. Values in each quintile sum up to 100.

Source: Authors' calculations using the 2020 Annual Poverty Indicators Survey public use file.

What further needs to be emphasized is that learning and earning losses are expected to be larger for children from disadvantaged backgrounds and marginalized groups, particularly when they are more adversely affected by school closures and remote learning is less effective for them (Azevedo et al. 2021; WB, UNESCO, and UNICEF 2021; Molato Gayares and Thomas 2022). Estimates of actual learning losses in developed countries during the early phase of the pandemic confirm the steeper decline in student achievement in national standardized exams for those belonging in households with lower socioeconomic status (e.g., Contini et al. 2021; Engzell et al. 2021; Maldonado and De Witte 2022).

The Philippines, in particular, recorded one of the longest full school closures to in-person learning in the world, lasting 75 weeks as of March 2022 (UIS 2022a). Similar to many countries, the initial response of the Philippine government to curb the spread of the COVID-19 virus included lockdowns, mobility restrictions, and closures of establishments and schools. Schools were closed in mid-March 2020, which was roughly a couple of weeks earlier than the official academic break. The government deferred the resumption of classes from June to October 2020 with the intention of preparing the education system for remote learning, which also meant that students were on school break for nearly seven months. Pilot testing for in-person classes started only in November 2021, and the government directed full in-person classes by November 2022, giving possible exemptions to schools and areas with special circumstances. An early analysis done by Raitzer et al. (2020) identifies the following as costs of school closures to in-person learning: forgone education under remote learning arrangements, lower future productivity of current students, loss in income of parents who need to stay at home and support the online learning of their children, and loss in wages of private-school teachers given the drop in private-school employment. Their cost-benefit analysis shows that the cumulative costs of a one-year school closure to in-person

learning could reach as much as PHP 1.93 trillion or 10 percent of GDP. These costs also outweigh the projected benefits.

Amid the long school closure to in-person learning, the country could be facing massive learning and earning losses, more so for the disadvantaged students. Molato Gayares and Thomas (2022) project that such losses in Asian countries, including the Philippines, are larger for the less affluent than the more affluent students (**Table 1**). Under the assumption of medium efficacy of remote learning, they estimate that students in the richest quintile lose 1.58 years of learning-adjusted years of schooling from the baseline, while the students in the poorest quintile lose 1.73 years. As such, the expected loss in per capita annual earnings is also greater for those in the poorest quintile than for those in the richest quintile. Wealth gaps in learning and earning losses between the poorest and richest quintiles are also seen to considerably widen as the efficacy of remote learning increases, assuming that improvements in the quality of remote learning disproportionately benefit students with better access to educational resources (Molato Gayares and Thomas 2022).

Table 1. Expected learning and earning losses by efficacy of remote learning (poorest vs. richest quintiles) and wealth gap, Philippines

Quintile	Low efficacy	Medium efficacy	High efficacy
A. Expected loss in learning-adjusted years of schooling			
Poorest	1.73	1.63	1.54
Richest	1.58	1.34	1.16
B. Expected loss in per capita annual earnings (constant 2020 USD)			
Poorest	664	623	591
Richest	603	513	443
C. Wealth gap (%)			
Schooling	9.5	21.6	32.8
Earnings	10.1	21.4	33.4

Source: Table A2.3 and Table A2.4 in Molato Gayares and Thomas (2022).

Digital divide between households with low socioeconomic status and those with high socioeconomic status is one factor that can explain the difference in the efficacy of remote learning. Internet access in the Philippines remains quite low as only 17.7 percent of households have access to the internet in 2019, but there is huge regional variation which ranged from 4.5 percent in BARMM to 33.2 percent in NCR (DICT 2019). Among developing ASEAN economies, the lack of facilities for online learning is also found to be most common in the Philippines (Morgan and Trinh 2021).

Remote learning modalities in the Philippines come in several forms—such as printed modules, online classes, and educational programs in TV and radio—to account for the varying availability and access to resources of schools and students. In his study about the situation of the basic education system during the pandemic, Orbeta (2022) observes that public-school students mostly used printed modules, while private-school students primarily took up modalities that entail full or some internet usage, particularly online and blended learning. Furthermore, the utilization of printed modules remained relatively high among students in public schools compared to those in private schools even in areas where internet availability is high, like in NCR, thus indicating the prevalent disparity in internet access. Orbeta (2022) discovers that access to the internet is most

strongly determined by presence of broadband internet, followed by income, family size, and having high-school educated parents. Nonetheless, the lack of access to the internet is not the only constraint which prevents students in low-income households from availing of online learning. Cho et al. (2021) find that low-income households also lack the means to acquire appropriate gadgets that can be solely used by their children for online learning.

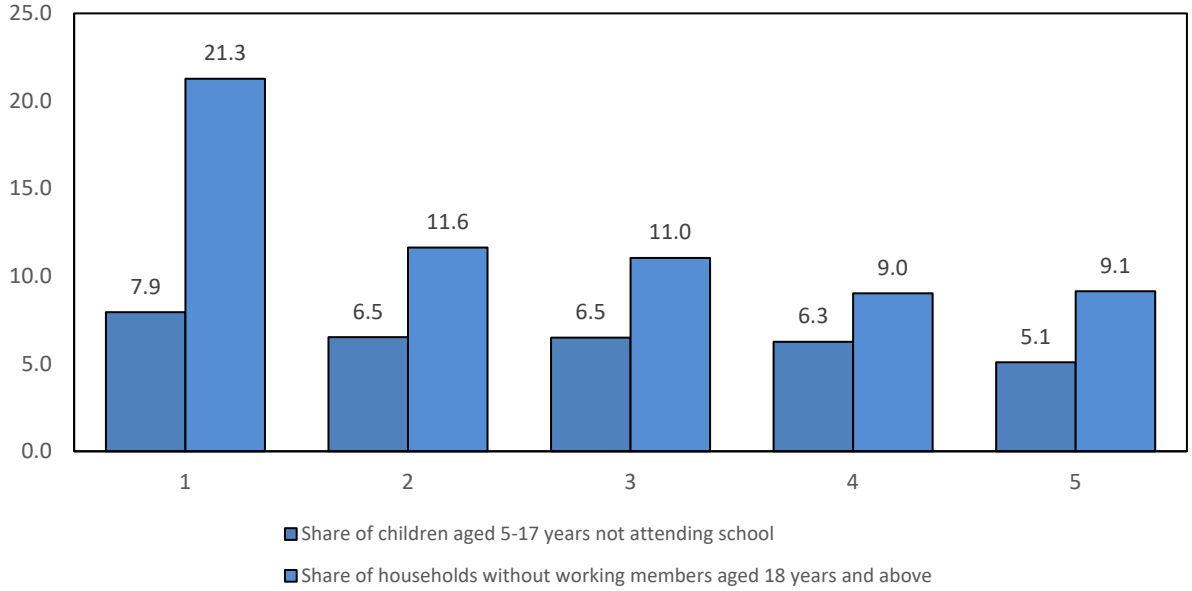
Notwithstanding digital divide, schooling-at-home relies heavily on the instructional skills of parents or guardians, more so in the absence of the support of trained teachers (Hanushek and Woessmann 2020). Thus, the quality of home support is crucial for remote learning, especially for students on offline setting because they have little interaction with their teachers and peers. However, the quality of support of low-income parents and guardians tends to be lower than their higher-income counterparts for two reasons. One, the share of household heads who are at least high school graduates is much lower in the poorest quintile than in the richest quintile (Orbeta 2022). Evidence from the 2005 Pakistan earthquake shows that the shock to schooling exacerbated the inequality in test scores between students with less educated mothers and those with highly educated mothers (Andrabi et al. 2021). Two, the necessity to be away from home to work is likely to be greater in low-income households (Orbeta 2022).

TV and radio educational programs can supplement printed modules, but their utilization is very low despite the high ownership of TV and radio across households (Orbeta 2022). Cho et al. (2021) observe that only a small share of households were aware of the availability of these learning modalities, suggesting that much improvement in information dissemination on the options for remote learning had been needed.

Children from less affluent backgrounds have also a higher tendency to drop out of the education system. Negative income shocks, especially in countries with weak safety nets and social protection mechanisms, could lead households to pull out their children from school—many of these children may not even return to school (Azevedo et al. 2021). The massive job losses during the pandemic, with the country's unemployment rate soaring to 17.6 percent in April 2020, severely affected low-income households. More than 20 percent of households in the poorest quintile did not have any members aged at least 18 years who were working, while this share is only less than 10 percent for the richest quintile (**Figure 10**). This pattern coincides with the increasing share of children not attending school from the top to the bottom income quintile. In the absence of effective remediation and intervention, children who temporarily dropped out would likely find difficulty catching up when they go back to school. Furthermore, older children, who can instead seek work, face a higher opportunity cost for staying in school, especially those from financially strapped households.

The pedagogical design of remote learning also tends to overlook the situation and developmental needs of the very young students and students with disabilities (Azevedo et al., 2021; WB, UNESCO, and UNICEF 2021). In 2020, only 7.7 percent of primary schools, 17.0 percent of lower secondary schools, and 13.8 percent of upper secondary schools in the Philippines had access to adapted infrastructure and materials for students with disabilities (UIS 2022b).

Figure 10. School attendance and working status by income quintile (2020, %)



Note: Quintile 1 refers to the poorest quintile, and quintile 5 refers to the richest quintile.
Source: Authors' calculations using the 2020 Annual Poverty Indicators Survey public use files.

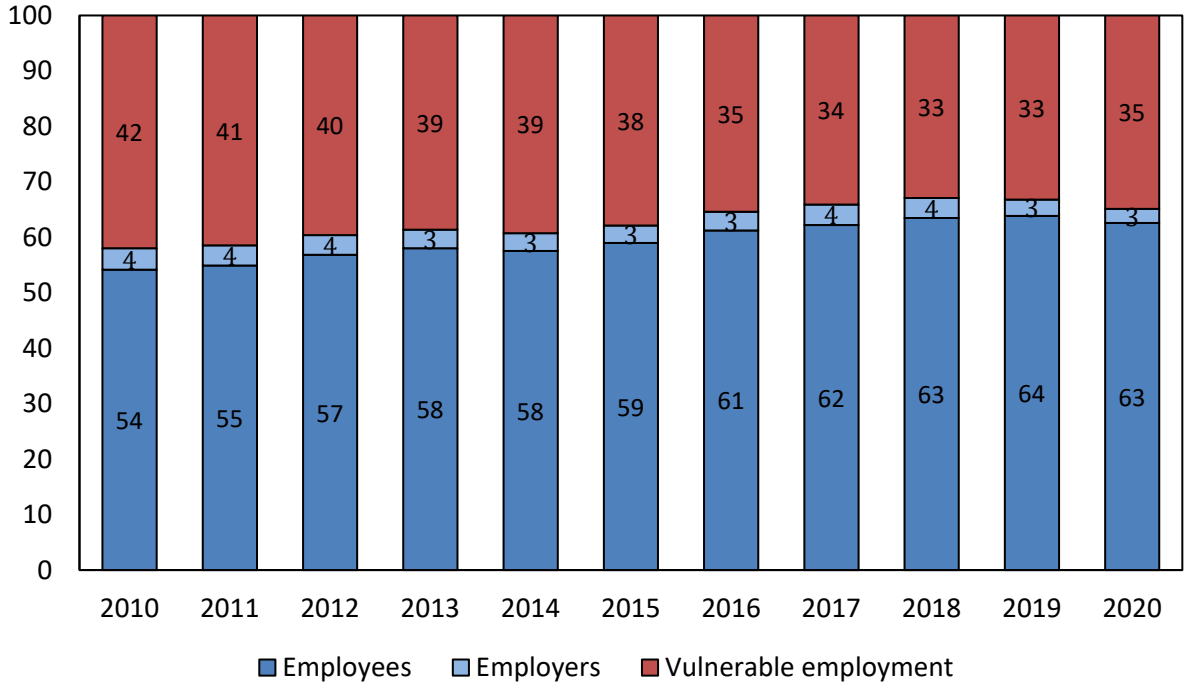
Aside from children, more youth are at the risk of being not in education, employment, or training (NEET) because of the disruptions on education and skills development, and delays in school-to-work transitions amid the COVID-19 pandemic (Khatiwada et al. 2021). This can have significant long-term negative effects on the youth's employment and earning prospects, as the time spent away from education, employment, and training entails loss of human capital (Khatiwada et al. 2021; OECD 2021; Orbeta et al. 2021). The youth NEET tend to be the economically disadvantaged, particularly the low-income, the less educated, and females (Orbeta et al. 2021). While there is room for the youth NEET to engage in technical and vocational education and training (TVET), incentivizing them to undergo training presents some challenges that need to be addressed, including financial constraints, lack of information, and lack of access to the internet as training shifted to online mode during the pandemic (Orbeta et al. 2021).

5.1.2. Inequities in labor

Education is understood to be critical for ensuring access to decent work and for social mobility, and it is a determinant of social status and source of self-respect in most societies (UN 2006, p. 18). Decent work then "involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men" (ILO n.d.). Inequities in access to quality education, as well as in lifelong learning, thus lead to differential opportunities for obtaining decent work. Such inequities hamper people's empowerment, capabilities, and full participation in social and economic development (Albert et al. 2015).

One perennial concern in obtaining decent work in the Philippines is the prevalence of informality. As informal workers are not covered by minimum wage and employment protection laws, the informal sector tends to be associated with little job security, weak (if at all) social protection, and low wages. On top of this, most workers do not enter the informal sector by choice but because of lack of opportunities in the formal sector (UN 2022). In recent years, around a third of workers in the country are in vulnerable employment, which is a proxy indicator for informal employment (**Figure 11**).[5] The proportion of vulnerable employment had been decreasing in the past decade amid the increasing share of employees, but an uptick in vulnerable employment can be seen during the pandemic.

Figure 11.Employment by status (% of total employment)



Note: Vulnerable employment is the sum of own-account workers and contributing family workers.
Source: Authors' calculations using ILOSTAT data.

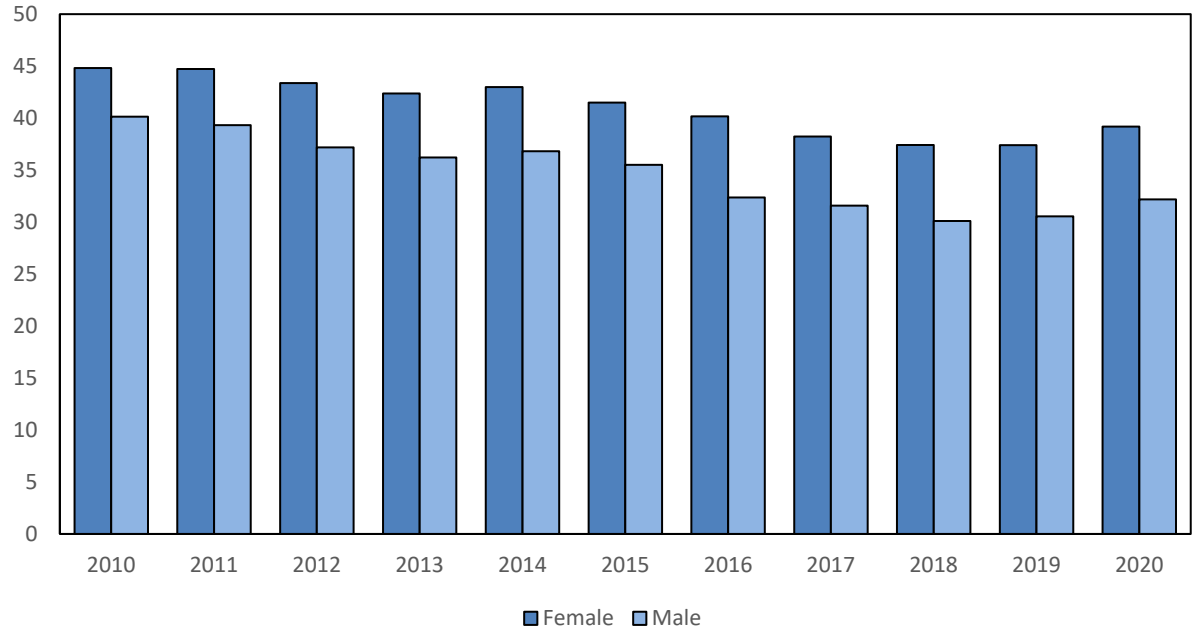
The same pattern as in the aggregate level can be roughly observed even when employment is disaggregated by gender, but the tendency to work in the informal sector tends to be higher for females than for males (**Figure 12**), suggesting the presence of gender gap in job security and social protection. While the increased joblessness during the COVID-19 pandemic induced an added-worker effect that boosted the labor force participation of women, the reentry of women in the labor market in the second half of 2020 was largely associated with lower quality and lower productivity jobs, which could have long-term negative effects on the working lives of women

[5] Vulnerable employment is the sum of the number of own-account workers (i.e., self-employed without employees) and the number of contributing family workers. It is to be noted, however, that the share of vulnerable employment understates the real extent of informal employment in the country, because not all wage workers are employed formally. Using the Informal Sector Survey 2008, Rutkowski (2015) estimates that around 60 percent of the employed are wage workers, but only 40 percent of wage workers are employed formally. This means that only 24 percent of the total employed can be considered formal wage workers. Still, in the absence of an informality indicator in the Labor Force Survey and a regularly published informal sector survey, vulnerable employment is used in this paper as proxy indicator for informality.

(Khatiwada et al. 2021). At the same time, the intensity of unpaid care and domestic work is reported to increase disproportionately for women during the pandemic (Seck et al. 2021).

Informality in the Philippines is also prevalent among the poor and the near-poor workers who, in turn, have little savings and would easily fall into food insecurity in the face of job and income losses (Khatiwada et al. 2021). Rutkowski (2015) explains that in-work poverty in the country is caused by two interacting factors: (i) low productivity due to low education and skills and (ii) lack of productive job opportunities. He further argues that this may lead to a vicious cycle where workers have little incentives to invest in skills amid few opportunities for skill-intensive jobs and skill-intensive jobs are not being created because the workforce lacks the required skills. The working poor, especially those in the informal economy, thus have lesser opportunities to get out of poverty.

Figure 12. Proportion of vulnerable employment by gender (% of total employment)



Note: Vulnerable employment is the sum of own-account workers and contributing family workers.
Source: Authors' calculations using ILOSTAT data.

The COVID-19 pandemic exacerbated the disparities in labor market outcomes and living standards between the less skilled and the highly skilled, and between the informal and formal workers. Given the nature of their work, low-skilled workers were at higher risk of infection and had a much lower likelihood to perform remote work arrangements at the height of the pandemic and corresponding lockdown measures (Aum et al. 2021). Only a small proportion of workers in the Philippine has potential to work from home (Generalao 2021; Gaduena et al. 2022) who, in turn, tend to be highly educated (Generalao 2021), residing in the more developed regions (Generalao 2021), and working in high-skill occupations (Gaduena et al. 2022). In contrast, those who are less likely to work in teleworkable occupations belong to the low-income groups, are less educated, and are self-employed (Gaduena et al. 2022). Amid workplace closures and mobility restrictions, job losses are then likely greater for the low-skilled and informal workers. Moreover,

transitioning to other jobs is particularly difficult for low-skilled workers given their limited set of skills (Park and Innocencio 2020).

The pandemic has also sped up the digital transformation of work which may lead to job and income polarization, inequality, and inadequate social protection (Park and Innocencio 2020). For one, the increased use of technology in work settings and the rise of automation would likely lead to stronger relative demand for well-paid, high-skill occupations (which usually require non-routine cognitive skills) and low-paid, low-skill occupations (which require non-routine manual skills) (Petropoulos 2021). However, the relative demand for medium-skill occupations (which usually require routine manual and cognitive skills) would likely fall (Petropoulos 2021). Unless medium-skill workers eventually acquire skills required in high-skill jobs, their displacement could lead them to occupy low-skill jobs. For another, such transformation of work can give rise to offshoring practices and self-employment as a global labor market for remote work, which is not subject to the legal and administrative costs of migration, develops (Petropoulos 2021).

Indeed, Bayudan-Dacuycuy et al. (2020) find that there is already a large supply of platform workers in countries like the Philippines. This is despite most of them being not covered by social protection, because they are classified as either contractual or self-employed. The authors observe that the young people and women are the ones who are mostly drawn to such type of work. Young workers possess the skills for navigating around platform work, while women are likely attracted to flexible work arrangements. However, given the large base of the young population, Bayudan-Dacuycuy et al. (2020) argue that the increasing participation of the young workers in platform work will erode the contribution base of social protection which, in turn, would weaken social protection coverage. Amid the already high proportion of women in vulnerable employment, they also see that gender gaps in social protection may further widen as women's engagement in platform work rises.

5.1.3. The concept of social justice in education and labor

The right to education is affirmed in international human rights treatises and, most countries, including the Philippines, have embedded the right to education in their respective national constitutions (UNESCO 2013). However, access to education is not sufficient, and the quality of learning is as important (UNESCO 2013). From a social justice perspective, Tikly and Barrett (2011) propose three dimensions of the quality of education: inclusion (access to quality education and opportunities for realizing outcomes), relevance (how meaningful learning outcomes are), and democracy (participation on decisions about education quality). Quality education not only equips students with basic and foundational skills but also enables them to adapt in the rapidly changing global economic, socio-political, and natural environments (UNESCO 2013).

In the Philippines, the human capital indicators in the poorest regions and income groups are comparable to poorer countries, while those of the richest regions and income groups are comparable to richer countries (King 2020). In theory, national policies are grounded on accepted principles of social inclusion and equality (King 2020). For instance, there exist laws and regulations which attempt to promote equality and equity in education such as the Governance of Basic Education Act of 2001, Free Public Secondary Education Act of 1988, Expanded Government Assistance to Students and Teachers in Private Education Act, and Universal Access to Quality Tertiary Education Act. However, the implementation of national policies appears to be

the primary constraint in achieving equality and equity in education, including poor implementation design, inadequate financing, and low administrative and technical capacity (King 2020).

The COVID-19 pandemic has further widened the preexisting inequities in education. Unless addressed, the loss in human capital due to the pandemic will leave permanent scars to the current generation of students, leading to future productivity and earnings that are much lower than their potential, especially among the poor and the vulnerable (WB 2021b). Learning recovery programs, such as remedial measures that account for student differences, can prevent and make up for the learning losses (WB, UNESCO, and UNICEF 2021).

Importantly, equitable access to education and labor are strongly associated with each other. The considerable extent of informality, however, undermines the opportunities for job security, social protection, and upward mobility. Informality is distinctly seen among the disadvantaged segments of population, including the poor, women, and the less skilled. The changing landscapes of work, accelerated by the COVID-19 pandemic, put more people at risk of entering the informal economy, more so for the already disadvantaged groups. Thus, promoting the transition to formality becomes a necessary condition for poverty and inequality reduction, advancement of decent work, and increase in productivity (UN 2022). Creating quality jobs should thus be prioritized but needed investments in education should also be taken (Albert et al. 2015). Given the vicious cycle between the low skills of the vulnerable workforce and the prevalence of low-productive jobs, fostering fair access to quality education, training, and other forms of lifelong learning, as well as strengthening incentives for them, is needed as well.

At the same time, the expansiveness of informality calls for the formulation of adequate and well-designed social protection schemes that are available to all workers regardless of the level of formality or informality of work. Extending social protection and safety nets, such as unemployment benefits, to informal workers reduces their vulnerability to adverse labor market shocks, especially ones as extensive as in the COVID-19 crisis. While the Philippine government implemented an extensive cash assistance program—which covers low-income families, the vulnerable population, migrant workers, laid-off workers, and even informal workers—during the pandemic, this policy had been mostly a transient response to the degree of the pandemic rather than a step towards a new normal (Yap 2020). Investments to promote social protection, as well as to improve labor market outcomes, of the typically underutilized and underpaid groups can generate positive economic and social externalities (WB 2021b).

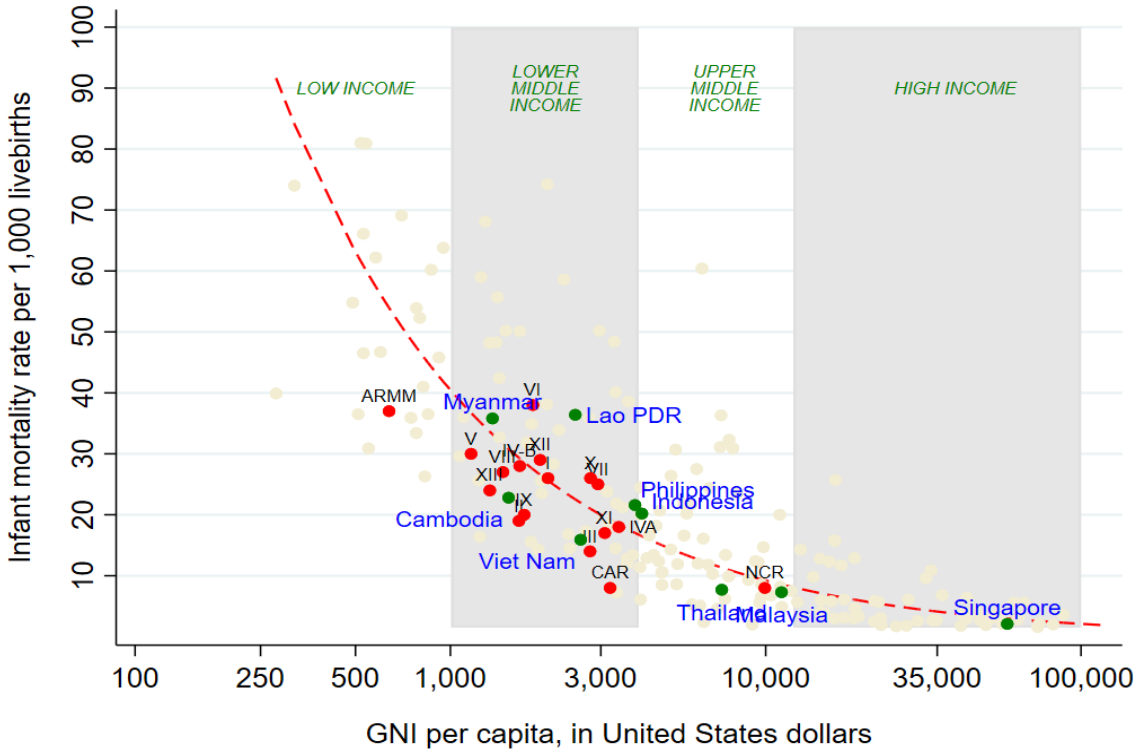
5.2. Health

In past decades, health outcomes have modestly improved in the Philippines compared to regional and aspirational peers. The country is lagging in major health and nutrition indicators, and health disparities is still a long-standing problem. The lack of rapid and inclusive improvement in health outcomes reflects challenges in the healthcare system, and the COVID-19 pandemic has revealed these cracks in the system. In the succeeding section, we described the disparities in healthcare inputs particularly, health service delivery, health human resources, and health financing.

5.2.1. Inequities in the health sector

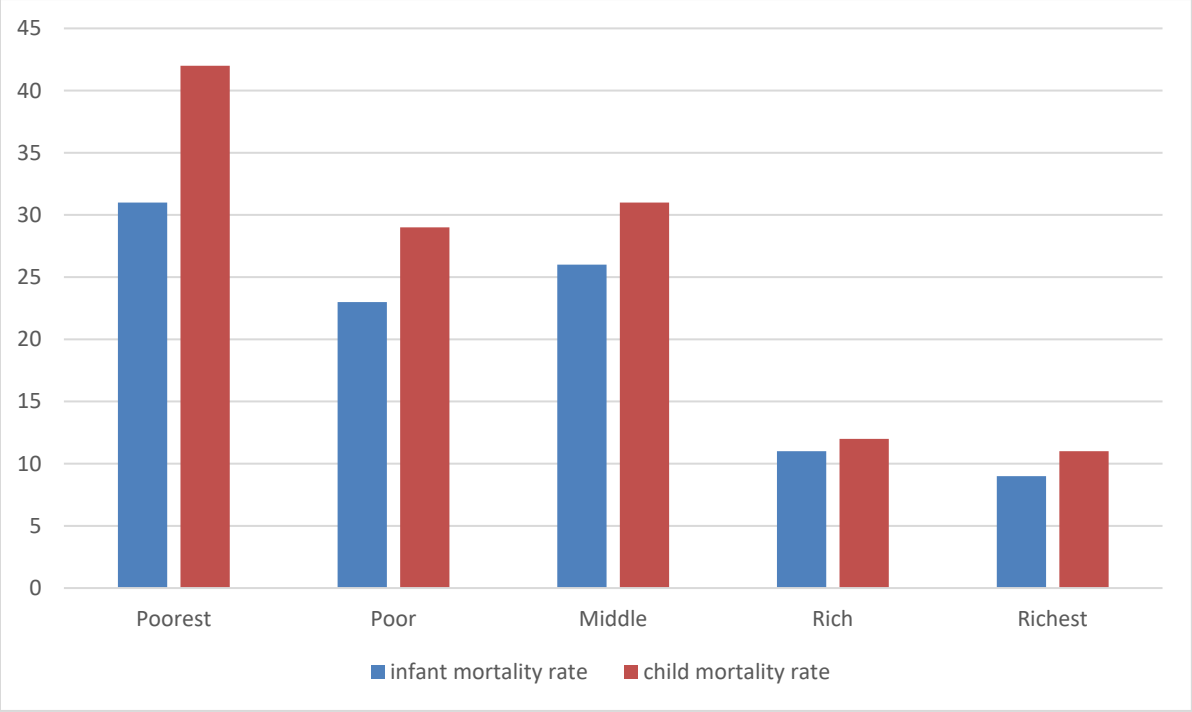
Large disparities in health outcomes persist in the Philippines. Relatively poorer regions have disproportionately worse health outcomes. **Figure 13** shows the infant mortality rate of Philippine regions superimposed with regional peers. In 2019, the IMR in wealthier regions (for example, National Capital Region and Region IV-A) were similar to most UMICs. In contrast, the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), the region with the highest poverty incidence is comparable to the poorest countries in the world. Also, the disparity across socio-economic positions is alarmingly large. In 2017, infant and child mortality, the most sensitive measure of population health, show large disparity across socio-economic status. The IMR poorest quintile is five times more than the richest quintile (PSA 2018).

Figure 13. Infant mortality, ASEAN and Philippine regions, 2019



Source: World Development Indicators and the National Development Health Survey (2018)

Figure 14. Infant and child mortality, by wealth quintile, Philippines, 2018



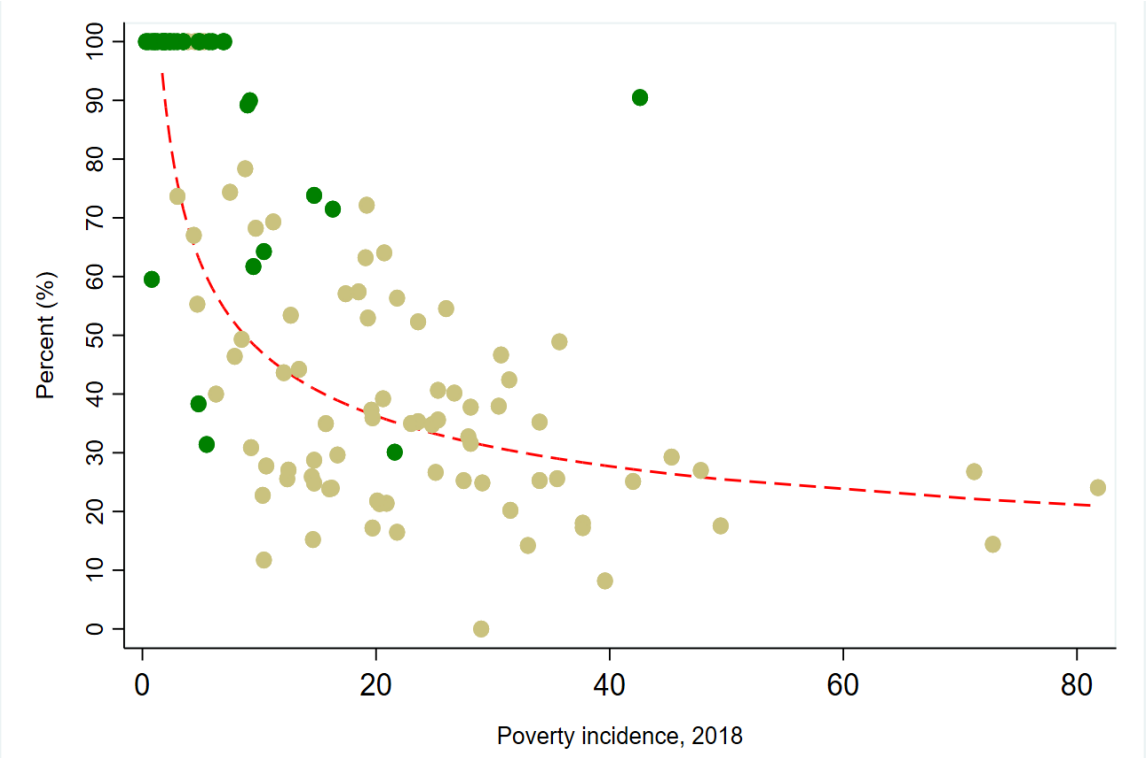
Source: National Development Health Survey (2018)

The modest improvement in health outcomes could be attributed to poor and unequal access to essential healthcare services. Filipinos regardless of socio-economic position should have access to healthcare they need without financial hardship. However, access remains a major challenge in the country. The World Health Organization (WHO) measures access of the population to essential infectious and non-communicable disease (NCDs), and maternal and child health services using the UHC Service Coverage Index. The Philippines is lagging in the region in providing universal access to essential healthcare services. The poor access to essential healthcare services could be attributed to challenges in health service delivery, health human resources, and health financing.

5.2.2. Health service delivery

Scarcity and maldistribution of primary care facilities and hospitals remain a challenge in the country. Health facilities are limited and concentrated in relatively rich local governments. Given the lack of data on private primary care facilities in the country, estimating the overall supply gap of primary care facilities has always been problematic. Examining the available public primary care facilities only limited supply. While the number of barangay health stations (BHS) has doubled from 11,000 in 1990 to about 22,000 in 2019, only half villages have at least one BHS. In terms of RHUs, there are only 2,593 in the country. According to the DOH, only 50% of the population have access to RHUs within 30 minutes with large variation across provinces. **Figure 15** the percentage of the population without access to RHU within 30 minutes and poverty incidence, by province.

Figure 15. Percentage of the population without access to RHU and poverty incidence



Source: Authors' re-analysis of the data from Philippine Health Facility Development Plan (PHFDP)

The Philippines has one (1) hospital for every 1,000 population, a level comparable to low-income countries. The bed-to-population ratios of Thailand and Vietnam, for example, were two and three times larger than the Philippines. The limited supply of hospital beds does not meet the population's required inpatient needs. Based on the government's projections, which accounts for current and future disease burden, the country needs 2.7 beds per 1,000 population to meet the impatient needs of Filipinos[6]. The bed to population ratio has declined in the last three decades because of the rapid population growth with modest increase in the supply of beds, which are mostly from the private sector.

The availability of hospitals varies across local governments. Ideally, all provinces and highly urbanized cities (HUCs)[7] should have level 1 and 2 hospitals, while each region must have an end-referral hospital (level 3). However, of the 114 provinces and HUC, 6 (5%) and 33 (29%) do not have level 1 and 2 hospital beds, respectively. During the height of COVID-19 pandemic, congestion was a persistent problem partly because of limited health infrastructure in the country.

Table 2. Supply of level 1 private hospital bed, by province and HUCs

	All hospital		Private hospitals	
	Median	Per 1,000 pop	Median	Per 1,000
HUCs	110	0.14	25	0.04

[6] Based on government projections in the Philippine Health Facility Development Plan (PHFDP).
7 Highly urbanized cities are those "with a minimum population of (200,000 inhabitants, as certified by the National Statistics Office, and with the latest annual income of at least P50,000,000.00 based on 1991 constant prices" (Section 452a, Republic Act 7160). There are 33 HUCs in the country.

Richest province	194	0.24	90	0.13
Middle province	179	0.33	35	0.05
Poorest province	201	0.27	94	0.09

Table 3.Supply of level 2 private hospital bed, by province and HUCs

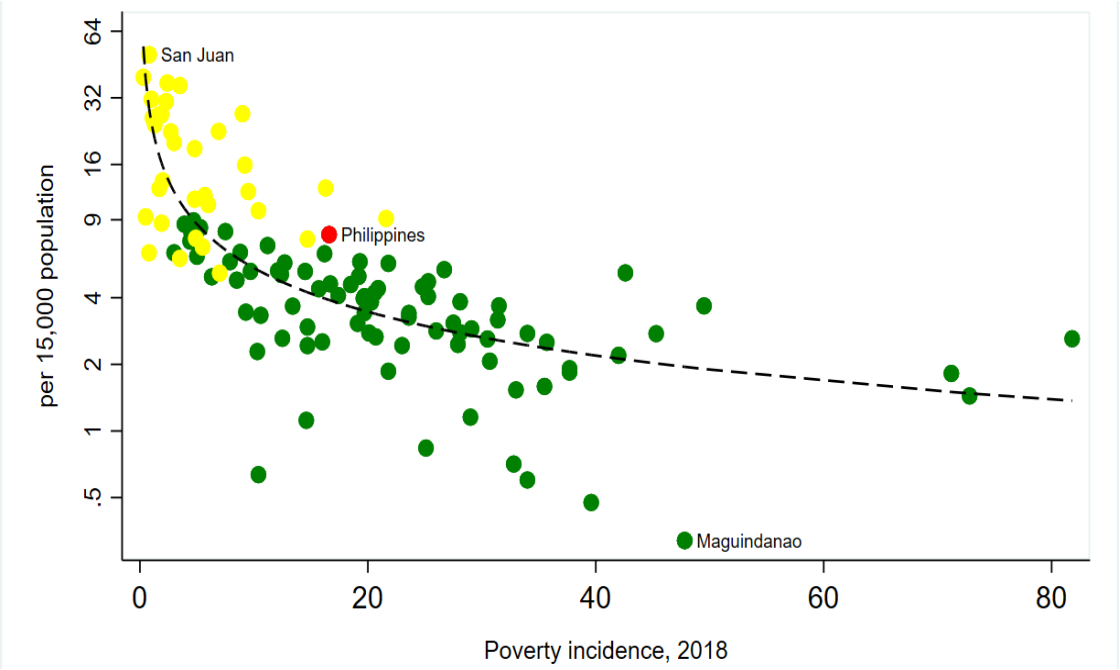
	All hospital		Private hospitals	
	Median	Per 1,000 pop	Median	Per 1,000
HUCs)	294	0.42	234	0.39
Richest province	275	0.23	180	0.15
Middle province	103	0.16	96	0.11
Poorest province	100	0.11	0	0.00

Source: analysis of DOH data

5.2.3. Health human resources

The availability of health workers across provinces and cities widely varies in the country. Healthcare depends on the availability of a health workforce, which include clinical staff such as physicians, nurses, pharmacists and dentists, as well as management and support staff. Currently, there is official data that captures the total number health workers in the country. The Philippine Census of Population Housing is the best data that captures the universe of health workers in the country (except midwives). Over the last three decades, while the number of doctors, nurses and allied health professionals have increased. Most health workers concentrated in rich provinces and cities. In poor and remote provinces, human resource remains a major constraint.

Figure 16. Availability of health clinical staff and poverty incidence, by province

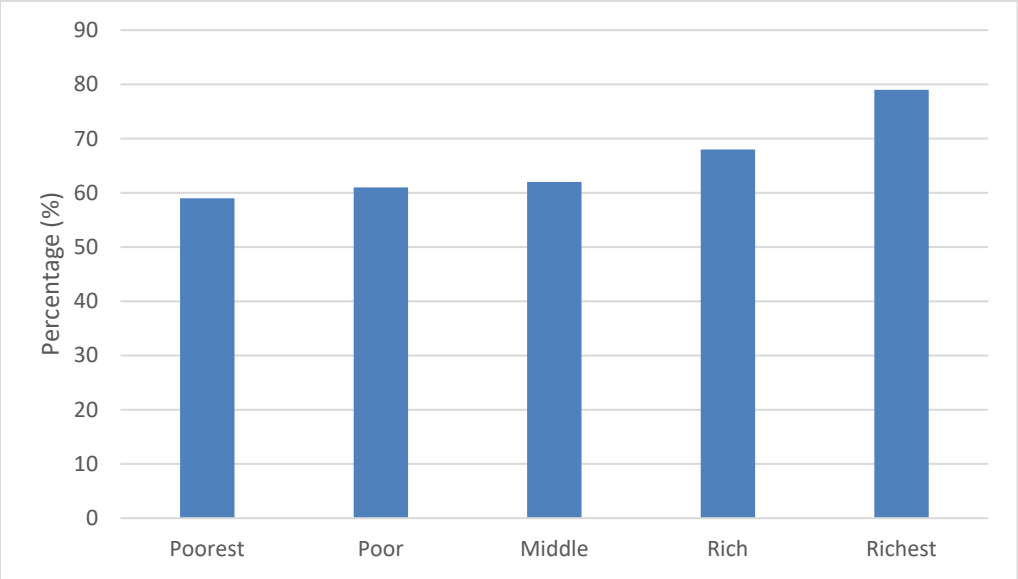


Note: y axis: logged the yellow dots are highly urbanized cities

Source: Poverty Incidence: Philippines Statistical Authority; No. of physicians: Philippine Census

Lastly, out-of-pocket spending (OOP) remains a significant source of financing. While the share of OOP to total health spending has declined in recent years (from 53 %in 2010 to 44% in 2020), it is still considered high. In countries that have successfully implemented UHC, OOP only accounts for about 10%-20%. The World Health Organization (WHO) discourages the widespread use of OOP because it prohibits healthcare access especially among the poor. Analysis of the 2018 Family Income and Expenditure Survey (FIES) suggests that about 1%of Filipino families experienced catastrophic health spending[8] and about 0.96% (about 240,000)[9] families fell into poverty because of OOP. The country's national health insurance program or PhilHealth, which was designed based in social justice and solidarity, remains less than 20% of health spending in the country. Analysis of the NDHS 2018 suggest large socio-economic gradient PhilHealth coverage, and financial support remains at 50%.

Figure 17. Coverage rate of PhilHealth, 2018



Source: National Development Health Survey (2018)

5.3. Environment

Environmental justice is an integral part of social justice. In the same light, climate change and disaster risk vulnerabilities are integral environmental justice issues. Socioeconomic vulnerabilities are further compounded by ecological integrity concerns in critical and environmentally sensitive areas. Issues transcend natural constructs, covering built environments and the welfare of the most susceptible groups which include cultural minorities.

The same welfare disparities have been magnified by COVID 19 pandemic complications. Albeit the marginalized suffer the most, vulnerabilities have been felt by even the mighty upper and middle classes. The meaningful involvement and contribution of the whole of Philippine society, regardless of socio-economic divide, require in-course or post-pandemic recovery and resilience building to be more encompassing and broad-based.

8 Occurs when a household's OOP is equal or exceed 40% of the household's non-subsistence spending
9 Here, we used provincial poverty thresholds to measure impoverishment

This section examines the inequities in the country's environment sector, with focus on disaster and climate change, urban planning, solid and water waste, extractive industries, and environmental policy enforcement.

5.3.1. Inequities in the environment sector

Embedded in the Philippines' development blueprints are safe and sustainable communities with reduced vulnerabilities, particularly among marginalized groups. But the same groups still feel the heaviest brunt with farmers, fisherfolks, and individuals residing in rural communities still posting the highest poverty incidences among the basic sectors (PSA 2020). Indigenous peoples further suffer the consequences of negative environment-related externalities given their compromised access to support provisions, resources and facilities. These make appropriate representations in decision-making structures within relevant sectors necessary, aside from rendering the more traditional mitigation and adaptation-related initiatives.

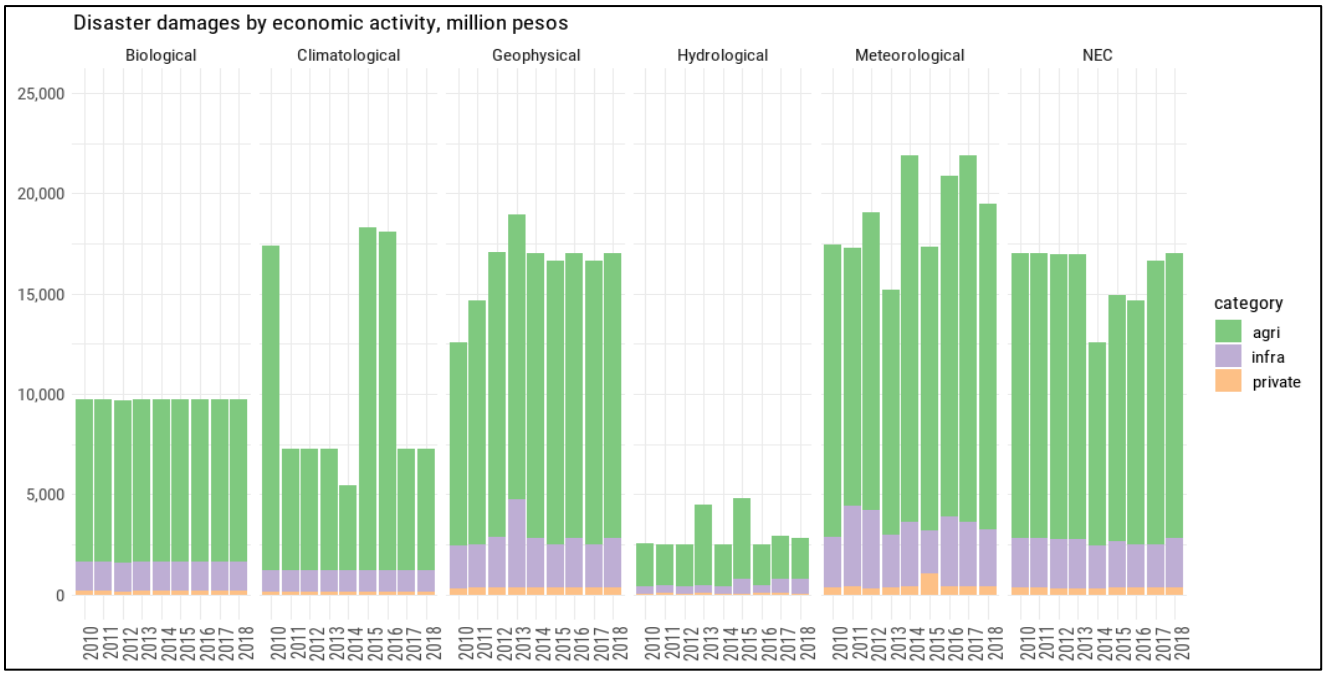
The presence of landmark legislations like the Climate Change Act and the Philippine Disaster Risk Reduction Management Act, the legislative codes for large-scale and small-scale mining, and the Indigenous Peoples Rights Act, among others, have established institutional oversight structures and encompassing provisions for public welfare, particularly those in vulnerable communities. Aligned international commitments including the Sendai and Paris agreements have also strengthened bureaucratic resolve to work with global partners on sustainability goals. But policy and policy implementation are still left wanting as evidenced by welfare disparities on the ground.

5.3.2. Climate change (CC) – Disaster risk reduction and management (DRRM)

The Philippines' location along the typhoon belt and the Pacific Ring of Fire exposes the country to multiple hazards, including the more frequent calamities of geological and hydrometeorological nature. PAGASA estimates an average of 20 tropical cyclones every year on top of earthquakes, volcanic eruptions, and man-induced disasters like public safety concerns, acts of terrorism, and most recently, the COVID-19 pandemic[10]. Disasters consistently hit the agriculture sector the hardest, which also has the highest poverty incidence at 31.6% and 26.2% among farmers and fisherfolks, respectively.

[10] Major disaster events include the Taal Volcano eruption, topical depression Ofel, typhoons Quinta and Pepito, super typhoon Rolly, and the pandemic in 2020; Calatagan earthquake, southwest monsoon, typhoons Jolina, Kiko, and Odette in 2021 (NDRRMC n.d.).

Figure 18. Disaster damages, 2010-2018



Note: NEC = not elsewhere classified

Source: Author's calculation using PSA 2020

5.3.3. CC-DRR Public Investment

Public investment[11] for CC-DRRM is lodged in various national and local funding. For climate change, fiscal resources are skewed towards adaptation strategies in both national and subnational budgets. The same goes for disaster risk reduction and management expenditures.

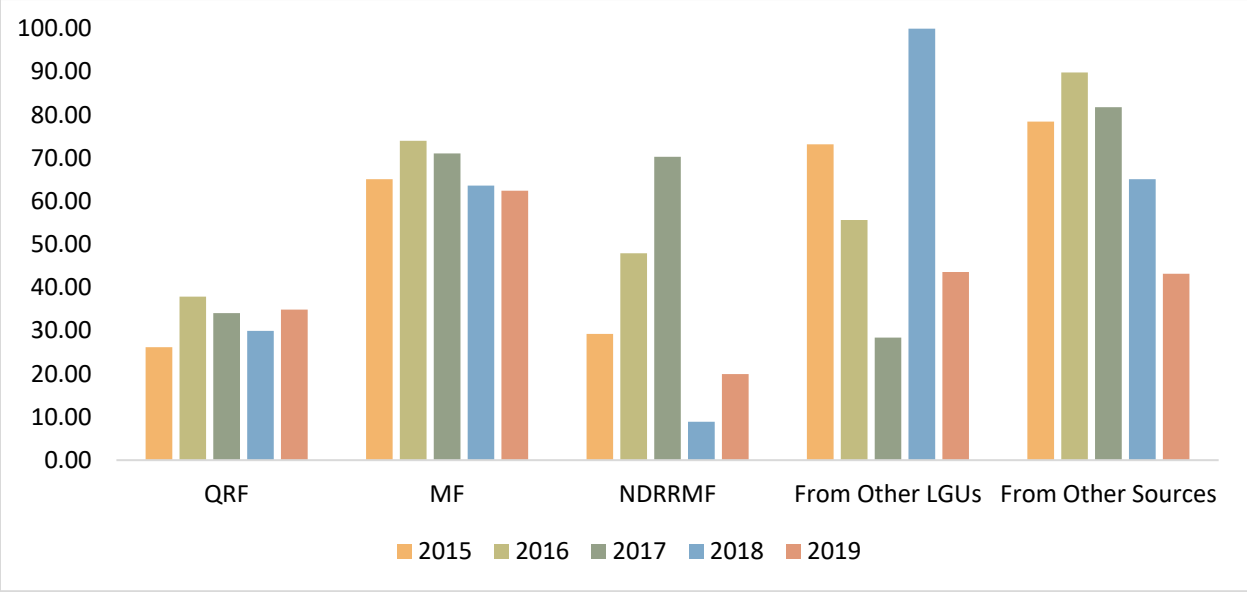
The Department of Public Works and Highways (DPWH) leads CC investment with a total of PHP 11.48 billion from 2017 to 2022, followed by Department of Agriculture (DA), and Department of Environment and Natural Resources (DENR). For DRRM, the Department of Education (DepEd) tops Quick Response Fund allocations followed by the Department of Social Welfare and Development, DPWH and DA, which is reflective of their core functions during disaster response.

The utilization of Local DRRM Fund (LDRRMF)[12] had been suboptimal between 2015 and 2019; with QRF and mitigation fund utilization barely reaching 50 percent and 80 percent, respectively.

11 CC is tracked on the ground through Climate Change Commission's CC Expenditure Tagging (CCET), People's Survival Fund (PSF) and Official Development Assistance (ODA) whereas DRRM resources are available through the National DRRM Fund/Calamity fund, Local DRRM Fund, and other local government funds (e.g. Special Trust Fund, General Fund, Local Development Fund).

12 Guiding framework is National Disaster Risk Reduction Management Council (NDRRMC)-Department of Interior and Local Government (DILG)-Department of Budget and Management (DBM) Joint Memorandum Circular No. 2013-01. This facilitated the mainstreaming of disaster funds and climate expenditure tagging in LGUs and integrated environment and climate-related allocation and utilization in local planning and development plans. The budget is equivalent to five percent (5%) estimated revenue from regular sources during calamities, 70 percent of which is mitigation fund, and the remaining 30 percent as QRF.

Figure 19. Utilization rate (%), by fund source, 2015-2019

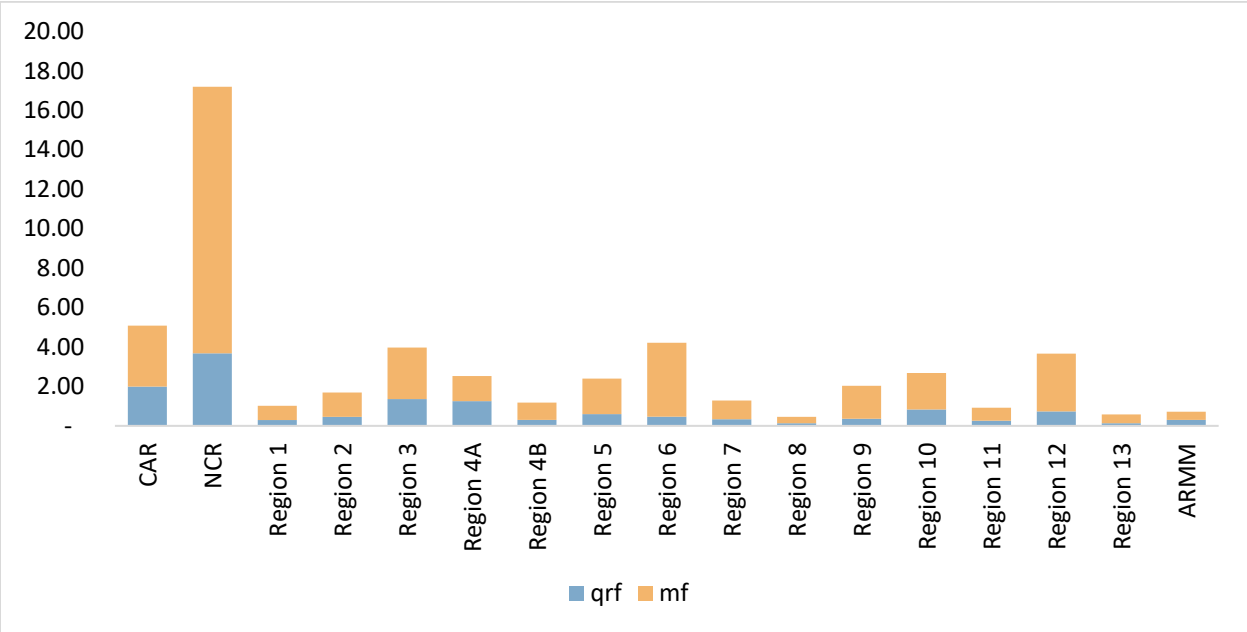


Note: 2018 From Other LGUs figures are multi-year aggregate

Source: Author's calculation from DILG-FDP LDRRMF Reports

The disparity in resource distribution is also apparent among regions with NCR having the highest mean allocation (PHP 17.20 million) and Region 8 the lowest (PHP 0.46 million). As LDRRMF is linked with IRA estimates, regions with more revenue sources get higher allocations. The implementation of the Garcia-Mandanas Ruling can either improve the subnational fiscal situation or further drive the inequality.

Figure 20. Utilization rate (%) by region, 2015-2019



Source: Author's calculation from DILG-FDP LDRRMF Reports

National policy and international accords13 espouse bottom-up participation and community resilience as the core of CC-DRR policy in the country, but the landscape is still largely top down. It is likewise plagued by limited community participation, minimal investment on participatory related PPAs, and non-alignment of development and investment plans. The cascading of these objectives remains wanting in terms of reporting, data management, and transparency and validation (Domingo and Manejar 2021).

5.3.4. Urban environment: transportation, solid and water waste management

Climate changes have compounding impacts on urban settings where poverty and environmental vulnerabilities transect, and the economically and socially marginalized residents bear the brunt (IPCC 2022). Social justice becomes a concern for urban sustainability given numerous environmental issues, including loss of natural vegetation, increased energy demands, increased congestion, increased air and water pollution, decreased water supply, and insufficient housing and sanitation facilities (Regmi 2017).

Population living in informal arrangement in the Philippines increased from 15.8M in 1990 to 22.1M in 2018 but declined by 10 percent in terms of proportion. Access to basic drinking water services, sanitation, handwashing facilities, and sufficient living areas also improved but did not manage to reach full coverage. In contrast, non-sewered connections rose to 88.1 percent in 2017, indicative of preference for septage systems. This is likewise reflected in DPWH's National Sewerage and Septage Management Program (NSSMP) in which LGUs exhibit low interest and uptake for sewerage projects.

Table 4. Percent population with basic services in urban areas

Year	Total Improved water	Access to basic drinking water services	Improved sanitation facilities		Total Improved Sanitation	Access to basic sanitation services	Sufficient living area
			Sewered facilities	Total non sewered			
1993	82.4	35.5	76		76		54.7
1998	97	85.9	87.2		87.2		64.9
2003	98.4	92.1	92.2	1.5	93.8		
2008	98.2	89.3	3.5	90.3	93.8	75.3	61.9
2013	98.4	92.6	6.9	87.2	94.1	73.8	63.2
2017	98.4	97.5	7	88.1	95.1	79	66.7

Source: UN Habitat Database

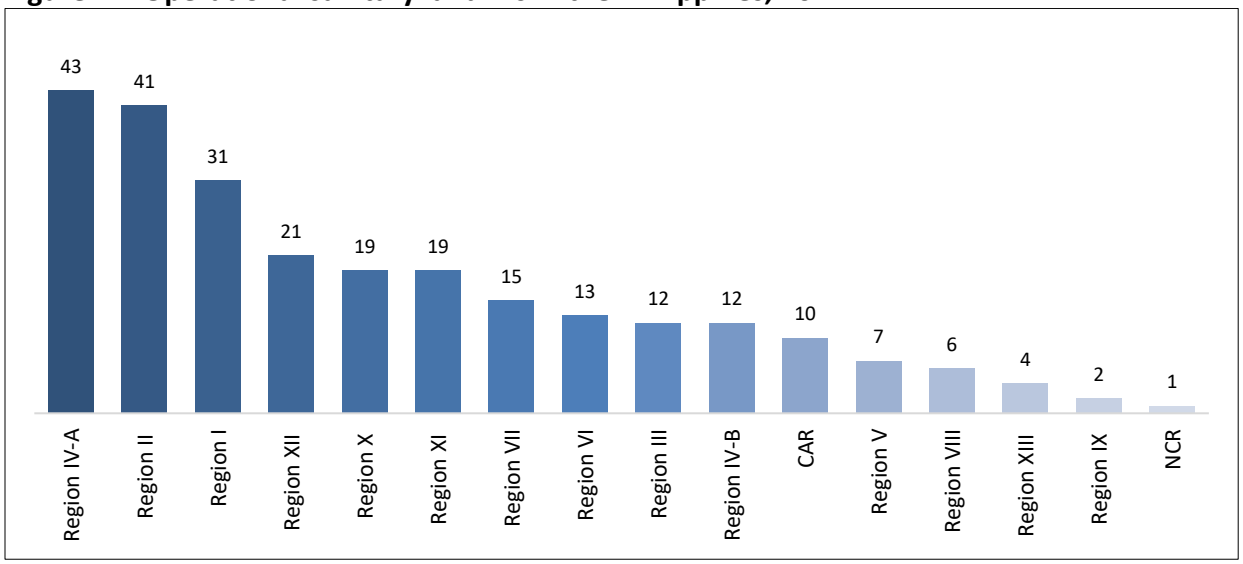
Another problem that comes with urbanization is solid waste management. Urban hotspots like the National Capital Region (NCR) and Region IVA generate the bulk of the solid waste, and cities naturally dominate sub-nationally in alarming figures. Unlike Region IVA with the advantage of land mass, NCR is only able to house one sanitary landfill (SLF), forcing it to dump its wastes in

13 Paris Agreement, Sendai Framework for Disaster Risk Reduction 2015-2030, United Nations Climate Change Conference (COP 26), 2021 Conference of the Parties to the Convention on Biological Diversity (COP15).

adjacent provinces. As of 2022, 244 operational SLFs in the country with a total capacity of 59.11 million cubic meters service 489 LGUs with a cumulative waste average of 12.91 thousand tons per day (NSWMC 2022).

The pandemic exposed weaknesses in hazardous waste management and conflicting policy provisions on technology options. Waste handling and safety protocols have to be formulated; legal questions on incineration/waste-to-energy interventions should be clarified; and, public and private investments on waste management infrastructure need to be beefed-up. There is also a need to protect the welfare of people working in the informal economy (e.g. junkshops, waste pickers).

Figure 21. Operational sanitary landfills in the Philippines, 2022



Source: NSWMC 2022

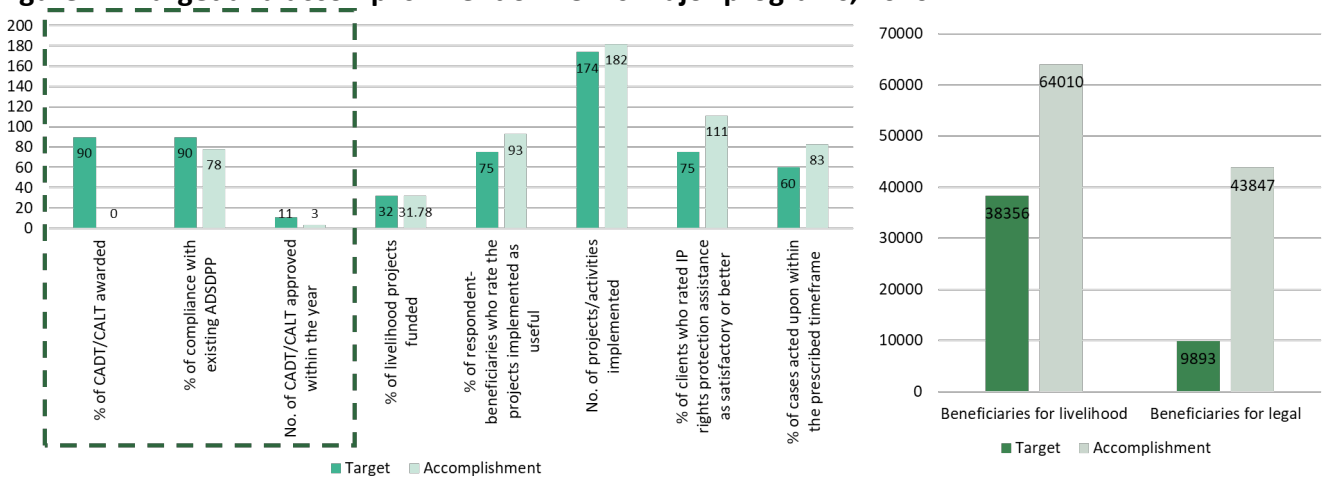
5.3.5. Extractive industries and indigenous people

Revitalizing the mining industry was one of the strategies pursued by the government to stimulate economic development following pandemic-related downturns. The DENR lifted the moratorium on new mineral agreements and on open pit mining ban through Executive Order No. 2021-130 and Administrative Order No. 2021-40, respectively. The mining industry's contribution comes around to one percent of GDP, but official figures fail to capture the benefits from small-scale metallic and non-metallic mines (Pascual et al. 2019). Their operations are largely informal, aggravating issues on child labor, occupational safety and hazards, and social services, among others.

Also affected by the extractive industries are indigenous peoples and cultural communities whose ancestral domains host mineral lands. The free, prior, and informed consent (FPIC) requirement is an important instrument for IPs to assert their rights, but its process remains inefficient, costly, and compromised.

IP representation and visibility[14] in different government oversight and decision-making platforms are critical. Social welfare programs and legal assistance, among other government services, are also better accessed by those with Certificate of Ancestral Domain Title (CADT). There is urgency on the part of the National Commission on Indigenous Peoples (NCIP) and other relevant NGAs to expedite the processing of CADT applications as seen in **Figure 22**[15] (Domingo and Manejar 2020).

Figure 22. Target and accomplishment of NCIP's major programs, 2020



Note: NCIP surpasses targets for human, socio-economic, and ecology development, and IP rights protection program. Beneficiaries numbered 64,010 for the former and 43,847 for the latter but unclear whether the figures are for assistance extended or cases acted upon.

Source: NCIP 2020

5.3.6. Legal landscape of environmental justice

The Philippines is reported as one of the deadliest countries for environmental activists. As of October 2021, related cases total to 250, showcasing attacks against environmental defenders working on land conflicts, mining and extractive industries, and agribusinesses (Global Witness 2021).

Table 5. Attacks against environmental defenders

Industry driver	Number of victims
Agribusiness	70
Fishing	2
Land conflict where sector could not be confirmed	77
Logging	14
Mining & Extractives	75
Water & Dams	12
Grand Total	250

Source: Global Witness 2021

14 Indigenous Peoples Officer (IPO) or IP Mandatory Representative (IPMR) in LGUs; participant though NCIP in regional development councils; avenues for national assembly

15 Agriculture, forest protection, land conversion

Relevant policies passed over the years covered efforts to improve adjudication and law enforcement in forest, land, and water ecosystems[16]. The Supreme Court established 117 green courts in 2008 dedicated to environmental adjudication, with particular emphasis on illegal logging and illegal mining cases.

The DENR also recorded highest apprehension cases in Regions 13, 5, and 4A where high forest cover and mining operations exist. This prompted the creation of an Environmental Law Enforcement and Protection Service (ELEPS)[17] for facilitated response to violations against environmental laws.

Table 6. DOJ Legal Database 2016-2020

Year	Type	Illegal Logging	Percent	Illegal Mining	Percent
2016	Conviction	109	40.82	13	59.09
	Dismissal	84	31.46	4	18.18
	Acquittal	20	7.49	3	13.64
	Archival	53	19.85	1	4.55
	Successfully mediated	1	0.37	1	4.55
	Total	267	100.00	22	100.00
2017	Conviction	369	51.32	36	58.06
	Dismissal	147	20.45	15	24.19
	Acquittal	39	5.42	3	4.84
	Archival	154	21.42	7	11.29
	Successfully mediated	10	1.39	1	1.61
	Total	719	100.00	62	100.00
2018	Conviction	635	65.80	29	24.79
	Dismissal	172	17.82	30	25.64
	Acquittal	40	4.15	3	2.56
	Archival	114	11.81	55	47.01
	Successfully mediated	4	0.41	0	0.00
	Total	965	100.00	117	100.00
2019	Conviction	784	71.01	52	65.00
	Dismissal	165	14.95	22	27.50
	Acquittal	42	3.80	1	1.25
	Archival	112	10.14	5	6.25
	Successfully mediated	1	0.09	0	0.00
	Total	1,104	100.00	80	100.00
2020	Conviction	681	70.42	25	58.14

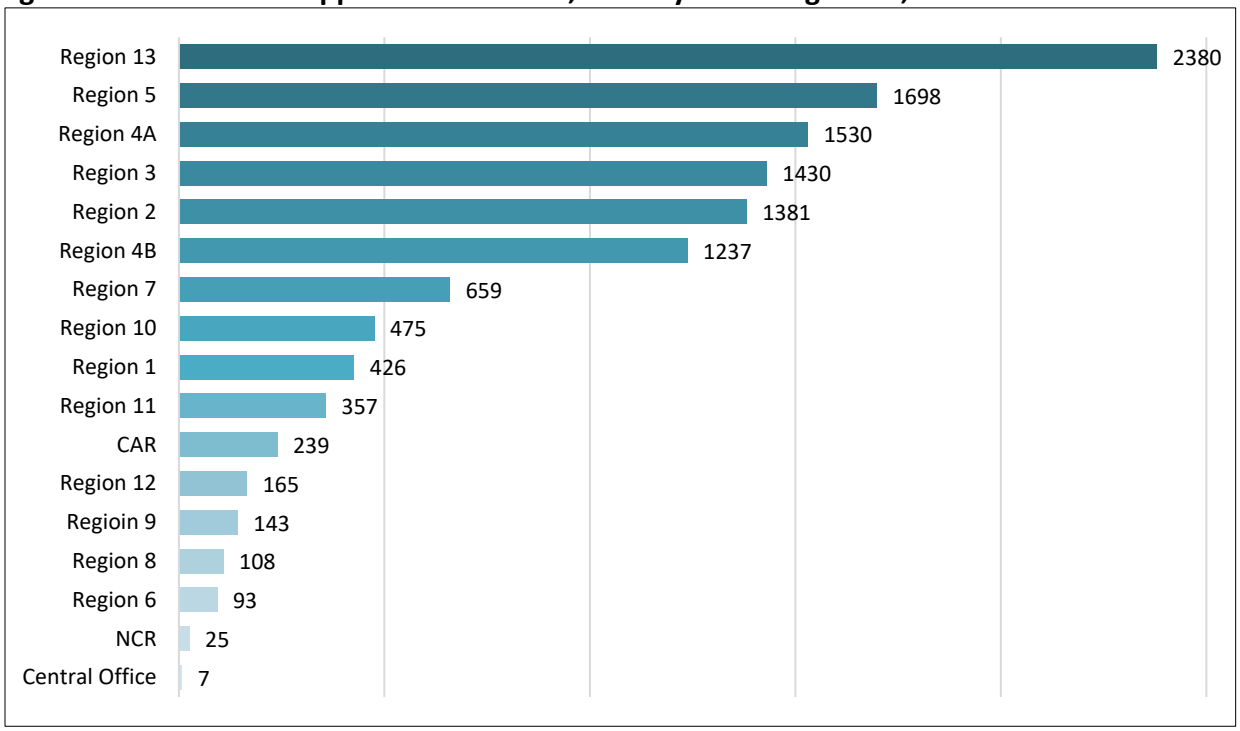
16For instance, the Marcopper Mining Disaster, which dumped mine tailings into the Makalupnit River and the entire Boac River, violated PD 1067 (Philippine Water Code). PD 984 (Anti-Pollution Law), and RA 7942 (Philippine Mining Act), and Article 365 of the Revised Code. On May 16, 2022, almost three decades after the accident, a Philippine court orders compensation equivalent to 30 people for the affected Marinduque community and for exemplary damages, bringing the total to PHP 1,300,000 (Dela Cruz 2022). Whether the amount reflects the present, existential, and bequest values of the resulting ENR damages remain as point of contention.

[17] Enforcement body in place as DENR awaits passage of Environmental Protection and Enforcement Bureau (EPEB)

Year	Type	Illegal Logging	Percent	Illegal Mining	Percent
	Dismissal	151	15.62	15	34.88
	Acquittal	33	3.41	2	4.65
	Archival	81	8.38	1	2.33
	Successfully mediated	21	2.17	0	0.00
	Total	967	100.00	43	100.00

Source: DOJ 2021

Figure 23. DENR-EFMS Apprehension Cases, January 2010-August 31, 2022



Source: DENR EFMS 2022

Environmental justice, at its core, is a set of advocacy and legal reforms aimed at redressing power imbalances that have resulted to the poor and vulnerable being disproportionately affected by ecological integrity concerns, while having inequitable access to benefits from natural capital. It requires fair distribution of environmental benefits, and risks and damages, between and among generations, and between people, and the natural world (Mitchell 2019, UNDP 2014). Along this line, the noble pursuit of environmental justice in the Philippine further requires sound public investments on climate-smart and resilient infrastructure; ecological integrity protection and advocacy; public safety and community welfare safeguards; and, policy enforcement and legal adjudication processes.

6. Conclusion

This paper examined the extreme and disproportionate impacts of the pandemic, particularly on the following key sectors: (1) health, (2) education and labor, and (3) environment. We have highlighted that these disparities in human capital indicators revealed during the pandemic stems

from structural and systems challenges that persist even before the pandemic. As the country moves forward, it is imperative to address these socio-economic disparities by placing social justice at the front and center of the post-pandemic recovery plan. While the concept of social justice could be abstract to some, this could be made tangible in the policy process and functions of the government. This include embracing the value system of social justice on how the government raises and allocates its resources and revenues, how it delivers social and economic services, how it regulates the private sector, and how it measures sectoral performance.

7. References

Abrams, E. M., and Szefler, S. J. 2020. COVID-19 and the impact of social determinants of health. The Lancet Respiratory Medicine, 8, 659–661. https://doi.org/10.1016/S2213-2600(20)30234-4.

Albert, J.R.G., J.C. Dumagan, and A. Martinez Jr. 2015. Inequalities in income, labor, and education: The challenge of inclusive growth. PIDS Discussion Paper Series No. 2015-01. Makati City: Philippine Institute for Development Studies.

Andrabi, T. B. Daniels, and J. Das. 2021. Human capital accumulation and disasters: Evidence from Pakistan Earthquake of 2005. *Journal of Human Resources.* doi:10.3368/jhr.59.2.0520-10887R1 (accessed on June 17, 2022).

Aram, Farshid, Ester Higueras Garcia, Ebrahim Solgi, and Soran Mansournia. 2019. "Urban green space cooling effect in cities." *Heliyon 5(4)* e01339.

Asian Development Bank. 2021. *COVID-19 and labor markets in Southeast Asia: Impacts on Indonesia, Malaysia The Philippines, Thailand, and Vietnam*. Retrieved from https://www.adb.org/sites/default/files/publication/758611/covid-19-labor-markets-southeast-asia.pdf.

Aum, S., S.Y. Lee, and Y. Shin. 2021. Inequality of fear and self-quarantine: Is there a trade-off between GDP and public health? *Journal of Public Economics* 194:104354.

Azcona, G., Bhatt, A., Encarnacion, J., Plazaola-Castaño, J., Seck, P., Staab, S., & Turquet, L. 2020. *From insights to action: Gender equality in the wake of COVID-19.* Retrieved from https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/Library/Publications/2020/Gender-equality-in-the-wake-of-COVID-19-en.pdf.

Azevedo, J.P., A. Hasan, D. Goldemberg, K. Geven, and S.A. Igbal. 2021. Simulating the potential impacts of COVID-19 school closures on schooling and learning outcomes: A set of global estimates. *The World Bank Research Observer* 36(1):1–40.

Bayudan-Dacuycuy, C. 2020. *Why and how should we value unpaid work?*. Retrieved from https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidspn2003.pdf.

Bayudan-Dacuycuy, C., A.C. Orbeta Jr., R.B. Serafica, and L.K.C Baje. 2020. Online work in the Philippines: Some lessons in the Asian context. PIDS Discussion Paper Series No. 2020-29. Quezon City: Philippine Institute for Development Studies.

Besa, Filippo. 2019. Philippines - Country note - PISA 2018 results. https://www.oecd.org/pisa/publications/PISA2018_CN_PHL.pdf (accessed on June 17, 2022).

Bolte, G., Pauli, A., and Hornberg, C. 2011. Environmental Justice: Social Disparities in Environmental Exposures and Health: Overview. 459-470.

Business Mirror. 2021. *DOTr inaugurates Philippines' longest bike lane network.* July 27. Accessed June 20, 2022. https://businessmirror.com.ph/2021/07/27/dotr-inaugurates-philippines-longest-bike-lane-network/.

Cabegin, E.C.A., & Gaddi, R.S. 2019. *Determinants of female labor force participation in the Philippines*. Retrieved from https://neda.gov.ph/wp-content/uploads/2021/09/Determinants-of-Female-Labor-Force-Participation-in-the-Philippines.pdf.

Cho, Y., J. Avalos, Y. Kawasoe, D. Johnson, and R. Rodriguez. 2021. The impact of the COVID-19 pandemic on low income households in the Philippines: Impending human capital crisis. COVID-19 Low Income HOPE Survey Note No. 3. Washington D.C.: World Bank. https://openknowledge.worldbank.org/bitstream/handle/10986/35260/The-Impact-of-the-COVID-19-Pandemic-on-Low-Income-Households-in-the-Philippines-Impending-Human-Capital-Crisis.pdf?sequence=1 (accessed on June 10, 2022).

Congressional Policy and Budget Research Department House of Representatives. 2021. *Food Insecurity Among Families Amid the Covid-19 Pandemic*. Gov.ph. Retrieved from https://cpbrd.congress.gov.ph/images/PDF%20Attachments/Facts%20in%20Figures/FF2021-35_Food_Insecurity.pdf.

Contini, D., M.L. Di Tommaso, C. Muratori, D. Piazzalunga, and L. Schiavon. 2021. The COVID-19 pandemic and school closure: Learning loss in mathematics in primary education. IZA Discussion Paper No. 14785. Bonn: IZA Institute of Labor Economics.

Cooper, H., B. Nye, K. Charlton, J. Lindsay, and S. Greathouse. 1996. The effects of summer vacation on achievement test scores: A narrative and meta-analytic review. *Review of Educational Research* 66(3):227-268.

Decerf, B., Ferreira, F. H. G., Mahler, D. G., & Sterck, O. (2021). Lives and Livelihoods : Estimates of the Global Mortality and Poverty Effects of the COVID-19 Pandemic. *World Development (forthcoming)*. http://hdl.handle.net/10986/35680.

Dela Cruz, Enrico. 2022. *Philippine court orders compensation for victims of 1993 mining disaster.* May 25. Accessed June 20, 2022. https://www.reuters.com/world/asia-pacific/philippine-court-orders-compensation-victims-1993-mining-disaster-2022-05-25/.

Department of Information and Communications Technology (DICT). 2019. National ICT Household Survey 2019.. https://dict.gov.ph/ictstatistics/nicths2019/ (accessed July 4, 2022).

Department of Health (DOH) website. (2021, November 26). Government aims to increase vaccine coverage through national Covid-19 vaccination days. [Press release]. https://doh.gov.ph/press-release/GOV%E2%80%99T-AIMS-TO-INCREASE-VACCINE-COVERAGE-THROUGH-NATIONAL-COVID-19-VACCINATION-DAYS

Domingo, Sonny N, and Arvie Joy A Manejar. 2021. *Policy, institutional, and expenditure review of bottom-up approach disaster risk reduction and management.* Quezon City: Philippine Institute for Development Studies.

Domingo, Sonny N, and Arvie Joy A Manejar. 2020. *Review of indigenous poples policy and institutional grounding.* Quezon City: Philippine Institute for Development Studies, July.

Eckstein, D., Kunzel, V., and Schafer, L. Global Climate Risk Index 2021: Who suffers most from extreme weather events? Weather-related events in 2019 and 2000-2019. Germanwatch. https://www.germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021_2.pdf (accessed on June 15 2022).

England, P., Levine, A., & Mishel, E. 2020. Progress toward gender equality in the United States has slowed or stalled. *Proceedings of the National Academy of Sciences of the United States of America, 117*(13), 6990–6997. https://doi.org/10.1073/pnas.1918891117.

Engzell, P., A. Frey, and M.D. Verhagen. 2021. Learning loss due to school closures during the COVID-19 pandemic. *Proceedings of the National Academy of Sciences* 118(17):e2022376118.

Gaduena, A., C.E. Caboverde, and J.P. Flaminiano. 2022. Telework potential in the Philippines. *Economic and Labour Relations Review* 33(2):434-454.

Generalao, I.N.A. 2021. Measuring the telework potential of jobs: Evidence from the International Standard Classification of Occupations. *Philippine Review of Economics* 58(1&2):92-127.

Goldin, I., & Muggah, R. (2020, November 10). *COVID-19 is increasing multiple kinds of inequality*. World Economic Forum. https://www.weforum.org/agenda/2020/10/covid-19-is-increasing -multiple-kinds-of-inequality-here-s-what-we-can-do-about-it/.

Gomez, E.J. 2022, July 6. Robust growth seen for e-commerce. *The Manila Times*. https://www.manilatimes.net/2022/07/06/news/robust-growth-seen-for-e-commerce/1849954?fbclid=IwAR1b1q_iWn9XGeHyXKmZIPaXqP7z3iflVgNQcJ-G3mbxiweIGCXMCvNOBZc.

Glewwe, P., and K. Muralidharan. 2016. Improving education outcomes in developing countries: Evidence, knowledge gaps, and policy implications. In *Handbook of the Economics of Education (Vol. 5)*, edited by E.A. Hanushek, S. Machin, and L. Woessmann, 653-744. Amsterdam: Elsevier.

Global Network for Women Peacebuilders. n.d. *Impact On Women And Gender Equality*. Retrieved from https://gnwp.org/resources/covid-19-wps-database/impact-on-womens-economic-activity- and-livelihood-including-in-the-informal-sector-3/.

Global Witness. 2021. Last Line of Defence: The industries causing the climate crisis and attack against land and environmental defenders. Global Witness.

Goodhand, J. 2001. Violent conflict, poverty, and chronic poverty. *Chronic Poverty Research Centre*. https://www.chronicpoverty.org/uploads/publication_files/WP06_Goodhand.pdf?fbclid=IwAR3YI3jKKIkYhsP51Zb-L-nG8NoCoA1GBQCnFWtPsPI9ppvYm6Y8B0BLQOo.

Gunther, I. & Gunther, F. 2010. Water, Sanitation and Children's Health: Evidence from 172 DHS Surveys. *Policy Research working paper*. World Bank. https://openknowledge.worldbank.org/handle/10986/3762.

Hanushek, E.A., and L. Woessmann. 2020. The economic impacts of learning losses. OECD Education Working Paper No. 225. Paris: OECD Publishing.

Harling, G., & Castro, M. C. 2014. A spatial analysis of social and economic determinants of tuberculosis in Brazil. *Health & place*, *25*, 56–67. https://doi.org/10.1016/j.healthplace.2013.10.008.

Ichino, A., and R. Winter-Ebmer. 2004. The long-run educational cost of World War II. *Journal of Labor Economics* 22(1):57-87.

International Labour Organization (ILO). n.d. *Decent work.* https://www.ilo.org/global/topics/decent-work/lang--en/index.htm (accessed on June 27, 2022).

ILO. 2002. *Resolution concerning decent work and the informal economy*. https://www.ilo.org/asia/info/WCMS_098314/lang--en/index.htm?fbclid=IwAR0CAPowrUjK6UG-knuMVSa2DGGcRElc3irOM8-T5chASyQstindVke254.

ILO. 2021. *Resolution concerning decent work and the informal economy* [Paper presentation]. https://www.ilo.org/asia/info/WCMS_098314/lang--en/index .htm?fbclid=IwAR0CAPowrUjK6UG-knuMVSa2DGGcRElc3irOM8-T5chASyQstindVke254.

ILOSTAT. 2022. *Employment statistics*. https://ilostat.ilo.org/topics/employment/ (accessed on August 1, 2022).

IPCC. 2022. *Climate Change 2022: Impacts, Adaptation, and Vulnerability.* Summary for Policymakers, Intergovernmental Panel on Climate Change.

Jaljaa, A., Caminada, S., Tosti, M. E., D'Angelo, F., Angelozzi, A., Isonne, C., Marchetti, G., Mazzalai, E., Giannini, D., Turatto, F., De Marchi, C., Gatta, A., Declich, S., Pizzarelli, S., Geraci, S., Baglio, G., & Marceca, M. (2022). Risk of SARS-CoV-2 infection in migrants and ethnic minorities compared with the general population in the European WHO region during the first year of the pandemic: a systematic review. *BMC public health*, *22*(1), 143. https://doi.org/10.1186/s12889-021-12466-1

Khatiwada, S., S.E.A. Hilal, R.M. Arao, and I.N. Generalao. 2021. COVID-19 and labor markets in Southeast Asia—Impacts on Indonesia, Malaysia, the Philippines, Thailand and Viet Nam. Mandaluyong City: Asian Development Bank. https://www.adb.org/sites/default/files/publication/758611/covid-19-labor-markets-southeast-asia.pdf (accessed on June 10, 2022.).

Kindipan-Dulawan, J., & Cruz, M.G. (2020). *Voices from the compounded crisis: Oxfam COVID-19 rapid gender assessment regional highlights in the Philippines*. Retrieved from https://oi-files-cng-prod.s3.amazonaws.com/philippines.oxfam.org/s3fs-public/file_attachments/LONG%20RGA%20Regional%20Highlights%20-%2004%20Dec%202020.pdf.

King, E. 2020. Building human capital: Lessons from country experiences - Philippines. Washington D.C.: World Bank. https://openknowledge.worldbank.org/handle/10986/34207 (accessed on June 14, 2022).

Khullar, A. (2021, September 25). COVID-19: Impact on women in the Philippines. *Institute of Peace and Conflict Studies*. http://www.ipcs.org/comm_select.php?articleNo=5787&fbclid= IwAR2PdDaXV4Zul1alwBaqmNwHAg8SDJkYpcCzBKI1emqLwKs7JKMP-M49RMU

Lakes, T., Bruckner, M., and Kramer, A. 2013. Development of an environmental justice index to determine socio-economic disparities of noise pollution and green space in residential areas in Berlin. Journal of Environmental Planning and Management 57(4).

Lavado, R. F., Nowacka, K., Raitzer, D., van der Meulen Rodgers, Y., & Zveglich, J. E., Jr (2021). COVID-19 Disparities by Gender and Income: Evidence from the Philippines. *International labour review, 161*(1), 107-130. https://doi.org/10.1111/ilr.12226.

Magsambol, B. (2021, September 21). What we know so far: Pilot run of limited face-to-face classes in PH. *Rappler*. Retreived from https://www.rappler.com/.

Maldonado, J.E., and K. De Witte. 2022. The effect of school closures on standardised student test outcomes. *British Educational Research Journal* 48(1):49-94.

Mangrio, E., & Zdravkovic, S. (2018). Crowded living and its association with mental ill-health among recently-arrived migrants in Sweden: a quantitative study. *BMC research notes*, *11*(1), 609. https://doi.org/10.1186/s13104-018-3718-6.

Marcotte, D.E., and S.W. Hemelt. 2008. Unscheduled school closings and student performance. *Education Finance and Policy* 3(3):316–338.

Marquez, M.P.N., Laguna, E.P., Kabamalan, M.M.M., & Cruz, G.T. (2020). Estimating the potential impact of the COVID-19 pandemic on key sexual and reproductive health outcomes in the Philippines.

Malolos, G., Baron, M., Apat, F., Sagsagat, H., Pasco, P., Aportadera, E., Tan, R., Gacutno-Evardone, A. J., & Lucero-Prisno Iii, D. E. (2021). Mental health and well-being of children in the Philippine setting during the COVID-19 pandemic. *Health promotion perspectives*, *11*(3), 267–270. https://doi.org/10.34172/hpp.2021.34

Mercurio, Richmond. 2022. *Bike lane network expanded - DOTr.* April 29. Accessed June 20, 2022. https://www.philstar.com/nation/2022/04/29/2177474/bike-lane-network-expanded-dotr.

Meyers, K., and M.A. Thomasson. 2017. Paralyzed by panic: Measuring the effect of school closures during the 1916 polio pandemic on educational attainment. NBER Working Paper No. 23890. Cambridge: National Bureau of Economic Research.

Mitchell, G. 2018. Environmental Justice: An Overview. Encyclopedia of Environmental Health 569-577.

Molato Gayares, R., and M. Thomas. 2022. Falling further behind: The cost of COVID-19 school closures by gender and wealth. Mandaluyong City: Asian Development Bank. https://www.adb.org/sites/default/files/publication/784041/ado2022-learning-losses.pdf (accessed on June 14, 2022).

Morgan, P.J. and L.Q. Trinh. 2021. Impacts of COVID-19 on households in ASEAN countries and their implications for human capital development. ADBI Working Paper No. 1226. Tokyo, Asian Development Bank Institute.

Mueller, A. L., McNamara, M. S., & Sinclair, D. A. (2020). Why does COVID-19 disproportionately affect older people?. *Aging*, *12*(10), 9959–9981. https://doi.org/10.18632/aging.103344

Mullis, I.V.S., M.O. Martin, P. Foy, D.L. Kelly, and B. Fishbein. 2020. TIMSS 2019 International results in mathematics and Science. Boston: TIMSS & PIRLS International Study Center. https://timssandpirls.bc.edu/timss2019/international-results/ (accessed on June 27, 2022).

NICCDIES. 2022. *National Climate Change Expenditure Tagging.* Accessed 06 21, 2022. https://niccdies.climate.gov.ph/climate-finance/ccet#pillar.

Organization for Economic Co-operation and Development (OECD). 2020a. *What is the impact of the COVID-19 pandemic on immigrants and their children?* https://www.oecd.org/coronavirus/policy-responses/what-is-the-impact-of-the-covid-19-pandemic-on-immigrants-and-their-children-e7cbb7de/

OECD. 2020b. Women at the core of the fight against COVID-19 crisis. Retrieved from https://www.oecd.org/coronavirus/policy-responses/women-at-the-core-of-the-fight-against-covid-19-crisis-553a8269/#section-d1e339

OECD. 2021. COVID-19 and well-being: Life in the pandemic. Paris: OECD Publishing.

Omoni, A., Rees-Thomas, P., Siddiqui, S., Arafat, Y. and Burgess, M. (2020). *The Hidden Impact of COVID-19 on Children's Health and Nutrition. London, Save the Children International*. https://resourcecentre.savethechildren.net/pdf/the_hidden_impact_of_covid-19_on_childrens_health_and_nutrition.pdf/.

Ong, M.M., Ong, R.M., Reyes, G.K., Sumpaico-Tanchanco, B. (2020). *Addressing the COVID-19 nutrition crisis in vulnerable communities: Applying a primary care perspective*. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7385814/pdf/10.1177_2150132720946951.pdf.

Orbeta, A.C. Jr. 2022. Basic education during the COVID-19 pandemic: What do enrollment by learning modality and household characteristics tell us? In *The Philippines' response to the COVID-19 pandemic: Learning from experience and emerging stronger to future shocks*, edited by C.M. Reyes. Quezon City: Philippine Institute for Development Studies.

Orbeta, A.C. Jr., J.P.P. Corpus, and N.V.V. Araos. 2021. Who are the youth NEET in the Philippines today? PIDS Discussion Paper Series No. 2021-21. Quezon City: Philippine Institute for Development Studies.

PAGASA. 2022. *Heat Index.* May 31. Accessed June 21, 2022. https://www.pagasa.dost.gov.ph/climate/climate-heat-index.

Park, C-Y., and A.M. Inocencio. 2020. COVID-19, technology, and polarizing jobs. ADB Briefs No. 147. Mandaluyong City. https://www.adb.org/sites/default/files/publication/623036/covid-19-technology-polarizing-jobs.pdf (accessed on June 15, 2022).

Perry, B. L., Aronson, B., & Pescosolido, B. A. 2021. Pandemic precarity: COVID-19 is exposing and exacerbating inequalities in the American heartland. *Proceedings of the National Academy of Sciences of the United States of America*, *118*(8), e2020685118. https://doi.org/10.1073/pnas.2020685118.

Petropoulos, G. 2021. Automation, COVID-19, and labor markets. ADBI Working Paper no. 1229. Tokyo: Asian Development Bank Institute.

Philippine Judicial Academy. 2012. *Citizen's Handbook on Environmental Justice.* United Nations Development Programme, United States Agency for International Development.

Philippine Statistics Authority (PSA). n.d. 2020 Annual Poverty Indicators Survey.

Pickett, K. E., & Wilkinson, R. G. (2015). Income inequality and health: a causal review. *Social science & medicine (1982)*, *128*, 316–326. https://doi.org/10.1016/j.socscimed.2014.12.031.

PSA. 2018. One in four women have ever experienced spousal violence (Preliminary results from the 2017 National Demographic and Health Survey). Retrieved from https://psa.gov.ph/content/one-four-women-have-ever-experienced-spousal-violence-preliminary-results-2017-national.

Raitzer, D.A., R.F. Lavado, J. Rabajante, X. Javier, L. Garces, and G. Amoranto. 2020. Cost-benefit analysis of face-to-face closure of schools to control COVID-19 in the Philippines. ADB Briefs no. 162. Mandaluyong City: Asian Development Bank. https://www.adb.org/sites/default/files/publication/662321/adb-brief-162-cost-benefit-analysis-closure-schools-philippines.pdf (accessed on June 10, 2022).

Raghupathi, V., Raghupathi, W. 2020. The influence of education on health: an empirical assessment of OECD countries for the period 1995–2015. *Arch Public Health* 78(20). https://doi.org/10.1186/s13690-020-00402-5.

Regmi, R.K. 2017. Urbanization and Related Environmental Issues of Metro Manila. Journal of Advanced College of Engineering and Management.

Repunblic Act 7160. 1991. Local Government Code of 1991. Manila, Philippines: Congress of the Philippines.

Riva, M., Larsen, C. V., & Bjerregaard, P. (2014). Household crowding and psychosocial health among Inuit in Greenland. *International journal of public health*, *59*(5), 739–748. https://doi.org/10.1007/s00038-014-0599-x.

Rivera, Temario. 2016. “Rethinking Democratization in the Philippines: Elections, Political Families and Parties”. In Chasing the Wind: Assessing Philippine Democracy, edited by F. Miranda and T. Rivera. 2nd ed. Quezon City: UNDP and Phil Commission on Human Rights.

Rutkowski, J.J. 2015. Employment and poverty in the Philippines. Philippine Social Protection Note No. 9. Washington D.C.: World Bank. https://openknowledge.worldbank.org/bitstream/handle/10986/26320/113101-WP-P150535-PUBLIC-ACS.pdf?sequence=1&isAllowed=y (accessed on June 24, 2022).

Seck, P.A., J.O. Encarnacion, C. Tinonin, and S. Duerto-Valero. 2021. Gendered impacts of COVID-19 in Asia and the Pacific: Early evidence on deepening socioeconomic inequalities in paid and unpaid work. *Feminist Economics* 27(1-2):117-132.

Shannon H, Allen C, Clarke M, et al. Web Annex A. Report of the systematic review on the effect of household crowding on health. In: WHO Housing and health guidelines. Geneva: World Health Organization; 2018 (WHO/CED/PHE/18.02). Licence: CC BY-NC-SA 3.0 IGO.

Singh, G., & Gadgil, G. (2017). *Navigating informality perils and prospects in Metro Manila’s slums*. World Bank Publications. https://thedocs.worldbank.org/en/doc/564861506978931790-0070022017/original/NavigatingInformalityMetroManila72617web.pdf?fbclid=IwAR13wOsJH6N7XOhFNq2pXVKOQhev_VRnWDEsAdqmS4ZWwCSAlidZIxPH7tw

Temper, L., Del Bene, D., and Martinez-Alier, J. 2015. Mapping the frontiers and front lines of global environmental justice: the EJAtlas. https://ejatlas.org/ (accessed on June 15 2022)

The COVID-19 outbreak and gender: Regional analysis and recommendations from Asia and the Pacific. (2020). Retrieved from https://reliefweb.int/report/world/covid-19-outbreak-and-gender-regional-analysis-and-recommendations-asia-and-pacific-may.

Thomson, S. (2018). Achievement at school and socioeconomic background—an educational perspective. *npj Science Learn* 3, 5 (2018). https://doi.org/10.1038/s41539-018-0022-0.

Tikly, L., and A.M. Barrett. 2011. Social justice, capabilities and the quality of education in low income countries. *International Journal of Educational Development* 31(1):3-14.

TomTom. 2021. *Traffic Index 2021.* Accessed June 14, 2022. https://www.tomtom.com/en_gb/traffic-index/ranking/.

Tornee, S., Kaewkungwal, J., Fungladda, W., Silachamroon, U., Akarasewi, P., & Sunakorn, P. (2004). Risk factors for tuberculosis infection among household contacts in Bangkok, Thailand. *The Southeast Asian journal of tropical medicine and public health*, *35*(2), 375–383.

Ulep, V.G., Uy, J., Casas, L.D. (2020). *Primary health care for non-communicable diseases in the Philippines.* Discussion Series No. 2020-39. Quezon City, Philippines: Philippine Institute for Development Studies.

United Nations Development Programme (UNDP). 2014. Environmental Justice: Comparative Experiences in Legal Empowerment. https://www1.undp.org/content/dam/undp/library/Democratic%20Governance/Access%20to%20Justice%20and%20Rule%20of%20Law/Environmental-Justice-Comparative-Experiences.pdf (accessed on June 15 2022).

UNESCO Institute for Statistics (UIS). 2022. Map on school closures. https://covid19.uis.unesco.org/global-monitoring-school-closures-covid19/ (accessed on May 30, 2022).

———. 2022. *UIS database*. http://data.uis.unesco.org (accessed on June 28, 2022).

UNICEF. (2021). Preventing a lost decade: Urgent action to reverse the impact of COVID-19 on children and young people.

United Nations (UN). 2022. 2022 theme: Achieving social justice through formal employment. https://www.un.org/development/desa/dspd/international-days/world-day-of-social-justice/2022-2.html (accessed on June 15, 2022).

———. 2006. Social justice in an open world: The role of the United Nations. New York: United Nations.

United Nations Educational, Scientific and Cultural Organization (UNESCO). 2013. The global learning crisis: Why every child deserves a quality education. Paris: UNESCO.

UN. 2020a. *Policy Brief: Education during COVID-19 and beyond*. Retreieved from https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/08/sg_policy_brief_covid-19_and_education_august_2020.pdf.

UN. 2020b. *Policy brief: The impact of COVID-19 on women*. Retrieved from https://www.un.org/sites/un2.un.org/files/policy_brief_on_covid_impact_on_women_9_apr_2020_updated.pdf.

United Nations Habitat. 2021. Urban Indicators Database: Housing, slums and informal settlements. https://data.unhabitat.org/pages/housing-slums-and-informal-settlements (accessed on June 21 2022).

UN Women. 2020a. COVID-19 and its economic toll on women: The story behind the numbers. Retrieved from https://www.unwomen.org/en/news/stories/2020/9/feature-covid-19-economic-impacts-on-women.

UN Women. 2020b. *Gendered dimensions of COVID-19 in the Philippines*. https://asiapacific.unwomen.org/sites/default/files/Field%20Office%20ESEAsia/Docs/Publications/2020/06/FINAL-Gender%20Snapshot%202-PHL.pdf.

UN Women, UNFPA, and Quilt.ai. 2020. *COVID-19 and violence against women: The evidence behind the talk: Insights from big data analysis in Asian countries*. Retrieved from https://asiapacific.unfpa.org/sites/default/files/pub-pdf/covid-19_and_vaw_insights_from_big_data_analysis_final.pdf.

Valdez, I.K., Enarnado, H.J., Eala, M.A., Ly-Uson, J.T. 2020. Violence against women in the Philippines. *The Lancet Public Health, 7(4). https://doi.org/10.1016/S2468-2667(22)00028-7.*

von Seidlein, L., Alabaster, G., Deen, J., & Knudsen, J. (2021). Crowding has consequences: Prevention and management of COVID-19 in informal urban settlements. *Building and environment*, *188*, 107472. https://doi.org/10.1016/j.buildenv.2020.107472.

World Bank (WB). n.d. Metadata Glossary Data Bank. https://databank.worldbank.org/metadataglossary/all/series?search=slum.

WB. 2021a. The Human Capital Index 2020 update: Human capital in the time of COVID-19. Washington, D.C.: World Bank.

WB. (2021b). Investing in nutrition can eradicate the "Silent Pandemic" affecting millions of poor families in the Philippines – World Bank. https://www.worldbank.org/en/news/press-release/2021/06/15/investing-in-nutrition-can-eradicate-the-silent-pandemic-affecting-millions-of-poor-families-in-the-philippines-world-ba.

World Health Organization (WHO). 2021. *Fuel poverty, homelessness and informal settlements: how housing affects health equity*. World Health Organization. https://www.who.int/news-room/events/detail/2021/01/28/default -calendar/who-webinar---fuel-poverty-homelessness-and-informal-settlements-how-housing-affects-health-equity.

WHO. 2022, June 15. *Weekly epidemiological update on COVID-19 - 15 June 2022*. Retrieved June 18, 2022, from https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---15-june-2022.

———. 2021b. Investing in human capital for a resilient recovery: The role of public finance. Washington D.C.: World Bank. https://openknowledge.worldbank.org/handle/10986/35840 (accessed on June 14, 2022).

WB, UNESCO, and UNICEF. 2021. The state of the global education crisis: a path to recovery. Washington D.C., Paris, New York: World Bank, UNESCO, and UNICEF.

Yap, O.F. 2020. A new normal or business-as-usual? Lessons for COVID-19 from financial crises in East and Southeast Asia. *The European Journal of Development Research* 32:1504–1534.

Zajacova, A., & Lawrence, E. M. 2018. The Relationship Between Education and Health: Reducing Disparities Through a Contextual Approach. *Annual review of public health*, *39*, 273–289. https://doi.org/10.1146/annurev-publhealth-031816-044628.