



The Economic Development And Level Of Poverty In Cambodia

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Citation: H.E. Prof. Dr. Ratana Eng, et al. (2024) The Economic Development And Level Of Poverty In Cambodia *Educational Administration: Theory and Practice*, 30(6), 3693-3701

Doi: 10.53555/kuey.v30i6.5806

ARTICLE INFO

ABSTRACT

The assessment of a country's development is not solely based on the income level of its individuals, but can also be gauged by considering two other key indicators: life expectancy and educational development. In the period spanning from 2015 to 2021, there has been a noticeable increase in Cambodian income, life expectancy, and education levels, indicating an overall improvement in the country's development status. The current number of individuals living in poverty stands at around 4.7 million, with approximately 4.3 million residing in rural areas and 0.4 million in urban areas. Nevertheless, over the span of ten years, there has been a noteworthy decline in the number of people below the poverty line, resulting in a reduction of 40.43%. The decrease in numbers has reduced the total nationwide count to 2.8 million people, with 2.2 million residing in rural regions and 0.6 million in urban areas. Consequently, 1.9 million individuals have successfully escaped poverty, indicating significant advancement. It should be emphasized that this impressive development could not have been achieved without continuous economic expansion. Cambodia has maintained an average economic growth rate of 7.7 percent for twenty years.

Keywords: Life expectancy, Education, Personal income, Economic development, Poverty

I. BACKGROUND ON POVERTY IN CAMBODIA

In 2021, the total population of Cambodia is estimated at 16.59 million people, of whom 6.52 (38% of the total population) and 10.07 million (62% of the total population) live in urban (Phnom Penh and other urban areas) and rural areas, respectively. Compared to 2015, the number of people living in urban areas has increased by 17 percent, from 22 to 38 percent. Conversely, the proportion of people living in rural areas has decreased at the same rate (National Institute of Statistics, 2021). At the same time, gross domestic product (GDP) per capita increased from \$741 in 2009 to \$1619 in 2021 (Asian Development Bank, 2022).

Poverty refers to a severe state of deprivation where individuals, families, and communities lack essential necessities like food, shelter, and clothing. This condition is marked by limited access to education, healthcare, and employment opportunities, affecting various aspects of people's lives. Poverty is a multifaceted problem with wide-ranging consequences, impacting both the physical and mental well-being of individuals. Addressing this issue requires collaborative endeavors and comprehensive approaches to effectively combat its effects.

Table 1 Poverty Rate (%) by Cities/Provinces in 2011 and 2020

No.	Provinces	2011	2020	Change %
1	Koh Kong	23	28	23
2	Mondul Kiri	26	27	3
3	Prey Veng	17	23	39
4	Kep	17	23	32
5	Battambang	20	23	14
6	Preah Sihanouk	12	21	76
7	Kratie	23	21	-8

8	Pailin	18	20	13
9	Pursat	22	19	-15
10	Stung Treng	25	19	-23
11	Kampong Chhnang	20	18	-10
12	Svay Rieng	14	18	26
13	Preah Vihear	25	18	-29
14	Ratanak Kiri	29	18	-37
15	Kampot	20	17	-16
16	Kampong Thom	23	17	-26
17	Kampong Speu	18	16	-9
18	Tbong Khmum	NA	16	NA
19	Takeo	16	15	-7
20	Kampong Cham	19	14	-26
21	Siem Reap	21	13	-39
22	Banteay Meanchey	21	11	-48
23	Kandal	15	10	-33
24	Otdar Meanchey	NA	10	NA
25	Phnom Penh	3	7	126

Source: Ministry of Planning, 2014 and 2020.

In 2009, the World Bank estimated the total number of people living in poverty at about 4.7 million, of whom 4.3 million live in rural areas and 0.4 million in urban areas. In ten years, the number of people living below the poverty line decreased by 40.43% from 4.7 to 2.8 million nationwide (2.2 million in rural areas and 0.6 million in urban areas), bringing about 1.9 million of the total population out of poverty. This large reduction in the poverty rate could not be achieved without sustained economic growth. Over two decades, Cambodia recorded average economic growth of 7.7 percent. Cambodia was a lower middle-income country in 2015 and is projected to be an upper middle-income country by 2030 (World Bank, 2022).

Figure 1 Cambodia’s Map



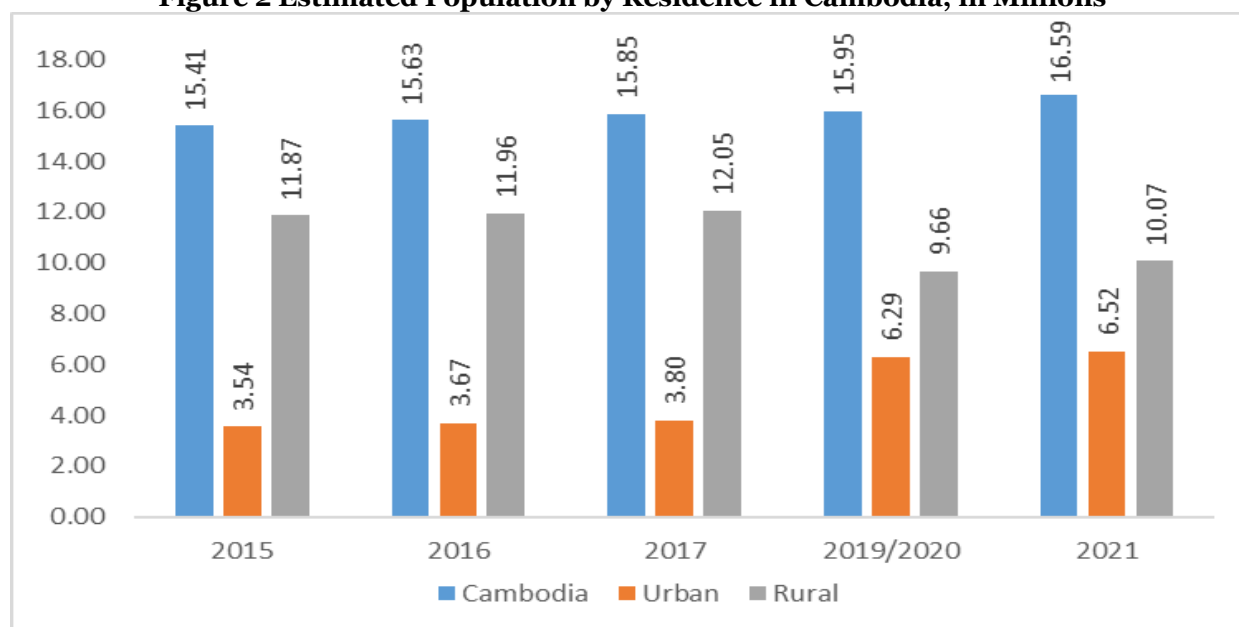
Source: National Institute of Statistics, 2022.

Reliance on only one indicator, the income level of the population as measured by GDP or GNI (Gross National Income) per capita, was considered insufficient information for measuring the level of development of a nation. An in-depth analysis that includes health and education indicators in addition to individual income should be accounted in the discussion of people's well-being. A weighted average of a country's three indicators of health,

education and standard of living yields an economic index known as the Human Development Index (HDI). The closer the HDI is to one, the higher a country's level of development is (Krugman, 1995). In the last three years, the level of development in Cambodia has slightly deteriorated according to the HDI, as the HDI value was 0.598 in 2019, 0.596 in 2020, and 0.593 in 2021, which means a steady decline on an annual basis (United Nation Development Program, 2022).

Although the Khmer Rouge regime ended in 1979, the Cambodian people lived in civil war for more than a decade before complete peace returned throughout the country. At that time, most people lived in rural areas. Most of their income came from the production of agricultural products using traditional technology and limited land, as most areas were mined.

Figure 2 Estimated Population by Residence in Cambodia, in Millions



Source: National Institute of Statistics (NIS), 2022.

II. ECONOMIC DEVELOPMENT IN CAMBODIA

The average life expectancy of Cambodians at birth was estimated at 50.14 years between 1979 and 1989. After the transition from communism to democracy in the early 1990s, Cambodia received much financial and technical assistance from abroad to develop the country. The Royal Government of Cambodia carried out deep structural reform in many core areas, such as education, health care, the armed forces (political and military), demining in Cambodia, and many other areas. The Royal Government of Cambodia has established numerous public schools (primary, lower secondary, upper secondary, and high schools) and health centres in all cities and provinces that are accessible to all people, especially those living in rural areas.

Table 2 Average Life Expectancy at Birth of Cambodian, Years

Year	Average Life Expectancy at Birth
1979-1989	50.14
1990-1999	56.35
2000-2010	63.87
2011-2021	69.84

Source: World Bank, 2022.

This reform paved the way for foreign investors to invest in Cambodia, especially in the textile industry. By the end of the 1990s, the population's standard of living improved. The average life expectancy of Cambodians was 56.35 years. Thanks to the National Strategic Development Plan and the win-win strategy introduced by the RGC, the average life expectancy of the Cambodian population is increasing year by year: 63.87 years in 2000-2010 and 69.84 years in 2011-2021.

Table 3 Adult Literacy (15 years and above) by Geographical Domain, in Percent

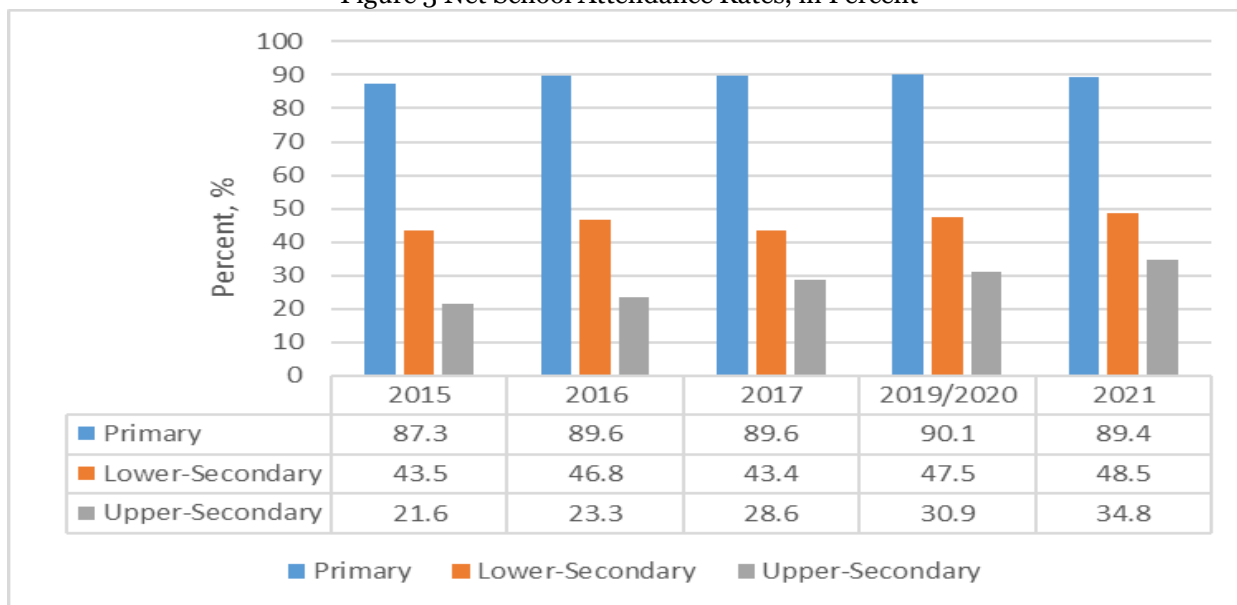
Year	2015	2016	2017	2019/2020	2021
Cambodia	80.5	84.4	82.5	81.9	84.7
Phnom Penh	93.8	95.6	94.5	92.9	92.4

Other urban	87.9	88.9	88.2	86.7	88.9
Other rural	76.8	81.6	79.3	76.8	80.7

Source: National Institute of Statistics, 2022.

The RGC provides free access to education for all Cambodians, from elementary school through high school. The adult literacy rate for Cambodians aged 15 and older was 80.5% of the total population in 2015 and is projected to increase to 84.7% by 2021.

Figure 3 Net School Attendance Rates, in Percent

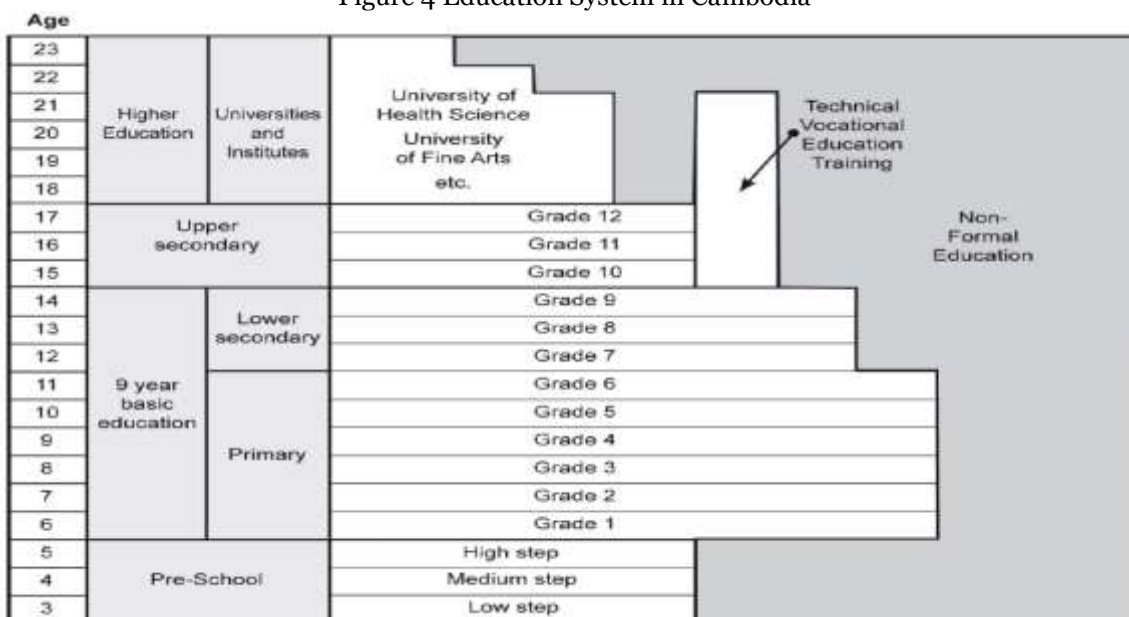


Source: National Institute of Statistics, 2022.

Adult literacy rates by geographic area in 2015 were 93.8% in Phnom Penh, 87.9% in other urban areas, and 76.8% in other rural areas. In 2021, the rates are 92.4% (a decrease of 1.4% compared to 2015), 88.9%, and 80.7% in Phnom Penh, other urban areas, and other rural areas, respectively.

The net school attendance rates for primary, lower secondary, and upper secondary education in 2015 were 87.3%, 43.5%, and 21.6%, respectively. In 2021, compared to 2015, school attendance rates were increased at all levels, reaching 89.4% at the primary level, 48.5% at the lower secondary level, and 34.8% at the upper secondary level.

Figure 4 Education System in Cambodia



Source: Ministry of Education, Youth and Sport (MoEYS).

In 2015, the per capita monthly disposable income of the 50th percentile was about 5.8 times higher than the income of the 5th percentile group, but the income gap between the two classes widened to 5.97 times in 2019/2020. This situation shows that the inequality of income distribution in Cambodia increased between 2015 and 2019/2020. Fortunately, the gap between the incomes of the middle and lower classes narrowed in 2019/2020-2021.

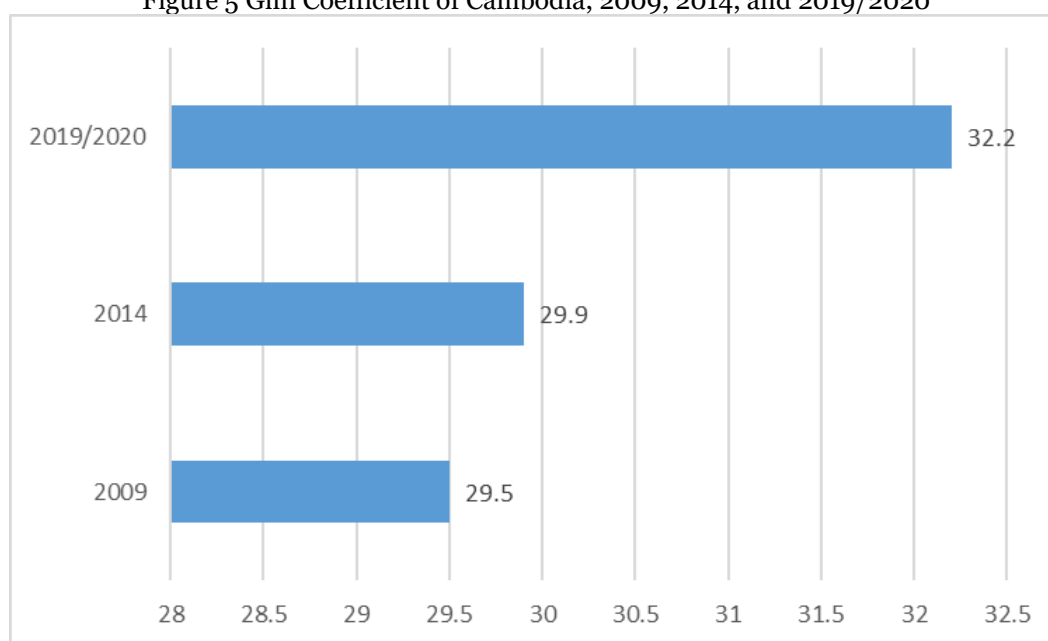
Table 4 Disposable Income per Capita per Month by Percentile, 2015-2021, in Thousand Riels

Percentile	2015	2016	2017	2019/2020	2021
5 th Percentile	46	37	70	73	76
10 th Percentile	73	68	113	129	131
25 th Percentile	152	157	205	255	254
50 th Percentile	267	295	350	436	431
75 th Percentile	438	473	550	693	676
90 th Percentile	705	759	825	1,083	984
95 th Percentile	1,004	1,118	1,063	1,500	1,271

Source: National Institute of Statistics (NIS), 2022.

The results of analysing the inequality of income distribution by measuring the dispersion between the 50th and the 5th percentile of the income distribution. The Italian statistician and sociologist Corrado Gini developed a statistical measure of the dispersion or inequality of income, the Gini coefficient or Gini index.

Figure 5 Gini Coefficient of Cambodia, 2009, 2014, and 2019/2020



Source: World Bank, 2022.

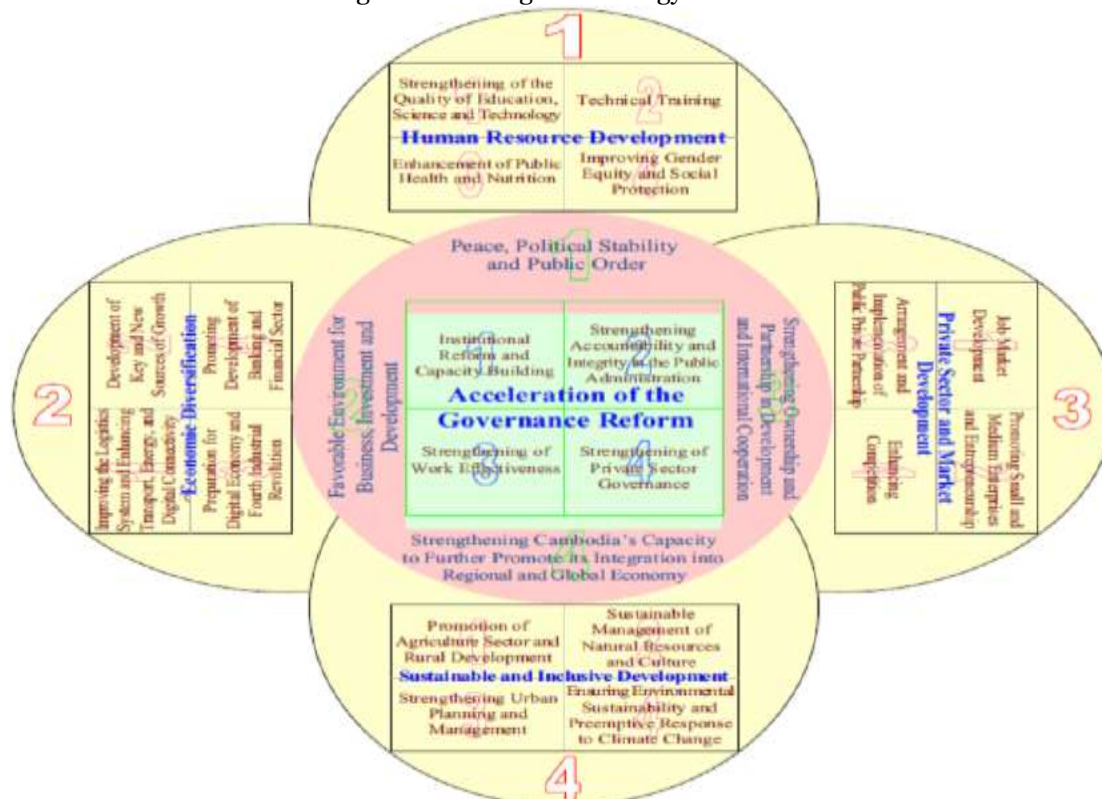
The closer the index is to one, the greater the inequality of wealth distribution within a nation (Gini, 1936). The World Bank estimates that the Gini indices in Cambodia were 29.5 in 2009, 29.9 in 2014, and 32.2 in 2019/2020, indicating that inequality in income distribution has increased (World Bank, 2022). Therefore, it is argued that sustained economic growth tends to benefit the non-poor, particularly the top 10th percentile, more than the poor, the bottom 10th percentile of the income distribution.

National Poverty Reduction Strategy 2003–2005 & National Strategic Development Plan 2019–2023

The National Poverty Reduction Strategy (NPRS) for 2003-2005 was developed and adopted in 2002 to alleviate poverty and improve the living standards of the Cambodian people. A year later, in 2003, Cambodia's Millennium Development Goals (CMDGs) were developed in line with the Millennium Declaration of the 2000 Summit UN. Following the third national elections in 2003, the National Strategic Development Plan (NSDP) for the period 2006 to 2010 was prepared. The NSDP represents a synthesis between the NPRS and the CMDGs that implement the rectangular strategy (International Monetary Fund, 2006). The NSDP focuses on four aspects or rectangles: growth, employment, equity, and efficiency, which ensure development sustainability and poverty reduction in Cambodia. The rectangle strategy has been implemented as part of the NSDP, which has already gone through three different phases: Rectangular Strategy Phase I from 2006-2010, Rectangular

Strategy Phase II from 2009-2013, and Rectangular Strategy Phase III from 2014-2018. The Rectangular Strategy Phase IV will be implemented under the NSDP 2019-2023 (Royal Government of Cambodia, 2019).

Figure 6 Rectangular Strategy Phase IV



Source: Royal Government of Cambodia, 2019

Cambodia Sustainable Development Goals 2016-2030

Another poverty reduction strategy in addition to the NSDP, called the Cambodia Sustainable Development Goals (CSDGs) 2016-2030, has been implemented in Cambodia by the RGC in collaboration with the United Nations since January 1, 2016. This strategy was in line with the Sustainable Development Goals (SDGs) established by the United Nations, which include 17 goals and 169 targets. In response to Cambodia's economic structure, the CSDGs include 18 targets (one target was added to address demining in Cambodia), 88 nationally relevant targets, and 148 indicators (defined globally and locally), of which 96 are national indicators (Royal Government of Cambodia, 2018).

Figure 7 United Nation Sustainable Development Goals



Source: Royal Government of Cambodia, 2018.

III. IMPORTANCE OF MAPPING POVERTY

What can be done to ensure that poverty reduction initiatives primarily benefit the poor (Lavallee et al., 2010)? Poverty mapping helps stakeholders identify the areas and communities most affected by poverty. Using this information, they can allocate poverty reduction resources to areas that most benefit the poorest, such as primary health care and education (Weiss, 2005). Mapping provides insights into the geographic distribution of poverty and the factors that contribute to it, which allows policymakers to develop targeted policies and strategies to meet the specific needs of different regions and communities (Martinez, 2020). More importantly, they help them determine where to allocate funding, infrastructure, social services, and other resources to maximize their impact on poverty reduction, particularly to allocate resources more effectively by identifying areas with the highest poverty rates (Karamba et al., 2022). Poverty maps facilitate monitoring and evaluation of poverty reduction programs and policies. By comparing poverty indicators before and after interventions, policymakers can measure the effectiveness of their strategies and make necessary adjustments to improve outcomes (Justina, 2019). It also promotes collaboration and coordination among different government agencies, NGOs, and development partners. By sharing and analyzing poverty data, different actors can work together more effectively to address poverty and its root causes (Asian Development Bank, 2012).

Poverty mapping in Cambodia typically uses a variety of data sources and statistical methods to identify and visualize the distribution and characteristics of poverty in different regions of the country. Some of the most common poverty mapping methods in Cambodia are: Household Income and Expenditure Surveys (HIES): HIES is a widely used method for collecting data on household income, expenditure, and consumption patterns. It provides valuable information on household socioeconomic status and helps estimate poverty levels. Census data: Census data are a comprehensive source of demographic and socioeconomic information at the individual and household levels. Census data can be used to identify areas with high poverty rates and to analyze the characteristics of the population living in these areas. Small Area Estimation Techniques (SAE): SAE Techniques are used to estimate poverty at the subnational or regional level where traditional survey sampling does not provide sufficient data. SAE Methods use a combination of survey data and other additional data sources such as satellite imagery, administrative records, and geospatial data to model poverty levels in smaller geographic areas. Geographic Information Systems (GIS): GIS Technology is used to map and analyze poverty at a spatial level. It helps visualize poverty patterns, identify areas with high or low poverty rates, and understand the relationship between poverty and various geographic variables such as distance to markets, infrastructure facilities, or natural resources. Multidimensional Poverty Index (MPI): The MPI is a composite measure that assesses poverty across multiple dimensions such as health, education, living standards, and social inclusion. It provides a comprehensive picture of poverty and can be used to capture the multidimensional aspect of poverty at different geographic levels. Participatory mapping: participatory mapping involves local communities and stakeholders in mapping poverty. It allows for the incorporation of local knowledge and perspectives in identifying poor areas, understanding local dynamics, and designing targeted poverty reduction interventions. These methods and techniques are often used in combination to produce a comprehensive and accurate analysis of poverty in Cambodia. By using a variety of data sources and analytical tools, policymakers and development practitioners can better understand the extent and nature of poverty and design effective poverty reduction strategies.

IV. TRADITIONAL APPROACHES TO POVERTY MAPPING

The poverty mapping method developed by Elbers et al. (2002), known as the small-area estimation technique, has been identified as the standard method for measuring the distribution of wealth in a country. Data on the living standards of people in a small area, a city, a municipality, or a district, were collected based on household surveys and matched with the census or a large sample. In one of the South American countries, Ecuador, this technique provided fairly reliable results for a population of only 15,000 households.

As part of the capacity building project for socioeconomic surveys and planning funded by the United Nations Development Program (UNDP), the World Bank (WB), and the Swedish International Development Cooperation Agency (SIDA), the first socioeconomic survey in Cambodia (CSES) was conducted in 1997 in collaboration with the National Institute of Statistics (NIS) of the Ministry of Planning. The main objective of the CSES was to measure the living standards of the Cambodian population in different segments and geographical strata. The sample was divided into national (24 provinces) Phnom Penh, other urban and other rural levels, Tonle Sap, coast, and plateau/mountainous areas. The CSES data were categorized into nine themes: demographic characteristics, education, economic characteristics, health, housing and environment, household consumption and expenditure, household assets and liabilities, fertility, mortality and childcare, household access to water, fuelwood and fodder. More importantly, the data collected benefit a wide range of users, including government agencies, nongovernmental organizations (NGOs), and donor agencies (National Institute of Statistics, 1997). The Cambodian Socioeconomic Survey is conducted every five years. The last CSES was held in 2020 (National Institute of Statistics, 2020).

After the collapse of the Khmer Rouge regime, the first census was conducted in 1998, counting a total of 11,437,656 people. Due to military operations, the National Institute of Statistics estimates that a total of 45,000 people were not counted in some villages and districts in the provinces of Banteay Mean Chey (Ou Bei

Choan village in Ou Chro district), Battambang (Samlot district), Odar Mean Chey (all of Anlong Veang district), and Pursat (Veal Veang district) (Huguet et al., 2000). The census in Cambodia is conducted every ten years. After 1998, two more censuses were conducted nationwide, in 2008 and 2019. The last census should have been conducted in 2018, but was postponed to 2019 because of the national elections. These censuses collected total population, growth rates, population density, total fertility, infant and maternal mortality rates, literate population, age structure, mother tongue, ethnic groups, religion, disabilities, and other data.

A joint research project of the Ministry of Planning, the United Nations World Food Program, and the World Bank estimated poverty rates, poverty gaps, and poverty severity in Cambodia in 2002 using the small-area (community-level) estimation technique, or ground-truthing exercise, developed by Elbers et al. (2002). The disaggregated distribution of poverty at the community level was obtained by combining four different data sets, the 1997 CSES, the 1999 CSES, the 1998 Census, and the Geographic Information Systems (GIS). At that time, this method was classified as the first standard poverty measurement technique used in Asia. Empirical analysis of the household consumption model showed that the poverty rate in Cambodia was 8.9% and the poverty risk was 3.2% (Ministry of Planning and United Nations World Food Program, 2002).

Nutrition mapping is a methodology of poverty mapping that works by assessing the fundamental needs of people, particularly children. In 2003, a nutrition mapping study was conducted in Cambodia as part of a collaboration between UN World Food Program (WFP), MoH (MoH) and Macro International (Macro International). As shown in the comparison to household consumption model above, a dependent variable of standard regression model is replaced by anthropometric indicators collected by Macro International. These indicators are Demographic and Health Survey (DHS) data that provides information on children's nutrition status in 17 strata levels (WFP, MoH, and Macro International, 2003).

The empirical investigation showed that there was a weaker relationship between poverty and child malnutrition in Cambodia. This indicates that this indicator was not very reliable for measuring poverty at the community level. The weak relationship between poverty and malnutrition is a result of statistical error. In recent years, this measurement error has been corrected by the revision of anthropometric indicators by Fujii (2010). Children with poor nutritional status may not only have inadequate caloric intake, which may be related to poverty, but they also may not have adequate childcare or be exposed to diseases such as malaria or diarrhea, which may not be closely related to poverty (Fujii, 2007).

There are many modern poverty-mapping techniques, including daytime and nighttime remote sensing imagery, Global System for Mobile Communications smartphone, and Wi-Fi indicators, the Survey of Well-being via Instant and Frequent Tracking, and call detail records, which can be used in conjunction with the traditional technique of mapping between survey data and census data.

The traditional technique is mainly adopted to measure the level of poverty in Cambodia as described earlier, but the disadvantage of this method is the frequency of the data and the cost of collecting the data. The census data is collected every ten years and the Cambodia Socio-Economic Survey (CSES) is performed every year after 2008. Therefore, the process of monitoring and evaluation of strategic policies in reducing poverty, which developed and carried out by the Royal Government of Cambodia (RGC), through CSES and census data, can only be performed every five or ten years due to the availability of the data sets. This issue might have caused a late in providing appropriate feedback or corrective action toward the poverty alleviation strategies being implemented by the RGC (Virginia et al., 2022).

Although small sample from survey at some small-area, commune and district level, can be collected frequently and can be used to map with large data sets as such CSES or census data, but the process of collecting the data is time consuming and sometime costly. Hence, modern poverty and development measurement techniques using satellite-based indicators which costless accessibility to the timely geospatial data, should be applied in the case of Cambodia.

V. CONCLUSION

It was estimated that the average life expectancy of Cambodians at birth was 50.14 years. Following the transition from communism to democracy in the early 1990s, Cambodia received significant financial and technical support from foreign sources to aid in the country's development. The Royal Government of Cambodia implemented extensive structural reforms in various key sectors, including education, healthcare, the armed forces, and demining efforts.

The implementation of the National Strategic Development Plan and the win-win strategy by the RGC has resulted in a steady rise in the average life expectancy of the Cambodian people over the years. Specifically, the average life expectancy increased to 63.87 years between 2000 and 2010, and further rose to 69.84 years between 2011 and 2021. However, in 2021, there was a decrease in adult literacy rates compared to 2015, with Phnom Penh having a rate of 92.4%, other urban areas at 88.9%, and other rural areas at 80.7%.

The per capita monthly disposable income of the 50th percentile exceeded that of the 5th percentile group by approximately 5.8 times in 2015, but by 2019/2020, the income gap between these two groups had expanded to 5.97 times. This data indicates a rise in income inequality in Cambodia from 2015 to 2019/2020. The Gini coefficient or Gini index is a statistical measure developed by the Italian statistician and sociologist Corrado

Gini to analyze income inequality. It calculates the dispersion between the 50th and the 5th percentile of the income distribution, providing valuable insights into the level of inequality within a society.

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