

**A STUDY OF MULTIDIMENSIONAL POVERTY  
MANAGEMENT IN THAILAND ACCORDING TO THE THAI  
PEOPLE MAP AND ANALYTICS PLATFORM (TPMAP)  
THROUGH PROVINCIAL BUDGET ALLOCATION AND  
PROVINCIAL GROUPS, ANNUAL BUDGET 2017-2019**



**Airawee Wiraphanphong**

**A Dissertation Submitted in Partial  
Fulfillment of the Requirements for the Degree of  
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## ABSTRACT

<b>Title of Dissertation</b>	A STUDY OF MULTIDIMENSIONAL POVERTY MANAGEMENT IN THAILAND ACCORDING TO THE THAI PEOPLE MAP AND ANALYTICS PLATFORM (TPMAP) THROUGH PROVINCIAL BUDGET ALLOCATION AND PROVINCIAL GROUPS, ANNUAL BUDGET 2017-2019
<b>Author</b>	Airawee Wiraphanphong
<b>Degree</b>	Doctor of Public Administration
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The objectives of this research are: 1) to study the status of multidimensional poverty in Thailand based on the Thai People Map and Analytics Platform (TPMAP); 2) to investigate government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters based on the TPMAP; 3) to examine the relationships between the status of multidimensional poverty and government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters, and; 4) to propose the policy recommendations for addressing the problem of multidimensional poverty in Thailand. This study employs a qualitative research design using documentary research techniques.

Research results show that Thailand's multidimensional poverty status – based on the TPMAP from 2017-2019 – can be divided into five dimensions, comprised of; (1) Healthcare: Bueng Kan and the upper Northeastern cluster 1 had the highest increase in the number of poor people; (2) Living standard: Nakhon Si Thammarat, the lower Central cluster 2, and the Southern cluster (Andaman Coast) had the highest increase in the number of poor people; (3) Education: Chiang Mai, the upper Central cluster, and the Southern cluster (Gulf of Thailand) had the highest increase in the number of poor people, (4) Income: Chiang Mai, the lower Central cluster 2, and; (5) Access to public services: Loei had the highest increase in the number of poor people and the highest rate of increased poverty concentrated in the upper Northeastern cluster 2 and the middle Northeastern cluster. Budgets were allocated to addressing poverty

under the following five dimensions: (1) Healthcare: Satun is the only province to receive the budget for this dimension in both 2018 and 2019. (2) Living standards: Kanchanaburi received the highest increase in budget; (3) Education: among the three provinces that received budget for this dimension in both 2018 and 2019, Samut Sakhon was provided with the highest budget. (4) Income: all provinces received budgets for this dimension except Chumphon. (5) Access to public services: Songkhla received the highest increase in budget.

Study results indicate that there is no correlation between the allocation of provincial and provincial cluster budgets and the poverty status in the five studied dimensions. The provinces that had no people below the poverty line or had a continual decline in the number of people below the poverty line were provided with financial assistance, whereas the provinces with an increased number of deprived people received little or no assistance. The policy recommendations for solving multidimensional poverty in Thailand include: 1) That MPI results should be fully published; 2) all related organizations should use the same database format for long-term operations; 3) the weight of the proportion of poor people should be increased in budget allocation, project evaluation indicators should be added and the analysis of multidimensional poverty should be included in the budgeting process, and; 4) a committee consisting of representatives from civil society should be established to participate in the budgeting process at the provincial and provincial cluster levels.

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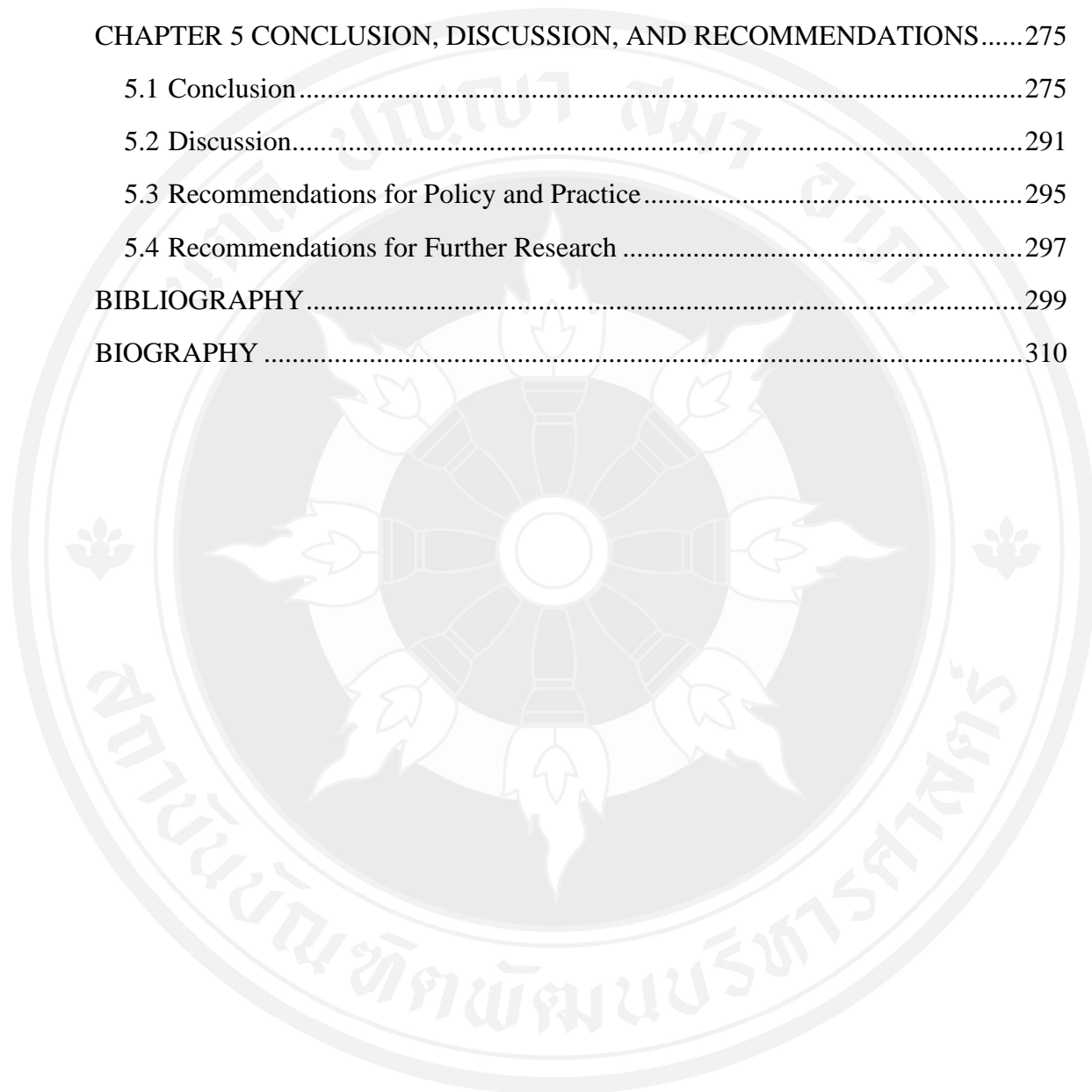
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# CHAPTER 1

## INTRODUCTION

### 1.1 Problem Statement

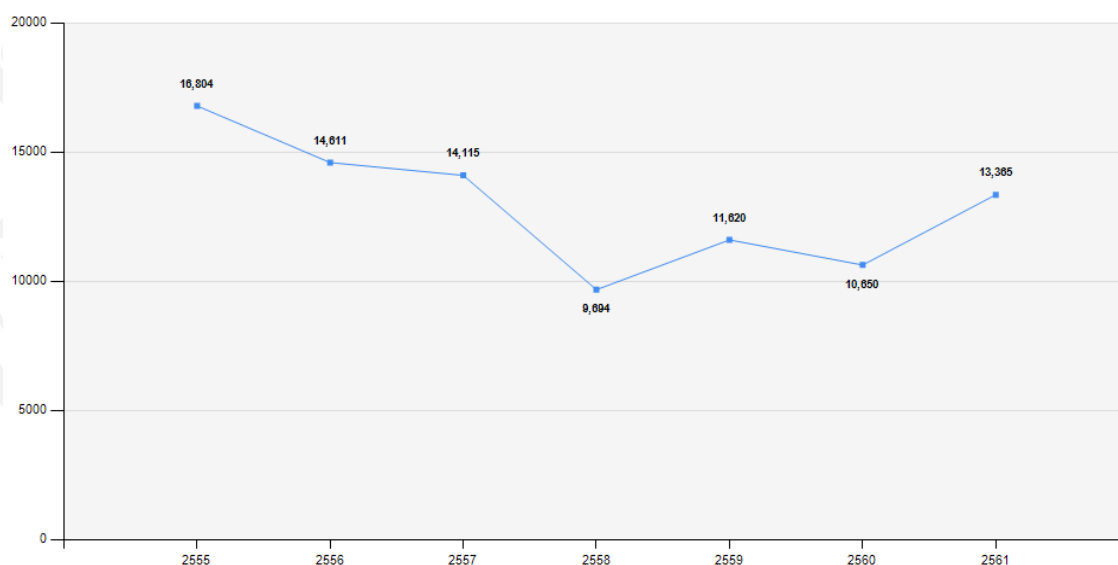
Over the past three decades, poverty has been a universal issue for every country and international organization around the world. Various policies have been adopted to address this issue, as more than a third of the world's population experiences extreme poverty. However, a recent World Bank survey revealed that from 1990-2015 the number of people under the poverty line (living on 1.90 USD a day or less) decreased from 1,900 million to 735 million, which means that the number of “poor people” based on the above definition declined from 36 percent in 1990 to 10 percent in 2015 (World Bank, 2019). The decline in the number of poor people resulted from the implementation of Millennium Development Goals (MDGs) that were established at the United Nations Millennium Summit in New York in 2000, where the leaders of international countries gathered to discuss and determine eight common development goals. The MDGs’ first goal is to reduce the number of poor people by 50 percent within a time frame of 15 years (2000-2015).

When the MDGs era ended in 2015, the United Nations tried to build on the MDGs achievements by preparing and holding international meetings at various levels. The opinions of the global community were collected through an internet system for at least three years prior to 2015 in order to set a framework for promoting the standard of living for people around the world. As a result, the Sustainable Development Goals (SDGs) were established in September 2015 to be used as a new global development framework for the next 15 years or until August 2030 (Natchada Kongsri, 2017). The first goal of the SDGs is to end poverty in all its forms by 2030.

Thailand implemented the SDGs by establishing the National Committee on Sustainable Development on 24 July 2013 and appointing the Secretary-General of the Office of Environmental Policy and Planning to be the secretary and committee

member. Thailand also collaborated with UNESCAP to host a conference, called the “Asia-Pacific Ministerial Dialogue: From the Millennium Development Goals to the United Nations Development Agenda beyond 2015,” in Bangkok on 26-28 August, 2013, and introduced the Bangkok Declaration of the Asia-Pacific Region on the United Nations Development Agenda beyond 2015 (Sayam Aroonsrimorakot & Yongyudh Vajaradul, 2016, p. 6) that focuses on eradicating poverty resulting from economic crises and unemployment, enhancing sustainable economic growth, creating valuable jobs, promoting quality-oriented education, and responding to the needs of the labor market (Development Affairs Division of Department of International Organizations in Ministry of Foreign Affairs, 2015).

The number of poor people in Thailand, as measured by consumption expenditure, continuously declined between 2012 and 2015, but increased from 2016 to 2019. The details are shown in Figure 1.1.



**Figure 1.1** The Number of Poor from 2012-2018, Measured by Consumption Expenditure.

**Source:** Office of Database Development and Social Indicators, 2020.

In addition, a World Bank survey (2020) reported that, between 2015 and 2018, Thailand’s poverty rate increased from 7.2 percent to 9.8 percent and the number of people living in poverty grew from 4,850,000 to 6,700,000. The increase in poverty in

2018 occurred in all regions; 61 out of 77 provinces. The number of poor people in the Central and Northeastern regions increased by more than 500,000 from 2015 to 2018. The Southern region became the region with the highest poverty rate in 2017.

As the number of poor people continues to increase, the Thai government has implemented various policies to eradicate poverty. The 12th National Economic and Social Development Plan (2017-2021) was created by Office of the National Economic and Social Development Board (NESDB, 2017a) in accordance with the 20-Year National Strategy (2017–2036 – Thailand’s development master plan – and the SDGs with the aims to raise per capita income to 6,000 USD a year, to develop human capital potential in order to make the Thai people more prosperous and to drive the nation towards the ‘Thailand 4.0’ vision.

Due to the Thailand 4.0 policy, the government of General Prayut Chan-o-cha has tried to achieve excellence in innovation and technology by transforming the public sector into a digital government, which is one of the main strategies of the Digital Economy and Society Plan. Moreover, the Government also announced the Big Data Plan to provide big data as a service to governmental agencies. Under this plan, all governmental agencies in Thailand will have the same set of data through which to perform their duties (Academic Office of Secretariat of the House of Representatives, 2016, p. 6). The government’s big data development will lead to an integration of data structure, data management, valuable data analysis, and tool selection and will promote effective data management in the public sector. At present, all governmental agencies are preparing for the digital transformation (Digital Government Development Agency (Public Organization), 2015).

When collecting big data, poverty data is one of the most important data sets that the government pays attention to. This is because Thailand has faced the problem of measuring poverty and cannot precisely identify poor people. Due to the use of different indicators, limitations of each indicator or each set of indicators, and errors arising from data collection, the identification of poor people varies in different governmental agencies (Sutep Punprasit, 2002, p. 2). Therefore, the National Strategy Committee established a special committee to study the possibility of developing a government big data system and appointed the Minister of Digital Economy and Society to host the committee. The NESDB and the National Electronics and Computer

Technology Center (NECTEC) were assigned to develop a prototype of the big data system that helps to improve the quality of life of Thai people for increasing income, reducing living costs, and increasing employment opportunities. As a result, both organizations collaborated to develop a pilot version of TPMAP.

TPMAP not only retains the ability to identify the poor, but also covers wider issues, including newborn children, education, aging population, and housing development. Thus, TPMAP can be used to identify the poor and poverty-related problems at the individual, household, community, local, provincial, and national levels in order to accurately solve the problems for each target group and design appropriate policies to serve the needs of people. TPMAP uses the Multidimensional Poverty Index (MPI), initiated by the Oxford Poverty & Human Development Initiative and United Nation Development Program, to identify the poor, as recommended by the NESDC. The Multidimensional Poverty Index defines the poor as those who lack a good quality of life according to five dimensions, includes of healthcare, education, income, living standards and access to public services.

On 11 January 2018, the Prime Minister's Delivery Unit submitted a memorandum concerning the progress of the study to the Prime Minister. The Prime Minister agreed to assign the special committee to report the progress and demonstrate how TPMAP can reduce poverty and improve the quality of life of Thai citizens to the joint committee on regional development policies and Lamphun, Mukdahan, and Nakhon Phanom Provincial Administrative Organizations so that these organizations can use TPMAP to solve poverty-related problems and issues and improve the quality of life of people in related areas (Thai People Map and Analytics Platform (TPMAP), 2019).

The government has tried to comply with the integrated provincial development plan, which is an important mechanism in implementing government policies, government administration plans, national strategies, and national economic and social development plans in accordance with the abilities, problems, and needs of people in each area. In addition, all provinces and provincial clusters are allowed to create their own provincial development plans in order to solve related problems and develop their own areas. Each province plays a comprehensive role in integrating provincial strategies, plans, and projects and coordinating with all sectors in the province,

including Central, provincial, and local government agencies, and can directly submit a budget request to the Parliamentary Budget Office in order to enhance area-based developments and promote a better quality of life. The integrated provincial development plan is aimed at poverty alleviation, which is in line with the purpose of TPMAP. However, the budget allocation to provinces and provincial clusters from 2017-2019, the study finds that the amount of allocated budget continued to decline, as shown in Table 1.1.

**Table 1.1** Comparing Budgets Allocated to Provinces and Provincial Clusters from 2017-2019

Unit: Million Baht

	Fiscal Year		
	2017	2018	2019
Annual Budget Expenditure Act	26,432.7035	31,765.3710	27,981.5752
Supplementary Budget Expenditure Act	56,238.6812	-	-
Budget Expenditure Transfer Act	(1,074.2468)	-	-
<b>Total Budget</b>	<b>81,597.1397</b>	<b>31,765.3710</b>	<b>27,981.5752</b>
Increase/Decrease from the Previous Year	59,051.1923	(49,831.7670)	(3,783.7957)
<b>Percentage</b>	<b>27.97</b>	<b>(61.07)</b>	<b>(11.91)</b>

**Source:** Parliamentary Budget Office, 2018, p. 7.

Based on the above information, this research seeks to study the multidimensional poverty status of Thai people based on TPMAP and the government policies on reducing multidimensional poverty through budget allocation to provinces and provincial clusters. The researcher aims to study all related data from fiscal year 2017 - 2019 in order to establish relationships between multidimensional poverty status and government policies. The results of the research will contribute to the effective use of big data in planning and formulating appropriate multidimensional poverty reduction policies in the future.



## **1.2 Research Questions**

1.2.1 What is the status of multidimensional poverty in Thailand based on TPMAP?

1.2.2 What are the government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters based on TPMAP?

1.2.3 What are the relationships between the status of multidimensional poverty and government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters?

1.2.4 What kinds of policies should be used to reduce multidimensional poverty in Thailand through provincial budget allocations?

## **1.3 Research Objectives**

1.3.1 To study the status of multidimensional poverty in Thailand based on TPMAP.

1.3.2 To investigate government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters based on TPMAP.

1.3.3 To examine the relationships between the status of multidimensional poverty and government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters.

1.3.4 To propose policies for solving multidimensional poverty in Thailand.

## **1.4 Scope of the Study**

The scope of this research can be described as follows.

1.4.1 Content: the scope of content is limited to multidimensional poverty status and related government policies based on TPMAP, focusing on five dimensions: healthcare, education, income, living standards and access to public services, from 2017-2019.

1.4.2 Unit of study: provinces and provincial clusters included in TPMAP's multidimensional poverty survey.

1.4.3 Research period: the research period, covering data collection, data analysis, and report writing processes, covers 12 months; January, 2020 to December, 2020.

## **1.5 Benefits of the Study**

1.5.1 Study findings will clarify the relationships between multidimensional poverty and government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters.

1.5.2 Study results can be used as a guideline for developing and proposing appropriate policies to solve poverty-related problems and issues in Thailand based on empirical data.

## **1.6 Definition of Terms**

1.6.1 'Poverty' refers to economic insufficiency, including a lack of adequate income to meet the minimum standards of living, an absence of ability to earn livelihood resulting from shortages of resources, production factors, and basic human needs, a lack of opportunities and safety in life and property, not having access to basic education and public services, social exclusion, and a lack of social, political, and cultural participation.

1.6.2 'Provincial cluster' refers to a group of provinces established according to the Notification of the Provincial and Provincial Cluster Administration Policy Committee Concerning Establishing Provincial Clusters and Appointing the Province to Be the Operating Center of the Provincial Cluster (No.3), which classified provinces in Thailand into 18 provincial clusters in six regions.

## **CHAPTER 2**

### **LITERATURE REVIEW**

This chapter presents the concepts, theories and research related to Thailand's multidimensional poverty management, the Thai Peoples Map and Analytics Platform, and the allocation of budget to provinces and provincial clusters. As this research aims to study the definition, indicators, and criteria of poverty, which may have a relationship with the multidimensional poverty index in solving poverty-related problems, it is necessary to thoroughly review related theories and research in order to develop the research framework. The contents of this chapter are organized and presented as follows.

- 1) Definition of poverty
- 2) Concept of poverty measurement
- 3) Indicators affecting multidimensional poverty measurement
- 4) Government policies on poverty alleviation in Thailand
- 5) Budget allocation by expenditure types

#### **2.1 Definition of Poverty**

The word “poverty” comes from the French word “poverté” or Latin “paupertas” (Chuchit Chaithaweep, 2016, p. 191). Poverty has been defined in various ways, leading to the use of different poverty indicators and analytics (Sukhothai Thammathirat Open University, 2010a). In general, the definition of poverty can be classified into two ways: 1) the dictionary definition, and 2) the academic definition.

##### **2.1.1 Dictionary Definition**

The Cambridge Advanced Learner's Dictionary (2020) defines poverty as a lack of something or low quality.

The Oxford Advanced Learner's Dictionary of Current English (2020) similarly defines poverty as the state of being poor or not having a good quality of life.

The Dictionary of the Royal Institute of Thailand B.E. 2554 (1982) states that poverty means being miserable and having no money.

The Office of the Royal Society defines poverty as a condition in which people are living below a set standard or have insufficient income to afford basic human needs, such as food, clothing, and housing.

From the definitions mentioned above, most are similar in terms of their focus on deprivation, inferiority and substandard living conditions.

### **2.1.2 Academic Definitions**

In the perspective of many scholars, clarifying definitions is a problematic issue. Most scholars have a strict standard about definitions. For the word poverty, it is required that the definition of poverty must include the 'true' characteristics of poverty that are common in every situation. As it is difficult to find true characteristics of poverty that are acceptable to everyone, as such, defining the word poverty is not easy and can lead to widespread debate (Somchai Jitsuchon, 2001, p. 8).

However, the definitions of poverty that are widely understood and used are usually based on the economic principles, which only give importance to the financial resources of a person. These definitions are not inclusive of all cases because the meaning of poverty is not limited to financial or income aspects.

The European Council defines poverty as, "individuals or families whose resources are so small as to exclude them from the minimum acceptable way of life of the Member State in which they live" (Council Decision, 1975).

Zastrow (1986) states that poverty, in general, refers to the deprivation of livelihoods resulting from a lack of money and that annual income is the most common poverty indicator.

The Thailand Development Research Institute (TDRI) specifies that poverty refers to economic poverty, determined by income levels or the ability to earn sufficient income and meet acceptable living standards in each society (Sumalee Santipolvtut, Sommai Udomwitid, Rosada Vesdapunt, & Bundit Chaivichayachat, 2011, p. 22).

Later, a new approach of defining poverty, which does not only focus on low income or low consumption, but also takes account of non-monetary dimensions (Jaree Phomkird, 2005, p. 12) and subjective elements, such as education, healthcare, security,

freedom, social status, and social acceptance emerged. International scholars and organizations have adopted this approach to define poverty, as detailed below:

Sen (1992) suggests that poverty is a failure to obtain basic necessities and access to a minimum level of living standards, including physical necessities, good food, clothing, housing, avoidance of preventable death and more complex social successes such as participating in public and community activities.

The World Summit on Social Development (WSSD) defines poverty as “a lack of income and productive resources sufficient to ensure sustainable livelihoods; hunger and malnutrition; ill health; limited or lack of access to education and other basic services; increased morbidity and mortality from illness; homelessness and inadequate housing; unsafe environments; and social discrimination and exclusion. It is also characterized by lack of participation in decision-making and in civil, social and cultural life...” (United Nations, 1995).

The United Nations (1998) specifies that “poverty is the inability to choose and opportunities, a violation of human dignity. It means lack of basic capacity to participate effectively in society. It means not having enough to feed and clothe a family, not having a school or clinic to go to, not having the land on which to grow one's food or a job to earn one's living, not having access to credit. It often implies living in marginal or fragile environments.”

The World Bank (as cited in Waller, Welsh, & Sansfaçon, 2001) states that poverty includes low incomes and a lack of opportunities and basic goods and services necessary for survival, such as primary education, opportunities and access to good health, contributing to future employment and income generation opportunities.

Similar to international scholars and organizations, the NESDB (2011) suggests that poverty covers not only economic deprivation and insufficient income, but also structural poverty, stemming from various shortages and resulting in the lack of ability to earn a living. It includes insufficient or poor education, resource deficiency, complete or inadequate access to land to make a living, a lack of political integration and participation, a lack of professional information and knowledge, high-dependency needs, and the inability to access government services and support, which leads to economic and social inequality.

The above definitions of poverty are very similar with only a few differences. However, some Thai scholars further explain the meaning of poverty in the Thai context, as detailed below.

Wittayakorn Chiangkul (2001) defines socio-economic poverty according to the capitalist mode of production in the industrial society. In the past, Thailand was an agricultural economy mainly producing agricultural products for domestic consumption so there was not a great deal of difference in the economic status of each household. Thus, most of the poor were people with social and cultural disadvantages such as unaccepted ethnic groups, people with disabilities, people suffering from disasters, widows and widowers, and elderly people with no family. However, Thai society has changed into a market-based economy, where everybody has to work to earn money and acquire basic necessities. Structural poverty arises from a shift in economic production. Therefore, poverty should be defined to cover the economic, social, political, and cultural aspects as well.

Narong Phetprasert (2003, pp. 54-55) narrowly defines poverty as the situation of lack of basic necessities providing a broad definition as the state of misery and deprivation according to four main dimensions: 1) lack of money, income, and necessities, 2) lack of opportunities and access to education, public services (such as electricity, tap water, and public health services), and social resource bases (such as soil, water, and forest), 3) lack of power, rights, negotiation possibilities, participation in policy and decision-making processes, and abilities to protect one's self from state and capital power, and 4) lack of dignity, including social exclusion and social inequalities such as racism and professional insults.

Somchai Jitsuchon (2001, pp. 2-9) points out that the poor, scholars, and policy-makers define poverty in a completely different way. The poor place an emphasis on insufficiency, lack of land, and debts. Scholars focus on poverty-related problems and issues and related issues in various dimensions. Policy-makers place importance to monetary or income elements (Nitinant Wisawaisuan, Supachai Srisuchart, & Somboon Siriprachai, 2003, p. 23). Thus, it can be said that poverty can be defined in various ways, depending on the perspective adopted.

'Poverty' thus refers to "economic insufficiency, including a lack of adequate income to meet the minimum standard of living, an absence of ability to earn livelihood

resulting from shortages of resources, production factors, and basic human needs, a lack of opportunities and safety in life and property, not having access to basic education and public services, social exclusion, and a lack of social, political, and cultural participation.”

## **2.2 Concepts of Poverty Measurement**

As mentioned above, poverty has many different definitions, which leads to the use of different poverty indicators and analytics. Poverty measurement concepts related to the main topic of this study are divided into two groups: 1) general poverty measurement and; 2) multidimensional poverty measurement. As discussed below:

### **2.2.1 General Poverty Measurement**

In order to identify who the poor are, it is essential to set standards or criteria for determining poverty. Poverty can be viewed from economic-structural, social, and political perspectives. Non-economic poverty is difficult to measure in terms of quantity (Sophida Netpukkana, 2010, p. 15). In general, poverty measurement can be divided into three approaches (Somchai Jitsuchon & Jiraporn Plangraphan, 2013, p. 5; Sukhothai Thammathirat Open University, 2010b; Supawat Chanatipakorn, 2013, p. 10), as follows.

2.2.1.1 ‘Absolute measures of poverty’ classifies the poor by using absolute criteria. Poverty levels are clearly defined by converting basic necessities into monetary terms. The minimum income necessary for people to meet their basic needs is determined to reflect their consumption levels. A household that is unable to acquire basic necessities will be classified as the poor.

Absolute measures of poverty can be categorized by two methods, as detailed below (Boltvinik, 1999, pp. 11-21; Somchai Jitsuchon & Jiraporn Plangraphan, 2013, p. 5; Sophida Netpukkana, 2010, pp. 16-17).

1) Unidimensional-indirect method: this method indirectly measures poverty by converting basic necessities into monetary terms and drawing a poverty line to compare with the income or consumption expenditure of individuals or households. If their income or expenditure is below the poverty line, they are considered poor. This method can be further classified into two approaches. The first one

determines a poverty line by calculating the minimum demand for goods and services. The latter includes other factors, such as access to public services and ownership of basic human needs, in the calculation by converting them into monetary values.

In Thailand, the household poverty line is a sum of the food poverty line non-food poverty lines. The concept of food poverty line assumes that people with different ages, genders, consumption styles, costs of living that varies by region and area may have different nutrient, calorie and protein needs but can obtain the same satisfaction or utility levels. Consumption styles are divided into nine consumption baskets by geographical areas. One consumption basket is for Bangkok, while the other eight consumption baskets are for the urban and rural areas of the Northern, Central, Northeastern, and Southern regions. These consumption baskets reflect the consumption styles of people in each region and society. A local consumer price index is also used to reflect product prices and costs of living in each area (Statistical Forecasting Bureau of National Statistical Office, n.d., p. 4). The household poverty line was created by the NESDB (2018b, p. 1) based on international standards under the concept that households of different sizes and areas have different consumption styles and living standards but receive the same utility levels. This poverty line has desirable features, including specificity and comparability and also uses an economy of scale in calculation. Thus, it can reflect the minimum standard of living of the society. The household poverty line is measured in Baht per person, per month. A person whose average monthly consumption expenditure is under the poverty line is considered poor<sup>1</sup>.

2) Multidimensional-direct method: this method can be conducted at the individual, household, regional, and national levels with or without clear poverty levels. The multidimensional-direct method with clear poverty levels generally uses the basic needs of individuals as the main poverty criteria. A person or household that is unable to acquire the determined basic needs is considered poor. In this way, individual/household poverty is directly measured.

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<sup>1</sup> The details on how to calculate the poverty line developed by the Office of the National Economic and Social Development Board can be found at Somchai Jitsuchon and Chiraporn Phlaengprapan (2013, p. 40-45).



The multidimensional-direct method without clear poverty levels is mostly associated with the order of geographic areas. However, the minimum standards of each indicator (such as literacy and access to clean water or other public services) is clearly specified and prioritized according to the proportion of the population that are below the determined standards for service access gaps. The variable analysis can be separately conducted by dimensions or carried out in the form of a composite index analysis by specifying the weight of variables and then prioritizing them according to the descending order of poverty.

In addition, other approaches that are adapted from the above-mentioned methods in order to identify poor households, for example, the Human Poverty Index 1997 that were developed by the UNDP to be used as a national measure.

2.2.1.2 Relative measures of poverty identify the poor by setting the standard of basic necessities in each society and presenting them in percentage terms in order to reflect a person's ability to attain those necessities. For example, a person whose average monthly household income is less than 60 percent is considered poor. The use of this kind of standard indicates that poverty cannot be eradicated because a certain percentage of income is set for the poor. This kind of standard is suitable for measuring income distribution, as it places importance on monetary equality.

Relative measures of poverty can be classified into two approaches as follows (Sukhothai Thammathirat Open University, 2010b).

- 1) Comparing the income levels of each population group by dividing the population into groups and specifying the percentage of each group. For example, Group 1 is the poorest households with the lowest household income level (20 percent), Group 2 is the second poorest households with the low household income level (20 percent), Group 3 is the medium-income households with the medium household income level (20 percent), Group 4 is the high-income households with the high household income level (20 percent), and Group 5 is the highest-income households with the highest household income level (20 percent). This approach can reflect income distribution inequality.

- 2) Comparing the income of the poor with the average income of the whole population in order to identify who has a lower than average income.

2.2.1.3 Combined measures of poverty that integrates absolute and relative measures in order to indicate income inequality and poverty.

## **2.2.2 Multidimensional Poverty Index**

As mentioned above, poverty cannot be defined by income alone, as it is also associated with non-monetary factors. Once poverty has been studied from multiple angles, more poverty indicators have been developed, such as the Human Poverty Index, the Regional Human Achievement Index, and the Multidimensional Poverty Index (MPI), initiated by the United Nations Development Program (UNDP) (Office of Border Economy and Logistics Study of Mae Fah Luang University, 2020). In order to provide a clearer picture about multidimensional poverty, the researcher divided the contents of this section into three parts. These are: 1) development of multidimensional poverty measurement at the international level; 2) multidimensional poverty measurement in Thailand, and; 3) poverty measurement methods.

### **2.2.2.1 Development of Multidimensional Poverty Measurement at the International Level**

Poverty is mostly measured by income or consumption levels according to the concept of basic necessities. This kind of measurement is based on the assumption that “money is a convertible asset that can be converted to meet all other needs.” In order to maintain this assumption, it is necessary to believe that the function of the market mechanism involves all good and services and that everyone has access to the market (Bourguignon & Chakravarty, 2003). Based on this assumption, everyone can convert their income into public goods such as electricity, water, and housing.

However, over the past three decades, the concept of unidimensional poverty measurement has been challenged. The measurements of poverty have been viewed as a multidimensional phenomenon, supported by the studies of Townsend (1979) and Sen (1976). Money and income are no longer an adequate indicator of poverty. The inadequacy of the unidimensional poverty measurement are based in the claim that there are a large amount of empirical evidence suggesting errors in classifying low-income people and non-income deprived people, and that monetary indicators not be accurate because money cannot be measured in imperfect competition markets, such as those frequently found in developing countries (Yu, 2013, p. 315).

Therefore, although income is a key primary indicator of poverty, other living standards indicators such as literacy and public service opportunities should also be included because they can indicate a person's ability to access goods and services.

Although other related dimensions have been included in poverty measurement, many research studies indicate that most countries in the low-income group still rely on the absolute measures of poverty. In other words, those countries still identify the poor by using 'poverty line' that cannot reflect many important dimensions of poverty (Hall & Midgley, 2004). In addition, Jerven (2013) suggest that some research studies on multidimensional poverty contain incomplete information about economic activities, which may lead to inaccurate results. Therefore, it is common that some research studies in developing countries still adopt the absolute measures of poverty.

Although the concept of multidimensional poverty measurement was not successfully accepted in the early stages, efforts to implement it at the national and international levels since the 1980s have been successful. The World Bank's *Voices of the Poor* report reflects a major effort to measure multidimensional poverty in low-income countries, starting from 2000 onwards (Narayan-Parker, Patel, Schafft, Rademacher, & Koch-Schulte, 2000). The report encouraged international countries to increasingly use multidimensional poverty measurement and develop living standards indicators in line with actual poverty conditions such as housing quality, levels of overcrowding, and access to basic services like drinking water, sanitation, healthcare, and education. The implementation of multidimensional poverty measurement is more prominent in the UNICEF's *Global Study on Child Poverty* that covers more than 45 countries and contains internationally accepted definitions of poverty (Pomati & Nandy, 2020, p. 107).

Many Latin American countries use various poverty indicators other than money, including those developed through household surveys that measure the basic needs and economic capabilities of household members in various areas. The Mexican government established the first official multidimensional poverty measure in the world and also set up the National Council for the Evaluation of Social Development Policy (CONEVAL) as an independent agency to measure poverty and assess social development policies in 2006. CONEVAL places an emphasis on three

elements: 1) existing legal norms; 2) criteria established by experts or by specialized public institutions, and; 3) statistical analysis results. Final decisions are made by the board of directors (Atkinson, 2016, p. 157). In addition to monetary indicators, CONEVAL also added social right indicators, including educational gaps, access to healthcare, social security services, food, and housing, and living environments (National Council for the Evaluation of Social Development Policy (CONEVAL), 2010).

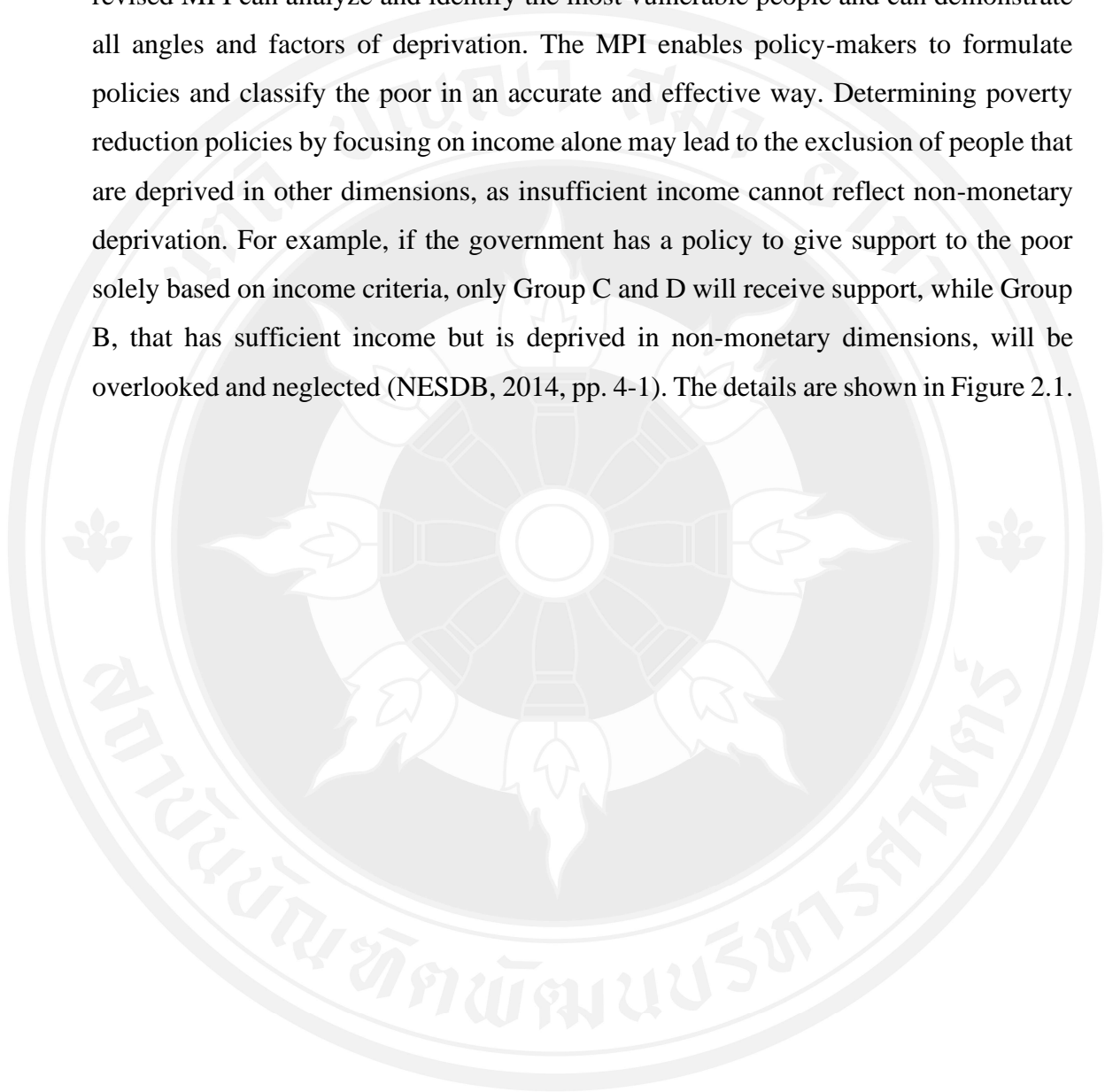
At the international level, due to the support of international country groups and leading global organizations like the World Bank and UNICEF, more poverty indicators have been developed, covering various dimensions. Many international countries face two major challenges in measuring multidimensional poverty, including: 1) the limitations of multidimensional data required for multidimensional poverty measures, and; 2) the diversity of people being assessed. Thus, creating an internationally comparable measure of poverty is quite complicated (Alkire & Jahan, 2018, p. 1).

In 2010, the Multidimensional Poverty Index (MPI) was established through a collaboration between the United Nations Development Program (UNDP), Human Development Report Office (HDRO), and Oxford Poverty and Human Development Initiative (OPHI) at University of Oxford. First published in 2010 as part of the 20<sup>th</sup> Anniversary of the Human Development Report (HDR), the MPI was created to align with the Millennium Development Goals (MDGs). In 2014, an innovative MPI was initiated and published in parallel with the original MPI in order to explore ways for improvements (Kovacevic & Calderón, 2014).

After the implementation period of the MDGs ended, the Sustainable Development Goals (SDGs) were launched in September 2015 along with improvements in some survey questions to better reflect the SDGs' indicators, providing an opportunity to revisit the Global MPI and publish a revised version in 2018. The improvements of the Global MPI are based on the recommendations of the World Bank's Atkinson Commission on Monitoring Global that are associated with non-monetary poverty measures (Atkinson, 2016). The improvements also reflect inputs from a consultative process encompassing academics, UN agencies, national statistics offices, and civil society organizations. Thus, the revised MPI covers more

related subjects and includes the best parts of the original MPI and the innovative MPI (Alkire & Jahan, 2018, p. 1).

Importantly, the latest MPI does not only focus on income but also pays attention to other dimensions including, education, health, and standards of living. The revised MPI can analyze and identify the most vulnerable people and can demonstrate all angles and factors of deprivation. The MPI enables policy-makers to formulate policies and classify the poor in an accurate and effective way. Determining poverty reduction policies by focusing on income alone may lead to the exclusion of people that are deprived in other dimensions, as insufficient income cannot reflect non-monetary deprivation. For example, if the government has a policy to give support to the poor solely based on income criteria, only Group C and D will receive support, while Group B, that has sufficient income but is deprived in non-monetary dimensions, will be overlooked and neglected (NESDB, 2014, pp. 4-1). The details are shown in Figure 2.1.



	Non-deprived in non-monetary dimension	Deprived in non-monetary dimension
Not income poor	Group A	<b>Group B (I)</b>
Income Poor	<b>Group C (II)</b>	<b>Group D</b>

**Figure 2.1** The Relationship between Poverty and Deprivation

**Source:** NESDB, 2014, pp. 4-1.

OPHI has carried out multidimensional poverty analyses in 104 developing countries across the world, using existing household survey data. Other dimensions such as work, safety, and empowerment will be incorporated into the MPI in the future as data becomes available. In calculating the MPI, OPHI focuses on the following three dimensions. 1) Health includes two indicators: child mortality and nutrition. 2) Education consists of two indicators: years of schooling and school attendance. 3) Standard of living includes six indicators: electricity, drinking water, sanitation, flooring, cooking fuel, and assets. Each indicator is weighted equally. A household is identified as multidimensionally poor, if the sum of the weighted deprivations is greater than 30 percent (Somchai Jitsuchon & Jiraporn Plangpraphan, 2013, p. 108). This model has been applied in various countries around the world.

#### 2.2.2.2 Multidimensional Poverty Measurement in Thailand

Thailand's national MPI was developed as an essential tool for assessing the poverty level of people or households in the country, especially non-monetary, in order to reflect poverty in a more comprehensive way and illustrate complicated correlations among poverty dimensions. Moreover, the MPI can demonstrate poverty from two components: 1) the headcount ratio, and 2) the intensity of poverty (Office of the National Economic and Social Development Council [NESDC], 2019, p. 3).

Multidimensional poverty measurement in Thailand is officially implemented by two governmental agencies: the NESDC and TPMAP. The details are presented below.

1) The Office of the National Economic and Social Development Council (NESDC)

The NESDC is the main agency for poverty reporting in Thailand. Poverty in Thailand places importance on the monetary dimension without paying attention to the lack of appropriate quality of life. Therefore, the NESDC has developed multidimensional poverty indicators that cover all aspects of the definition of poverty in order to more effectively monitor it.

Thailand's MPI was been developed through partnerships among poverty-related organizations, including UNICEF Thailand, Oxford Poverty and Human Development Initiative (OPHI), Department of Health, Ministry of Public Health, Education Council, Thailand Science Research and Innovation, Ministry of Social Development and Human Security, Department of Community Development, Ministry of Interior, Thailand Development Research Institute, National Statistical Office, Equitable Education Fund, and faculty members from various universities. The household socio-economic survey data, collected by the National Statistical Office, is used for data analysis.

The MPI development process started with a brainstorming session among experts. In order to create a poverty index that is consistent with the Thai context, the NESDC requested support from poverty-related organizations to assist in providing related information, suggestions, and recommendations and useful guidance on how to solve poverty according to its various dimensions. Four advisory committee meetings were held to determine data that would be used to define indicators and dimensions and discuss the study results. Three additional meetings were also held for the UNICEF and OPHI to provide technical and methodological knowledge and recommendations.

Based on the results from the advisory committee meetings and the brainstorming session, household socio-economic survey data was selected as the main data for the calculation because this is the same data used to formulate the poverty line and reflects both monetary and non-monetary dimensions of poverty. The four key dimensions were determined as follows. 1) Education, which includes three indicators: years of schooling, delayed education, and living with parents. 2) Healthy living, which consists of three indicators: drinking water, self-care, and nutrition. 3) Living

conditions, which includes three indicators: household waste disposal, internet usage, and assets. 4) Financial security, which includes three indicators: savings, financial burden, and gratuity/pension (NESDC, 2019, pp. 1-8). The household socio-economic survey data, collected by the National Statistical Office, is used for calculation. Each dimension is equally weighted at 25 percent. The poverty cut-off is 26 percent, indicating that all household members are identified as multidimensional poor if the household is deprived in more than one dimension. The Alkire-Foster method, which is used worldwide, was adopted to calculate the MPI. The calculation details are discussed in the next section. Apart from the national MPI, the NESDC has also specifically created the Child MPI and the Elderly MPI.

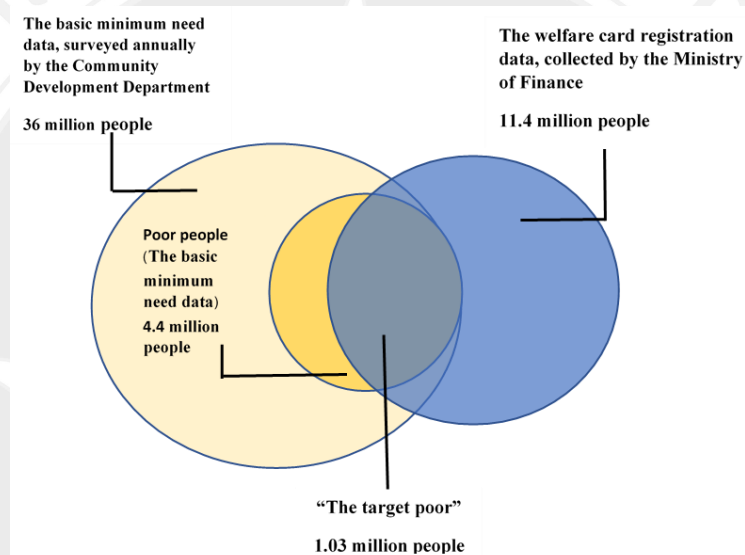
## 2) TPMAP

The National Strategy Committee ordered the establishment of a special committee to study the possibility of developing a government big data system and appointed the Minister of Digital Economy and Society to host the committee. The NESDB and National Electronics and Computer Technology Center was assigned to develop a case study of the big data system to help improve the quality of citizens' lives in terms of increasing income, reducing the burden of living costs and improving employment opportunities. Both organizations subsequently collaborated to develop TPMAP in order to solve poverty-related problems and enhance the quality of life of Thai people.

Building on the Thai Poverty Map and Analytics Platform, Thai People Map and Analytics Platform (TPMAP) (2019) uses data from two sources: 1) survey-based basic minimum need data from the Community Development Department, and 2) register-based data from the Ministry of Finance, and applies the MPI, developed by the Oxford Poverty & Human Development Initiative and the United Nation Development Program, to identify the poor. The PMI has been adapted to cover wider issues, such as newborn children, education, aging population, and living condition, by the NESDC. Thus, TPMAP can be used to identify the poor and poverty-related problems and issues at the individual, household, community, local, provincial, and national levels in order to accurately solve the problems of each target group, to design appropriate policies based on the needs of people, and to better understand where the poor are and according to which dimension they are poor.



The main idea of TPMAP is to integrate and compare different data sources for verification. Currently, TPMAP works based on the assumption that people classified as poor by both the survey-based data and the register-based data are the target poor in need of urgent assistance. Therefore, TPMAP compares basic minimum needs data, surveyed annually by the Community Development Department with the welfare card registration data, collected by the Ministry of Finance. In other words, the ‘target poor’ are the people living in poverty according to the basic minimum needs survey, who register for the state welfare card, as detailed in Figure 2.2.



**Figure 2.2** Target Poor People that Need Urgent Assistance

Source: TPMAP

As TPMAP can compare data on a yearly basis, it is able to show problems and the progress of solutions that can be used to analyze causal factors and evaluate the efficiency of policies, contributing to accurate problem-solving and effective policy selection. The obtained results are helpful for policy-makers and responsible agencies in formulating and implementing poverty alleviation policies. In the future, TPMAP will integrate more dimensions of information in order to make the analysis more comprehensive and accurate. TPMAP identifies the target poor (or the poor in the basic minimum needs survey) that register for the state welfare card and

then use the data storytelling method to show the results on [www.tpmmap.in.th](http://www.tpmmap.in.th). The number and proportion of the poor are clearly presented at the sub-district, district, provincial, and national levels in order to prioritize areas that need urgent assistance.

TPMAP users are policy and local authorities. In order to solve poverty-related problems and issues that vary in different areas in an integrated way, these authorities adhere to the following procedures: 1) correctly analyze problems, 2) formulate policies to solve problems, 3) implement policies, and 4) evaluate policy implementation (Department of Local Administration, 2020). Recently, TPMAP was presented to Lamphun, Mukdahan, and Nakhon Phanom Provinces. Responsible governmental agencies in those provinces not only receive training about the importance of the database system and how to use the platform, but are also offered an opportunity to share their ideas on how to make the platform more productive.

#### 2.2.2.3 Measurement of the MPI

Over the past decades, much research has been done to measure the MPI. The pioneering study of Sen (1976) suggests that poverty measurement is involved with two related approaches: 1) identifying poor people, and 2) measuring all poor people in society. The study also proposes a more concrete method for measuring poverty. Since then, efforts have been made to develop a wide variety of methods for measuring the MPI (Yu, 2013, p. 316). However, the Alkire-Foster methodology (AF) is widely accepted and applied for the calculation of the MPI. The researcher summarizes and divides the calculation concept into two parts, including: 1) the Alkire-Foster methodology, and; 2) multidimensional poverty measurement design. As below:

##### 1) Alkire-Foster Methodology

The Alkire-Foster methodology, developed by Alkire and Foster (2011a) and Alkire and Foster (2011b), is a flexible technique for measuring poverty according to different dimensions including: lack of education, unemployment, poor health, and low living standards. The results help to identify people who are multidimensionally poor and leads to the appropriate provision of assistance. Based on the AF method, the process of identifying the poor focuses on poverty in various dimensions and is not limited to only monetary poverty. In addition, each indicator can be weighted differently, depending on the context and development goals of each country. A person is considered poor, when the sum of the deprivation score is equal to

or greater than the poverty cut-off, which can be differently set at 20 percent, 30 percent, or 50 percent (Oxford Poverty and Human Development Initiative (OPHI), 2019, pp. 3-5). This approach is quite flexible and can be adapted to suit the specific context of each country in terms of dimensions, indicator selection and poverty criteria (NESDC, 2019, p. 31).

Santos (2019) explains how to calculate the MPI:  $x_{ij}$  is the achievement of person  $i = 1, \dots, n$  in indicator  $j = 1, \dots, d$ .  $z_j$  is the deprivation cut-off of indicator  $j$ . A person is considered deprived, if his/her achievement in that indicator is below the cut-off. The deprivation is defined as  $g_{ij}^0 = 1$ , when  $x_{ij} < z_j$  and  $g_{ij}^0 = 0$ , otherwise. Then the deprivation of each person is weighted by the indicator's weight ( $w_i$ ). The weighted sum of all enactors must be equal to 1 ( $\sum_j w_i = 1$ ). A deprivation score is calculated for each person, defined as the weighted sum of deprivations ( $c_i = \sum_{j=1}^d w_i g_{ij}^0$ , where  $C_i$  is the weighted sum of deprivations of person  $i$ ). Then the poverty cut-off is used to identify multidimensional poverty. A person is considered multidimensionally poor, if his/her  $c_i$  is greater than the poverty cut-off ( $c_i \geq k$ , where  $k$  is the poverty cut-off).

Multidimensional poverty is involved with two main components: 1) poverty incidence, and 2) intensity of poverty. The poverty incidence  $H$  can be calculated by the following equation.  $H = \frac{q}{n}$ , where  $q$  is the number of people who are multidimensionally poor and  $n$  is the total population. The poverty intensity is the average deprivation score of the multidimensionally poor people and can be expressed as:  $A = \sum_{i=1}^n \frac{c_i(k)}{q}$ . Therefore, the MPI can be calculated as follows.

$$MPI = M_o = H \times A = \frac{1}{n} \sum_{i=1}^n \sum_{j=1}^d w_i g_{ij}^0 (k)$$

The MPI is considered a tool that can effectively identify policy issues for policy-makers, as it can classify multidimensional poverty into several subgroups by gender, age, and geographical area in order to calculate poverty contribution and explore poverty factors in each subgroup, and it can clearly reflect the actual problems of poor people or the deprivation of poor people according to each indicator

through the censored headcount ratio (NESDC, 2019, p. 3; Somchai Jitsuchon & Jiraporn Plangpraphan, 2013, pp. 108-110).

## 2) Measurement Design

Measuring multidimensional poverty is associated with the following important processes: 1) selecting dimensions and indicators, 2) defining weights, and 3) determining poverty and deprivation cut-offs. The details of each process are as follows (NESDC, 2019, pp. 32-36).

### (1) Dimensions and indicators

The determination of dimensions and indicators is a key step in the process of poverty-related problem identification and problem-solving. Related agencies, sectors, and professionals should exchange ideas, discuss relevant issues, and jointly determine the dimensions and indicators that can truly reflect the country's multidimensional poverty. Key dimensions that are frequently used to measure poverty at the national level include health, education, work, housing, standard of living, basic public services, environment, and food security. In addition, the researcher summarizes the dimensions of poverty in Latin American countries, as shown in Table 2.1.

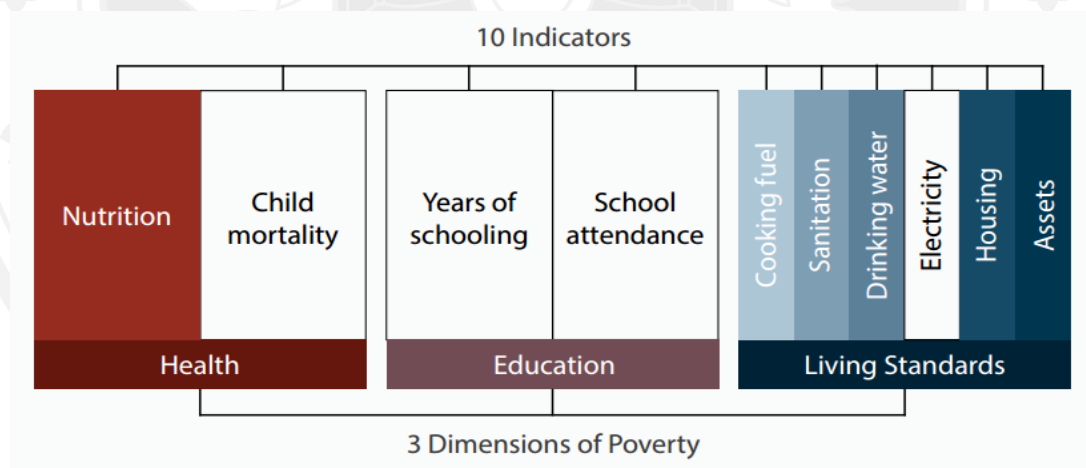
**Table 2.1** Dimensions of Poverty in Latin American Countries

Country	Dimension	Quantity
<b>Chile</b>	(1) Education (2) Health (3) Work and social security (4) Basic standard of living	4
<b>Costa Rica</b>	(1) Education (2) Health (3) Work and social security (4) Basic standard of living	4
<b>Colombia</b>	(1) Education (2) Childhood and youth (3) Work (4) Healthcare (5) Housing and public services	5
<b>Ecuador</b>	(1) Education (2) Health, water, and nutrition (3) Work and social security (4) Housing and public services	4

Country	Dimension	Quantity
<b>El Salvador</b>	(1) Education and childhood (2) Health and food security (3) Work (4) Housing (5) Safety and environment	5
<b>Mexico</b>	(1) Education (2) Access to Healthcare (3) Access to food (4) Access to social security (5) Housing (6) Basic housing services (7) Income	7

**Source:** Adapted from Atkinson, 2016, p. 158.

The selection of indicators is similar to the selection of dimensions, in that there is no fixed list of what should be included. Important things that should be taken into account include the availability or completeness of data and the consistency between dimensions and indicators. Good indicators should clearly demonstrate deprivation in each dimension. The Global MPI includes three dimensions made up of ten indicators, as presented in Figure 2.3.



**Figure 2.3** Dimensions and Indicators of the Global MPI

**Source:** Oxford Poverty & Human Development Initiative (OPHI), 2018, p. 3.

## (2) Weights

Each dimension is generally given an equal weight. For example, the three dimensions of the Global MPI: health, education, and standard of living, are equally weighted at 1/3 or 0.33 percent. The weight of indicators depends on the number of indicators in the dimension. If there is a change in the number of indicators in any dimension, the weight of indicators in that dimension change accordingly. If the number of indicators in the dimension increases, the weight of the indicators will decrease and vice versa.

However, the indicators in the same dimension can be weighted differently according to the importance of those indicators in each country. For example, the weight of Indicator 1 in Dimension A can be twice the weight of Indicator 2 in the same dimension. In other words, the weight of Indicator 1 is assigned as  $1/3 \div 3 \times 2 = 0.22$ , while Indicator 2 is assigned as  $1/3 \div 3 \times 1 = 0.11$ . However, this approach requires solid supporting reasons because it can give some indicators a greater effect on poverty than others.

It should be noted that the weighted sum of each indicator must not be greater than 100 percent, as shown in the equation below.

$$\sum_{j=1}^d w_i = 1$$

were

$w_i$  is the weight attached to indicator  $i$ .

$i$  is the indicator.

$i = 1, 2, 3, \dots, d$

## (3) Poverty and deprivation cut-offs

In general, 1 indicates deprivation in the indicator, while 0 indicates no presence of deprivation. The determining criteria are based on the AF methodology, as mentioned above.

For the Global MPI, the deprivation cut-offs are based on internationally agreed upon MDGs and SDGs, which lead to the comparability of the index. When designing a national multidimensional poverty measure, different cut-offs

may be set based on context, policy priorities, previous research, and empirical evidence.

For example, Germany's MPI identifies educational deprivation, using two deprivation cut-offs: 1) elementary schooling is not completed or elementary schooling is completed but no vocational qualifications, and; 2) having less than 10 books in the household. Additional details are presented in Table 2.2.

**Table 2.2** Deprivation Cut-Offs Based on Germany's Multidimensional Poverty Index

<b>Dimension</b>	<b>Deprivation Cut-Off</b>	<b>Weight</b>
<b>Education</b>	Elementary schooling is not completed or elementary schooling is completed but no vocational qualifications.	1/12
	Less than 10 books in the household.	1/12
<b>Housing</b>	House requires major renovation or is ready for demolition.	1/18
	There is neither of bathnor shower, kitchen, warm water.	1/18
	Toilet is overcrowded (less than one room per person).	1/18
<b>Health</b>	Partially or severely disabled.	1/18
	Reporting 2/4 health issues.	1/18
	Body mass index greater than 30.	1/18
<b>Material</b>	Reporting 2/4 goods missing for financial reasons.	1/12
<b>Deprivation</b>	None of life insurance, pension, and ownership of the house, apartment, other house, financial assets, commercial enterprise, or tangible assets.	1/12
<b>Social</b>	Less than 5/7 activities performed per month or never.	1/12
<b>Participation</b>	Never meeting friends.	1/12
	Unemployed	1/6
<b>Employment</b>	Involuntary hours worked <30	1/18
	Precariously employed (including temporary work).	1/18

Source: OPHI, 2016, p. 22.

The poverty cut-off is used to identify the poor and non-poor, taking account deprivation in all dimensions and indicators. The identification of multidimensional poverty consists of two processes: 1) calculating the deprivation score of the household or person, and 2) defining the poverty cut-off of the household or person, as detailed below.

(a) Calculating the deprivation score: the deprivation score of each person is calculated by taking a weighted sum of the number of deprivations, according to the following formula.

$$c_j = \sum_{i=1}^d w_i g_{ji}$$

where

$c_j$  is the weighted sum of deprivations of household or person  $j$ .

$w_i$  is the weight of indicator  $i$ .

$g_{ji}$  is the status of household or person  $j$  in indicator  $i$ .

$i$  is the indicator.

$i = 1, 2, 3, \dots, d$

(b) Defining the poverty cut-off: after the weighted sum of deprivations ( $c_j$ ) of each household or person is calculated, it is compared with the poverty cut-off in order to identify whether that household or person is multidimensionally poor or not. If the weighted sum of deprivations is equal to or greater than the poverty cut-off, that household or person is considered multidimensionally poor.

The NESDC (2019, pp. 36-38) summarizes the calculation of multidimensional poverty as shown in Table 2.3.



**Table 2.3** Calculation Procedures of Multidimensional Poverty

Procedure	Detail
1. Choosing the data source	<p>In designing a national MPI, all information must come from the same source or survey. As each data source or survey uses different data collection techniques, sample selection methods, and questions, using information from different sources may lead to a lack of consistency and unity.</p>
2. Choosing the unit of identification	<p>Choose the unit of identification between (1) individual and (2) household by taking account of the source of information. The advantages and disadvantages of each unit of identification are as follows.</p> <p>(1) Individual: individuals can be analyzed in different ways and at various levels, such as using age, gender, or occupation as criteria. However, it is difficult to define an indicator that can be applied to individuals in all age groups because some indicators may be suitable for only specific age groups.</p> <p>(2) Households: it is easier to collect the data of households and determine appropriate indicators. However, calculation errors can easily occur, especially when one household member's deprivation has an impact on others, causing the resulting values to be higher and/or lower than it should be.</p>
3. Choosing the dimensions and indicators	<p>○ There is no fixed rule to define dimensions and indicators. Each can be differently defined based on the context of each country. However, key dimensions that are used include: health, education, occupation, housing, living standards, basic services, environment, social security system, and food security.</p>

Procedure	Detail																			
	<ul style="list-style-type: none"> <li>○ The selection of indicators is involved with defining indicators that clearly reflect deprivation according to each dimension in order to identify the deprived and non-deprived.</li> </ul>																			
	<ul style="list-style-type: none"> <li>○ The Global MPI uses 10 indicators belonging to three dimensions: 1) health: nutrition and child mortality, 2) education: school attendance and years of schooling, and 3) standard of living: assets, flooring, electricity, drinking water, sanitation, and cooking fuel.</li> </ul>																			
4. Choosing the indicators' deprivation cut-offs	<ul style="list-style-type: none"> <li>○ A deprivation cut-off is used to identify if a household or person is deprived according to the indicator. 1 indicates deprivation in the indicator, while 0 indicates non-deprivation.</li> <li>○ When designing a national measure, different cut-offs may be set based on suitability and the current context of each country through a meeting among related committee and experts.</li> <li>○ To give an example, Germany uses two deprivation cut-offs to identify educational deprivation: 1) elementary schooling is not completed or elementary schooling is completed but no vocational qualifications, and 2) having less than 10 books in the household.</li> </ul>																			
5. Classifying the unit of identification by the deprivation cut-offs	<p>The unit of identification (individuals or households) is classified into the deprived and non-deprived groups based on the deprivation cut-offs resulting from Procedure 4. Normally, 1 indicates deprivation according to the indicator, while 0 indicates non-deprivation.</p>																			
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: left; padding: 5px;"><b>Indicator</b></th> <th colspan="4" style="text-align: center; padding: 5px;"><b>Household</b></th> </tr> <tr> <th style="text-align: center; padding: 5px;">2</th> <th style="text-align: center; padding: 5px;">3</th> <th style="text-align: center; padding: 5px;">4</th> <th style="text-align: center; padding: 5px;">4</th> </tr> </thead> <tbody> <tr> <td style="text-align: left; padding: 5px;"><b>Health</b></td> <td colspan="4"></td> </tr> <tr> <td style="padding: 5px;">1. Anyone in the household is malnourished.</td> <td style="text-align: center; padding: 5px;">0</td> <td style="text-align: center; padding: 5px;">0</td> <td style="text-align: center; padding: 5px;">1</td> <td style="text-align: center; padding: 5px;">0</td> </tr> </tbody> </table>	<b>Indicator</b>	<b>Household</b>				2	3	4	4	<b>Health</b>					1. Anyone in the household is malnourished.	0	0	1	0
<b>Indicator</b>	<b>Household</b>																			
	2	3	4	4																
<b>Health</b>																				
1. Anyone in the household is malnourished.	0	0	1	0																

Procedure	Detail				
	2. At least one child death. <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1</td> </tr> </table>	1	1	0	1
1	1	0	1		

6. Choosing the indicators' weights

Each dimension is generally given an equal weight. For example, the three dimensions of the Global MPI: health, education, and standard of living, are equally weighted at 1/3 or 0.33 percent. The weight of indicators depend on the number of indicators, as detailed in the following formula.

Indicator's weight = Dimension's weight/Number of indicators

However, the indicators in the same dimension can be weighted differently, if there are enough supporting reasons and their importance is clearly different.

7. Choosing the poverty cut-off to identify the poor

The poverty cut-off is used to identify the poor and non-poor by taking account of deprivation in all dimensions and indicators. The identification of poverty consists of two processes as follows.

(1) Calculating the deprivation score of the household or person based on the following formula.

$$c_j = \sum_{i=1}^d w_i g_{ji}$$

where

$c_j$  is the deprivation score of household or person  $j$ .

$w_i$  is the weight of indicator  $i$

$g_{ji}$  is the status of household or person  $j$  in indicator  $i$ .

$i$  is the indicator

Procedure	Detail
8. Calculating the headcount ratio	<p><math>i = 1, 2, 3, \dots, d</math></p> <p>(2) Defining the poverty cut-off (<math>k</math>) of the household or person and comparing the poverty cut-off with the deprivation score in order to identify multidimensional poverty. If the deprivation score is equal to or greater than the poverty cut-off, the household or person is considered as multidimensionally poor (<math>c_j \geq k</math>).</p> <p>The multidimensional headcount ratio can be calculated by the following formula.</p> $H = \frac{q}{n}$ <p>where</p> <p><math>H</math> = the headcount ratio</p> <p><math>q</math> = the number of people who are multidimensionally poor</p> <p><math>n</math> = the total population</p>
9. Calculating the intensity of poverty	<p>The intensity of poverty indicates not only the deprivation intensity of the unity of analysis in all dimensions, but also the number of people who are multidimensionally poor. It can be calculated as follows.</p> $A = \sum_{i=1}^n \frac{c_i(k)}{q}$ <p>where</p> <p><math>A</math> = the intensity of poverty</p> <p><math>c_i(k)</math> = the censored deprivation score</p> <p><math>q</math> = the number of people who are multidimensionally poor</p> <p><math>n</math> = the total population</p>

Procedure	Detail
10. Computing the MPI	<p>The MPI is the product of the headcount ratio and the intensity of poverty, which can be calculated as follows:</p> $MPI = H \times A$ <p>where</p> <p><math>MPI</math> = the MPI</p> <p><math>H</math> = the headcount ratio</p> <p><math>A</math> = the intensity of poverty</p>

### 2.3 Indicators Affecting Multidimensional Poverty Measurement

This study focuses on indicators that have an effect on multidimensional poverty measurement, as international poverty measures may not clearly reflect what kind of indicators should be included in the MPI. According to the literature review, a number of scholars have addressed the indicators that are necessary for multidimensional poverty measurement. The researcher collected and summarized the key indicators useful for developing a national MPI as follows:

Yu (2013, p. 315) studies multidimensional poverty in China by using the Alkire-Foster methodology to analyze the information obtained from the 2000-2009 China Health and Nutrition Survey (CHNS). The research results suggest that, over the past decades, rapid economic growth has not only contributed to lower income poverty but also reduced deprivation in other dimensions both in terms of prevalence and severity. However, many challenges remain. There are great differences in poverty levels among urban and rural areas. In 2009, the poverty level in rural areas was 1.5 times higher than that in urban areas. Yu's indicators (2013, p. 315) belong to five dimensions: 1) income, 2) living standard, 3) education, 4) health, and 5) social security. The details are shown in Table 2.4.

**Table 2.4** Multidimensional Poverty Indicators of Yu (2013)

<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>
<b>Income</b>	Per capita income of household	Per capita income of the household is less than 2,300 Yuan in rural areas and less than 3,014 Yuan in urban areas in 2010, adjusted according to prices in different waves and regions.	1/4
<b>Living standard</b>	Access to clean water	No access to in-house tap water.	0.25
	Access to improved sanitation facilities	No access to toilet facilities, no access to private restroom, or using open earth pit as toilet.	0.25
	Access to electricity	Not using electricity as a main energy source for lighting.	0.25
	Access to cooking fuel	Using wood, stick/straw, charcoal, etc. as main fuels for cooking.	0.25
<b>Education</b>	Elementary schooling is completed	No any household member completes elementary schooling.	1
<b>Health</b>	Body Mass Index (BMI)	At least one adult member of the household with BMI less than 18.5 kg/m. <sup>2</sup>	1
<b>Social security</b>	Medical insurance	No any household member has access to any kind of medical insurance.	1

**Source:** Yu, 2013, p. 320.

Table 2.4 demonstrates eight indicators according to five dimensions. The weights of all indicators are assigned so that the sum of weights in each dimension is equal to 1. For example, for living standard, each indicator is given an equal weight of 0.25. The details of each dimension are presented below.

1) Income: although the income dimension alone is not enough to measure poverty, it is considered one of the key dimensions for measuring poverty. The income dimension is included in this study together with four other dimensions because it helps to make the poverty measurement become more complete. However, the main reason why this dimension is clearly separated from the others is to make the other dimensions reflect market imperfections, as the level of income does not guarantee access to public services.

The unit of analysis is households. In rural areas, the deprivation cut-off is the per capita income of less than 2,600 Yuan per year in 2010 or less than 2,227 Yuan per year in 2008, based on the official poverty line of the State Council Leading Group Office of Poverty Alleviation and Development. In urban areas, the deprivation cut-off is the per capita income of less than 3,014 Yuan per year in 2010 or less than 2,944 Yuan per year in 2008. The income threshold is adjusted according to provincial CPI indices in the past year.

2) Living standards: Access to clean water is used as the deprivation cut-off because it is in line with the Chinese government policy and the MDGs. Access to sanitation facilities, including toilet, private restroom, and open earth pit, is also included based on the MDGs. Access to electric lighting is included because lighting reflects basic electricity consumption. For access to cooking fuel, households that use wood, stick/straws, charcoal, etc. as main fuels for cooking are considered as deprived, according to the MDGs' criteria.

3) Education: Ideally, literacy should be defined in terms of the ability to remember a certain number of words or do basic calculations. However, this approach couldn't be used in China before the mid-1980s, where elementary education period varied from five to six years due to changes in the elementary education system, meaning each student had different years of schooling. Thus, this study uses the completion of elementary schooling as the deprivation cut-off instead of years of schooling. The household is considered educationally-deprived if no any household member completed elementary schooling.

4) Health: the BMI is used as the indicator because it can reflect a persons' long-term nutritional status. In addition, it is in line with the principles of the World Health

Organization (WHO). The basic assumption of this indicator is that a household member with malnutrition has a negative impact on the entire household.

5) Social security: only medical insurance is used as the indicator because other potential indicators, such as unemployment insurance, minimum cost of living, work injury insurance, and old age pension, cannot be measured. About a third of Chinese households were living in poverty due to the 2005 economic downturn. Access to health insurance of household members is critical in reducing a household's health risk. The household is considered deprived if no any household member has access to any kind of medical insurance.

Bader, Bieri, Wiesmann, and Heinemann (2016, pp. 483-502) conducted a multidimensional poverty study in Lao PDR, using the Alkire-Foster methodology. The results suggest that there was a reduction in the multidimensional poverty headcount ratio over the study period, regardless of how the indicators are weighted or how the deprivation and poverty cut-offs are set. The results also show that there are wide disparities between urban and rural areas. The proportion of poor people in rural areas is twice that of those in urban areas. The three dimensions used to identify the poor in this study are shown in Table 2.5.

**Table 2.5** Multidimensional Poverty Indicators of Bader, Bieri, Wiesmann and Heinemann (2016)

<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>
<b>Education</b>			<b>1/3</b>
	Years of schooling	No household member has completed five years of schooling.	(1/6)
	School enrollment	At least one school-age child (1 to 8 years old) is not attending school.	(1/6)
<b>Health</b>			<b>1/3</b>
	Nutrition	At least one adult or child is malnourished.	(1/3)
<b>Living standard</b>			<b>1/3</b>
	Electricity	The household has no electricity.	(1/18)



<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>
	Sanitation	The household's sanitation facility is not improved or is shared.	(1/18)
	Water	The household has no access to drinking water within a walking distance of 30 minutes.	(1/18)
	Housing	The household has dirt, sand, or dung floor.	(1/18)
	Cooking	The household cooks with dung, wood, or charcoal.	(1/18)
	Assets	The household owns no car and no more than one radio, TV, telephone, bicycle, or motorcycle.	(1/18)

**Source:** Bader, Bieri, Wiesmann and Heinemann, 2016, p. 489.

Table 2.5 shows nine indicators and three dimensions together with the weight given to it. Each dimension is equally weighted at one-third and each indicator within a dimension is also equally weighted. The data used for the analysis is from the Lao Statistics Bureau. The indicators are based on the MPI developed in 2010 through a collaboration between the United Nations Development Program (UNDP), Human Development Report Office (HDRO), and Oxford Poverty and Human Development Initiative (OPHI). This MPI complies with the Millennium Development Goals.

In the study, the unit of analysis is households. However, due to the limitation of data collection and storage in Lao PDR, some indicators were removed and some deprivation cut-offs adjusted in accordance with the available data, which may result in inconsistent findings, especially on the nutrition indicator. This shows that the availability of data is very important for measuring multidimensional poverty.

Hanandita and Tampubolon (2016) study multidimensional poverty in Indonesia from 2003-2013 with the aim of helping economic and social agencies in Indonesia recognize the importance of multidimensional poverty measurement. This is because in Indonesia, the poor are identified mainly based on monetary dimensions and multidimensional poverty measurements still do not receive much attention. The results show that poverty in Indonesia was reduced at the national and local levels. Moreover,

the findings of the research helped to confirm that multidimensional poverty measurement can be effectively applied to the Indonesian context.

The Alkire-Foster methodology is used in this study with indicators separated into three dimensions: 1) income, 2) health, and 3) education. The details are as follows.

1) **Income:** The unit of analysis in this study is households. The indicator in this dimension is per capita daily consumption (USD), which is adapted according to provincial CPI indices in the previous year. A person is considered deprived in the income dimension, if his/her daily consumption is less than the Asia-specific poverty line of 1.51 USD. This cut-off is more stringent than Indonesia's national poverty line.

2) **Health:** Health status is evaluated using two indicators, which are illness episode and morbidity. A person is considered deprived if he/she is ill for more than four days or caught more than three diseases. Cut-offs are adjusted based on the availability of Indonesian data.

3) **Education:** Education is assessed by two indicators, which include the completion of primary schooling and the ability to read and write Latin characters. A person is educational deprived, if he/she has not completed primary education or is illiterate. These two indicators are globally accepted social indicators that have been included in the HDI, MPI, MDGs, and even the 1945 Constitution of the Republic of Indonesia.

The indicators and dimensions used in this study are detailed in Table 2.6.

**Table 2.6** Multidimensional Poverty Indicators of Hanandita and Tampubolon (2016)

<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>
<b>Income</b>	Per capita daily consumption	Per capita daily consumption is less than 1.51 USD.	1/3
<b>Health</b>	Illness episode	A household member has been ill for more than four days.	1/6
	Morbidity	A household member has caught more than three diseases.	1/6

<b>Education</b>	Schooling	A household member has not completed primary school.	1/6
	Literacy	A household member cannot read and write Latin characters.	1/6

**Source:** Hanandita and Tampubolon, 2016, p. 567.

From the above information, multidimensional poverty indicators are mostly determined based on the MDGs. Moreover, it can be seen that indicators can be set differently, depending on the geographical context and data availability in each area. However, after the MDGs ended, the implementation of the SDGs has led to the development of more diverse indicators.

Mushongera, Zikhali, and Ngwenya (2017, pp. 277-303) measures the Multidimensional Poverty Index for Gauteng Province of South Africa, using the Alkire-Foster method to analyze the 2011-2013 Quality of Life Survey data. This study is one of the first to measure multidimensional poverty in small geographical areas, while most previous studies tended to study multidimensional poverty at the national level. The results suggest that the Multidimensional Poverty Index for Gauteng is low but varies by municipality and by ward. This study suggests that governments to pay attention to multidimensional poverty in different parts of the country in order to formulate policies that can accurately solve poverty-related problems and issues.

The indicators and deprivation cut-offs included in the Multidimensional Poverty Index for Gauteng (GMPI) are determined based on: 1) the Statistics South Africa's South African Multidimensional Poverty Index (SAMPI) statistics collected in 2014; 2) the relevance to Gauteng Province and South African social and economic conditions; 3) the limitations of surveyed data. A redundancy test was conducted to classify the indicators into high and low-relevance groups in order to select the most suitable indicators. A significant correlation between skipping a meal and having no money to feed children was apparent under the Food Security dimension. This indicator was removed from the dimension.

In addition, the dimensions used in this study examine the implementation of government policies on poverty alleviation according to the Basic Rights category of the Constitution of South Africa. The multidimensional poverty indicators of

Mushongera, Zikhali, and Ngwenya are categorized into four dimensions, including: 1) education, 2) economic activity, 3) food security, and 4) living standards, as detailed in Table 2.7.



**Table 2.7** Multidimensional Poverty Indicators of Mushongera, Zikhali, and Ngwenya (2017)

<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>
<b>Education</b>	Years of schooling	A household member has 5 or less years of schooling.	1/4
<b>Economic activity</b>	Unemployment	No household member is employed.	1/4
<b>Food security</b>	Food	At least one household member has to skip a meal.	1/4
<b>Living standard</b>	Housing	Housing is a shack (informal dwelling – backyard/non-backyard).	1/24
	Housing	Housing is overcrowded (two people per room).	1/24
	Water	No access to tap water in dwelling or in yard.	1/24
	Sanitation	No access to a flush toilet.	1/24
	Energy	No access to electricity for lighting.	1/24
	Assets	The household does not own more than one of these assets: radio, TV, and telephone.	1/24

**Source:** Mushongera, Zikhali, and Ngwenya, 2017, p. 286.

In 2018, the UNDP, HDRO, and OPHI jointly developed and published “the Global Multidimensional Poverty Index,” which consists of 10 indicators along three dimensions: 1) health, 2) education, and 3) living standards. The details are summarized in Table 2.8.

**Table 2.8** Multidimensional Poverty Indicators of the Global MPI

<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>
<b>Health</b>	Nutrition	Any adult under 70 years of age or any child is undernourished.	1/6
	Child mortality	Any child has died in the family in the five-year period preceding the survey.	1/6
<b>Education</b>	Years of schooling	No household member aged 10 years or older has completed six years of schooling.	1/6
	School attendance	Any school-aged child is not attending school up to the age at which he/she would complete class 8.	1/6
<b>Living standard</b>	Cooking fuel	The household cooks with dung, wood, charcoal, or coal.	1/18
	Sanitation	The household's sanitation facility is not improved (according to the SDGs guidelines) or is shared with other households.	1/18
	Drinking water	The household has no access to improved drinking water (according to the SDGs guidelines) or safe drinking water is at least a 30-minute walk from home, round trip.	1/18
	Electricity	The household has no electricity.	1/18
	Housing	At least one of the three housing materials for roof, walls and floor are inadequate: the floor is of natural materials and/or the roof and/or walls are of natural or rudimentary materials.	1/18
	Assets	The household does not own more than one of these assets: radio, TV, telephone, computer, animal cart, bicycle, motorcycle,	1/18

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or refrigerator, and does not own a car or truck.

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**Source:** Alkire and Jahan, 2018, p. 9.

Table 2.8 presents 10 indicators categorized in three dimensions together with their weights. A person is considered poor if the weighted deprivations sum to one-third or more. The details of each dimension are as follows (Alkire & Jahan, 2018, pp. 10-15):

1) Health has two indicators: nutrition and child mortality, as detailed below.

(1) Nutrition: all anthropometric data that is available for household members is used. In the 2018 Global MPI, individuals above 20 years of age are considered undernourished if their BMI is lower than 18.5 m/kg<sup>2</sup>. For individuals aged 15 to 19, the World Health Organization's age and gender-specific BMI cutoffs are applied. This change in deprivation cut-offs was supported by the global consultation and complies with the MPI best practices.

Children aged 0 to 5 are considered malnourished, if their z-score of either stunting or underweight is below minus two standard deviations from the median of the reference population. According to the global consultation, the expert community prefers stunting as an indicator of child malnutrition, as it is clearly supported in the SDGs.

(2) Child mortality: in the 2018 Global MPI, a household is considered deprived if any child in the household has died within the last five years.

2) Education has two indicators, which are years of schooling and school attendance.

(1) Years of schooling: a household is considered deprived in years of schooling, if no household member aged 10 years or older has completed six years of schooling. This is because, in most countries, primary-level schooling has a duration of six years.

(2) School attendance: a household is considered deprived if any child in the household is not attending school up to the age at which they should complete class eight or junior high school. This indicator has not changed from the original version

and is consistent with the mechanism by which UNESCO uses ages to calculate out-of-school children.

3) Living standards has six indicators: housing, assets, sanitation, drinking water, cooking fuel, and electricity.

(1) Housing: housing construction materials (roof, floor, and walls) are a key factor in the quality of life. People living in poor-quality or slum-like housing facilities tend to experience poorer health and less favorable education and employment outcomes. The 2018 Global MPI classifies a household as deprived in housing, if any of the roof, floor, or walls use low-quality material.

(2) Assets: a person is considered deprived in assets if their household does not own more than one of these items: radio, telephone, television, refrigerator, computer, bicycle, motorcycle or animal cart. If they own a car or truck, they are not deprived in assets.

(3) Sanitation, drinking water, cooking fuel, and electricity: these four indicators remain unchanged according to the MDGs.

The 2018 Global MPI has been widely applied in a number of research studies such as the study of Beycan, Vani, Bruggemann, and Suter (2019) that aims to rank Karnataka districts in India by the MPI through the use of the Alkire-Foster method.

Strotmann and Volkert (2018) also use the Global MPI framework to study multidimensional poverty in four villages in rural Karnataka (India) in 2011. Importantly, this study includes more subjective indicators such as happiness. The results show that there are positive correlations between multidimensional poverty and the lack of happiness in some dimensions. This study recommends that further research be conducted to study the relationship between happiness and monetary indicators in order to obtain a clearer picture of multidimensional poverty.

Similarly, Deka (2018) measures the MPI for poor households in Guwahati City, Assam, India. The results suggest that the deprivation of Guwahati households is high in assets, housing, water, sanitation, occupation, and education while education is the most important determinant of well-being of the people. Illiterate households are considered the most deprived group. The information used is based on the census database and other national representative surveys such as Assam reports and Guwahati



Municipal Corporation (GMC) reports. The Alkire-Foster method is applied, which is in line with the studies mentioned above.

The indicators used in Deka's study are categorized into four dimensions: 1) education, 2) health, 3) employment, and 4) living standards. Most indicators are consistent with the 2018 Global MPI, except for indicators of employment deprivation as presented in Table 2.9.

**Table 2.9** Employment Deprivation Indicators of Deka (2018)

Dimension	Indicator	Deprived if ...	Weight
Employment	Child labor	A household member aged 14 years or lower works outside the home to earn income.	1/8
	Work status	A household member is unemployed, works outside the formal sector, or works as a day laborer.	1/8

**Source:** Deka, 2018, p. 51.

The employment dimension is added to this multidimensional poverty measure because millions of immigrants have moved to work in Guwahati, turning it into a poor city crowded with migrant and informal laborers. In the urban area, there is a large proportion of poor temporary laborers and formal and informal unemployed workers. Guwahati has become a slum-like area with poor economic and social outcomes and inadequate housing and basic facilities. Therefore, the aforementioned employment deprivation indicators are included in this study.

Although the 2018 Global MPI has been applied in various contexts, as mentioned above, a number of researchers have developed their own multidimensional poverty index, as detailed below.

Ervin, Gayoso de Ervin, Molinas Vega, and Sacco (2018, pp. 1035-1076) apply the Alkire-Foster method to measure multidimensional poverty in Paraguay using 2000-2015 national household survey data with the aim of proposing a multidimensional poverty index to contribute to the achievement of the country's national development goals and the SDGs. Weighting schemes and cut-offs used in the Paraguayan MPI are determined based on national definitions of poverty and national

and international development priorities. The indicators used in this study fall under four dimensions: 1) health, drinking water, and sanitation, 2) housing and basic public services, 3) education, and 4) employment. As detailed below:

1) Health, drinking water, and sanitation: the following five indicators are selected based on their impacts on the people's well-being.

(1) Water source: this indicator focuses on access to in-house drinking water.

(2) Tap water: based on the definition in the national standard of living report, if a household is deprived in tap water, if it does not receive safe water supply.

(3) Sanitation: a household is considered deprived if it has no access to advanced water drainage system, based on the definition in the national standard of living report.

(4) Kitchen and cooking fuel: examines unsafe cooking conditions such as those using cooking fuels that cause high rates of air pollution. A household is considered deprived if it has no kitchen or uses wood or coal as cooking fuels.

(5) Healthcare: places emphasis on access to medical services. A household is considered deprived according to this indicator if a sick household member does not receive medical services due to lack of monetary resources and local healthcare facilities. Sick household members who do not receive medical services because they think that their sickness or injury is mild are not considered as deprived.

2) Housing and basic public services: this dimension pays attention to the following six indicators that lead to good living conditions and good relationships with others.

(1) Housing materials: based on the definition in the national standard of living report. A household is considered deprived if the materials used to build roof, floor, and walls are low quality materials such as dirt, cardboard, straw, and clay.

(2) People per room: a household is considered deprived if housing is overcrowded (three people or more per room).

(3) Electricity: a household is considered deprived if it has no access to electricity.

(4) Assets or durable goods: a household is considered deprived if it owns no car and does not own more than two of these assets: motorcycle, washing machine, or refrigerator.

(5) Telephone: a household is considered deprived if it has no access to neither landline phone or mobile phone.

(6) Access to information: a household is considered deprived if household members have no access to information on the internet and television, such as news and market reports, through cable systems or antenna connections.

3) Education: measures educational difficulties, living ability and learning conditions. It consists of the following five indicators:

(1) Delayed education: a household is considered deprived if a household member has not completed 12 years of schooling but is enrolled in school with a delay of two years or more. A household is not deprived if at least one household member has currently enrolled in school for a period of at least two years.

(2) Child enrollment: in Paraguay, a child is required to attend school at age 6 and attend compulsory school for 9 years. A household is considered deprived if a school-age child (6 to 14 years) in the household is not attending school as required.

(3) Schooling achievement: a household is considered deprived if at least one adult (20 years or older) in the household has not completed compulsory schooling. It should be noted that due educational reform in 1994, the years of compulsory schooling increased from six to nine years. Thus, the compulsory schooling period is six years for students enrolled before the reform, but nine year for students enrolled after.

(4) Literacy: a household is considered deprived if a household member aged 15 years or older cannot read or write.

(5) Early-dropout: a household is considered deprived if a household member aged 15 to 17 years drops out of school. A household is not classified as deprived if it has no school-age child.

4) Employment: this dimension focuses on challenges in workforce management. It consists of the following four indicators.

(1) Unemployment or underemployment: a household is considered deprived if the head of the household or spouse is unemployed or underemployed (or

needs to work more than 30 hours a week). A household is considered deprived if the head of the household or spouse is not in the labor market, does not want to work, or does not look for work.

(2) Salary: a household is considered deprived if the head of the household or spouse works 30 hours or more per week, but receives less than the minimum wage.

(3) Child labor: a household is considered deprived if at least one child (10-14 years) in the household works in the labor market.

(4) Work or study: the normative view is adopted to measure this indicator, as it carries a high risk of limited future opportunities. A household is considered deprived if at least one household member aged 15-19 years does not work or study. A household is classified as deprived, if it has no household member aged 15-19 years.

The multidimensional poverty indicators of Paraguay's PMI are summarized in Table 2.10.

**Table 2.10** Multidimensional Poverty Indicators of Paraguay's MPI

<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>
<b>Health, drinking water, and sanitation</b>			0.25
	Tap water	No access to in-house drinking water.	0.05
	Water source	Not getting drinking water from public utilities or personal networks, or groundwater sources.	0.05
	Sanitation	No toilet connected to a septic tank or sewage disposal system.	0.05
	Kitchen and cooking fuel	No kitchen and using wood or coal as cooking fuels.	0.05
	Healthcare	No access to medical services.	0.05
<b>Housing and basic public services</b>			0.25
	Housing materials	The materials used to build roof, floor, and walls are low quality materials (dirt, cardboard, straw, or clay).	0.0417
	People per room	Three people or more per room.	0.0417

<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>
	Assets or durable goods	The household owns no car and does not own more than two of these assets: motorcycle, washing machine, or refrigerator.	0.0417
	Electricity	No access to electricity.	0.0417
	Telephone	No access to neither landline phone nor mobile phone.	0.0417
	Access to information	No access to information on the internet and television through cable systems or antenna connections.	0.0417
<b>Education</b>			0.25
	Delayed education	At least one household member (6-20 years) has not completed 12 years of schooling but is enrolled in school with a delay of two years or more.	0.05
	Child enrollment	At least one school-age child (6-14 years) in the household is not attending school as required.	0.05
	Schooling achievement	At least one adult (20 years or older) in the household has not completed compulsory schooling (9 years for adults aged 20-33 years and 6 years for adults aged 33 years or older).	0.05
	Literacy	At least one household member (15 years or older) cannot read or write.	0.05
	Early-dropout	At least one household member (15-17 years) drops out of school.	0.05
<b>Employment</b>			0.25

Dimension	Indicator	Deprived if ...	Weight
	Unemployment or underemployment	The head of the household or spouse is unemployed or underemployed (or needs to work more than 30 hours a week.	0.0625
	Salary	The head of the household or spouse works 30 hours or more per week, but receives less than the minimum wage.	0.0625
	Child labor	At least one child (10-14 years) in the household works in the labor market.	0.0625
	Work or study	At least one household member (15-19 years) does not work or study.	0.0625

**Source:** Ervin et al., 2018, p. 1045.

Similarly, Abeje et al. (2020, pp. 585-611) measure area-based poverty in the Upper Blue Nile Basin of Ethiopia, using the Alkire-Foster method. They place importance on developing a multidimensional poverty index and systematically carry out a preliminary survey with 390 households. The 2018 Global MPI is adopted to determine dimensions and indicators that truly reflect poverty. The result of this study indicates that living standards and the ownership of land and livestock have the greatest impact on poverty.

The indicators used in this study are classified into four dimensions: 1) land and livestock ownership, 2) health, 3) education, and 4) living standard. The indicators in the living standards dimension are the same as those in the 2018 Global MPI. Thus, only the indicators in the other three dimensions are summarized in Table 2.11.

**Table 2.11** Multidimensional Poverty Indicators of Abeje, Tsunekawa, Haregeweyn, et al.

<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>	
<b>Land and livestock ownership</b>	Land and livestock ownership	The household owns no agricultural land and livestock (at least one cow or horse/ two goats or sheep/ ten chickens).	1/4	
	<b>Health</b>	Health status	In the past five years, the health status of household members has not improved.	1/8
		Medical expenses	No ability to pay for severe or chronic illness.	1/8
<b>Education</b>	Adult literacy	At least one adult in the household is illiterate.	1/12	
	Years of schooling	No household member aged 13 years or older has completed compulsory schooling (6 years).	1/12	
	School attendance	No school-age child is enrolled in the current school year.	1/12	

**Source:** Abeje, Tsunekawa, Haregeweyn, et al., 2020, p. 591.

Table 2.11 shows six indicators in three dimensions together with their weights. The details of each dimension are as follows.

1) Land and livestock ownership: the results of the preliminary survey suggest that land and livestock are the most important assets of rural households because those households rely on land and livestock to support their livelihood. In addition, the validity of this indicator is confirmed by several studies in the region. A household is considered deprived, if it owns no land and livestock (at least one cow or horse/ two goats or sheep/ ten chickens).

2) Health: health has been recognized as one of the key factors of well-being, although the measurement of health varies the most. Due to the limitation of data, there are only two indicators in this dimension, including health status and ability to pay for

chronic illness. A household is considered deprived if a household member does not report improved health status within the past five years and has no ability to pay for severe or chronic illness.

3) Education: for rural households, education plays an important role in income enhancement and living condition improvement through better standards of living. Education also plays a greater role in promoting democracy, equality, justice, and freedom. There are three indicators in the education dimension (years of schooling, school attendance, and adult literacy), which are determined based on the Ethiopian government's National Early Childhood Care and Education Policy (ECCE).

Gallardo (2020, pp. 67-103) intends to develop a more flexible multidimensional poverty measure that can be applied for measuring poverty in a wide range of MPI designs, including the Global MPI. He uses the official MPI of Chile to carry out a study in Chile. The information used is from the National Socioeconomic Characterization Survey (CASEN) for the year 2017. The indicators used in this study belong to five dimensions: 1) education, 2) income, 3) employment and social security, 4) housing and environment, and 5) networks and social cohesion. All indicators are determined by the Chilean government, as summarized in Table 2.12.

**Table 2.12** Multidimensional Poverty Indicators of Gallardo

<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>
<b>Education</b>	School attendance	At least one child (4-18 years) is not attending school and has not completed middle school, or at least one person (6-26 years) with permanent disability does not attend school.	3/40
	Schooling lag	At least one person under 22 years of age is still attending school and is two or more years behind.	3/40
	Years of schooling	At least one person over the age of 18 has attained fewer years of schooling than those established by law.	3/40



<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>
<b>Health</b>	Child malnutrition	At least one child (0 to 6 years) is overweight or obese, or is malnourished or at risk of malnutrition.	3/40
	Health insurance	At least one person does not have health insurance.	3/40
	Access to healthcare	At least one person, for reasons beyond his/her control, did not have access to healthcare in the last three months or did not have coverage of the AUGE-GES system for the treatment of chronic diseases.	3/40
<b>Employment and social security</b>	Occupation	At least one person over 18 is unemployed.	3/40
	Social security	A person of 15 years or more, who is employed, is not registered in the pension system and is not an independent worker.	3/40
	Retirement	A person of retirement age does not receive a pension and does not receive other income from leases, profit, dividends, and interest.	3/40
<b>Housing and environment</b>	Habitability	A person is in a situation of overcrowding (the number of people per bedroom is greater than or equal to 2.5) or resides in a precarious home.	3/40
	Basic services	A person resides in a house without basic sanitary services (WC, key inside the house and water according to urban or rural standards).	3/40
	Local environment	A person experiences two or more environmental pollution problems that frequently occur in his/her residence, or	3/40

Dimension	Indicator	Deprived if ...	Weight
		lacks some basic equipment (health, education and transport) in his/her residence.	
<b>Networks and social cohesion</b>	Social participation and support	A person does not have anyone else outside the household who can help him/her in situations of support, nor does the household has any members aged 14 years or more who have participated in any social organizations in the last 12 months.	1/30
	Equal treatment	Someone in the household has received discriminatory or unfair treatment in the last 12 months.	1/30
	Safety	Someone in the household has always witnessed drug trafficking or shootings in the last month.	1/30

**Source:** CASEN, 2016 cited in Gallardo, 2020, p. 78.

In Thailand, the NESDC (2019, pp. 4-9) develops a national MPI to monitor the situations of poverty in Thailand in a more comprehensive way. The results from brainstorming and discussions with various experts and organizations are used to determine the MPI for Thailand with 12 indicators and four dimensions, as detailed below.

1) Education: includes three indicators as follows:

(1) Years of schooling: the years of schooling of a household member aged 15-59 years reflects access to educational opportunities of the Thai population. The deprivation cut-off is based on the country's compulsory schooling. A household is considered deprived if at least one household member (1) aged 15-29 years has not completed junior high school education (9 years of compulsory schooling), or (2) if one household member aged 30-59 years has not completed primary school education (6 years of compulsory schooling).

(2) Delayed education: this indicator focuses on delayed education of children aged 6-17 years. A household is considered deprived if at least one household member aged 6-17 years is not enrolled in school or is still attending school two or more years behind (except those who already completed junior high school education) their grade.

(3) Living with parents: this indicator can reflect learning development of pre-school age children because children will have opportunities to interact with their parents and perform various activities, such as playing, singing, and reading, which directly affect their long-term learning development. A household is considered deprived if at least a child aged 0-6 years does not live with the father and/or mother (in case the father and/or mother are still alive).

2) Healthy living: the three indicators of healthy living are listed below:

(1) Drinking water: access to a clean source of drinking water contributes to the short and long-term well-being of household members. A household is deprived if it gets drinking water from (1) groundwater wells in the house, (2) groundwater wells outside the house, (3) rivers/streams/canals/waterfalls/mountains, (4) rainwater, or (5) other sources.

(2) Self-care: this indicator measures the ability to perform daily activities, such as bathing and eating without relying on caregivers or assistants, which reflects the health status of each household member. It also indicates the ability/inability of dependent household members, which may affect the quality of life of other household members. A household is considered deprived if at least one household member aged 15 years or older is unable to perform daily activities without assistance and unable to leave the residential area without relying on caregivers.

(3) Nutrition: access to adequate nutrition is vital to good health. The average monthly food, drink, and tobacco expenditure of a household member will be compared with the food poverty line that differs by gender, age, consumption behavior, and living cost in each area and region. A household is considered deprived if the average monthly food expenditure is below the food poverty line, calculated from the minimum amount of nutrition (calories) that people of different ages and genders need per day.

3) Living conditions: there are three indicators, as detailed below:

(1) Household waste disposal: this indicator is selected because it can reflect the living conditions of each household. Using effective waste disposal methods contributes to good living environment. A household is considered deprived, if it uses one of these waste disposal methods: (1) burning, (2) burying, (3) dumping into rivers, or (4) dumping at abandoned areas/public places.

(2) Internet usage: access to basic services that are necessary for high middle-income countries reflects opportunities to receive information of each household. A household is considered deprived if it has no access to the internet.

(3) Asset ownership: asset ownership indicates the wealth level of each household. A household with a lot of assets tends to have more well-being, compared to a household with fewer assets. Assets can be divided into two categories: 1) small assets such as radio, television, air conditioner, bicycle, phone, and refrigerator, and 2) large assets such as cars and boats. A household is considered deprived if it does not own at least four small assets and one large asset.

4) Financial security: includes three indicators as follows:

(1) Savings: this indicator reflects a household's financial readiness and preparation to enter the aging society. Each household has to save enough money in order to prepare for the transition to an aging society and deal with sudden changes that may affect the well-being of the household. This leads to the formation and promotion of policies on social safety networking and advanced development policy goals to reflect the well-being and strength of households based on the same standards as developed countries. A household is considered deprived if it does not own the following assets: 1) financial assets such as cash, bank deposits, and provident funds, 2) investment assets such as bonds, mutual funds, LTFs, and RMFs, and 3) other assets such as gold, jewelry, and receivables.

(2) Financial burden: this indicator measures the basic financial problems of the household within the past 12 months and assesses the overall financial status of the household. Financial burden is a key variable of household security as it is involved with other related issues such as income sufficiency, savings, financial planning and fiscal discipline. A household is considered deprived if it has experienced problems paying for rent, water, electricity, or tuition within the past 12 months.

(3) Gratuity/pension: focused on the access and coverage of social protection and social assistance services that indicate the aging readiness and living ability of elderly people and includes social security plans and systems to support the quality of life and enhance financial stability and living ability of this group of people. This leads to problem-solving or policy recommendations on the development of social protection and social assistance services. The adequacy of gratuity, pension and other allowances is also assessed according to this indicator. A household is classified as deprived if at least one household member aged 60 or older does not receive a gratuity, pension, annuity or allowance.

The four dimensions in this MPI are equally weighted at 25 percent. Each dimension consists of three indicators, which are also given an equal weighting of 8.3 percent. According to the advisory committee meeting, the poverty cut-off is 26 percent. A household is not poor, if the weighted sum of deprivations is below the poverty cut-off. Conversely, a household is classified as poor if the weighted sum of deprivation is greater than or equal to 26 percent whereby all individuals in the poor household are considered poor. The multidimensional poverty indicators of the NESDC are summarized in Table 2.13.

**Table 2.13** Multidimensional Poverty Indicators of the NESDC

<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>
<b>Education</b>	Years of schooling	At least one household member (1) aged 15-29 years has not completed junior high school education (9 years of compulsory schooling), or (2) aged 30-59 years has not completed primary school education (6 years of compulsory schooling).	1/12
	Delayed education	At least one household member aged 6-17 years is not enrolled in school or is still attending school with two or more years	1/12

<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>
		behind (except those who already completed junior high school education).	
	Living with parents	At least a child aged 0-6 years does not live with the father and/or mother (in case the father and/or mother are still alive).	1/12
<b>Healthy living</b>	Drinking water	Getting drinking water from (1) groundwater wells in the house, (2) groundwater wells outside the house, (3) rivers/streams/canals/waterfalls/mountains, (4) rainwater, or (5) other sources.	1/12
	Self-care	At least one household member aged 15 years or older is unable to perform daily activities without assistance and unable to leave the residential area without relying on caregivers.	1/12
	Nutrition	The household's food expenditure is below the food poverty line, calculated from the minimum amount of nutrition (calories) that people of different ages and genders need per day.	1/12
<b>Living conditions</b>	Household waste disposal	The household uses one of these waste disposal methods: (1) burning, (2) burying, (3) dumping into rivers, or (4) dumping at abandoned areas/public places.	1/12
	Internet usage	The household has no access to the internet.	1/12
	Asset ownership	The household does not own at least four small assets and one large asset.	1/12

<b>Dimension</b>	<b>Indicator</b>	<b>Deprived if ...</b>	<b>Weight</b>
<b>Financial security</b>	Saving	The household does not own the following assets: 1) financial assets such as cash, bank deposit, and provident fund, 2) investment assets such as bond, mutual fund, LTF, and RMF, and 3) other assets such as gold, jewelry, and receivables.	1/12
	Financial burden	The household has problems paying for rent, water, electricity, or tuition within the past 12 months.	1/12
	Gratuity/pension	At least one household member aged 60 or older does not receive gratuity, pension, annuity, or retirement allowance.	1/12

**Source:** NESDC, 2019, p. 9.

Thai People Map and Analytics Platform (TPMAP) (2019) can analyze poverty data from multiple sources. Data integration is applied to provide results that are closest to actual poverty conditions. Thus, the platform can identify target poor people and their area of deprivation based on the basic minimum needs survey data. Basic minimum needs indicators are used to calculate the MPI in order to identify target poor people that need urgent assistance in a timely and precise manner. TPMAP's multidimensional poverty indicators are categorized into five dimensions as follows:

1) Healthcare: includes four indicators, these are: 1) newborns in the household which weigh above 2,500 grams; 2) that household food consumption meets minimum hygienic standards; 3) household members use medicine in a suitable manner, and; 4) household members aged 6 years and above exercise regularly (at least three times a week for 30 minutes each time).

2) Education: includes four indicators: 1) children aged 3-5 years in the household are properly raised and taken care of; 2) children aged 6-14 years receive a compulsory education of nine years; 3) children who finish Mathayom 3 are able to

continue on to Mathayom 4 or comparable education level, and; 4) household members age 15-59 years can read and write Thai and perform basic math calculations.

3) Living standards includes four indicators: 1) the condition of the house is safe to live in, 2) household members have enough drinking water (5 liters per person per day), 3) household members have access to clean water for daily usage (45 liters per person per day), and; 4) the house is kept tidy and hygienic.

4) Access to public services includes two indicators: 1) the elderly in domestic households are properly taken care of by their family, community, government, or private agencies; 2) the disabled in domestic households are properly taken care of by their family, community, government, or private agencies.

5) Income, includes three indicators: 1) household members aged 15-59 years have proper jobs and income; 2) household members aged 60 years or older have proper jobs and income, and; 3) the average annual income of household members.

Each dimension is equally weighted at 1/5. The poverty cut-off is 5 percent. In other words, a household is considered poor if it is deprived in more than one dimension. Everyone in the poor household is classified as poor. The Alkire-Foster method, which is widely accepted worldwide, is adopted to calculate multidimensional poverty. TPMAP's multidimensional poverty indicators are presented in Table 2.14.

**Table 2.14** Multidimensional Poverty Indicators of TPMAP

<b>Dimension</b>	<b>Deprived if ...</b>	<b>Weight</b>
<b>Healthcare</b>	Newborns weigh above 2,500 grams.	1/20
	The household's food consumption meets minimum hygienic standard.	1/20
	Household members use medicines in a suitable manner.	1/20
	Household members aged 6 years and above exercise regularly three times a week, 30 minutes each.	1/20
<b>Education</b>	Children aged 3-5 years are properly raised and cared for.	1/20
	Children aged 6-14 years receive a compulsory education of nine years.	1/20



<b>Dimension</b>	<b>Deprived if ...</b>	<b>Weight</b>
	Children who finished Mathayom 3 are able to continue on to Mathayom 4 or comparable education level.	1/20
	Household members aged 15-59 years can read and write Thai and perform basic math calculations.	1/20
<b>Living standard</b>	The condition of the house is safe to live in.	1/20
	Household members have enough drinking water (5 liters per person per day).	1/20
	Household members have access to clean water for daily usage (45 liters per person per day).	1/20
	The house is kept tidy and hygienic.	1/20
<b>Access to public services</b>	The elderly are properly taken care of by their family, community, government, or private agencies.	1/10
	The disabled are properly taken care of by their family, community, government, or private agencies	1/10
<b>Income</b>	Household members aged 15-59 years have proper jobs and income.	1/15
	Household members aged 60 years or older have proper jobs and income.	1/15
	Average annual income of household members.	1/15

Based on the above literature review, it can be summarized that there are seven key dimensions commonly used to determine multidimensional poverty, which include 1) health, 2) education, 3) living standard, 4) access to public services, 5) income, 6) employment, and 7) network and social cohesion. The details of each dimension are shown in Table 2.15.

**Table 2.15 Indicators Affecting Multidimensional Poverty Measurement**

Indicator	Determined by	Alkire and Jahan	Abeje, Tsunekawa, Haregeyeyn, et al.	Yu	Bader, Bieri, Wiesmann & Heinemann	Beycan, Vani, Bruggemann, and Suter	Deka	Ervin et al.	Gallardo	Hanadita & Tampubolon	Mushongera, Zikhali, and Ngwenya	Strotmann and Volkert	NESDC	TPMAP
<b>1. Health</b>														
- Newborns weigh more than 2,500 grams.														
- Household's food consumption meets minimum hygienic standard.														
- Household members use medicines in a suitable manner.														
- Household members aged 6 years and above exercise regularly 3 times a week, 30 minutes each.														
- Any adult aged 70 and above or a child in the household is malnourished.														
- Any child in the household has died within the past 5 years.														
- Health status of household members has not improved within the past 5 years.														
- Household members have no ability to pay for medical bills.														

Indicator	Alkire and Jahan	Abey, Tsunekawa, Haregeyyn, et al.	Yu	Bader, Bieri, Wismann & Heimann	Beyan, Vani, Bruggemann, and Suter	Deka	Ervin et al.	Gallardo	Hanandita & Tampubolon	Mushongera, Zikali, and Ngwenya	Strotmann and Volkert	NESDC	TPMAP
<p><b>Determined by</b></p> <ul style="list-style-type: none"> <li>- Household members have no access to any kind of medical insurance.</li> <li>- A household member has been ill for more than 4 days.</li> <li>- A household member has caught more than 3 diseases.</li> <li>- At least one household member has to skip a meal.</li> </ul>													
<p><b>2. Education</b></p> <ul style="list-style-type: none"> <li>- Children aged 3-5 years are properly raised and cared for.</li> <li>- Children aged 6-14 years receive a compulsory education of 9 years.</li> <li>- Children who finished Mathayom 3 are able to continue on to Mathayom 4 or comparable education level.</li> <li>- Household members aged 15-59 years can read and write Thai and perform basic math calculations.</li> </ul>													



Indicator	Alkire and Jahan	Abaje, Tsunekawa, Haregewyn, et al.	Yu	Bader, Bieri, Wismann & Heimann	Beyan, Vani, Bruggemann, and Suter	Deka	Ervin et al.	Gallardo	Hanadita & Tampubolon	Mushongera, Zikali, and Ngunya	Strotmann and Volkert	NESDC	TPMAP
Determined by	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
- Household has no electricity.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
- Household does not own at least one asset.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
- Household does not own any land or livestock.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
- Housing is overcrowded (3 people or more per room).	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
- A household member faces 2 or more environmental pollution problems.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
- Household disposes of waste by burning, burying, or dumping it into rivers, or public places.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>4. Access to public services</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
- The elderly are properly taken care of by their family, community, government, or private agencies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
- The disabled are properly taken care of by their family, community, government, or private agencies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Indicator	Determined by	Alkire and Jahan	Abey, Tsunekawa, et al.	Yu	Bader, Bieri, Wisemann & Heimann	Beyan, Vani, Bruggemann, and Suter	Deka	Ervin et al.	Gallardo	Hanandita & Tampubolon	Mushongera, Zikhali, and Ngenya	Strotmann and Volkert	NESDC	TPMAP
<ul style="list-style-type: none"> <li>- At least one household member does not have health insurance.</li> </ul>	<p>Determined by</p>	✓												
<ul style="list-style-type: none"> <li>- A household member aged 15 years or older is employed but is not in the social security system.</li> </ul>	<p>Determined by</p>								✓					
<p><b>5. Income</b></p>	<p>Determined by</p>													
<ul style="list-style-type: none"> <li>- Household members aged 15-59 years have proper jobs and income.</li> </ul>	<p>Determined by</p>												✓	
<ul style="list-style-type: none"> <li>- Household members aged 60 years and older have proper jobs and income.</li> </ul>	<p>Determined by</p>												✓	
<ul style="list-style-type: none"> <li>- Average annual income of household members.</li> </ul>	<p>Determined by</p>												✓	
<ul style="list-style-type: none"> <li>- Household has no saving assets.</li> </ul>	<p>Determined by</p>												✓	
<ul style="list-style-type: none"> <li>- Household has problems paying for rent, water, electricity, or tuition within the past year.</li> </ul>	<p>Determined by</p>												✓	
<ul style="list-style-type: none"> <li>- At least one household member aged 60 or older does not receive</li> </ul>	<p>Determined by</p>												✓	



**Indicator**

**Determined by**

Alkire and Jahan  
Abaje, Tsunekawa, et al.  
Haregewyn, et al.  
Yu  
Bader, Bieri, Wisemann & Heimann  
Beycan, Vani, Bruggemann, and Suter  
Deka  
Ervin et al.  
Gallardo  
Hanandita & Tampubolon  
Mushongera, Zikhali, and Ngenya  
Strotmann and Volkert  
NESDC  
TPMAP

**7. Networks and social cohesion**

- A person does not have anyone else outside the household who can support him/her, nor does the household has any member aged 14 years or more who has participated in any social organizations in the past year.
- Someone in the household has received discriminatory or unfair treatment In the past year.
- Someone in the household has always witnessed drug trafficking or shootings in the last month.





According to Table 2.15, the indicators that have an effect on multidimensional poverty measurement are categorized into seven dimensions as follows.

1) The health dimension consists of 12 indicators: 1) newborns weigh more than 2,500 grams, 2) household's food consumption meets minimum hygienic standard, 3) household members use medicines in a suitable manner, 4) household members aged 6 years and above exercise regularly 3 times a week, 30 minutes each, 5) any adult aged 70 and above or a child in the household is malnourished, 6) any child in the household has died within the past five years, 7) the health status of household members has not improved within the past five years, 8) household members have no ability to pay for medical bills, 9) household members have no access to any kind of medical insurance, 10) a household member has been ill for more than four days, 11) a household member has caught more than three diseases, and 12) at least one household member has to skip a meal.

2) The education dimension is composed of six indicators: 1) children aged 3-5 years are properly raised and cared for, 2) children aged 6-14 years receive a compulsory education of nine years, 3) children who finished Mathayom 3 are able to continue on to Mathayom 4 or comparable education level, 4) household members aged 15-59 years can read and write Thai and perform basic math calculations, 5) at least one household member is attending school with two years behind, and 6) living with parents.

3) The living standards dimension includes 12 indicators: 1) the condition of the house is safe to live in, 2) household members have enough drinking water, 3) household members have access to clean water, 4) the house is kept tidy and hygienic, 5) household cooks with dung, wood, or charcoal, 6) household's sanitation facility is not improved (according to the SDGs guidelines) or is shared with other households, 7) household has no electricity, 8) household does not own at least one asset, 9) household does not own any land or livestock, 10) housing is overcrowded (three people or more per room), 11) Household members face two or more environmental pollution problems, and 12) household members dispose of waste by burning, burying, or dumping it into rivers or public places.

4) The access to public services dimension includes four indicators: 1) the elderly are properly taken care of by their family, community, government, or private

agencies, 2) the disabled are properly taken care of by their family, community, government, or private agencies, 3) at least one household member does not have health insurance, and 4) a household member aged 15 years or older is employed but is not in the social security system.

5) The income dimension includes of six indicators: 1) household members aged 15-59 years have proper jobs and income, 2) household members aged 60 years and older have proper jobs and income, 3) average annual income of household members, 4) household has no saving assets, 5) household has problems paying for rent, water, electricity, or tuition within the past year, and 6) at least one household member aged 60 or older does not receive gratuity, pension, annuity, or retirement allowance.

6) The employment dimension consists of five indicators: 1) a household member aged 14 years or lower works outside the home to earn income, 2) a household member is unemployed, works outside the formal sector, or works as a day laborer, 3) the head of the household or spouse is unemployed or underemployed (work less than 30 hours a week), 4) the head of the household or spouse works 30 hours or more per week, but receives less than the minimum wage, and 5) at least one adult in the household is unemployed.

7) The networks and social cohesion dimension includes three indicators: 1) a person does not have anyone else outside the household who can support him/her, nor does the household has any member aged 14 years or more who has participated in any social organizations in the past year, 2) someone in the household has received discriminatory or unfair treatment In the past year, and 3) someone in the household has always witnessed drug trafficking or shootings in the last month.

## **2.4 Poverty Alleviation Policies in Thailand**

The alleviation of poverty has long been the Thai government's priority. This is reflected through policies, mechanisms, and tools that the government has used to determine the direction and approach to solve the problem. The summary of Thailand's government policies on poverty alleviation can be described below:

### **2.4.1 National Economic and Social Development Plans**

The development of policies on poverty alleviation officially started under the government of Field Marshal Sarit Thanarat that adopted the concept of Americanization to develop the country by initiating the 1st National Economic and Social Development Plan in 1961 (Natthaphon Jaijing, 2020, p. 314). In the early stage, the government believed that the promotion of industrial and modern sector developments would create a trickle-down effect in rural areas and lead to poverty reduction. In other words, the government believed that generating economic growth is a key strategy for reducing poverty-related problems and issues (Buapun Promphakping, 2004, p. 133).

In the first eight National Economic and Social Development Plans, the government used various policies and measures to tackle poverty-related problems and issues, which can be categorized into three groups as follows. The first group includes agricultural policies concerning the construction of agricultural infrastructures such as irrigation and transportation systems, loan provision, productivity enhancement, pricing, price insurance, price support, product purchase, and agricultural subsidies. The second group includes industrial policies that have impacts on employment and may indirectly contribute to increased productivity in the agricultural sector. The last group consists of social policies associated with the construction of basic infrastructures such as tap water, electricity, roads, and communication systems, education policies, and public health policies (Buapun Promphakping, 2004, pp. 133-134; Nitinant Wisawesuan et al., 2003, pp. 79-86).

Although a total of 12 National Economic and Social Development Plans has been published so far, a clear policy on poverty alleviation only appeared for the first time in the 5<sup>th</sup> National Economic and Social Development Plan (1981-1986). The NESDB played an important role in driving the establishment of “rural development strategies,” which consist of five main features: 1) giving priority to high poverty concentration areas, 2) focusing on improving basic necessities and providing sufficient public services to target areas, 3) developing self-help programs for people in target areas, 4) using simple and appropriate technologies or methods to reduce financial and fiscal burden of the government, and 5) encouraging public participation in rural development (Buapun Promphakping, 2004, p. 135). In addition, the government started to recognize that poverty has a broader meaning than economic poverty. In other

words, the government started to view poverty in different dimensions other than income. Therefore, In the implementation of the 5<sup>th</sup> National Economic and Social Development Plan, the government tried to develop the country in other areas along with economic development. The key concept of development is improving the people's quality of life and basic necessities. This development plan is considered the starting point for concrete efforts to overcome the problems of poverty. Poverty alleviation policies and measures included in the National Economic and Social Development Plans are summarized in Table 2.16.

**Table 2.16** Poverty Alleviation Policies Included in the 5<sup>th</sup> to 12<sup>th</sup> National Economic and Social Development Plans

<b>National Economic and Social Development</b>	<b>Highlight</b>
The 5 <sup>th</sup> Plan (1982-1986)	<ul style="list-style-type: none"> <li>○ Adopting the new development policy guidelines to adjust economic structures and expand regional development opportunities, without focusing on generating economic growth like the previous plan.</li> <li>○ Balancing between economic and social development.</li> <li>○ Solving rural poverty by giving priority to high poverty concentration areas, thoroughly providing sufficient public services, and encouraging local people to participate in solving their own problems.</li> <li>○ Establishing the new local administration system.</li> <li>○ Mobilizing corporation from the private sector.</li> <li>○ Transforming the policy into action plans.</li> </ul>
The 6 <sup>th</sup> Plan (1987-1991)	<ul style="list-style-type: none"> <li>○ Building on the 5<sup>th</sup> Plan by expanding the scope of rural development to the village level.</li> </ul>

<b>National Economic and Social Development</b>	<b>Highlight</b>
The 7 <sup>th</sup> Plan (1992-1996)	<ul style="list-style-type: none"> <li>○ Improving the country's production and marketing structure to be more diversified.</li> <li>○ Focusing on improving the people's quality of life and increasing the skills of labor force.</li> <li>○ Developing urban and specific areas in order to distribute prosperity to localities. Encouraging local people to take care of their own local resources.</li> <li>○ Distributing income and development to provincial and local areas by focusing on the low-income group, including poor farmers, agricultural laborers, small and medium business entrepreneurs, private company employees, government officials, and dependent people, in addition to maintaining economic growth.</li> <li>○ Adopting tax and expenditure policies to distribute fiscal power to provinces and localities.</li> <li>○ Adjusting agricultural and industrial structures at the regional level. Establishing and developing the center of each region.</li> <li>○ Setting up development plans to improve the quality of life of poor people in rural and urban areas and to develop human resources in accordance with economic growth.</li> </ul>

<b>National Economic and Social Development</b>	<b>Highlight</b>
The 8 <sup>th</sup> Plan (1997-2001)	<ul style="list-style-type: none"> <li>○ Placing importance on human development, especially in terms of potential enhancement and quality of life improvement.</li> <li>○ Conducting environmental development to support social and economic development.</li> <li>○ Putting people at the center of development.</li> </ul>
The 9 <sup>th</sup> Plan (2002-2006)	<ul style="list-style-type: none"> <li>○ Adopting the sufficiency economy philosophy, initiated by King Bhumibol Adulyadej, to be the country's development and administration guidelines. Adhering to the principle of middle path, moderation, and reasonableness in order to survive crises and achieve sustainable development.</li> <li>○ Restoring the country's economic efficiency in the financial and fiscal sectors to be more resilient and independent.</li> <li>○ Laying the foundation for national development that focuses on resilience, sustainability, self-reliance, knowledge-based learning, human quality development, educational and health reform, community empowerment, environmental and natural resources management, and science and technology development.</li> <li>○ Solving poverty-related problems and issues by increasing self-reliance abilities, educational and occupational opportunities, income, and quality of life of Thai people in a thorough and fair manner.</li> </ul>

<b>National Economic and Social Development</b>	<b>Highlight</b>
The 10 <sup>th</sup> Plan (2007-2011)	<ul style="list-style-type: none"> <li>○ Adopting the sufficiency economy philosophy and the concept of human centered development as the guiding principle of national development in order to achieve a balanced, sustainable and fair development under the vision “Green and Happiness Society.”</li> </ul>
The 11 <sup>th</sup> Plan (2012-2016)	<ul style="list-style-type: none"> <li>○ Focusing on the development of “a happy society with equality, fairness, and resilience.”</li> <li>○ Promoting a peaceful society. Adopting the sufficiency economy philosophy as a common practice throughout society. Strengthening the governmental, political, and civil society sectors based on the principles of democracy in order to maintain public confidence and trust.</li> <li>○ Developing people with knowledge and skills to be the driving force for national growth and competitiveness by focusing on both intellectual and mental competence, needed for transforming the country into a knowledge-based society.</li> <li>○ Increasing the number of middle-class people in all areas of the country because they are a vital force in coordinating benefits and developing a balanced society. Encouraging people of all classes to recognize their duties and jointly develop the country to be more prosperous and livable.</li> <li>○ Strengthening the agricultural sector to produce sufficient food for the Thai people. Improving the abilities of farmers in producing agricultural products for domestic consumption and export in order to become the world’s</li> </ul>



<b>National Economic and Social Development</b>	<b>Highlight</b>
The 12 <sup>th</sup> Plan (2017-2021)	<p>leader in food production. Maintaining the traditional features of Thai food that foreigners love.</p> <ul style="list-style-type: none"> <li>○ Improving public administration to be more transparent and accountable in order to facilitate future development. Encouraging all sectors to participate in national development.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>○ Developing the Thai people to have a good value-system. Thai people should possess discipline, attitudes, and manners according to the norms of society. They should also be receptive to learning, practical, well-informed, responsible, physically and mentally healthy, spiritually refined, self-sufficient and able to represent Thainess.</li> <li>○ Reducing the level of poverty and income inequality. The foundations of the economy should be strengthened. Every Thai should have fair access to resources, job opportunities and social services. The 40 percent of the population with the lowest incomes should see their income levels rise by at least 15%.</li> <li>○ Developing the Thai economy to be strong and competitive. The structure of the economy should be based on services and digital technologies that are environmental and community friendly. Production and service bases should be distributed to different regions across the country in order to reduce inequality. The Thai economy should grow at an average annual rate of 5 percent. The driving factors for this growth should include</li> </ul>

<b>National Economic and Social Development</b>	<b>Highlight</b>
	<p>logistics, energy and investment in research and development programs which support the expansion of the manufacturing and service sectors.</p> <ul style="list-style-type: none"> <li>○ Developing natural capital and environmental quality to support green growth. Enhancing food, energy, and water security.</li> <li>○ Improving national sovereignty, security, safety, reconciliation, and the country's confidence.</li> <li>○ Developing public administration to be efficient, modern, transparent, accountable, decentralized, and conducive to public participation.</li> </ul>
<p><b>Source:</b> adapted from Nitinant Wisaweesuan, Supachai Srisuchart, and Somboon Siriprachai, 2003, pp. 79-86.</p>	

## **2.5 Budget Allocation by Expenditure Types**

Budget is allocated based on expenditure types, which can be divided into six categories: 1) Central budget, 2) function-based budget, 3) agenda-based budget, 4) area-based budget, 5) government debt management budget, and 6) manpower planning budget. The details of each category are described below (Salee Sukkerd, 2017, pp. 15-25).

1) Central budget is the budget set aside for governmental agencies and state enterprises, which includes (1) expenditures on royal projects, (2) expenditures on royal visits and receptions for foreign heads of state, (3) expenditures on reimbursement for urgent disaster assistance, (4) compensation for construction projects, and (5) emergency reserve expenditures.

2) Function-based budget is the budget for ministries and government departments that can be divided into two groups: (1) regular functions, which perform their duties on a regular basis as prescribed by law, as failure to do so may cause damage to the provision of public services, and (2) strategic functions, which perform their responsibilities as assigned in order to respond to a specific policy In a certain period of time.

3) Agenda-based budget is the budget for urgent policy plans, which require cooperation from various parties, planning processes, and systematic brainstorming among all involved parties under the same goals and objectives set forth by the host agency, such as the development of special economic zones, the development of infrastructure and logistics systems, the promotion of equality in aging society, and the management of water resources.

4) Area-based budget can be classified into three categories: (1) integrated budget plan for decentralized to local government organizations, (2) integrated budget plan for integrated development of provinces and provincial clusters, and (3) integrated budget plan for area development at the regional level.

5) Government debt management budget can be divided into three groups: (1) debt management budget plan, (2) compensation plan for treasury reserves, and (3) compensation plan for reserve funds.

6) Government manpower budget can be categorized into three groups: (1) personnel budget, which includes salaries, regular wages, temporary wages, and remuneration for government officials, and (2) operating budget, which includes specific remunerations that need to be allocated according to legal rights and requirements and paid in the form of salaries or paid in conjunction with salaries, (3) Central budget items, which consist of (a) annuity, gratuity, pension, (b) subsidies for government officials, government permanent and temporary employees, (c) incentives for promotion of government officials, (d) reserves, contributions, and compensation for government officials, and (e) contributions for government permanent employees.

The present research focuses only on the integrated budget plan for integrated development of provinces and provincial clusters, which is part of the area-based budget. The details are as follows.

### **2.5.1 Integrated Administration of Provinces and Provincial Clusters**

Integrated administration of provinces and provincial clusters is of great importance in driving the achievement of government policies in target areas. It helps to create fairness in the budget system and increase the power of people in the national budget process, while distributing budget to localities, which ultimately leads to inequality reduction. The integrated administration of provinces and provincial clusters aims to solve the problems of people in local areas and to promote economic and social development in localities according to the national development strategies and the needs of all sectors (Parliamentary Budget Office, 2016, p. b). The researcher organized the contents of this section into four parts: 1) the background of budget for provinces and provincial clusters, 2) the provincial budgeting process, 3) the criteria for budget allocation to provinces and provincial clusters, and 4) the development of studies on provincial and provincial cluster administration. The details of each part are presented below.

#### **2.5.1.1 The Background of Budget for Provinces and Provincial Clusters**

Since the announcement of the 1st National Economic and Social Development Plan until the present version, Thailand's national development policies and practices have been continuously developed, influencing the determination of development direction at the provincial level. In the past, provinces were assigned to develop a provincial development plan as a development tool by using the village-based socio-economic data (NRD2C) and the basic minimum need data (BMN) with the aim to improve the quality of life of local people. Although provincial development plans were developed by taking account of both the national development policies and practices and the local context, each province still had to request for budget from the Central government and might not receive the budget as requested. Thus, this approach could not drive provincial development or solve provincial problems as planned. As each province did not have its own budget, provincial administration was carried out under limited conditions (Farat Somsaen, 2012, pp. 63-64).

Later, at the end of the 9th National Economic and Social Development Plan in the fiscal year 2004-2006, the government recognized the importance of strengthening the unity and efficiency of provincial administration and decided to adopt

the concept of CEO (Chief Executive Officer) administration. It was determined that a provincial governor as the chief executive officer of the province has to integrate cooperation from all sectors and use the national strategic plan as a development guideline at the provincial and provincial cluster level. Central budget was allocated to provinces in order to drive the achievement of strategic plan in each province and provincial cluster. During the government of Thaksin Shinawatra, the Cabinet passed a resolution on 22 July 2003 and 17 November 2003 agreeing to classify provinces into 19 provincial clusters. However, provinces and provincial clusters were unable to propose a budget request on their own. They only received the budget to support the implementation of government policies. When the policies changed and no budget was provided, they had to stop or slow down their strategic development projects, leading to discontinuity in development. The administration of provincial clusters in the early stage faced three major problems: 1) lack of administrative budget, 2) lack of personnel, and 3) lack of clarity about the responsible organization (Farat Somsaen, 2012, p. 64; Parliamentary Budget Office, 2016, p. 1).

When the Constitution of the Kingdom of Thailand B.E. 2550 was enacted, each province is determined to set up a development plan and receive financial support for the implementation of such plan, as Section 78 specified that “The State shall organize a system for the Central administration, provincial administration, and local administration with clear limits, powers, duties and responsibilities suitable for national development, and support the province’s formulation of a development plan and provincial development budget for the benefit of the public within that area.”

Subsequently, the State Administration Act B.E. 2534 was amended in accordance with the latest constitution, resulting in the enactment of the State Administration Act B.E. 2550 (No. 7). The duties and responsibilities of the province and the district were revised. Based on this act, the province has duties to formulate a provincial development plan. The province and provincial cluster are considered as government agencies and can propose a budget request for provincial development.

**Section 52 Paragraph 3** stated that “For the benefit of the integrated administration within a province or a group of provinces, that province or the group of provinces shall be able to file budget proposals, in accordance with criteria, methods, and conditions stipulated in Royal Decree. In this case, the province or the group of

provinces shall be deemed as the government agency under the law on budget management.”

**Section 53/1** specified that “The province shall formulate a development plan to be in conformity with the national economic and social development plan, and the needs of the local people in that province.

In formulating the development plan under paragraph one, the Governor shall organize a meeting among chiefs of government agencies having their offices in that province, be it the provincial or Central administration, and all executives of the local administration agencies in that province, including representatives from the civil society and private sector.

The formulation of the development plan under paragraph one, numbers and methods of selection of the representatives from the civil society and private sector under paragraph two shall be in accordance with criteria and methods specified in Royal Decree.

After the publication of the provincial development plan, formulation of the local development plan by the local administration agencies and implementation of the work of all government agencies and other State agencies carrying out in that province shall be in conformity with that provincial development plan.”

**Section 53/2** specified that “The provision in section 53/1 shall apply mutatis mutandis to the formulation of the development plan of a group of provinces.”

As a result, the Royal Decree on Integrated Administration of Provinces and Provincial Clusters B.E. 2551 was promulgated. The criteria, procedures, and conditions for creating a development plan and budget proposal and performing provincial administration activities were determined. The following three committees were also established to oversee the integrated administration of provinces and provincial clusters.

- 1) The Provincial and Provincial Cluster Administration Policy Committee (Kor Nor Jor), chaired by the Prime Minister: The Secretary-General of the Public Sector Development Commission was initially appointed as secretary and committee member, before changing to the Secretary-General of the National Economic and Social Development Board in the fiscal year 2019.

2) The Integrated Provincial Administration Committee (Kor Bor Jor), chaired by the provincial governor: the Head of Provincial Office is appointed as secretary and committee member.

3) The Integrated Provincial Cluster Administration Committee (Kor Bor Kor), chaired by the governor of the province which has a leading function in the cluster: secretary of the committee is appointed by the Permanent Secretary of the Ministry of Interior.

Section 26 of this Royal Decree specified that the Provincial and Provincial Cluster Administration Policy Committee has the power to establish provincial clusters and the operating center of the cluster. Thus, on 18 February 2009, the Provincial and Provincial Cluster Administration Policy Committee announced the establishment of 18 provincial clusters as detailed in Table 2.17.

**Table 2.17** Provinces and Provincial Clusters as Announced on 18 February 2009

	<b>Cluster</b>	<b>Province</b>	<b>Center of the Cluster</b>
1	Upper Central 1	Nonthaburi, Pathum Thani, Ayutthaya, Saraburi	Ayutthaya
2	Upper Central 2	Chainat, Lopburi, Singburi, Angthong	Lopburi
3	Middle Central	Chachoengsao, Prachinburi, Sarakaew, Nakhon Nayok, Samut Prakan	Chachoengsao
4	Lower Central 1	Kanchanaburi, Nakhon Pathom, Ratchaburi, Suphanburi	Nakhon Pathom
5	Lower Central 2	Prachuap Khiri Khan, Phetchaburi, Samut Sakhon, Samut Songkhram	Phetchaburi

	<b>Cluster</b>	<b>Province</b>	<b>Center of the Cluster</b>
6	South (Gulf of Thailand)	Chumphon, Surat Thani, Nakhon Si Thammarat, Phatthalung	Surat Thani
7	South (Andaman Coast)	Ranong, Phangnga, Phuket, Krabi, Trang	Phuket
8	South (Border)	Songkhla, Satun, Pattani, Yala, Narathiwat	Songkhla
9	East	Chanthaburi, Chonburi, Rayong, Trat	Chonburi
10	Upper Northeast 1	Bueng Kan, Nong Khai, Loei, Udon Thani, Nong Bua Lam Phu	Udon Thani
11	Upper Northeast 2	Nakhon Phanom, Mukdahan, Sakon Nakhon	Sakon Nakhon
12	Middle Northeast	Roi Et, Khon Kaen, Mahasarakham, Kalasin	Khon Kaen
13	Lower Northeast 1	Surin, Nakhon Ratchasima, Buriram, Chaiyaphum	Nakhon Ratchasima
14	Lower Northeast 2	Amnat Charoen, Sisaket, Yasothon, Ubon Ratchathani	Ubon Ratchathani
15	Upper North 1	Chiang Mai, Mae Hong Son, Lampang, Lamphun	Chiang Mai
16	Upper North 2	Nan, Phayao, Chiang Rai, Phrae	Chiang Rai
17	Lower North 1	Tak, Phitsanulok, Sukhothai, Phetchabun, Uttaradit	Phitsanulok



	<b>Cluster</b>	<b>Province</b>	<b>Center of the Cluster</b>
18	Lower North 2	Kamphaengphet, Phichit, Nakhon Sawan, Uthai Thani	Nakhon Sawan

**Source:** The Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster, 2009, p. 33.

Later, on 16 November 2017, the Provincial and Provincial Cluster Administration Policy Committee announced the establishment of 18 provincial clusters and six regions together with the operating center of each cluster, which were determined in accordance with the 2019 budget allocation framework, as shown in Table 2.18.

**Table 2.18** Provinces and Provincial Clusters as Announced on 17 November 2017

<b>Region</b>	<b>Cluster</b>	<b>Province</b>	<b>Center of the Cluster</b>
	1. Upper Central	Chainat, Ayutthaya, Lopburi, Saraburi, Singburi, Angthong	Ayutthaya
	2. Middle Central	Nonthaburi, Pathum Thani, Nakhon Pathom, Samut Prakan	Nakhon Pathom
1. Central	3. Lower Central 1	Kanchanaburi, Ratchaburi, Suphanburi	Ratchaburi
	4. Lower Central 2	Prachuap Khiri Khan, Phetchaburi, Samut Songkhram, Samut Sakhon	Phetchaburi
	5. South (Gulf of Thailand)	Chumphon, Nakhon Si Thammarat, Phatthalung, Surat Thani, Songkhla	Surat Thani
2. South			

<b>Region</b>	<b>Cluster</b>	<b>Province</b>	<b>Center of the Cluster</b>
	6. South (Andaman Coast)	Krabi, Trang, Phangnga, Phuket, Ranong, Satun	Phuket
3. Southern Border	7. Southern Border	Pattani, Yala, Narathiwat	Yala
	8. East 1	Chachoengsao, Chonburi, Rayong	Chonburi
4. East	9. East 2	Chanthaburi, Trat, Nakhon Nayok, Prachinburi, Sa Kaeo	Prachinburi
	10. Upper Northeast 1	Bueng Kan, Nong Khai, Loei, Udon Thani, Nong Bua Lam Phu	Udon Thani
5. Northeast	11. Upper Northeast 2	Nakhon Phanom, Mukdahan, Sakon Nakhon	Sakon Nakhon
	12. Middle Northeast	Roi Et, Khon Kaen, Mahasarakham, Kalasin	Khon Kaen
	13. Lower Northeast 1	Surin, Nakhon Ratchasima, Buriram, Chaiyaphum	Nakhon Ratchasima
	14. Lower Northeast 2	Amnat Charoen, Sisaket, Yasothon, Ubon Ratchathani	Ubon Ratchathani
	15. Upper North 1	Chiang Mai, Mae Hong Son, Lampang, Lamphun	Chiang Mai
	16. Upper North 2	Nan, Phayao, Chiang Rai, Phrae	Chiang Rai
6. North	17. Lower North 1	Tak, Phitsanulok, Sukhothai, Phetchabun, Uttaradit	Phitsanulok
	18. Lower North 2	Kamphaengphet, Phichit, Nakhon Sawan, Uthai Thani	Nakhon Sawan

**Source:** The Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster (No.3), 2017, p. 14.

The development regions were established according to the Regulations of the Prime Minister's Office on Integrated Area Administration B.E. 2560. There were new administrative mechanisms established in form of committees in order to formulate a policy framework and plans and drive the administration of the regions by creating integration with existing administrative mechanisms, including the Integrated Provincial Cluster Administration Committee and the Provincial Administrative Committee that were set up based on the Royal Decree on Integrated Administration of Provinces and Provincial Clusters B.E. 2551. The two administrative mechanisms, which were newly established and supported by the Office of the National Economic and Social Development, are listed below:

- 1) The Integrated Regional Development Policy Committee (Kor Bor Phor), chaired by the Prime Minister: its main duty is to formulate policy frameworks, rules, and procedures for creating development plans and annual action plans at the regional, provincial, and provincial cluster levels and to integrate government action plans with local development plans.

- 2) The Integrated Regional Development Policy Subcommittees (Or Kor Bor Phor): the Integrated Regional Development Policy Committee passed a resolution to establish six subcommittees, comprised of: (1) Central Region Subcommittee, (2) Eastern Region Subcommittee, (3) Northeastern Subcommittee, (4) Northern Region Subcommittee, (5) Southern Region Subcommittee, and (6) Academic Subcommittee, chaired by six Deputy Prime Ministers, to facilitate the operations of the Integrated Regional Development Policy Committee, to create regional development plans, to integrate project plans of government agencies, and to review development plans and annual action plans at the regional, provincial, and provincial cluster levels under support of the Regional Economic and Social Development Offices.

The establishment of the above two mechanisms helps to promote competitiveness, development consistency, and operational integration of government agencies in a holistic way.

#### 2.5.1.2 Budgeting for Provinces and Provincial Clusters

Budgeting for provinces and provincial clusters is different from budgeting for government agencies that is carried out based on the Budget Procedures Act B.E. 2502. Provincial budgeting must be performed in accordance with the rules and procedures specified in the Royal Decree on Integrated Administration of Provinces and Provincial Clusters B.E. 2551 and the additional criteria and conditions determined according to this Royal Decree. The process of budgeting for provinces and provincial clusters can be divided into two phases as follows.

1) Before the development regions were established according to the Regulations of the Prime Minister's Office on Integrated Area Administration B.E. 2560: the budgeting procedures are listed below (Parliamentary Budget Office, 2016, pp. 3-4).

(1) The Kor Nor Jor determines policy frameworks, procedures, methods, plans, and budget based on the requirements of the Kor Bor Phor in order for the province and provincial cluster to implement.

(2) The province collects information on the provincial potential and surveys the needs of the local people.

(3) The Kor Bor Jor analyzes the provincial potential and the needs of the local people in order to estimate the province's potential and needs. The results will be sent to the Kor Bor Kor for developing a provincial cluster development plan in the next step.

(4) The Kor Bor Kor prepares a draft provincial cluster development plan and then send it to the Kor Bor Jor to be used in creating a provincial development plan.

(5) The Kor Bor Jor creates a draft provincial development plan to be presented in a meeting with all related parties.

(6) The province holds a meeting with all related parties in order to discuss the draft provincial development plan and share comments and suggestion about provincial and provincial cluster development.

(7) The obtained comments and suggestions are used to develop the final development plan as follows.

(a) The Kor Bor Kor develops the final provincial cluster development plan.

(b) The Kor Bor Jor develops the final provincial development plan.

(8) The province/provincial cluster submits the development plan to the Kor Bor Nor.

(9) The Kor Bor Nor screens the provincial development plan and the provincial cluster development plan before submitting them to the Cabinet for approval.

(10) The Cabinet approves the provincial development plan and the provincial cluster development plan. Local development plans of local administrative organizations and all operations of relevant government agencies must comply with the provincial development plan, announced every four years.

(11) The Kor Bor Jor prepare an annual action plan for the province. The Kor Bor Nor creates an annual action plan for the provincial cluster. The minimum details that must be provided include project descriptions, objectives, achievements, responsible agency, required budget, and the name of the agency that directly submits a budget proposal to the Parliamentary Budget Office. The Kor Bor Nor screens the annual action plan and then proposes it to the Cabinet.

(12) The Cabinet approves the annual action plan of the province/provincial cluster. The Kor Bor Nor sends the approved annual action plan to the Parliamentary Budget Office for use in budget allocation. In this way, it is deemed that the province/provincial cluster filed the budget proposal to the Parliamentary Budget Office already.

2) After the development regions were established according to the Regulations of the Prime Minister's Office on Integrated Area Administration B.E. 2560: the budgeting procedures are presented in Table 2.19.

**Table 2.19** Budgeting Procedures after the Establishment of the Development Regions

No.	Procedure	Detail	Responsible Person
1	<p>Determine policies and criteria for creating development plans/annual action plans.</p>	<p>The Kor Bor Phor determines policies, rules, and procedures for formulating development plans and annual action plans as well as provincial and provincial cluster budget plans in order for the province and provincial cluster to implement.</p>	<p>Secretary of the Kor Bor Phor (NESDB)</p>
2	<p>Give advice and support in creating plans and projects to the province/provincial cluster.</p>	<p>The Central integration team advise the province and provincial cluster on reviewing development plans, creating annual action plans, and developing a project based on the requirements of the Kor Bor Phor.</p>	<p>The Central integration team, hosted by the Ministry of Interior</p>
3	<p>Submit the development plan/annual action plan.</p>	<p>The Kor Bor Jor and Kor Bor submit the provincial development plan and the provincial cluster development plan to the Secretary of the Kor Bor Phor and the Central integration team.</p>	<p>Province/provincial cluster</p>
4	<p>Review the documents and analyze the plans.</p>	<p>Check the completeness of the documents and analyze the submitted plans in order to prepare for a meeting with the Central integration team.</p>	<p>Integrated provincial administrative development officers</p>

No.	Procedure	Detail	Responsible Person
5	<div style="border: 1px solid black; padding: 5px; width: fit-content;">Hold a meeting to consider the proposed plans.</div>	Join a meeting with the Central integration team to consider the plans and projects proposed by the province/province cluster before submitting them to the five regional subcommittees.	The Central integration team, hosted by the Ministry of Interior
6	<div style="border: 1px solid black; padding: 5px; width: fit-content;">Five Subcommittees</div>	The five regional subcommittees hold a meeting to discuss the submitted plans.	Secretaries of the five regional subcommittees
7	<div style="border: 1px solid black; border-radius: 50%; padding: 5px; width: fit-content;">Kor Nor Jor and Kor Bor Phor make an approval.</div>	Hold a meeting with the Kor Bor Phor and Kor Nor Jor in order to consider the plans and projects submitted by the province/province cluster.	Secretaries of the five regional subcommittees and the Kor Nor Jor

**Source:** Office of the Public Sector Development Commission, 2018, p. 5.

### 2.5.1.3 Criteria for Budget Allocation to Provinces and Provincial Clusters

The formulation of budget/project proposal must take into account the direction and goal of the provincial cluster development plan. The criteria for budget allocation to provinces and provincial clusters can be divided into two categories as follows.

#### 1) Compliance with the regional development framework

When 18 provincial clusters and six regions were established according to the Notification on the Establishment of the Provincial Cluster and the Center of the Cluster on 17 November 2017, the regional development framework was also determined together with the positioning of each region as detailed below (NESDC, 2019, pp. 41-49).

##### (1) Northern region

Target: develop the Northern region into a high-value creative economy and enhance economic integration with the Mekong sub-region countries. The positioning strategies are as follows.

(a) Continue to develop tourism and service businesses that can create sustainable added-value and distribute benefits to all parties. Continuously develop high-potential products and services with local wisdom and innovation.

(b) Take advantage of the special economic zone and the linkage with the GMS, BIMSTEC, and AEC to expand the regional economic base.

(c) Become a production base for organic and safe agriculture. Create an integration with the agricultural processing industry that creates high added-value.

(d) Improve the quality of life. Reduce poverty. Develop a participatory elderly care system for families and communities. Enhance the skills of workers in the service sector.

(e) Conserve and restore watershed forests. Provide an appropriate water management system, covering all agricultural areas. Prevent and solve the problem of haze pollution in a sustainable way.



## (2) Central region

Target: establish Bangkok as a modern metropolis and develop the Central region into a production base for high-value products and services. The positioning strategies are as follows.

(a) Develop Bangkok as a modern metropolis along with improving the quality of life and solving urban environmental problems.

(b) Improve the quality of Thai tourist attractions that are internationally famous. Build connections to expand tourism across the region.

(c) Enhance the production of agricultural and industrial products by using innovative technology and creativity to create sustainable competitiveness.

(d) Carry out water and natural resource management to solve flooding and drought problems and maintain a sustainable ecological balance.

(e) Open the door to trade, investment, and tourism. Create a connection between the Dawei Special Economic Zone, the Central region, and the Eastern Economic Corridor.

(f) Develop economic and social connections with all sectors in order to strengthen stability and reduce inequality within the country.

## (3) Northeastern region

Target: to become the economic hub of the Greater Mekong Subregion.

(a) Manage water to be sufficient for economic development and quality of life improvement in a sustainable way.

(b) Tackle poverty and improve the quality of life of low-income people in order to reduce social inequality.

(c) Strengthen the internal economic base along with solving natural resource and environmental problems.

(d) Carry out integrated tourism development.

(e) Take advantage of the transport networks that connect the key economic areas in the Central region with the Eastern Economic Corridor to develop new economic and urban areas within the region.

(f) Develop cooperation and take advantage of partnerships with neighboring countries to enhance economic strengths along the border and the economic corridors.

(4) Eastern region

Target: to become a major economic base.

(a) Develop the Eastern Economic Corridor as the best and most modern economic zone of ASEAN.

(b) Develop the Eastern region to become a major food hub that meets international quality standards.

(c) Improve the standard of tourism products and services.

(d) Develop border economic areas to become an economic gate that has linkage with neighboring countries in order to ensure sustainable growth.

(e) Accelerate the solving of critical natural resource problems. Establish a more efficient pollution management system.

(5) Southern region

Target: develop the Southern region as a world-renowned tourist resort, a center for rubber and oil palm production, and an economic city with extensive trade and investment linkage with various countries worldwide.

(a) Develop tourist sites in the region to become the world's leading tourist destinations.

(b) Develop the country's new rubber and palm oil processing businesses.

(c) Develop the production of key agricultural products in the region.

(d) Develop infrastructures to support tourism businesses, industrial area development, and world trade connection.

(6) Southern border region

Target: develop the Southern border region as the country's important source of agricultural production and agricultural processing industry and a

border trade and tourist hub that links between the Southern region, Malaysia, and Singapore.

(a) Develop agro industry and agricultural processing industry for the stability of the manufacturing sector.

(b) Develop Su-ngai Kolok and Betong as border trade and tourist city.

(c) Empower communities.

2) Criteria for formulating an annual government action plan of the province and provincial cluster<sup>2</sup>

The allocation of budgets to provinces and provincial clusters is carried out based on the criteria for formulating an annual government action plan of the province and provincial cluster, which have been continuously changed. The establishment of the Kor Bor Phor and the Or Kor Bor Phor resulted in the changes in provincial budgeting process. However, the details of the criteria addressed in the most urgent letters of the Office of the Public Sector Development Commission No. NoRo 1203.2/Wo 15 dated 11 August 2015 and No. NoRo (Kor Nor Jor) 1203.2/Wo 14 dated 9 August 2016 and the most urgent letter of the NESDB No. NoRo (Kor Bor Phor) 1112/Wo 6875 dated 20 December 2017, there are only slight changes, which can be divided into two parts as follows.

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<sup>2</sup> The name of the criteria has been changed each year from “the criteria and procedures for formulating a development action plan of the province and provincial cluster” in the fiscal year 2017 to “the criteria and procedures for formulating an annual government action plan of the province and provincial cluster” in the fiscal year 2018, and the above mentioned name in the fiscal year 2019.

- (1) The suitability of the project, according to the annual government action plan of the province and provincial cluster

The suitability of the project is assessed based on the criteria for formulating an annual government action plan of the province and provincial cluster set by the Kor Nor Jor. The direction and goal of the project must be in line with the provincial and provincial cluster development plans and there must be a link among the provincial and provincial cluster development plans and annual government action plans of the province and provincial cluster in terms of project ideas. There are quantitative and qualitative indicators and target values that are clearly defined at the project level. In addition, a list of things to do (Do) and not to do (Don't) is also determined. The details are as follows (Office of the Public Sector Development Commission, 2018, p. 9).

- (a) The project must comply with the objectives and development guidelines of the provincial and provincial cluster development plans.
- (b) There must be a link among the provincial and provincial cluster development plans and annual government action plans of the province and provincial cluster.
- (c) The project included in the annual government action plans of the province and provincial cluster must be consistent and integrated with the provincial and provincial cluster development plans.

The project proposed by the province and provincial cluster to be included in the annual government action plan and provided with financial support must comply with the following criteria<sup>3</sup>.

- (a) The project must be consistent with and linked to the provincial and provincial cluster development guideline. The Kor Bor Jor/Kor Bor Kor must prioritize the proposed projects before submitting them to the Or Kor Bor Phor, Kor Nor Jor, and Kor Bor Phor. The Kor Bor Phor, Kor Nor Jor, and Or Kor Bor Phor will make an approval based on the compliance with national policies and strategies,

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<sup>3</sup> Please see more details in the annual government action plan preparation form of the Office of the Public Sector Development Commission, 2018, pp. 8-26.

national action plans, national development directions, and potential and problems/needs of local people,

(b) The project plan must combine upstream, midstream, and downstream activities in order to solve local problems, create value to products, and enhance the potential of the province and provincial cluster in a sustainable way.

(c) The project must be valid and feasible in terms of methodology (operational methods and techniques) physical readiness (readiness of operational areas, personnel, risk management, and management procedures), budget (reasonableness of costs and benefits), and implementation period within each fiscal year. The positive and negative impacts of the project must be assessed. The Kor Bor Phor, Kor Nor Jor, and Or Kor Bor Phor will consider and approve only projects that have feasibility and readiness.

(d) The project must be worthwhile in the economic, social, security, natural resource, and environmental dimensions in terms of population size, number of farmers, agricultural areas, and income. Importantly, it must bring benefits to local people in the area.

(e) The project must provide complete information as required by the Kor Bor Phor. In the case of a construction project, the readiness of construction area and brief description must be submitted together with the confirmation document ensuring that the project can be carried out immediately after approval.

(f) The project must have a detailed cost estimate that can determine the suitability of the cost. The project will not be considered, if it does not have a detailed cost estimate.

(g) The project that requests investment budget must indicate an agency that is ready to bear the expenses that will be incurred in the next year. In addition, there must be a memorandum of agreement between the province/provincial cluster and that agency regarding budgeting requests and transfer of assets arising from project operations. The memorandum of agreement must be submitted together with the project proposal. The project proposal will not be considered, if there is no memorandum of agreement attached.

(h) The Kor Bor Jor/Kor Bor Kor can propose a project that takes longer than one year to complete by providing solid supporting reasons why that project needs continuous implementation and how a lack of continuous implementation can affect the achievement of the project. Moreover, a several-year project requires advanced preparations, such as environmental impact assessment (EIA) and construction drawing, to ensure that the project can be completed within the proposed time frame.

(i) The project that will conduct in areas that require authorization to enter, such as national parks and forests, must receive approval/permission from the landlord or responsible agency before submitting the proposal. An environmental impact assessment must also be carried out prior to proposal submission. This is to ensure that the project can be completed within the approved fiscal year. The project proposal will not be considered without the approval paper from the landlord or responsible agency and/or the environmental impact assessment report.

(j) The project must not: (1) The project must not focus on purchasing durable goods for distribution to the public, except in the case that the purchased durable goods are part of project activities that are in line with the development guideline of the province and provincial cluster. (2) The main objective of the project must not be associated with educational activities, training, and study trips. The target group of the project must not be government employees. An exception is made for some professional and security training and research activities that are conducted to solve major problems of the province and provincial cluster. However, the scope of those activities must not overlap with the missions of the Central government agencies. (3) The project must not consist of several sub-activities. All related activities should be integrated into a single project plan. (4) The project must not include overseas trips and activities, except the activities with foreign commitments for trade and investment negotiations, tourism, and relations with neighboring countries. The province and provincial cluster must prepare an operational plan that reflects the concrete benefits of overseas trips/activities. In case of no foreign commitment, the province and provincial cluster must demonstrate the worthiness of overseas trips/activities such as to increase the number of partner countries and to create

a strong bond among sister countries. A post-trip report must be prepared and submitted to the Or Kor Bor Phor, Kor Nor Jor, and Kor Bor Phor in order to assess whether the operations are in line with the provincial and provincial cluster development guidelines and whether the results are useful for the provincial and provincial cluster development.

(5) The projects must not be an expense for renovation or repairing of government buildings.

## (2) Budget allocation guidelines

The guidelines for the allocation of budget to the province and provincial cluster were under the responsibility of the Kor Nor Jor in the fiscal year 2017 and 2018 before being transferred to the Kor Bor Phor in the fiscal year 2019. Although the responsible agencies frequently change, the details of the guidelines are similar. There are only some minor changes, which can be classified into two parts as follows.

### (a) Budget allocation framework

The proportion of budget allocated to the province and provincial cluster is set at 70:30 according to the following criteria.

#### (a1) Provincial budget allocation framework

Provincial budget accounts for 70 percent of the fiscal year 2017 budget, the fiscal year 2018 budget, and the fiscal year 2019 budget. The components of provincial budget allocation are summarized in Table 2.20.

**Table 2.20** Comparing the Components of Provincial Budget Allocation in the Fiscal Year 2017, 2018, and 2019

Component	Weight	Weight	Weight
	(%)	(%)	(%)
	2017	2018	2019
1. Budget is allocated according to the population of each province ( Data from the Department of Provincial Administration, Ministry of Interior).	25	25	25
2. Budget is equally allocated to each province.	20	20	25

Component	Weight	Weight	Weight
	(%)	(%)	(%)
	2017	2018	2019
3. Budget is allocated according to the inverse of income per household of each province (Data from the National Statistical Office).	40	40	30
4. Budget is allocated based on gross provincial product (Data from the Office of the NESDB).	5	5	10
5. Budget is allocated based on the quality of provincial development plan (Data from the Office of the NESDB).	5	5	
6. Budget is allocated based on the efficiency of provincial budget management (Data from the Provincial Budget Office). The sub-criteria are as follows.			
- Result of disbursements at the end of fiscal year (30 points)	5	5	5
- Investment budget (30 points)			
- Transfers of budget (30 points)			
- Percentage of disbursement reserves (10 points)			
7. Budget is allocated based on the proportion of the poor in each province (Data from the Office of the NESDB).			5
Total	100	100	100

**Source:** Office of the Public Sector Development Commission, 2015, 2016; NESDB, 2017b.

Table 2.20 shows that the provincial budget allocation in the fiscal year 2019 started to place emphasis on allocating budget to the



poor. The fiscal year 2019 marked the first time the proportion of the poor is included in the criteria for provincial budget allocation.



## (a2) Provincial cluster budget allocation framework

Provincial cluster budget accounts for 30 percent of the fiscal year 2017 budget, the fiscal year 2018 budget, and the fiscal year 2019 budget. The allocation framework of each fiscal year is different. In the fiscal year 2019, provincial clusters were rearranged according to the Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster (No.3) dated 16 November 2017. As a result, each provincial cluster had to develop a new provincial cluster development plan and the efficiency of budget management could not be measured. The researcher summarized the components of provincial cluster budget allocation as shown in Table 2.21.

**Table 2.21** Comparing the Components of Provincial Cluster Budget Allocation in the Fiscal Year 2017, 2018, and 2019

Component	Weight (%) 2017	Weight (%) 2018	Weight (%) 2019
<b>Part 1 (50%)</b>			
1. Budget is allocated on an equal basis. The sum of the budgets of all provinces in the provincial cluster is used as the budget limit of that cluster.	50	50	50
<b>Part 2 (50%)</b>			
1. Budget is allocated based on the quality of provincial cluster development plan. (Data from the Office of the NESDB)	40	40	
2. Budget is allocated based on the efficiency of provincial cluster budget management (Data from the Provincial Budget Office).			
The sub-criteria are as follows.	10	10	
- Result of disbursements at the end of fiscal year (30 points)			

Component	Weight	Weight	Weight
	(%)	(%)	(%)
	2017	2018	2019
- Investment budget (30 points)			
- Transfers of budget (30 points)			
- Percentage of disbursement reserves (10 points)			
3. Budget is allocated based on gross provincial cluster product.			25
4. Budget is allocated based on the inverse of gross provincial cluster product per capita.			25
Total	100	100	100

**Source:** Office of the Public Sector Development Commission, 2015, 2016; NESDB, 2017b.

(b) Allocation of administration budget to the province and provincial cluster

Administration budget is included in the approved budget limit of each province and provincial cluster. The allocation of administration budget can be divided into three parts as follows.

(b1) Provincial administration budget

Provincial administration budget is allocated according to the size of the province, which consists of three elements: 1) the number of districts in the province (40 percent), 2) the population in the province (30 percent), and 3) the size of the provincial area (30 percent). Although the same criteria were used to determine the province size in the fiscal year 2017, 2018, and 2019, the results were different as shown in Table 2.22.

**Table 2.22** Comparing the Provincial Administration Budget Allocated Based on the Size of the Province

The Size of the Province	2017	2018	2019
1. Large provinces receive a budget of 10 million Baht	23	23	24
2. Medium province receive a budget of 9 million Baht	41	41	39
3. Small provinces receive a budget of 9 million Baht	12	12	13
Total	76	76	76

**Source:** Office of the Public Sector Development Commission, 2015, 2016; NESDB, 2017b.

(b2) Provincial cluster administration budget

Provincial cluster administration budget is allocated based on the original criteria (five million Baht per province).

(b3) Budget spending guidelines

Provincial and provincial cluster administration budget is allocated for performing administrative tasks in seven main areas as follows: (1) Organize a meeting with related parties regarding the formulation of provincial and provincial cluster development plans based on Section 53/1 and 53/2 of the State Administration Act B.E. 2534 and its amendments (No. 7) B.E. 2550. (2) Arrange a meeting with the Kor Bor Jor and Kor Bor Kor. (3) Carry out studies to formulate effective provincial and provincial cluster development strategies. (4) Survey the opinions of the people in the province according to Section 18 Paragraph 4 of the Royal Decree on Integrated Administration of Provinces and Provincial Clusters B.E. 2551 in order to investigate the needs, problems, and potential of the people and the readiness of the public and private sectors and the national strategies. (5) Develop management efficiency such as providing knowledge about the formulation of provincial and provincial development plans to the members of the Kor Bor Jor/Kor Bor Kor and related personnel, establishing a database system for formulating provincial and provincial development strategies, improving the quality of public administration, and creating a manual on the formulation of development plans. (6) Disseminate useful information, encourage related sectors to participate in the formulation of development

plans, and promote the implementation of the development plans. (7) Monitor and evaluate the results.

From the above information, it can be said that the allocation of budget to the province and provincial cluster must comply with the criteria set at the regional, provincial, and provincial cluster levels, reflected through provincial and provincial cluster development plans. The criteria and indicators of financial worthiness and the survey of local needs and problems make it possible to allocate the budget according to the needs of the people in a more accurate way. Moreover, the role of poverty in the allocation of provincial and provincial cluster budget is more clearly seen in the allocation criteria of the fiscal year 2019.

#### 2.5.1.4 The Development of Studies on Provincial and Provincial Cluster Administration

Research studies on provincial and provincial cluster administration have been continually developed since the concept of CEO administration was adopted in Thailand. According to the literature review, there are many research studies investigating the administration of provinces and provincial clusters in Thailand, which can be divided into two groups as follows.

- 1) Studies conducted before the promulgation of the Royal Decree on Integrated Administration of Provinces and Provincial Clusters B.E. 2551

After the Cabinet agreed to establish 19 provincial clusters, most researchers focused on studying the development planning and budgeting process at the provincial and provincial cluster levels. Prince Damrong Rajanupab Institute (2005, pp. (1)-(10)) attempted to demonstrate the process of formulating provincial and provincial development strategic plans based on the requirements of the Office of the Public Sector Development Commission and also conducted the fieldwork at the provincial and provincial levels to study the actual implementation. The results of this research reflect four problems concerning the administration of provinces and provincial clusters: 1) the lack of support agencies at the operational level, 2) the lack of a provincial cluster working group and a cluster leader (CEO) to integrate the operations in the provincial cluster, 3) the inappropriate clustering of provinces that pays no attention to geographical characteristics, 4) the lack of budget integration

between Central and local government organizations, making the allocation of budget is conducted based on mission-based concept rather than strategy-based approach, and 5) the lack of holistic strategy to reflect the direction of provincial and provincial cluster development.

Rungtip Lakdee (2008, p. D) also carried out a study entitled “The formulation of provincial plan and budgeting process of Chiang Mai Governor’s Office in pursuant to the enactment of the State Administration Act B.E. 2550 (No. 7).” Based on the State Administration Act B.E. 2550 (No. 7), the province has duties to formulate a provincial development plan and the province and provincial cluster are considered as government agencies that can propose a budget request for provincial development. The duties and responsibilities of the province in this act was revised in accordance with the Constitution of the Kingdom of Thailand B.E. 2550, which stated that the province must formulate a development plan and obtain provincial development budget. This research study suggested the factors affecting the formulation of provincial plan and budgeting process of Chiang Mai Governor's Office. The findings indicated that time constraints in the formulation of provincial plan and budgeting process can lead to the incomplete and incomprehensive provincial plan.

Sudjai Saadying, Thanik Namwattana, and Darun Pundoangnetr (2009, pp. 183-184) studied the process of formulating provincial cluster development plans in the Thai-Cambodia border area in the lower Northeastern region. This study demonstrated all procedures related to the process of formulating provincial cluster development plans and also suggested who should participate in this process. The participatory development approach was adopted to explain how to participate in the formulation of provincial development plans.

Prayuth Swadriokul (2009), who studied the provincial budget management in the strategic performance-based budgeting system, similarly suggested that provincial budget problems and obstacles tend to result from time constraints, lack of public participation in the formulation of community plans at the district level, and lack of cooperation from the private sector.

Thus, it can be concluded that research studies conducted prior to the promulgation of the Royal Decree on Integrated Administration of Provinces and Provincial Clusters B.E. 2551 mostly focus on the process and procedures of provincial

plan formulation, followed by participation in provincial plan formulation. Each of them tries to demonstrate the problems and obstacles to the administration of provinces and provincial clusters. The findings of each study are in a consistent direction.

2) Studies conducted after the promulgation of the Royal Decree on Integrated Administration of Provinces and Provincial Clusters B.E. 2551

After the promulgation of the Royal Decree on Integrated Administration of Provinces and Provincial Clusters B.E. 2551, some studies still place emphasis on the process of provincial development plan formulation, while many studies have started to focus more on other dimensions. Farat Somsaen (2012, pp. 235-238) conducted a comparative study on the budgeting process at the provincial level and the participation of the people sector prior to and after the Royal Decree on Integrated Provincial and Provincial Cluster Administration B.E. 2551 (2008) by focusing on the budgeting procedures and public participation in provincial plan formulation. The results showed that the Royal Decree on Integrated Provincial and Provincial Cluster Administration was promulgated to solve legal limitations and facilitate integrated provincial and provincial cluster administration. The province and provincial cluster can create their own development plan and annual action plan and are allowed to directly submit a budget proposal. Representatives from related sectors are encouraged to join the brainstorming and formation of provincial plans as committee members. The pattern of participation is limited and inconsistent with the autonomous principles. The qualifications of the committee members are also clearly determined because they can affect the reliability of the proposal.

Similarly, Ubolrath Pongpinyo (2014, p. i) studied the participation process of the Integrated Provincial Administration Committee according to the Royal Decree on Integrated Administration of Provinces and Provincial Clusters B.E. 2551 in Phayao Province. This study did not focus on the participation process at the macro level but only paid attention to the participation of the Integrated Provincial Administration Committee. The results showed that the members of the Integrated Provincial Administration Committee are highly understand the participation process and can use various management tools such as McKinsey's 7s model and SWOT analysis. Law is the most important factor of the participation process.

For the studies that place more importance on other dimensions rather than budgeting process and participation in provincial development planning, Jate Dittaudom (2014, pp. 128-140) carried out a study entitled “Public Spending Effects on Quality of Life: A Provincial-Level Analysis” to examine the quality of life of the people at the provincial level and to investigate the effects of public spending and fiscal institutional arrangement on the quality of life of the people. The overall results indicated that public spending has no direct effect on the quality of life of the people at the provincial level because the criteria used to establish government agencies and determine government personnel and government budget allocation are not consistent with the actual problems and needs of the people at the provincial level. This study also suggested that the administrative structure and budget allocation process should be reviewed and revised at the provincial level.

Due to the suggestion of the above study, Narong Rakroin (2018, pp. 65-68) studied the development of regional administrative structures in Thailand and compare the establishment of provincial clusters and regions. This study presented the needs for establishing responsible agencies at the regional level and also highlighted the importance of relationships among provincial clusters and regions. The region has duties to ensure that all provincial clusters follow the same development direction.

From the above information, it can be said that research studies conducted after the enactment of the Royal Decree on Integrated Administration of Provinces and Provincial Clusters B.E. 2551 still pay attention to provincial plan formulation process and participation. However, some of them turn to focusing on other dimensions. Some of them carry out a comparative study, while some place importance on the administrative structure and the outcome of budget allocation.

According to the review of relevant research, it can be seen that most research studies on the administration of provinces and provincial clusters give importance to provincial plan formulation process and participation. Although in the later period there are some studies paying attention to the comparative dimension and the structure of provincial administration, most of them are descriptive and not analytical. There is research on the effects of provincial budget allocation. The study of Jate Dittaudom (2014) aims to examine the quality of life of the people. However, there



is no study directly addressing comprehensive solutions of poverty. Therefore, the present research intends to study the allocation of provincial and provincial cluster budget to solve multidimensional poverty and to find measures to tackle multidimensional poverty through budget allocation in an effective way.



## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

This research has four main objectives: 1) to study the status of multidimensional poverty in Thailand based on TPMAP, 2) to investigate the government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters based on TPMAP, 3) to examine the relationships between the status of multidimensional poverty and the government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters, and 4) to propose the policies for solving the problem of multidimensional poverty in Thailand. The obtained results can be used as a guideline for developing appropriate policies to solve poverty-related problems and issues in Thailand based on empirical data. The conceptual framework of this study was developed according to the literature review. The details of research methodology are described below:

#### **3.1 Research Design**

A qualitative research design is employed in this study. The documentary research technique is mainly used to collect secondary data regarding the status of multidimensional poverty based on TPMAP, government policies on multidimensional poverty alleviation, and appropriate multidimensional poverty reduction measures in order to obtain the results that can be practically applied to develop effective policies to tackle poverty in Thailand. Both descriptive and explanatory research designs were adopted. The research procedure are as follows.

##### **3.1.1 Documentary Research:**

The documentary research method was applied to study the concepts, theories, and information related to multidimensional poverty, government policies on multidimensional poverty alleviation, and multidimensional poverty statistics under

five main areas (healthcare, education, living standard, access to public services, and income) that were recorded in secondary sources, including interviews, reviews, articles, academic conference reports, and research papers.

The researcher also collected data from related laws, regulations, notifications, letters of the Office of the Public Sector Development Commission and the NESDB, and websites containing information about multidimensional poverty alleviation policies. The collected data included the Revised Expenditure Budget according to the Budget Expenditure Act for the Fiscal Year 2016-2019, the Royal Decree on Integrated Administration of Provinces and Group of Provinces B.E. 2551, the Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster (No. 3), the most urgent letters of the Office of the Public Sector Development Commission No. NoRo 1203.2/Wo 15 dated 11 August 2015 and No. NoRo (Kor Nor Jor) 1203.2/Wo 14 dated 9 August 2016, the most urgent letter of the NESDB No. NoRo (Kor Bor Phor) 1112/Wo 6875 dated 20 December 2017, and the information in the official website of TPMAP.

### **3.1.2 Data Processing:**

The data obtained from the documentary research were processed and analyzed in order to answer the research questions that were predetermined.

## **3.2 Unit of Study**

The unit of study is the 76 provinces included in TPMAP's multidimensional poverty survey. These 76 provinces are categorized into 18 clusters and six regions according to the Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster dated 18 February 2009 and the Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster (No. 3) dated 16 November, 2017.

### 3.3 Data Collection

The documentary research is carried out to collect data from related research papers and documents. The research collection period was five months (June to October 2020).

### 3.4 Data Analysis

The data analysis is divided into two steps as follows:

1) The 2017-2019 multidimensional poverty statistics of TPMAP were analyzed together with the data collected from related documents and official websites of relevant government agencies in order to obtain the results about the status of multidimensional poverty in Thailand.

2) The data collected from related laws, regulations, announcements, and letters, including the Revised Expenditure Budget according to the Budget Expenditure Act for the Fiscal Year 2016-2019, the Royal Decree on Integrated Administration of Provinces and Group of Provinces B.E. 2551, the Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster (No. 3), the most urgent letters of the Office of the Public Sector Development Commission No. NoRo 1203.2/Wo 15 dated 11 August 2015 and No. NoRo (Kor Nor Jor) 1203.2/Wo 14 dated 9 August 2016, the most urgent letter of the NESDB No. NoRo (Kor Bor Phor) 1112/Wo 6875 dated 20 December 2017, were analyzed to gain the results about multidimensional poverty alleviation policies. Then these results were further analyzed together with the status of multidimensional poverty in Thailand in order to find appropriate policies for dealing with multidimensional poverty in the Thai context.

## CHAPTER 4

### RESULTS

The results of this research are divided into the following three parts:

- 1) The status of multidimensional poverty in Thailand based on TPMAP.
- 2) Government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters based on TPMAP.
- 3) The relationship between the status of multidimensional poverty and government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters.

#### **4.1 The Status of Multidimensional Poverty in Thailand Based on TPMAP**

TPMAP (2019) can analyze poverty data from multiple sources through data integration, which leads to a more accurate identification of “target poor people” that are deprived in each relevant dimension. The number of poor people deprived of basic minimum needs who have registered for a state welfare card was used to calculate the multidimensional poverty index and identify the target poor people that need urgent assistance in the form of a cartographic map. TPMAP’s multidimensional poverty indicators are classified into five dimensions: 1) healthcare, 2) education, 3) living standards, 4) access to public services, and 5) income. The details of each indicator are presented in Table 2.14. The researcher organized the contents of this section into two parts: 1) An overview of Thailand’s multidimensional poverty, and; 2) the status of poverty according to each dimension.

##### **4.1.1 Overview of Thailand’s Multidimensional Poverty**

The researcher used the number of poor people classified as deprived in TPMAP database from 2017-2019 to analyze the overall status of multidimensional poverty in Thailand. The details are summarized in Table 4.1.

**Table 4.1** Proportion of Multidimensionally Poor People from 2017-2019 Classified by Provinces

Province	Proportion of poor people in 2017	Proportion of poor people in 2018	Proportion of poor people in 2019
<b>Krabi</b>	0.88	0.80	1.08
<b>Kanchanaburi</b>	1.57	1.12	0.83
<b>Kalasin</b>	0.98	1.28	1.31
<b>Kamphaengphet</b>	1.59	1.64	1.16
<b>Khon Kaen</b>	2.44	2.43	2.09
<b>Chanthaburi</b>	0.48	0.50	0.57
<b>Chachoengsao</b>	0.74	0.59	0.73
<b>Chonburi</b>	0.51	0.55	0.59
<b>Chainat</b>	0.47	0.39	0.27
<b>Chaiyaphum</b>	2.08	2.32	2.31
<b>Chumphon</b>	0.50	0.41	0.41
<b>Chiang Rai</b>	4.00	3.82	4.14
<b>Chiang Mai</b>	4.76	5.22	5.11
<b>Trang</b>	1.24	1.33	1.23
<b>Trat</b>	0.19	0.19	0.18
<b>Tak</b>	1.74	2.18	2.83
<b>Nakhon Nayok</b>	0.30	0.26	0.33
<b>Nakhon Pathom</b>	0.57	0.33	0.38
<b>Nakhon Phanom</b>	1.34	0.80	1.31
<b>Nakhon Ratchasima</b>	4.16	5.06	3.50
<b>Nakhon Si Thammarat</b>	3.04	3.34	3.99
<b>Nakhon Sawan</b>	1.90	1.89	2.10
<b>Nonthaburi</b>	0.37	0.34	0.28
<b>Narathiwat</b>	2.35	2.11	1.76
<b>Nan</b>	2.55	3.65	3.16
<b>Bueng Kan</b>	0.78	1.03	2.60

Province	Proportion of poor people in 2017	Proportion of poor people in 2018	Proportion of poor people in 2019
<b>Buriram</b>	3.32	3.49	4.04
<b>Pathum Thani</b>	0.49	0.52	0.35
<b>Prachuap Khiri Khan</b>	0.42	0.27	0.57
<b>Prachinburi</b>	0.66	0.60	0.51
<b>Pattani</b>	1.95	2.48	1.84
<b>Ayutthaya</b>	0.78	0.88	0.58
<b>Phayao</b>	1.27	0.67	0.66
<b>Phangnga</b>	0.34	0.34	0.28
<b>Phatthalung</b>	1.02	1.15	1.46
<b>Phichit</b>	1.09	1.39	0.99
<b>Phitsanulok</b>	2.37	2.54	2.33
<b>Phetchaburi</b>	0.69	0.51	0.54
<b>Phetchabun</b>	2.04	1.88	2.01
<b>Phrae</b>	0.91	0.65	0.52
<b>Phuket</b>	0.09	0.10	0.10
<b>Maharakham</b>	1.32	0.95	0.68
<b>Mukdahan</b>	0.40	0.28	0.46
<b>Mae Hong Son</b>	1.95	1.99	2.13
<b>Yasothon</b>	0.64	0.71	0.38
<b>Yala</b>	1.74	1.83	2.06
<b>Roi Et</b>	1.06	1.11	1.03
<b>Ranong</b>	0.17	0.26	0.19
<b>Rayong</b>	0.42	0.34	0.22
<b>Ratchaburi</b>	0.57	0.72	0.64
<b>Lopburi</b>	1.68	1.60	1.99
<b>Lampang</b>	2.09	1.71	1.60
<b>Lamphun</b>	1.26	0.78	0.75
<b>Loei</b>	1.34	1.72	0.75

Province	Proportion of poor people in 2017	Proportion of poor people in 2018	Proportion of poor people in 2019
<b>Sisaket</b>	4.01	3.74	3.66
<b>Sakon Nakhon</b>	2.09	1.72	1.57
<b>Songkhla</b>	1.71	1.39	1.78
<b>Satun</b>	1.11	1.27	2.19
<b>Samut Prakan</b>	0.58	0.69	0.91
<b>Samut Songkhram</b>	0.15	0.09	0.08
<b>Samut Sakhon</b>	0.50	0.48	0.66
<b>Sa Kaeo</b>	0.85	0.56	0.66
<b>Saraburi</b>	0.67	0.70	0.80
<b>Singburi</b>	0.18	0.27	0.34
<b>Sukhothai</b>	1.70	1.76	1.52
<b>Suphanburi</b>	1.12	1.23	1.44
<b>Surat Thani</b>	1.11	1.31	1.40
<b>Surin</b>	2.59	1.31	1.51
<b>Nong Khai</b>	0.69	0.48	0.22
<b>Nong Bua Lam Phu</b>	0.36	0.12	0.20
<b>Angthong</b>	0.64	0.60	0.53
<b>Amnat Charoen</b>	0.26	0.40	0.18
<b>Udon Thani</b>	2.32	2.56	2.87
<b>Uttaradit</b>	0.87	1.07	0.79
<b>Uthai Thani</b>	0.62	0.56	0.41
<b>Ubon Ratchathani</b>	2.26	2.68	2.33

**Note:** the proportion of poor people is based on the number of poor people in each province compared to the total number of poor people who are classified as deprived according to the basic minimum need survey and register for the state welfare card in that year.

Table 4.1 shows the proportion of multidimensionally poor people in 76 provinces, excluding Bangkok. The information can be classified by years as follows.



In 2017, the top five provinces with the highest proportion of poor people were Chiang Mai (4.76%), Nakhon Ratchasima (4.16%), Sisaket (4.01%), Chiang Rai (4.00%), and Buriram (3.32%). The five provinces with the lowest proportion of poor people included Phuket (0.09%), Samut Songkhram (0.15%), Ranong (0.17%), Singburi (0.18%), and Trat (0.19%).

In 2018, the top five provinces with the highest proportion of poor people included Chiang Mai (5.22%), Nakhon Ratchasima (5.06%), Chiang Rai (3.82%), Sisaket (3.74%), and Nan (3.65%). The five provinces with the lowest proportion of poor people were Samut Songkhram (0.09%), Phuket (0.10%), Nong Bua Lam Phu (0.12%), Trat (0.19%), and Nakhon Nayok (0.26%).

In 2019, the top five provinces with the highest proportion of poor people included Chiang Mai (5.11%), Chiang Rai (4.14%), Buriram (4.04%), Nakhon Si Thammarat (3.99%), and Sisaket (3.66%). The five provinces with the lowest proportion of poor people included Samut Songkhram (0.08%), Phuket (0.10%), Trat and Amnat Charoen (0.18%), Ranong (0.19%), and Nong Bua Lam Phu (0.20%).

When comparing the five highest-poverty provinces over the three years, Chiang Mai had the highest proportion of poor people for three consecutive years and its poverty proportion continued to increase, while the poverty proportion of the other four provinces decreased in 2018 and increased again in 2019. There was almost no change in the list of the poorest provinces from 2017-2019. For the five least poor provinces, Phuket, which was the lowest-poverty province in 2017, was replaced by Samut Songkhram in 2018 and 2019. The proportion of poor people in these two provinces were not much different. In addition, there was no major difference in the proportion of poor people in other low-poverty provinces. Each of them had a similar number of poor people.

A comparison of the proportion of multidimensionally poor people is shown in Figure 4.1.



The proportion of multidimensionally poor people in 18 provincial clusters, classified according to the Notification on the Establishment of the Provincial Clusters and the Center of the Cluster dated 16 November 2017, are presented in Table 4.2.

**Table 4.2** Proportion of Multidimensionally Poor People from 2017-2019 Classified by Provincial Clusters

Cluster	Province	Proportion of poor people in 2017	Proportion of poor people in 2018	Proportion of poor people in 2019
<b>Upper</b>	Chainat	10.69	8.86	6.07
<b>Central</b>	Ayutthaya	17.55	19.72	12.88
	Lopburi	38.06	36.02	44.09
	Saraburi	15.12	15.77	17.67
	Singburi	4.07	6.09	7.55
	Angthong	14.51	13.54	11.74
<b>Middle</b>	Nakhon Pathom	28.19	17.71	19.68
<b>Central</b>	Nonthaburi	18.31	17.88	14.68
	Pathum Thani	24.49	27.81	18.18
	Samut Prakan	29.02	36.60	47.46
<b>Lower</b>	Kanchanaburi	48.00	36.54	28.50
<b>Central</b>	Ratchaburi	17.60	23.49	21.92
<b>1</b>	Suphanburi	34.40	39.97	49.57
<b>Lower</b>	Prachuap Khiri Khan	23.78	20.00	30.70
<b>Central</b>	Phetchaburi	39.18	37.95	29.32
<b>2</b>	Samut Songkhram	8.50	6.45	4.12
	Samut Sakhon	28.54	35.60	35.86
<b>South</b>	Chumphon	5.87	4.57	3.68
<b>(Gulf of</b>	Nakhon Si Thammarat	35.84	37.68	35.53
<b>Thailand)</b>	Phatthalung	12.02	12.96	12.99
	Songkhla	20.12	15.71	15.82
	Satun	13.13	14.35	19.49

Cluster	Province	Proportion of poor people in 2017	Proportion of poor people in 2018	Proportion of poor people in 2019
	Surat Thani	13.02	14.73	12.50
<b>South</b>	Krabi	32.31	28.23	37.46
<b>(Andaman Coast)</b>	Trang	45.66	46.98	42.71
	Phangnga	12.58	12.05	9.83
	Phuket	3.33	3.50	3.57
	Ranong	6.11	9.24	6.44
<b>Southern Border</b>	Narathiwat	38.85	32.85	31.09
	Pattani	32.33	38.64	32.52
	Yala	28.82	28.51	36.39
<b>East 1</b>	Chachoengsao	44.11	39.96	47.67
	Chonburi	30.55	37.11	38.22
	Rayong	25.34	22.93	14.11
<b>East 2</b>	Chanthaburi	19.21	23.87	25.20
	Trat	7.74	8.89	8.11
	Nakhon Nayok	12.08	12.28	14.55
	Prachinburi	26.59	28.46	22.71
	Sa Kaeo	34.38	26.50	29.43
<b>Upper Northeast 1</b>	Bueng Kan	14.16	17.43	39.14
	Loei	24.41	29.03	11.24
	Nong Khai	12.59	8.08	3.38
	Nong Bua Lam Phu	6.52	2.11	3.08
	Udon Thani	42.33	43.36	43.17
<b>Upper Northeast 2</b>	Nakhon Phanom	34.99	28.68	39.24
	Mukdahan	10.47	10.15	13.90
<b>Middle Northeast</b>	Sakon Nakhon	54.54	61.17	46.85
	Kalasin	16.94	22.20	25.71
	Khon Kaen	42.03	42.06	40.94
	Maharakham	22.75	16.48	13.26

Cluster	Province	Proportion of poor people in 2017	Proportion of poor people in 2018	Proportion of poor people in 2019
	Roi Et	18.29	19.26	20.09
<b>Lower</b>	Chaiyaphum	17.10	19.07	20.35
<b>Northeast</b>	Nakhon Ratchasima	34.28	41.51	30.81
<b>1</b>	Buriram	27.32	28.68	35.52
	Surin	21.30	10.74	13.32
<b>Lower</b>	Yasothon	8.89	9.50	5.85
<b>Northeast</b>	Sisaket	55.94	49.64	55.77
<b>2</b>	Amnat Charoen	3.58	5.25	2.80
	Ubon Ratchathani	31.59	35.61	35.58
<b>Upper</b>	Chiang Mai	47.32	53.82	53.29
<b>North 1</b>	Mae Hong Son	19.39	20.50	22.19
	Lampang	20.75	17.66	16.67
	Lamphun	12.54	8.01	7.85
<b>Upper</b>	Chiang Rai	45.81	43.46	48.85
<b>North 2</b>	Nan	29.21	41.51	37.22
	Phayao	14.60	7.62	7.80
	Phrae	10.38	7.41	6.14
<b>Lower</b>	Tak	19.98	23.12	29.85
<b>North 1</b>	Phitsanulok	27.16	26.92	24.60
	Phetchabun	23.43	20.01	21.14
	Sukhothai	19.45	18.63	16.06
	Uttaradit	9.98	11.32	8.36
<b>Lower</b>	Kamphaengphet	30.60	29.91	24.88
<b>North 2</b>	Nakhon Sawan	36.58	34.49	45.12
	Phichit	20.97	25.40	21.30
	Uthai Thani	11.84	10.21	8.71

**Note:** the proportion of poor people is based on the number of poor people in each cluster compared to the total number of poor people who are classified as deprived

according to the basic minimum need survey and register for the state welfare card in that year.

The proportion of multidimensionally poor people in 18 provincial clusters shown in Table 4.1 can be analyzed as follows.

In 2017, in the upper Central cluster, Lopburi had the highest proportion of poor people (38.06%), followed by Ayutthaya (17.55%), Saraburi (15.12%), Angthong (14.51%), Chainat (10.69%), and Singburi (4.07%).

In the middle Central cluster, Samut Prakan had the highest proportion of poor people (29.02%), followed by Nakhon Pathom (28.19%), Pathum Thani (24.49%), and Nonthaburi (18.31%).

In the lower Central cluster 1, Kanchanaburi had the highest proportion of poor people (48.00%), followed by Suphanburi (34.40%), and Ratchaburi (17.60%).

In the lower Central cluster 2, Phetchaburi had the highest proportion of poor people (39.18%), followed by Samut Sakhon (28.54%), Prachuap Khiri Khan (23.78%), and Samut Songkhram (8.50%).

In the Southern cluster (Gulf of Thailand), Nakhon Si Thammarat had the highest proportion of poor people (35.84%), followed by Songkhla (20.12%), Satun (13.13%), Surat Thani (13.02%), Phatthalung (12.02%), and Chumphon (5.87%).

In the Southern cluster (Andaman Coast), Trang had the highest proportion of poor people (45.66%), followed by Krabi (32.31%), Phangnga (12.58%), Ranong (6.11%), and Phuket (3.33%).

In the Southern border cluster, Narathiwat had the highest proportion of poor people (38.85%), followed by Pattani (32.33%), and Yala (28.82%).

In the Eastern cluster 1, Chachoengsao had the highest proportion of poor people (44.11%), followed by Chonburi (30.55%), and Rayong (25.34%).

In the Eastern cluster 2, Sa Kaeo had the highest proportion of poor people (34.38%), followed by Prachinburi (26.59%), Chanthaburi (19.21%), Nakhon Nayok (12.08%), and Trat (7.74%).

In the upper Northeastern cluster 1, Udon Thani had the highest proportion of poor people (42.33%), followed by Loei (24.41%), Bueng Kan (14.16%), Nong Khai (12.59%), and Nong Bua Lam Phu (6.52%).

In the upper Northeastern cluster 2, Sakon Nakhon had the highest proportion of poor people (54.54%), followed by Nakhon Phanom (34.99%), and Mukdahan (10.47%).

In the middle Northeastern cluster, Khon Kaen had the highest proportion of poor people (42.03%), followed by Mahasarakham (22.75%), Roi Et (18.29%), and Kalasin (16.94%).

In the lower Northeastern cluster 1, Nakhon Ratchasima had the highest proportion of poor people (34.28%), followed by Buriram (27.32%), Surin (21.30%), and Chaiyaphum (17.10%).

In the lower Northeastern cluster 2, Sisaket had the highest proportion of poor people (55.94%), followed by Ubon Ratchathani (31.59%), Yasothon (8.89%), and Amnat Charoen (3.58%).

In the upper Northern cluster 1, Chiang Mai had the highest proportion of poor people (47.32%), followed by Lampang (20.75%), Mae Hong Son (19.39%), and Lamphun (12.54%).

In the upper Northern cluster 2, Chiang Rai had the highest proportion of poor people (45.81%), followed by Nan (29.21%), Phayao (14.60%), and Phrae (10.38%).

In the lower Northern cluster 1, Phitsanulok had the highest proportion of poor people (27.16%), followed by Phetchabun (23.43%), Tak (19.98%), Sukhothai (19.45%), and Uttaradit (9.98%).

In the lower Northern cluster 2, Nakhon Sawan had the highest proportion of poor people (36.58%), followed by Kamphaengphet (30.60%), Phichit (20.97%), and Uthai Thani (11.84%).

In 2018, in the upper Central cluster, Lopburi had the highest proportion of poor people (36.02%), followed by Ayutthaya (19.72%), Saraburi (15.77%), Angthong (13.54%), Chainat (8.86%), and Singburi (6.09%).

In the middle Central cluster, Samut Prakan had the highest proportion of poor people (36.60%), followed by Pathum Thani (27.81%), Nonthaburi (17.88%), and Nakhon Pathom (17.71%).

In the lower Central cluster 1, Suphanburi had the highest proportion of poor people (39.97%), followed by Kanchanaburi (36.54%), and Ratchaburi (23.49%).

In the lower Central cluster 2, Phetchaburi had the highest proportion of poor people (37.95%), followed by Samut Sakhon (35.60%), Prachuap Khiri Khan (20.00%), and Samut Songkhram (6.45%).

In the Southern cluster (Gulf of Thailand), Nakhon Si Thammarat had the highest proportion of poor people (37.68%), followed by Songkhla (15.71%), Surat Thani (14.73%), Satun (14.35%), Phatthalung (12.96%), and Chumphon (4.57%).

In the Southern cluster (Andaman Coast), Trang had the highest proportion of poor people (46.98%), followed by Krabi (28.23%), Phangnga (12.05%), Ranong (9.24%), and Phuket (3.50%).

In the Southern border cluster, Pattani had the highest proportion of poor people (38.64%), followed by Narathiwat (32.85%), and Yala (28.51%).

In the Eastern cluster 1, Chachoengsao had the highest proportion of poor people (39.96%), followed by Chonburi (37.11%), and Rayong (22.93%).

In the Eastern cluster 2, Prachinburi had the highest proportion of poor people (28.46%), followed by Sa Kaeo (26.50%), Chanthaburi (23.87%), Nakhon Nayok (12.28%), and Trat (8.89%).

In the upper Northeastern cluster 1, Udon Thani had the highest proportion of poor people (43.36%), followed by Loei (29.03%), Bueng Kan (17.43%), Nong Khai (8.08%), and Nong Bua Lam Phu (2.11%).

In the upper Northeastern cluster 2, Sakon Nakhon had the highest proportion of poor people (61.17%), followed by Nakhon Phanom (28.68%), and Mukdahan (10.15%).

In the middle Northeastern cluster, Khon Kaen had the highest proportion of poor people (42.06%), followed by Kalasin (22.20%), Roi Et (19.26%), and Mahasarakham (16.48%).

In the lower Northeastern cluster 1, Nakhon Ratchasima had the highest proportion of poor people (41.51%), followed by Buriram (28.68%), Chaiyaphum (19.07%), and Surin (10.74%).

In the lower Northeastern cluster 2, Sisaket had the highest proportion of poor people (49.64%), followed by Ubon Ratchathani (35.61%), Yasothon (9.50%), and Amnat Charoen (5.25%).



In the upper Northern cluster 1, Chiang Mai had the highest proportion of poor people (53.82%), followed by Mae Hong Son (20.50%), Lampang (17.66%), and Lamphun (8.01%).

In the upper Northern cluster 2, Chiang Rai had the highest proportion of poor people (43.46%), followed by Nan (41.51%), Phayao (7.62%), and Phrae (7.41%).

In the lower Northern cluster 1, Phitsanulok had the highest proportion of poor people (26.92%), followed by Tak (23.12%), Phetchabun (20.01%), Sukhothai (18.63%), and Uttaradit (11.32%).

In the lower Northern cluster 2, Nakhon Sawan had the highest proportion of poor people (34.49%), followed by Kamphaengphet (29.91%), Phichit (25.40%), and Uthai Thani (10.21%).

In 2019, in the upper Central cluster, Lopburi had the highest proportion of poor people (44.09%), followed by Saraburi (17.67%), Ayutthaya (12.88%), Angthong (11.74%), Singburi (7.55%), and Chainat (6.07%).

In the middle Central cluster, Samut Prakan had the highest proportion of poor people (47.46%), followed by Nakhon Pathom (19.68%), Pathum Thani (18.18%), and Nonthaburi (14.68%).

In the lower Central cluster 1, Suphanburi had the highest proportion of poor people (49.57%), followed by Kanchanaburi (28.50%), and Ratchaburi (21.92%).

In the lower Central cluster 2, Samut Sakhon had the highest proportion of poor people (35.86%), followed by Prachuap Khiri Khan (30.70%), Phetchaburi (29.32%), and Samut Songkhram (4.12%).

In the Southern cluster (Gulf of Thailand), Nakhon Si Thammarat had the highest proportion of poor people (35.53%), followed by Satun (19.49%), Songkhla (15.82%), Phatthalung (12.99%), Surat Thani (12.50%), and Chumphon (3.68%).

In the Southern cluster (Andaman Coast), Trang had the highest proportion of poor people (42.71%), followed by Krabi (37.46%), Phangnga (9.83%), Ranong (6.44%), and Phuket (3.57%).

In the Southern border cluster, Yala had the highest proportion of poor people (36.39%), followed by Pattani (32.52%), and Narathiwat (31.09%).

In the Eastern cluster 1, Chachoengsao had the highest proportion of poor people (47.67%), followed by Chonburi (38.22%), and Rayong (14.11%).

In the Eastern cluster 2, Sa Kaeo had the highest proportion of poor people (29.43%), followed by Chanthaburi (25.20%), Prachinburi (22.71%), Nakhon Nayok (14.55%), and Trat (8.11%).

In the upper Northeastern cluster 1, Udon Thani had the highest proportion of poor people (43.17%), followed by Bueng Kan (39.14%), Loei (11.24%), Nong Khai (3.38%), and Nong Bua Lam Phu (3.08%).

In the upper Northeastern cluster 2, Sakon Nakhon had the highest proportion of poor people (46.85%), followed by Nakhon Phanom (39.24%), and Mukdahan (13.90%).

In the middle Northeastern cluster, Khon Kaen had the highest proportion of poor people (40.94%), followed by Kalasin (25.71%), Roi ET (20.09%), and Mahasarakham (13.26%).

In the lower Northeastern cluster 1, Buriram had the highest proportion of poor people (35.52%), followed by Nakhon Ratchasima (30.81%), Chaiyaphum (20.35%), and Surin (13.32%).

In the lower Northeastern cluster 2, Sisaket had the highest proportion of poor people (55.77%), followed by Ubon Ratchathani (35.58%), Yasothon (5.85%), and Amnat Charoen (2.80%).

In the upper Northern cluster 1, Chiang Mai had the highest proportion of poor people (53.29%), followed by Mae Hong Son (22.19%), Lampang (16.67%), and Lamphun (7.85%).

In the upper Northern cluster 2, Chiang Rai had the highest proportion of poor people (48.85%), followed by Nan (37.22%), Phayao (7.80%), and Phrae (6.14%).

In the lower Northern cluster 1, Tak had the highest proportion of poor people (29.85%), followed by Phitsanulok (24.60%), Phetchabun (21.14%), Sukhothai (16.06%), and Uttaradit (8.36%).

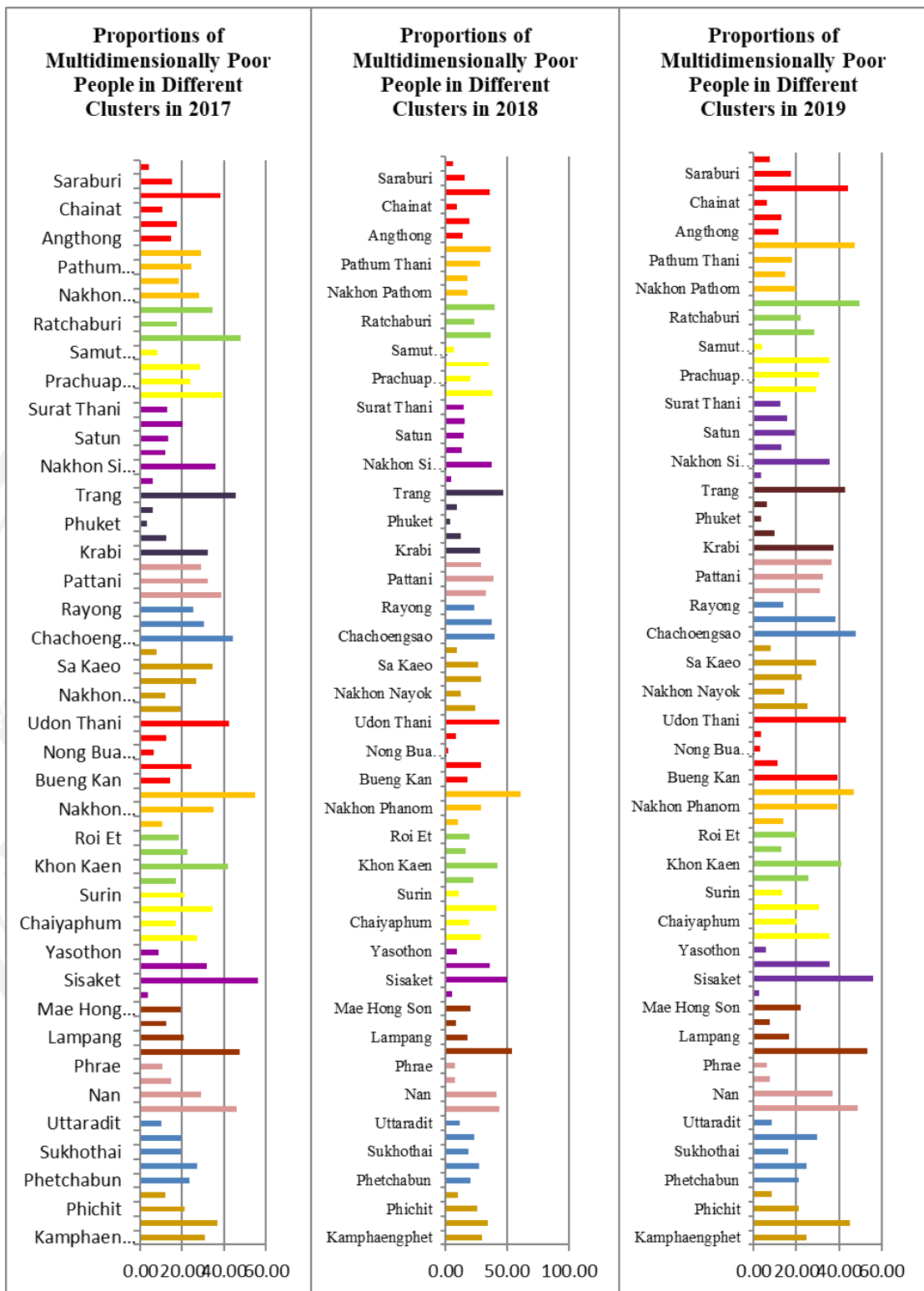
In the lower Northern cluster 2, Nakhon Sawan had the highest proportion of poor people (45.12%), followed by Kamphaengphet (24.88%), Phichit (21.30%), and Uthai Thani (8.71%).

The study finds that the Southern cluster (Andaman Coast), the Eastern cluster 1, the upper Northeastern cluster 1, the upper Northeastern cluster 2, the lower Northeastern cluster 2, the upper Northern cluster 1, and the lower Northern cluster 2

provincial clusters had no change in the list of the highest poverty provinces. Other provincial clusters were found to have some changes in the list of the highest poverty provinces. However, among the clusters with some changes in the list of the highest poverty provinces, Yala in the Southern border cluster changed from the lowest-poverty province in 2017 and 2018 to the highest-poverty province in 2019.

A comparison of the proportion of multidimensionally poor people classified by provincial clusters is shown in Figure 4.2.





**Figure 4.2** Comparing the Proportion of Multidimensionally Poor People in Different Clusters from 2017-2019

### 4.1.2 The Status of Poverty in Each Dimension

TPMAP measures poverty according to five dimensions: 1) healthcare, 2) education, 3) living standards, 4) access to public services, and 5) income. The indicators of each dimension are shown in Table 2.14. The status of poverty in these five dimensions from 2017-2019 can be summarized as follows.

#### 4.1.2.1 Healthcare

TPMAP uses the survey-based basic minimum need data to identify the poor. According to the basic minimum need survey, there are seven health indicators, which include:

- 1) The weight of a newborn baby is not less than 2,500 grams.
- 2) A newborn baby is breastfed at least the first 6 months.
- 3) Newborn to 12-year-old children are given vaccines.
- 4) Everybody in the household has clean and safe food.
- 5) Everybody in the household uses medicines in a suitable manner.
- 6) Household members aged 35 years old up have an annual health check.
- 7) Household members aged 6 years old up do exercise at least three days a week (30 minutes/day).

TPMAP adopts only four indicators (1, 4, 5, and 7) to measure poverty according to the dimension of health. The number of poor people classified as deprived according to the dimension of health from 2017-2019 was used to analyze the overview of health poverty in Thailand. The details are shown in Table 4.3.

**Table 4.3** Proportion of Health-Deprived People from 2017-2019 Classified by

Provinces			
Province	Proportion of health-deprived people in 2017	Proportion of health-deprived people in 2018	Proportion of health-deprived people in 2019
Krabi	0.92	0.94	1.07
Kanchanaburi	1.48	1.19	0.74
Kalasin	0.47	0.61	0.67
Kamphaengphet	1.91	2.00	1.31
Khon Kaen	2.21	1.90	1.12
Chanthaburi	0.57	0.58	0.64
Chachoengsao	0.84	0.67	0.69
Chonburi	0.44	0.47	0.38
Chainat	0.16	0.07	0.01
Chaiyaphum	2.08	2.29	2.12
Chumphon	0.91	0.69	0.83
Chiang Rai	4.37	3.71	3.78
Chiang Mai	5.66	8.44	4.72
Trang	0.95	1.28	0.96
Trat	0.34	0.15	0.09
Tak	2.06	2.80	3.06
Nakhon Nayok	0.19	0.17	0.23
Nakhon Pathom	0.80	0.37	0.63
Nakhon Phanom	2.14	1.12	2.67
Nakhon Ratchasima	3.70	4.40	4.22
Nakhon Si Thammarat	2.61	3.25	3.55
Nakhon Sawan	1.91	1.58	1.50
Nonthaburi	0.51	0.38	0.29
Narathiwat	1.40	1.49	1.32
Nan	2.87	5.94	4.94
Bueng Kan	1.13	1.09	7.50

<b>Province</b>	<b>Proportion of health-deprived people in 2017</b>	<b>Proportion of health-deprived people in 2018</b>	<b>Proportion of health-deprived people in 2019</b>
<b>Buriram</b>	2.91	2.36	2.96
<b>Pathum Thani</b>	0.39	0.53	0.38
<b>Prachuap Khiri Khan</b>	0.66	0.29	0.51
<b>Prachinburi</b>	0.77	0.39	0.28
<b>Pattani</b>	0.98	1.84	1.69
<b>Ayutthaya</b>	0.46	0.32	0.11
<b>Phayao</b>	1.72	0.68	1.04
<b>Phangnga</b>	0.27	0.21	0.25
<b>Phatthalung</b>	0.84	0.73	0.62
<b>Phichit</b>	0.84	1.03	0.71
<b>Phitsanulok</b>	2.48	2.86	2.48
<b>Phetchaburi</b>	0.81	0.46	0.41
<b>Phetchabun</b>	2.02	1.73	1.08
<b>Phrae</b>	0.61	0.54	0.50
<b>Phuket</b>	0.16	0.09	0.12
<b>Maharakham</b>	2.14	1.06	0.50
<b>Mukdahan</b>	0.26	0.39	0.56
<b>Mae Hong Son</b>	1.50	1.83	1.08
<b>Yasothon</b>	0.47	0.42	0.29
<b>Yala</b>	1.55	2.15	1.45
<b>Roi Et</b>	0.90	0.72	0.26
<b>Ranong</b>	0.16	0.26	0.20
<b>Rayong</b>	0.57	0.41	0.32
<b>Ratchaburi</b>	0.31	0.36	0.31
<b>Lopburi</b>	1.92	2.01	2.51
<b>Lampang</b>	2.34	1.55	1.33
<b>Lamphun</b>	1.90	1.10	0.94
<b>Loei</b>	1.47	1.16	1.56

<b>Province</b>	<b>Proportion of health-deprived people in 2017</b>	<b>Proportion of health-deprived people in 2018</b>	<b>Proportion of health-deprived people in 2019</b>
<b>Sisaket</b>	3.66	3.32	3.09
<b>Sakon Nakhon</b>	3.09	2.53	2.00
<b>Songkhla</b>	1.58	1.86	2.71
<b>Satun</b>	1.19	1.08	1.15
<b>Samut Prakan</b>	0.86	1.02	1.17
<b>Samut Songkhram</b>	0.13	0.05	0.05
<b>Samut Sakhon</b>	0.53	0.71	0.73
<b>Sa Kaeo</b>	1.17	0.39	0.55
<b>Saraburi</b>	0.57	0.57	0.73
<b>Singburi</b>	0.07	0.19	0.12
<b>Sukhothai</b>	2.17	3.05	3.67
<b>Suphanburi</b>	0.88	0.91	1.34
<b>Surat Thani</b>	1.35	1.98	1.64
<b>Surin</b>	1.47	0.95	1.13
<b>Nong Khai</b>	0.73	0.62	0.14
<b>Nong Bua Lam Phu</b>	0.24	0.06	0.15
<b>Angthong</b>	0.41	0.38	0.21
<b>Amnat Charoen</b>	0.12	0.17	0.04
<b>Udon Thani</b>	2.17	2.02	3.78
<b>Uttaradit</b>	0.67	0.61	0.52
<b>Uthai Thani</b>	0.54	0.49	0.44
<b>Ubon Ratchathani</b>	2.35	1.99	1.11

**Note:** the proportion of poor people is based on the number of poor people in each province compared to the total number of poor people who are classified as deprived according to the basic minimum need survey and register for the state welfare card in that year.

Table 4.3 demonstrates the proportion of health-deprived people in 76 provinces, excluding Bangkok. The information can be classified by year as follows:



In 2017, the top five provinces with the highest proportion of health-deprived people were Chiang Mai (5.66%), Chiang Rai (4.37%), Nakhon Ratchasima (3.70%), Sisaket (3.66%), and Sakon Nakhon (3.09%). The five provinces with the lowest proportion of health-deprived people included Singburi (0.07%), Amnat Charoen (0.12%), Samut Songkhram (0.13%), Phuket and Ranong (0.16%), and Nakhon Nayok (0.19%).

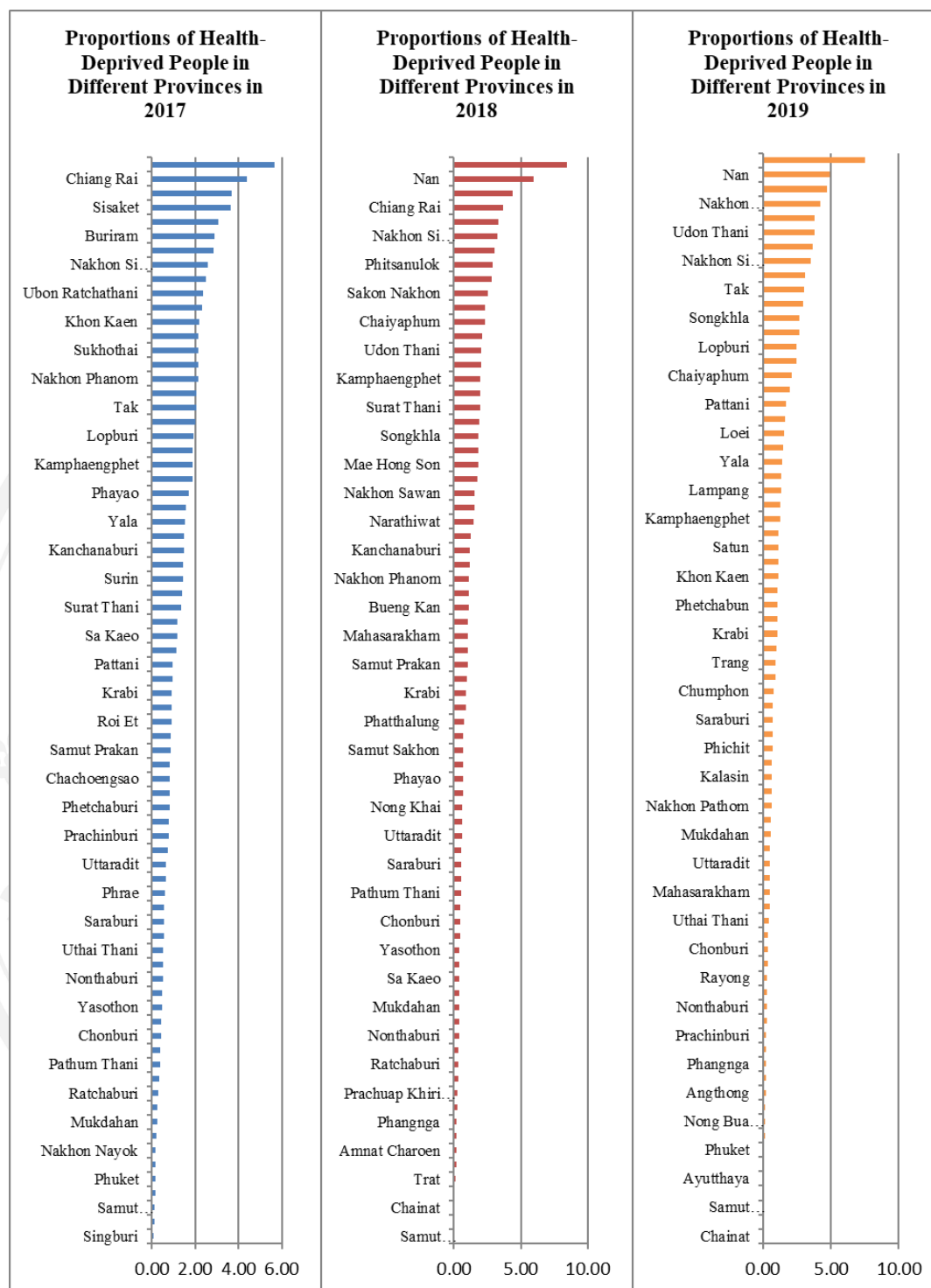
In 2018, the top five provinces with the highest proportion of health-deprived people were Chiang Mai (8.44%), Nan (5.94%), Nakhon Ratchasima (4.40%), Chiang Rai (3.71%), and Sisaket (3.32%). The five provinces with the lowest proportion of health-deprived people were Samut Songkhram (0.05%), Nong Bua Lam Phu (0.06%), Chainat (0.07%), Phuket (0.09%), and Trat (0.15%).

In 2019, the top five provinces with the highest proportion of health-deprived people were Bueng Kan (7.50%), Nan (4.94%), Chiang Mai (4.72%), Nakhon Ratchasima (4.22%), and Chiang Rai (3.66%). The five provinces with the lowest proportion of health-deprived people were Chainat (0.01%), Amnat Charoen (0.04%), Samut Songkhram (0.05%), Trat (0.09%), and Ayutthaya (0.11%).

Bueng Kan showed with the highest increase in the number of health-deprived people. The number of health-deprived people in Chiang Mai significantly increased in 2018 but decreased by half in 2019. The number of health-deprived people in the other three provinces in this group similarly decreased. In the five least health-deprived provinces, the number of health-deprived people in Chainat continued to decrease and almost reached zero in 2019, while the number of health-deprived people in Singburi and Nong Bua Lam Phu increased.

The proportion of health-deprived people in different provinces are compared in Figure 4.3.

In addition, the proportion of health-deprived people in 18 provincial clusters, classified according to the Notification on the Establishment of the Provincial Clusters and the Center of the Cluster dated 16 November 2017, are illustrated in Table 4.4.



**Figure 4.3** Comparing the Proportion of Health-Deprived People in Different Provinces from 2017-2019

**Table 4.4** Proportion of Health-Deprived People from 2017-2019 Classified by Provincial Clusters and Indicators

Cluster	Province	Overall		Indicator 1		Indicator 4		Indicator 5		Indicator 7	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
Upper Central	Chainat	-69.56	-93.50	-66.67	-100.00	-91.18	-100.00	-96.22	-100.00	-50.66	-93.01
	Ayutthaya	-53.29	-75.23	100.00	-100.00	-85.75	-90.00	-56.51	-80.21	-46.95	-73.54
	Lopburi	-29.70	-11.06	-65.00	-14.29	-50.02	-18.10	-34.97	-17.58	9.22	-1.39
	Saraburi	-33.06	-7.95	-90.00	-100.00	-28.51	9.83	-36.25	22.66	-27.73	-16.88
	Singburi	76.71	-54.84	-100.00	400.00	320.45	-94.59	-29.69	-77.78	50.00	-30.72
	Angthong	-36.85	-60.51	-	-	-63.57	-70.34	-77.63	-28.74	1.43	-59.82
Middle Central	Nakhon Pathom	-68.99	22.54	-66.67	-100.00	-69.77	123.35	-39.71	-24.35	-80.63	-28.80
	Nonthaburi	-50.17	-45.08	-100.00	-	-69.24	-62.29	-32.32	-60.00	-40.20	-46.72
	Pathum Thani	-9.14	-49.15	-100.00	-	60.71	-42.07	42.50	-53.31	-48.09	-48.48
	Samut Prakan	-20.22	-18.53	-	-	4.42	-53.65	-32.08	20.37	-34.07	-6.87
	Kanchanaburi	-45.83	-55.84	-81.25	66.67	-15.81	-79.64	-43.62	-69.00	-64.29	-6.59
Lower Central 1	Ratchaburi	-21.95	-38.04	-100.00	-	-43.77	-74.25	-49.87	-75.00	-1.20	-18.00
	Suphanburi	-30.52	4.85	-91.67	-100.00	-52.42	75.59	-36.71	-7.18	-28.30	7.44
	Prachuap Khiri Khan	-70.72	26.82	-83.33	400.00	-42.91	-34.64	-82.68	14.95	-67.03	39.81
Lower Central 2	Phetchaburi	-62.45	-36.46	-87.50	100.00	-74.46	-31.50	-59.71	-49.07	-34.53	-10.62
	Samut Songkhram	-75.51	-21.97	-100.00	-	-10.84	-91.89	-81.22	-86.49	-84.66	91.67
	Samut Sakhon	-10.90	-26.46	-	-	-0.44	-72.07	-79.22	52.90	13.42	5.03



Cluster	Province	Overall		Indicator 1		Indicator 4		Indicator 5		Indicator 7	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
	Trat	-70.47	-56.80			-90.29	75.00	-77.91	147.37	-66.64	-70.86
	Nakhon Nayok	-40.26	-2.38			-73.97	-42.11	-18.48	-32.39	-52.32	37.44
	Prachinburi	-66.25	-49.35	-72.73	-100.00	-64.13	-67.98	-62.28	-81.92	-66.86	-6.12
	Sa Kaeo	-77.73	1.39	0.00	-100.00	-90.16	72.26	-66.14	-1.56	-59.79	-41.14
	Bueng Kan	-35.29	389.79	-92.86	-100.00	13.37	512.23	-77.94	804.65	-51.30	28.19
	Loei	-47.14	-4.00	382.35	-93.90	-38.28	-1.14	-62.24	-63.94	-55.50	64.74
Upper Northeast 1	Nong Khai	-43.24	-83.83	-42.86	-100.00	-33.50	-95.33	-35.07	-95.72	-70.35	12.22
	Nong Bua Lam Phu	-83.76	88.05	1300.00	-100.00	-94.46	560.00	-88.85	69.35	-63.00	50.00
	Udon Thani	-37.63	33.61	-68.75	-53.33	-38.65	135.11	-41.56	-70.95	-12.10	-46.41
	Nakhon Phanom	-64.97	70.53	-93.55	900.00	-60.71	82.91	-82.09	-16.34	-91.31	-13.16
Upper Northeast 2	Mukdahan	-0.37	3.91	-100.00	800.00	49.12	-1.96	-100.00	2800.00	-72.36	52.73
	Sakon Nakhon	-45.14	-43.70	-60.00	-100.00	-42.76	-41.43	-47.53	-77.70	-56.09	4.08
	Kalasin	-12.51	-22.16	-83.78	-50.00	42.95	-40.14	-39.09	-59.85	-34.48	68.18
Middle Northeast	Khon Kaen	-42.40	-57.81	-54.84	14.29	-40.42	-66.24	-37.25	-57.11	-53.72	-35.33
	Maharakham	-66.72	-66.18	-52.38	-50.00	-70.48	-78.38	-58.48	-72.71	-27.13	-3.82
	Roi Et	-46.82	-73.80	-77.42	-85.71	-29.84	-81.90	-67.69	-79.67	-47.30	-54.27
	Chaiyaphum	-26.15	-34.12	-85.37	-83.33	3.86	-62.18	-47.44	-51.89	-54.13	124.97
Lower Northeast 1	Nakhon Ratchasima	-20.04	-31.58	-48.72	-82.50	-40.32	-39.80	-36.26	-58.11	5.47	-13.04

Cluster	Province	Overall		Indicator 1		Indicator 4		Indicator 5		Indicator 7	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
Lower Northeast 2	Buriram	-45.60	-10.57	-76.39	-47.06	-52.86	21.60	-41.73	-33.01	-50.78	13.22
	Surin	-56.86	-14.45	-71.05	18.18	-55.04	-54.45	-58.28	-23.11	-55.69	35.29
	Yasothon	-39.44	-50.77	-64.29	-100.00	-17.90	-74.19	-49.19	-44.29	-60.00	15.73
	Sisaket	-39.17	-33.71	-85.92	10.00	-37.23	-30.19	-47.33	-54.29	-30.29	-9.32
	Amnat Charoen	-4.90	-82.06	50.00	-100.00	42.17	-92.37	1.12	95.19	-27.64	-53.47
Upper North 1	Ubon Ratchathani	-43.23	-60.05	-82.35	-83.33	-36.84	-67.37	-68.80	-63.87	-6.79	-50.37
	Chiang Mai	0.02	-60.08	-36.36	-85.71	34.38	-76.68	-5.52	-64.31	-27.26	-20.47
	Mae Hong Son	-18.12	-57.86	-96.00	400.00	-30.16	-32.38	17.54	-56.10	-39.15	-67.38
	Lampang	-55.46	-38.93	-100.00	-	-46.02	-34.32	-57.10	-70.42	-65.25	-29.84
	Lamphun	-61.29	-38.92	-100.00	700.00	-44.92	-36.69	-63.90	-43.74	-82.16	-43.25
Upper North 2	Chiang Rai	-43.09	-27.20	-91.23	-40.00	-49.91	-20.61	-59.24	-38.59	-9.59	-19.52
	Nan	39.01	-40.68	-67.65	-36.36	80.30	-39.28	-19.22	-62.91	-14.26	-40.14
	Phayao	-73.28	8.79	-62.50	-100.00	-73.02	3.29	-73.45	-19.49	-78.77	24.10
	Phrae	-40.98	-34.02	-100.00	-	-55.04	6.69	-36.28	-45.75	-30.50	-81.53
	Tak	-8.72	-22.14	-78.05	-100.00	-2.95	3.46	-5.47	-50.09	-32.30	-30.29
Lower North 1	Phitsanulok	-22.66	-38.11	-86.36	-16.67	-3.56	-56.89	-36.58	-31.35	-21.43	-21.63
	Phetchabun	-42.24	-55.42	-84.85	-60.00	-53.80	-53.48	-66.90	-46.20	-3.06	-60.89
	Sukhothai	-5.45	-14.10	21.05	-100.00	4.15	10.30	-3.15	-67.77	-27.64	-41.46

Cluster	Province	Overall		Indicator 1		Indicator 4		Indicator 5		Indicator 7	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
	Uttaradit	-38.45	-39.76	266.67	227.27	-61.40	-25.45	-53.38	-8.50	-29.90	-51.18
	Kamphaengphet	-29.82	-53.05	-91.67	-100.00	-27.55	-51.69	-27.55	-53.87	-43.02	-51.40
	Nakhon Sawan	-44.63	-32.27	-85.37	-100.00	-43.91	-41.40	-44.43	-50.17	-43.09	-21.98
	Phichit	-18.13	-50.72	-30.77	-100.00	-37.34	-63.04	-25.16	-64.02	-10.71	-28.64
	Uthai Thani	-38.85	-35.81	-100.00	-	-33.63	103.14	-51.71	24.44	-30.89	-69.41

**Note:** 1. The data was calculated by the researcher.

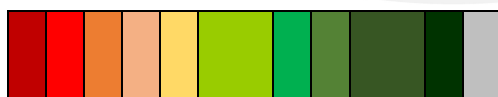
2. Indicator 1 is the weight of a newborn baby is not less than 2,500 grams.

Indicator 4 is everybody in the household has clean and safe food.

Indicator 5 is everybody in the household uses medicines in a suitable manner.

Indicator 7 is household members aged 6 years old up do exercise at least three days a week (30 minutes/day).

3.



Increase at an increasing rate  
 Increase at a decreasing rate  
 Decrease - increase  
 Not deprived - increase  
 Increase - decrease  
 Decrease at a decreasing rate, or  
 decrease – unchanged  
 Decrease at an increasing rate  
 Increase – not deprived  
 Decrease, or unchanged – not  
 deprived  
 No deprived people in the latest year  
 Unchanged





Table 4.4 presents the proportion of health-deprived people classified by provincial clusters and indicators from 2017-2019. Overall, the data report shows a continuous decline in the number of health-deprived people in almost all provincial clusters. The number of health-deprived people in the lower Northern cluster 1 continued to decline at the highest rate. Chainat saw the highest reduction rate of health deprivation (-95.50%) while number of health-deprived people in the Northeastern cluster continued to increase. Bueng Kan showed the highest growth rate of health deprivation (389.79%), while Sa Kaeo had the lowest growth rate of health deprivation (1.39%).

For Indicator 1, “The weight of a newborn baby is not less than 2,500 grams,” the study finds that, in most provincial clusters, there were almost no deprived people. The number of deprived people in the middle Central cluster and the lower Northern cluster 2 decreased to zero. However, it should be noted that six provinces showed no deprived people from 2017-2019, consisting of: Angthong, Samut Prakan, Samut Sakhon, Phuket, Trat, and Nakhon Nayok. In provincial clusters with a higher number of deprived people, Uttaradit saw the highest increase in deprivation, where the number of deprived people continued to increase at a decreasing rate (227.27%). In addition, there were three provinces (Singburi, Lamphun and Mukdahan) with no deprivation in 2017 but the number of deprived people increased in the following years.

For Indicator 4, “Everybody in the household has clean and safe food,” the study finds that the number of people deprived decreased in almost all provincial clusters. The five provincial clusters where all provinces within the cluster had a decline in the number of deprived people are the lower Central cluster 2, the Eastern cluster 1, the middle Northeastern cluster, the lower Northeastern cluster 2, and the upper Northern cluster 1. In Chainat, the number of deprived people decreased to zero. Bueng Kan saw the highest rate of deprivation (512.23%), followed by Sukhothai (10.30%), and Phuket, where the deprivation increased at a decreasing rate (103.23%).

For Indicator 5 “Everybody in the household uses medicines in a suitable manner,” the study finds that the number of people deprived according to this indicator decreased in almost all provincial clusters. Chainat is the province, where the number of deprived people decreased to zero. The provinces with the highest increase in the number of deprived people are Bueng Kan (804.65%), Nakorn Nakok (147.37%), and

Samut Sakhon (52.90%). Mukdahan had no health deprivation in 2017 but the number of deprived people increased in the following years.

For Indicator 7, “Household members aged 6 years old and above exercise at least three days a week (30 minutes/day),” the study finds that the number of people deprived according to this indicator declined at an increasing rate in almost all provincial clusters. The decline concentrated in the middle Central cluster, the lower Northeastern cluster 2, the upper Northern cluster 1, the lower Northern cluster 1, and the lower Northern cluster 2. Chainat is the province, where the number of deprived people declined at the highest rate (-95.01%), followed by Phrae (-81.55%), and Trat (-70.86%). Conversely the increase in the number of deprived people concentrated in the upper Northeastern cluster 1 and the lower Northeastern cluster 1. Samut Sakhon had the highest increase in deprivation at a decreasing rate (5.03%), followed by Samut Songkhram (91.67%), Kalasin (68.18%), and Loei (64.74%).

#### 4.1.2.2 Living standard

TPMAP uses the living standards indicators included in the basic minimum need survey to measure poverty in the living standards dimension. Based on the annual basic minimum need survey, there are seven living standards indicators as follows.

- 8) The condition of the house is safe to live in.
- 9) Household members have enough drinking water (5 liters per person per day).
- 10) Household members have access to clean water for daily usage (45 liters per person per day).
- 11) The house is kept tidy and hygienic.
- 12) Household members are not bothered with pollution.
- 13) Household members have taken safety precautions to prevent accidents.
- 14) Household members get no harm to lives and properties.

TPMAP adopts only four indicators (8, 9, 10, and 11) to measure poverty in the living standards dimension. The number of poor people who are classified as deprived in the living standards dimension from 2017-2019 was used to

analyze the overview of Thailand's deprivation of living standard. The details are demonstrated in Table 4.5.

**Table 4.5** Proportion of Living Standard-Deprived People from 2017-2019  
Classified by Provinces

Province	Proportion of	Proportion of	Proportion of
	living standard- deprived people in 2017	living standard- deprived people in 2018	living standard- deprived people in 2019
<b>Krabi</b>	1.76	1.61	2.80
<b>Kanchanaburi</b>	1.88	1.20	0.69
<b>Kalasin</b>	0.48	0.52	0.49
<b>Kamphaengphet</b>	2.33	1.98	1.52
<b>Khon Kaen</b>	1.53	1.97	0.56
<b>Chanthaburi</b>	0.46	0.50	0.54
<b>Chachoengsao</b>	0.65	0.40	0.39
<b>Chonburi</b>	0.31	0.19	0.10
<b>Chainat</b>	0.32	0.24	0.15
<b>Chaiyaphum</b>	2.13	2.35	2.50
<b>Chumphon</b>	0.87	0.54	0.58
<b>Chiang Rai</b>	3.54	2.87	2.25
<b>Chiang Mai</b>	5.44	7.49	2.64
<b>Trang</b>	1.74	1.90	2.13
<b>Trat</b>	0.26	0.07	0.10
<b>Tak</b>	2.50	3.32	4.71
<b>Nakhon Nayok</b>	0.25	0.21	0.21
<b>Nakhon Pathom</b>	0.44	0.29	0.62
<b>Nakhon Phanom</b>	0.92	0.88	0.66
<b>Nakhon Ratchasima</b>	3.05	3.11	2.82
<b>Nakhon Si Thammarat</b>	4.49	4.68	7.02
<b>Nakhon Sawan</b>	1.98	1.53	1.66

<b>Province</b>	<b>Proportion of living standard- deprived people in 2017</b>	<b>Proportion of living standard- deprived people in 2018</b>	<b>Proportion of living standard- deprived people in 2019</b>
<b>Nonthaburi</b>	0.21	0.11	0.16
<b>Narathiwat</b>	3.21	3.39	2.17
<b>Nan</b>	2.56	5.11	5.26
<b>Bueng Kan</b>	0.58	0.17	1.67
<b>Buriram</b>	3.71	2.94	3.54
<b>Pathum Thani</b>	0.36	0.38	0.15
<b>Prachuap Khiri Khan</b>	0.31	0.31	0.73
<b>Prachinburi</b>	0.78	0.59	0.52
<b>Pattani</b>	1.49	1.78	1.47
<b>Ayutthaya</b>	0.29	0.37	0.11
<b>Phayao</b>	0.76	0.17	0.15
<b>Phangnga</b>	0.62	0.57	0.48
<b>Phatthalung</b>	1.28	1.17	1.11
<b>Phichit</b>	0.90	2.11	0.38
<b>Phitsanulok</b>	3.14	4.16	3.89
<b>Phetchaburi</b>	0.67	0.27	0.42
<b>Phetchabun</b>	2.49	3.48	5.37
<b>Phrae</b>	0.57	0.24	0.09
<b>Phuket</b>	0.05	0.06	0.19
<b>Maharakham</b>	1.28	0.64	0.32
<b>Mukdahan</b>	0.23	0.52	1.47
<b>Mae Hong Son</b>	2.10	3.04	3.35
<b>Yasothon</b>	0.31	0.26	0.44
<b>Yala</b>	2.27	3.23	3.08
<b>Roi Et</b>	0.75	0.46	0.30
<b>Ranong</b>	0.24	0.58	0.32
<b>Rayong</b>	0.41	0.25	0.06

<b>Province</b>	<b>Proportion of living standard- deprived people in 2017</b>	<b>Proportion of living standard- deprived people in 2018</b>	<b>Proportion of living standard- deprived people in 2019</b>
<b>Ratchaburi</b>	0.48	0.30	0.46
<b>Lopburi</b>	1.64	1.30	1.38
<b>Lampang</b>	1.71	0.99	0.55
<b>Lamphun</b>	1.33	1.05	1.17
<b>Loei</b>	0.96	1.12	0.62
<b>Sisaket</b>	5.39	3.49	2.73
<b>Sakon Nakhon</b>	1.83	1.50	1.50
<b>Songkhla</b>	1.77	1.51	2.19
<b>Satun</b>	1.54	1.54	4.39
<b>Samut Prakan</b>	0.39	0.70	0.65
<b>Samut Songkhram</b>	0.10	0.04	0.04
<b>Samut Sakhon</b>	0.52	0.11	0.44
<b>Sa Kaeo</b>	0.79	0.45	0.84
<b>Saraburi</b>	0.41	0.52	0.39
<b>Singburi</b>	0.05	0.05	0.02
<b>Sukhothai</b>	1.44	2.03	1.06
<b>Suphanburi</b>	0.75	0.92	1.38
<b>Surat Thani</b>	1.81	2.49	2.83
<b>Surin</b>	1.83	1.26	1.58
<b>Nong Khai</b>	0.61	0.46	0.15
<b>Nong Bua Lam Phu</b>	0.23	0.06	0.06
<b>Angthong</b>	0.61	0.38	0.22
<b>Amnat Charoen</b>	0.22	0.37	0.04
<b>Udon Thani</b>	1.92	1.03	1.64
<b>Uttaradit</b>	0.49	0.50	0.32
<b>Uthai Thani</b>	0.40	0.42	0.38
<b>Ubon Ratchathani</b>	1.85	1.21	0.64

**Note:** the proportion of poor people is based on the number of poor people in each province compared to the total number of poor people who are classified as deprived according to the basic minimum need survey and register for the state welfare card in that year.

Table 4.5 presents the proportion of living standard-deprived people in 76 provinces, excluding Bangkok. The information can be classified by years as follows.

In 2017, the top five provinces with the highest proportion of living standards-deprived people were Chiang Mai (5.44%), Sisaket (5.39%), Nakhon Si Thammarat (4.49%), Buriram (3.71%), and Chiang Rai (3.54%). The five provinces with the lowest proportion of living standards-deprived people included Singburi and Phuket (0.05%), Samut Songkhram (0.10%), Nonthaburi (0.21%), Amnat Charoen (0.22%), and Mukdahan and Nong Bua Lam Phu (0.23%).

In 2018, the top five provinces with the highest proportion of living standards-deprived people were Chiang Mai (7.49%), Nan (5.11%), Nakhon Si Thammarat (4.68%), Phitsanulok (4.16%), and Sisaket (3.49%). The top five provinces with the lowest proportion of living standard-deprived people included Samut Songkhram (0.04%), Singburi (0.05%), Nong Bua Lam Phu and Phuket (0.06%), Trat (0.07%), and Nonthaburi and Samut Sakhon (0.11%).

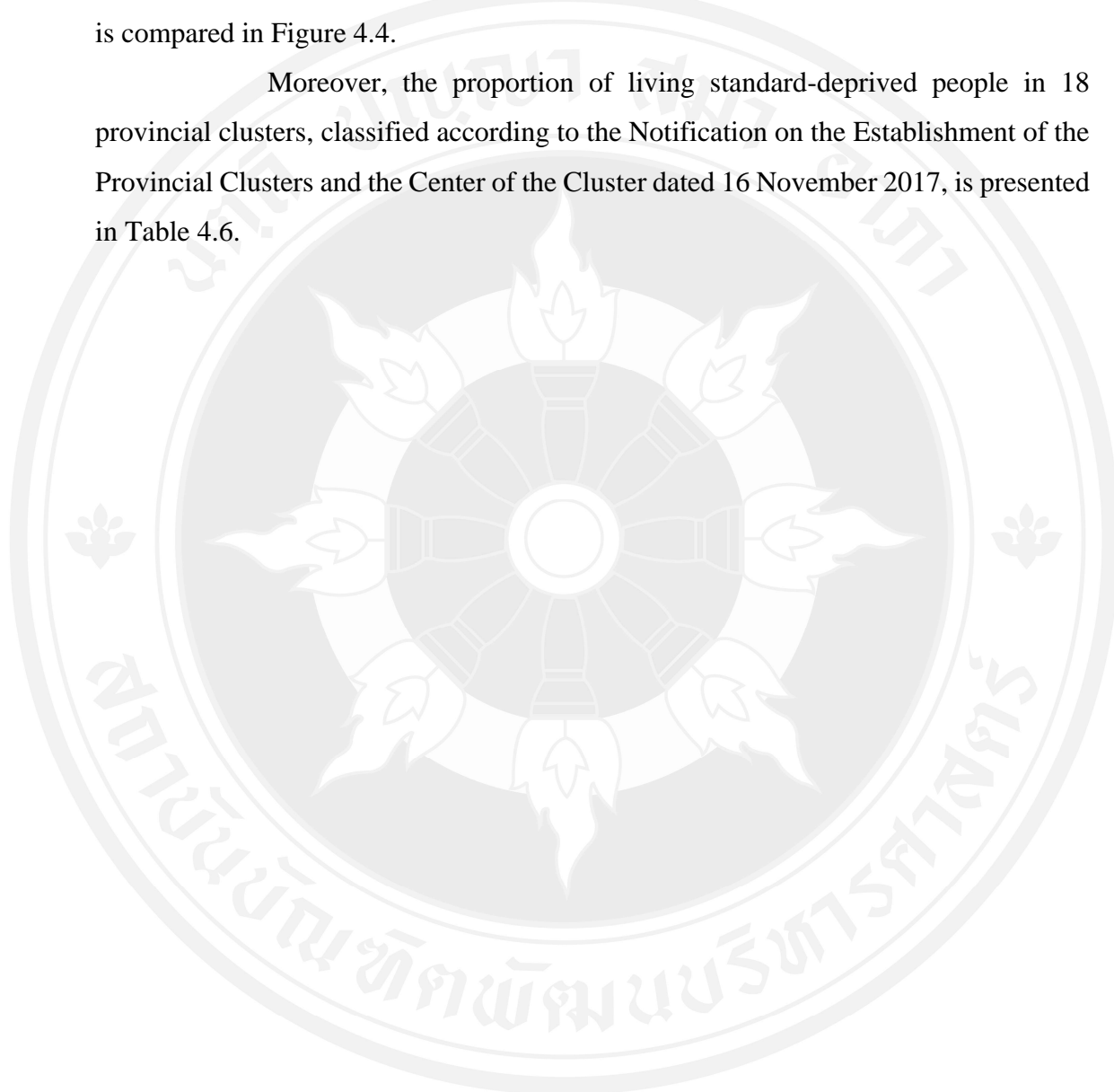
In 2019, the top five provinces with the highest proportion of living standard-deprived people included Nakhon Si Thammarat (7.02%), Phetchabun (5.37%), Nan (5.26%), Tak (4.71%), and Satun (4.39%). The five provinces with the lowest proportion of living standard-deprived people were Singburi (0.02%), Samut Songkhram and Amnat Charoen (0.04%), Nong Bua Lam Phu and Rayong (0.06%), Phrae (0.09%), and Trat and Chonburi (0.10%).

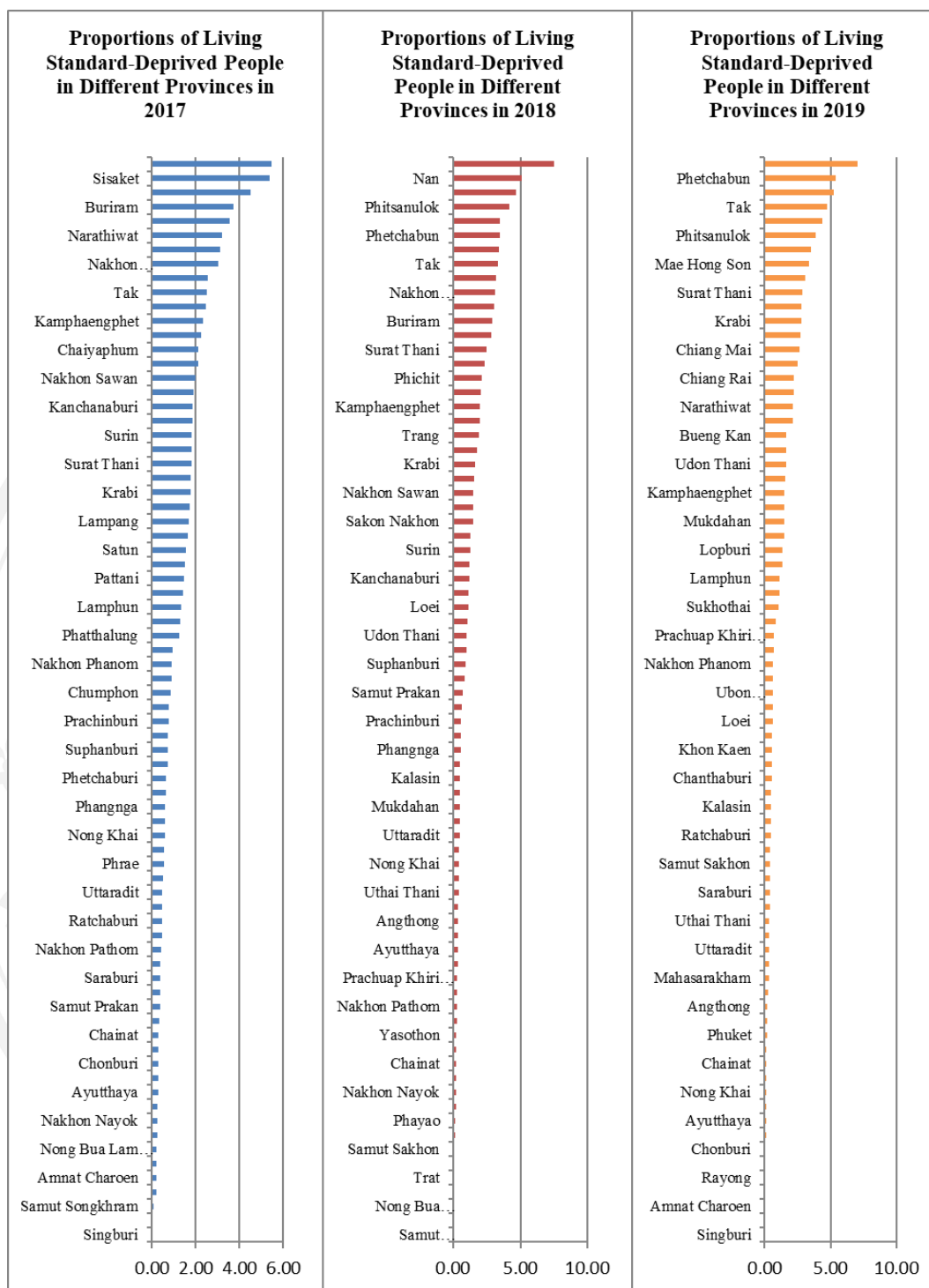
When comparing the number of living standard-deprived people over the three years, the study finds that, among the five most deprived provinces, Nakhon Si Thammarat showed the highest increase in the number of living standard-deprived people. For Chiang Mai, the number of living standard-deprived people increased in 2017-2018 but decreased in 2019. The number of living standard-deprived people similarly decreased. However, the top five provinces in 2019 were not listed as the

highest deprived provinces in 2017 and 2018. For the five least deprived provinces, the number of living standard-deprived people in Nong Bua Lam Phu and Amnat Charoen decreased at a high rate to zero in 2019, while the number of living standard-deprived people in Phuket and Trat continued to increase.

The proportion of living standard-deprived people in different provinces is compared in Figure 4.4.

Moreover, the proportion of living standard-deprived people in 18 provincial clusters, classified according to the Notification on the Establishment of the Provincial Clusters and the Center of the Cluster dated 16 November 2017, is presented in Table 4.6.





**Figure 4.4** Comparing the Proportion of Living Standard-Deprived People in Different Provinces from 2017-2019



**Table 4.6** Proportion of Living Standard-Deprived People from 2017-2019 Classified by Provincial Clusters and Indicators

Cluster	Province	Overall		Indicator 8		Indicator 9		Indicator 10		Indicator 11	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
Upper Central	Chainat	-53.79	-61.94	-41.71	-47.15	-32.57	-47.37	-60.42	-29.32	-73.64	-100.00
	Ayuthaya	-20.09	-81.98	-14.86	-94.44	528.57	-94.32	71.43	-100.00	-26.62	-79.52
	Lopburi	-51.89	-35.51	-30.28	-25.38	-62.89	52.78	-53.51	-16.98	-53.26	-36.36
	Saraburi	-22.00	-54.66	-39.80	-53.89	-16.00	-12.70	-73.33	-10.00	-21.84	-58.74
	Singburi	-35.29	-77.92	-79.49	-25.00	-100.00	-	-	100.00	-34.22	-80.41
	Angthong	-62.13	-65.38	-31.45	-63.53	-71.43	-100.00	-100.00	400.00	-62.34	-65.70
Middle Central	Nakhon Pathom	-60.75	31.61	-26.67	-86.67	-35.71	-100.00	-7.69	-91.67	-62.88	44.65
	Nonthaburi	-68.76	-9.17	-98.67	1150.00	-100.00	-	-91.67	-100.00	-66.23	-11.94
	Pathum Thani	-34.97	-76.97	35.86	-98.48	5.26	-90.00	-24.24	-68.00	-36.73	-76.39
	Samut Prakan	8.92	-43.96	7.35	-36.30	5.88	5.56	-32.35	130.43	14.38	-45.88
	Kanchanaburi	-61.20	-65.35	-48.63	-57.81	-70.38	-81.68	-73.98	-87.02	-61.42	-65.32
Lower Central 1	Ratchaburi	-62.42	-6.85	-70.37	84.38	-93.75	-100.00	-96.92	-100.00	-61.66	-9.39
	Suphanburi	-25.76	-9.39	-46.65	-32.93	-79.89	-53.52	-78.49	115.00	-22.81	-9.60
	Prachuap Khiri Khan	-38.30	40.14	-48.86	101.48	-66.67	50.00	-72.14	-50.00	-35.62	35.14
Lower Central 2	Phetchaburi	-75.74	-3.32	-56.97	-9.52	-73.33	-75.00	-67.86	1555.56	-76.48	-23.85
	Samut Songkhram	-76.76	-34.45	-69.81	231.25	-100.00	-	-	-	-76.23	-69.37
	Samut Sakhon	-87.05	136.34	-100.00	200.00	-	-	-	-	-87.05	136.06

Cluster	Province	Overall		Indicator 8		Indicator 9		Indicator 10		Indicator 11	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
South (Gulf of Thailand)	Chumphon	-62.33	-34.68	-63.55	36.15	-54.50	-23.08	-74.57	-4.81	-63.08	-45.96
	Nakhon Si Thammarat	-36.60	-9.14	-19.07	-16.06	-50.13	-51.34	-52.53	-61.26	-38.40	-8.55
	Phatthalung	-44.03	-42.60	-28.79	-67.21	-2.58	-96.55	-42.50	-56.75	-45.19	-41.88
	Songkhla	-48.19	-12.39	-76.16	18.29	-76.32	-61.73	-77.08	-55.63	-45.82	-11.81
	Satun	-39.32	72.50	45.15	7.40	-50.71	-56.25	-49.11	-49.38	-56.82	131.35
	Surat Thani	-16.20	-31.26	-21.63	-15.31	-24.07	-23.04	-22.41	-17.56	-17.14	-33.91
South (Andaman Coast)	Krabi	-44.44	5.40	-46.99	3.49	-22.08	38.53	12.90	3.97	-49.55	3.61
	Trang	-33.17	-32.42	30.28	-88.47	43.38	-75.97	-35.68	-63.26	-33.89	-29.86
	Phangnga	-43.92	-49.08	-20.63	-37.00	100.00	-100.00	-99.84	-100.00	-35.81	-49.88
	Phuket	-32.97	103.83	-57.78	184.21	600.00	1114.29	-94.83	3900.00	18.57	-57.23
	Ranong	46.31	-66.88	-24.59	-58.70	31.82	-84.14	-12.82	-72.55	53.47	-66.38
	Narathiwat	-35.73	-61.27	-21.41	-28.34	-94.97	11.11	-94.32	-9.09	-35.30	-63.18
Southern Border	Pattani	-27.16	-50.21	178.13	-87.36	28.05	-64.76	-60.58	-75.00	-26.04	-49.76
	Yala	-13.43	-42.25	-12.53	-61.81	-44.60	-80.50	-55.37	-81.62	-10.06	-41.98
East 1	Chachoengsao	-62.95	-40.87	-69.64	-30.77	-55.03	-88.16	-69.62	-75.00	-63.28	-41.19
	Chonburi	-62.60	-69.67	-30.54	-59.48	-63.01	-46.30	-82.11	31.82	-65.67	-75.20
East 2	Rayong	-62.35	-85.48	-76.41	-67.39	-49.12	-68.97	-17.65	-42.86	-65.40	-94.95
	Chanthaburi	-32.94	-34.69	-34.31	-43.31	-54.84	-55.95	-36.90	-49.15	-32.60	-33.94

Cluster	Province	Overall		Indicator 8		Indicator 9		Indicator 10		Indicator 11	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
	Trat	-84.08	-12.96	-18.69	-72.41	-40.00	-50.00	-82.35	-66.67	-89.56	21.80
	Nakhon Nayok	-47.67	-41.25	-61.84	-43.04	-91.84	200.00	-93.55	1350.00	-44.83	-47.28
	Prachinburi	-54.22	-45.95	29.45	-95.73	-87.19	-100.00	-59.29	-77.19	-55.62	-41.99
	Sa Kaeo	-65.55	13.39	-53.11	-32.53	-89.70	-11.76	-92.40	180.00	-64.39	12.39
	Buang Kan	-82.28	502.62	-65.90	-15.73	-87.69	700.00	-91.67	1116.67	-83.83	578.26
	Loei	-29.44	-66.25	376.43	-92.10	45.81	-82.48	42.31	-64.86	-54.60	-52.97
Upper Northeast 1	Nong Khai	-54.30	-80.48	-51.64	-67.96	-49.49	-86.00	-47.52	-83.02	-54.65	-82.09
	Nong Bua Lam Phu	-85.05	-39.11	-20.83	-26.32	-	200.00	-100.00	200.00	-87.24	-46.26
	Udon Thani	-67.40	-2.94	-59.76	-42.55	-81.72	48.98	-72.18	330.38	-68.40	-1.96
	Nakhon Phanom	-41.67	-54.77	93.83	-70.70	-32.84	-97.78	11.76	-93.42	-44.81	-52.98
Upper Northeast 2	Mukdahan	38.50	72.57	-72.86	65.79	58.27	-99.25	15.19	-98.51	65.09	127.70
	Sakon Nakhon	-50.13	-39.38	-43.17	-25.00	-73.10	321.74	-64.52	268.18	-50.40	-42.32
	Kalasin	-34.11	-43.06	-43.87	309.20	-8.16	-92.22	73.21	-94.33	-37.69	-58.63
Middle Northeast	Khon Kaen	-21.67	-82.81	-28.02	-66.80	-49.38	-47.15	-49.65	-35.21	-20.94	-85.36
	Maharakham	-69.63	-70.06	-3.32	-74.43	-72.73	-61.11	-82.02	-25.00	-72.09	-70.39
	Roi Et	-62.41	-61.18	30.41	-30.05	5.56	357.89	-44.44	246.67	-66.42	-72.41
Lower Northeast 1	Chaiyaphum	-32.65	-35.68	-56.75	67.83	28.48	-88.67	-51.79	-51.06	-31.76	-40.39
	Nakhon Ratchasima	-37.97	-45.08	-47.68	-46.22	-60.09	-37.36	-70.53	-19.69	-37.72	-46.23

Cluster	Province	Overall		Indicator 8		Indicator 9		Indicator 10		Indicator 11	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
	Buriram	-51.78	-27.06	-56.04	5.61	-64.58	20.96	-74.60	19.27	-50.59	-31.28
	Surin	-58.25	-24.18	-22.10	-28.77	-67.10	-15.79	-67.01	-6.15	-59.47	-26.21
	Yasothon	-49.45	2.06	19.40	-53.75	-88.74	-35.29	-89.47	-68.75	-47.71	5.98
Lower Northeast 2	Sisaket	-60.52	-52.65	-44.58	-27.14	-57.10	-78.31	-53.95	-67.36	-61.62	-53.39
	Amnat Charoen	5.50	-93.36	-28.30	-57.89	-70.27	90.91	-85.71	0.00	5.16	-96.32
	Ubon Ratchathani	-60.00	-67.97	-54.99	-57.84	-67.02	-66.13	-63.76	-68.42	-60.30	-69.06
Upper North 1	Chiang Mai	-16.19	-78.65	-33.53	-59.72	-47.24	-59.20	5.81	-47.93	-15.76	-85.72
	Mae Hong Son	-11.97	-33.44	25.56	-93.81	-56.71	-75.28	-2.35	-60.48	-18.19	-19.55
	Lampang	-64.76	-66.66	-38.03	-48.28	-62.78	-96.57	-56.68	-99.25	-65.63	-65.49
	Lamphun	-52.19	-32.50	-70.74	-87.91	-73.40	-37.97	-85.84	-32.65	-50.37	-30.60
	Chiang Rai	-50.60	-52.71	-2.75	-64.44	-57.44	-33.52	-67.04	-42.35	-56.71	-55.60
Upper North 2	Nan	21.36	-37.74	-35.67	9.42	357.14	-58.63	82.68	-47.20	-9.19	-44.00
	Phayao	-86.11	-47.37	-96.30	733.33	-100.00	3300.00	-99.56	2900.00	-85.36	-57.38
	Phrae	-74.33	-78.22	-18.18	-73.74	22.45	-19.17	-31.25	-17.42	-79.32	-98.24
Lower North 1	Tak	-19.19	-14.16	-60.72	67.41	-9.32	-52.27	-35.21	-11.59	-0.69	-38.86
	Phitsanulok	-19.24	-43.36	71.25	-37.44	-62.65	34.44	-77.21	53.52	-29.74	-49.93
	Phetchabun	-14.84	-6.68	89.04	-0.66	-68.01	11.38	-61.78	3.37	-55.07	-23.30
	Sukhothai	-14.09	-68.44	-52.24	-3.38	-71.28	49.38	-46.59	-35.22	-10.11	-74.98

Cluster	Province	Overall		Indicator 8		Indicator 9		Indicator 10		Indicator 11	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
Lower North 2	Uttaradit	-38.36	-61.29	-44.75	-60.33	26.43	-98.26	-27.97	-63.13	-43.34	-50.94
	Kamphaengphet	-48.06	-53.73	-63.82	-30.71	-54.36	-28.36	-47.25	-32.70	-47.35	-58.59
	Nakhon Sawan	-53.00	-34.29	-46.69	-77.58	-2.55	9.80	-26.06	58.27	-54.69	-32.79
	Phichit	41.99	-89.16	-25.61	-54.58	-55.56	-89.29	-75.61	-60.00	46.09	-90.47
	Uthai Thani	-36.14	-45.64	152.94	-80.23	-84.55	-61.02	-81.25	-81.16	-47.28	-35.35

Note: 1. The data were calculated by the researcher.

2. Indicator 8 is the condition of the house is safe to live in.

Indicator 9 is household members have enough drinking water (5 liters per person per day).

Indicator 10 is household members have access to clean water for daily usage (45 liters per person per day).

Indicator 11 is the house is kept tidy and hygienic.



3.



Increase at an increasing rate

Increase at a decreasing rate

Decrease - increase

Not deprived - increase

Increase - decrease

Decrease at a decreasing or decreased rate - unchanged

Decrease at an increasing rate

Increase - not deprived

Decrease, or unchanged - not deprived

No deprived people in the latest year

Unchanged

Table 4.6 shows the proportion of living standard-deprived people classified by provincial clusters and indicators from 2017-2019. Overall, the number of living standard-deprived people decreased at an increased rate in almost all provincial clusters. All provinces within the Southern border cluster had a continuous decline in the number of deprived people. Rayong saw the highest reduction rate of deprivation (-85.48%), followed by Nong Khai (-82.81%) and Ayutthaya (-81.98%). The increase in the number of deprived people concentrated in the lower Central cluster 2 and the Southern cluster (Andaman Coast). Mukdahan had the highest increase in deprivation (72.57%), followed by Bueng Kan (502.62%) and Samut Sakhon (136.34%).

For Indicator 8, “The condition of the house is safe to live in,” the study finds that the number of people deprived according to this indicator decreased at an increased rate in almost all provincial clusters, especially in the upper Central cluster, the Eastern cluster 1, the Eastern cluster 2, the upper Northeastern cluster 1, and the upper Northern cluster 1. In Ayutthaya, the number of deprived people decreased at the highest rate (-94.44%), followed by Lamphun (-87.91%), Nakhon Pathom (-86.67%). On the contrary, the increase in the number of deprived people concentrated in the lower Central cluster 2 and the Southern cluster (Gulf of Thailand). Satun saw the highest increase in the number of deprived people (7.40%), followed by Nonthaburi (1150%) and Phayao (733.33%). Samut Sakhon had no deprivation according to this indicator in 2017 but the number of deprived people increased in the following years.

For Indicator 9, “Household members have enough drinking water (5 liters per person per day),” there were nine provinces with no deprived people according to this indicator including Singburi, Angthong, Nakhon Pathom, Nonthaburi, Ratchaburi, Samut Songkhram, Samut Sakhon, Phangnga, and Prachinburi. In addition, the number of deprived people decreased in almost all provincial clusters, especially in the Southern cluster (Gulf of Thailand), the Eastern cluster 1, and the upper Northern cluster 1. In Nakhon Phanom the number of deprived people decreased at the highest rate (-97.78%), followed by Lampang (-96.57%), and Phatthalung (-96.55%). The increase in the number of deprived people concentrated in the lower Northern cluster 1. Phuket saw the highest increase in deprivation, where the number of deprived people increased at an increasing rate (1114.29%), followed by Roi Et (357.89%), and Samut Prakan, where the number of deprived people increased at a decreasing rate (5.56%).

Phayao and Nong Bua Lam Phu had no deprivation according to this indicator in 2017 but the number of deprived people increased in the following years.

For Indicator 10 “Household members have access to clean water for daily usage (45 liters per person per day),” the study finds that Samut Songkhram and Samut Sakhon had no deprived people according to this indicator from 2017-2019. There were four provinces, consisting of Ayutthaya, Nonthaburi, Ratchaburi, and Phangnga, where the number of deprived people decreased to zero. Moreover, the number of deprived people continued to decrease in the Southern cluster (Gulf of Thailand), the lower Northeastern cluster 2, and the upper Northern cluster 1. In Lampang the number of deprived people decreased at the highest rate (-99.25%), followed by Nakhon Pathom (-91.67%), and Kanchanaburi (-87.02%). The increase in the number of deprived people concentrated in the upper Northeastern cluster 2. Krabi saw the highest increase in deprivation, where the number of deprived people increased at a decreasing rate (3.97%), followed by Phuket (3900.00%), and Phayao (2900.00%). Singburi, Angthong, and Nong Bua Lam Phu had no deprivation according to this indicator in 2017 but the number of deprived people increased in the following years.

For Indicator 11, “The house is kept tidy and hygienic,” the study finds that Chainat is the only province with no deprived people according to this indicator. The number of deprived people continuously decreased in almost all provincial clusters. In Phrae, the number of deprived people decreased at the highest rate (-98.24%), followed by Rayong (-94.95 %) and Nong Khai (-82.09%). Overall, there was a slight increase in the number of deprived people. Mukdahan saw the highest increase in deprivation, where the number of deprived people increased at an increasing rate (127.70%), followed by Bueng Kan (578.26%), and Samut Sakhon (136.06%).



#### 4.1.2.3 Education

TPMAP uses the survey-based basic minimum need data to determine the poor. According to the basic minimum need survey, there are five indicators of educational poverty as follows.

15) Children aged 3-5 years are properly raised and cared for.

16) Children aged 6-14 years receive a compulsory education of nine years.

17) Children, who finished Mathayom 3, are able to continue on to Mathayom 4 or comparable education level.

18) Household members, who completed compulsory education but do not continue high school education or are unemployed, obtain an occupational training.

19) Household members aged 15-59 years can read and write Thai and perform basic math calculations.

TPMAP adopts only four indicators (15, 16, 17, and 19) to measure poverty in the education dimension. The researcher used the number of poor people who are classified as deprived in the education dimension from 2017-2019 to analyze the overview of educational poverty in Thailand. The details are shown in Table 4.7.

**Table 4.7** Proportion of Educationally-Deprived People from 2017-2019 Classified by Provinces

Province	Proportion of educationally-deprived people in 2017	Proportion of educationally-deprived people in 2018	Proportion of educationally-deprived people in 2018
<b>Krabi</b>	0.50	0.56	0.64
<b>Kanchanaburi</b>	1.12	0.84	0.63
<b>Kalasin</b>	1.64	2.13	2.43
<b>Kamphaengphet</b>	0.93	1.20	0.82
<b>Khon Kaen</b>	2.50	2.88	2.93

<b>Province</b>	<b>Proportion of educationally-deprived people in 2017</b>	<b>Proportion of educationally-deprived people in 2018</b>	<b>Proportion of educationally-deprived people in 2018</b>
<b>Chanthaburi</b>	0.37	0.42	0.67
<b>Chachoengsao</b>	0.19	0.37	0.50
<b>Chonburi</b>	0.32	0.50	0.65
<b>Chainat</b>	0.24	0.11	0.01
<b>Chaiyaphum</b>	2.24	2.68	2.68
<b>Chumphon</b>	0.25	0.29	0.23
<b>Chiang Rai</b>	4.94	5.01	5.68
<b>Chiang Mai</b>	6.64	5.09	7.12
<b>Trang</b>	1.06	1.14	0.67
<b>Trat</b>	0.12	0.16	0.17
<b>Tak</b>	2.62	3.20	4.16
<b>Nakhon Nayok</b>	0.15	0.17	0.19
<b>Nakhon Pathom</b>	0.34	0.06	0.04
<b>Nakhon Phanom</b>	1.12	0.94	1.74
<b>Nakhon Ratchasima</b>	4.35	6.04	2.05
<b>Nakhon Si Thammarat</b>	1.43	2.10	2.51
<b>Nakhon Sawan</b>	1.64	1.91	2.66
<b>Nonthaburi</b>	0.11	0.12	0.01
<b>Narathiwat</b>	3.77	2.43	2.18
<b>Nan</b>	3.02	2.56	2.12
<b>Bueng Kan</b>	1.06	1.63	1.91
<b>Buriram</b>	3.87	4.99	6.25
<b>Pathum Thani</b>	0.26	0.41	0.04
<b>Prachuap Khiri Khan</b>	0.34	0.15	0.24
<b>Prachinburi</b>	0.45	0.76	0.63
<b>Pattani</b>	3.00	3.50	1.73

<b>Province</b>	<b>Proportion of educationally-deprived people in 2017</b>	<b>Proportion of educationally-deprived people in 2018</b>	<b>Proportion of educationally-deprived people in 2018</b>
<b>Ayutthaya</b>	0.30	0.47	0.43
<b>Phayao</b>	0.77	0.24	0.10
<b>Phangnga</b>	0.02	0.02	0.02
<b>Phatthalung</b>	0.94	1.31	2.16
<b>Phichit</b>	0.64	0.40	0.44
<b>Phitsanulok</b>	1.86	1.26	0.68
<b>Phetchaburi</b>	0.25	0.06	0.01
<b>Phetchabun</b>	1.47	0.83	0.68
<b>Phrae</b>	0.44	0.14	0.09
<b>Phuket</b>	0.03	0.09	0.04
<b>Maharakham</b>	0.99	0.96	0.49
<b>Mukdahan</b>	0.57	0.11	0.14
<b>Mae Hong Son</b>	4.84	3.10	3.96
<b>Yasothon</b>	1.02	1.22	0.44
<b>Yala</b>	2.32	1.46	2.06
<b>Roi Et</b>	1.42	1.54	1.61
<b>Ranong</b>	0.09	0.13	0.23
<b>Rayong</b>	0.29	0.24	0.03
<b>Ratchaburi</b>	0.40	0.40	0.35
<b>Lopburi</b>	1.05	1.29	2.08
<b>Lampang</b>	0.68	0.55	0.52
<b>Lamphun</b>	1.42	0.92	1.07
<b>Loei</b>	1.39	2.37	0.25
<b>Sisaket</b>	4.76	5.37	6.25
<b>Sakon Nakhon</b>	2.42	2.11	2.26
<b>Songkhla</b>	1.00	0.44	0.27

<b>Province</b>	<b>Proportion of educationally-deprived people in 2017</b>	<b>Proportion of educationally-deprived people in 2018</b>	<b>Proportion of educationally-deprived people in 2018</b>
<b>Satun</b>	0.92	1.27	2.33
<b>Samut Prakan</b>	0.21	0.28	0.43
<b>Samut Songkhram</b>	0.09	0.09	0.03
<b>Samut Sakhon</b>	0.20	0.27	0.36
<b>Sa Kaeo</b>	0.76	0.59	0.75
<b>Saraburi</b>	0.55	0.53	0.57
<b>Singburi</b>	0.21	0.19	0.45
<b>Sukhothai</b>	1.10	0.88	0.20
<b>Suphanburi</b>	1.08	1.28	1.20
<b>Surat Thani</b>	0.62	0.82	1.08
<b>Surin</b>	3.03	1.23	1.35
<b>Nong Khai</b>	0.81	0.39	0.30
<b>Nong Bua Lam Phu</b>	0.61	0.02	0.26
<b>Angthong</b>	0.23	0.17	0.35
<b>Amnat Charoen</b>	0.25	0.56	0.31
<b>Udon Thani</b>	2.87	3.81	3.77
<b>Uttaradit</b>	0.77	0.94	0.41
<b>Uthai Thani</b>	0.55	0.44	0.44
<b>Ubon Ratchathani</b>	3.14	4.88	4.47

**Note:** the proportion of poor people is based on the number of poor people in each province compared to the total number of poor people who are classified as deprived according to the basic minimum need survey and register for the state welfare card in that year.

Table 4.7 presents the proportion of educationally-deprived people in 76 provinces, excluding Bangkok. The information can be classified by years as follows.

In 2017, the top five provinces with the highest proportion of educationally-deprived people were Chiang Mai (6.64%), Chiang Rai (4.94%), Mae Hong Son (4.84%), Sisaket (4.76%), and Nakhon Ratchasima (4.35%). The five provinces with the lowest proportion of educationally-deprived people included Phangnga (0.02%), Phuket (0.03%), Ranong and Samut Songkhram (0.09%), Nonthaburi (0.11%), and Trat (0.12%).

In 2018, the top five provinces with the highest proportion of educationally-deprived people were Nakhon Ratchasima (6.04%), Sisaket (5.37%), Chiang Mai (5.09%), Chiang Rai (5.01%), and Buriram (4.99%). The provinces with the lowest proportion of educationally-deprived people includes Phangnga and Nong Bua Lam Phu (0.02%), Phetchaburi and Nakhon Pathom (0.06%), Phuket and Samut Songkhram (0.09%), Chainat and Mukdahan (0.11%), and Nonthaburi (0.12%).

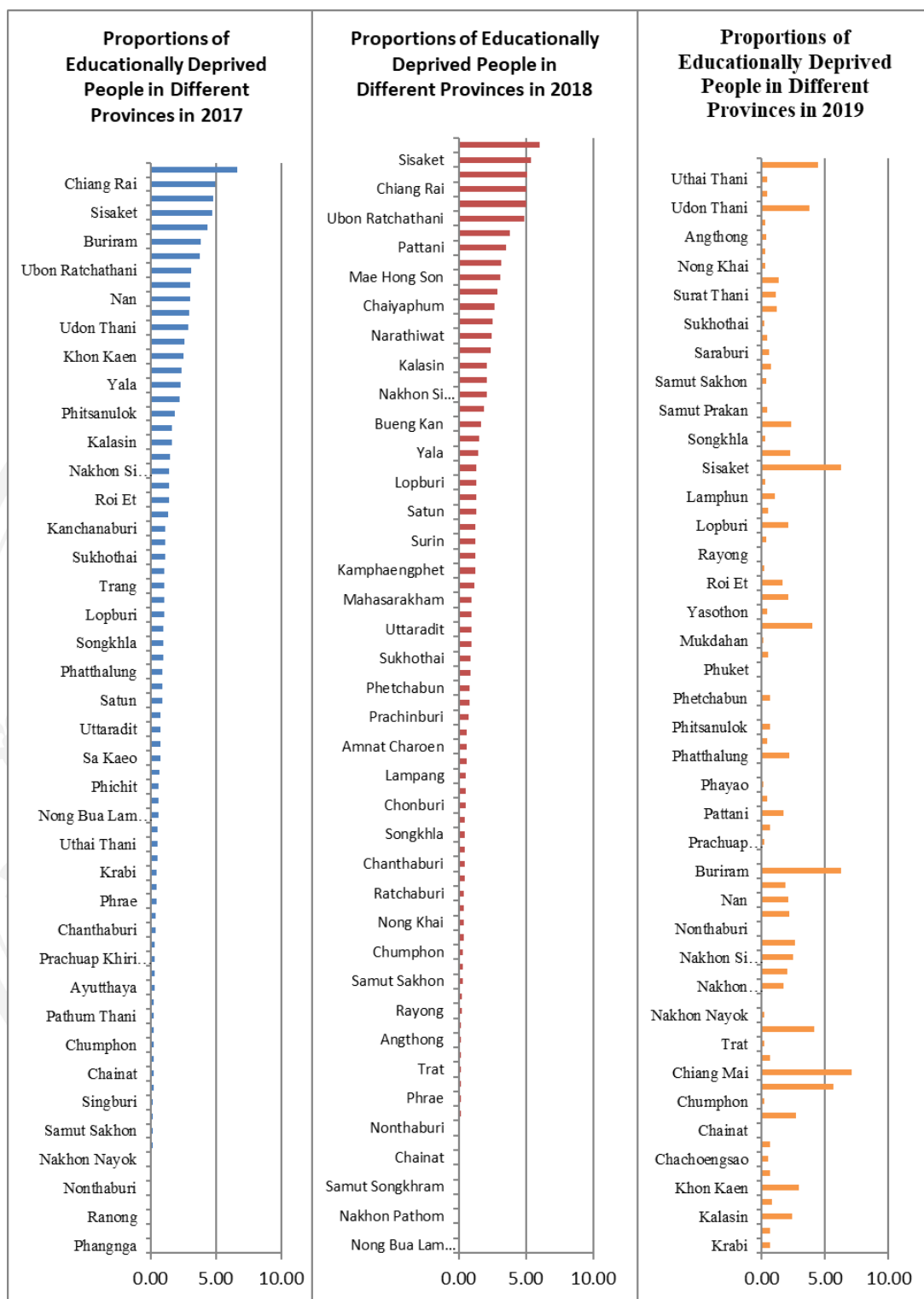
In 2019, the top five provinces with the highest proportion of educationally-deprived people included Chiang Mai (7.12%), Buriram and Sisaket (6.25%), Chiang Rai (5.68%), Ubon Ratchathani (4.47%), and Tak (4.16%). The provinces with the lowest proportion of educationally-deprived people were Nonthaburi, Chainat, and Phetchaburi (0.01%), followed by Phangnga (0.02%), Rayong and Samut Songkhram (0.03%), Nakhon Pathom, Phuket, and Pathum Thani (0.04%), and Phrae (0.09%).

When comparing the number of educationally-deprived people over the three years among the five most educationally-deprived provinces, Chiang Mai saw the highest increase in educational deprivation, where the number of educationally-deprived people increased from 2017-2018 but decreased in 2019. Similarly, the number of educationally-deprived people in Buriram also increased at an increased rate in 2019. The number of educationally-deprived people in this group continued to increase. In the five least educationally-deprived provinces, the number of educationally-deprived people in Nonthaburi, Chainat and Phetchaburi decreased at an increasingly rate and almost reached zero in 2019, while the number of educationally-deprived people in the other provinces in this group similarly decreased.

A comparison of the proportion of educationally-deprived people in different provinces is clearly presented in Figure 4.5.

The proportion of educationally-deprived people in 18 provincial clusters, classified according to the Notification on the Establishment of the Provincial Clusters and the Center of the Cluster dated 16 November 2017, are also demonstrated in Table 4.8.





**Figure 4.5** Comparing the Proportion of Educationally-Deprived People in Different Provinces from 2017-2019

**Table 4.8** Proportion of Educationally-Deprived People from 2017-2019 Classified by Provincial Clusters and Indicators

Cluster	Province	Overall		Indicator 15		Indicator 16		Indicator 17		Indicator 19	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
Upper Central	Chainat	-51.69	-93.02	0.00	-100.00	-57.18	-98.04	10.00	-100.00	-38.13	-81.13
	Ayutthaya	67.20	-34.08	-100.00	-	94.30	-27.85	107.69	-88.89	-30.94	-89.62
	Lopburi	31.96	16.90	-46.67	-33.33	61.62	32.22	-10.00	-60.00	-21.63	-37.73
	Saraburi	4.25	-22.66	-73.91	-100.00	27.95	-23.15	-81.36	-45.45	-51.69	-18.10
	Singburi	-3.16	67.33	-100.00	-	-2.76	78.01	-50.00	100.00	-1.98	-18.18
	Angthong	-18.89	43.77	-75.00	-50.00	-11.70	63.62	-85.71	166.67	-34.46	-31.43
Middle Central	Nakhon Pathom	-82.27	-51.26	80.00	-88.89	-96.02	21.15	-39.29	-11.76	-13.68	-72.28
	Nonthaburi	21.99	-90.99	-87.50	-100.00	51.79	-98.00	0.00	-66.67	-70.00	13.89
	Pathum Thani	74.79	-93.23	-69.23	-100.00	97.66	-93.89	-81.25	-100.00	-45.45	-78.89
	Samut Prakan	42.37	11.66	-43.75	-100.00	69.42	15.57	75.00	-28.57	-57.54	-35.53
	Kanchanaburi	-19.20	-46.22	-100.00	-	5.32	-37.41	-81.46	-67.86	-39.85	-61.58
Lower Central 1	Ratchaburi	6.33	-37.02	100.00	-100.00	13.41	-31.29	-80.65	-100.00	-5.92	-61.99
	Suphanburi	27.46	-32.21	-71.43	-75.00	66.28	-37.14	-58.54	-26.47	-63.54	24.95
	Prachuap Khiri Khan	-53.09	17.17	-35.71	55.56	-60.39	-35.70	-85.00	433.33	-37.80	91.67
Lower Central 2	Phetchaburi	-74.56	-88.36	-20.00	-100.00	-84.52	-91.49	-100.00	-	-32.55	-84.62
	Samut Songkhram	4.78	-74.89	-	-	20.33	-92.92	-100.00	100.00	-31.73	16.90
	Samut Sakhon	49.55	-5.10	-	-	72.63	-15.10	-100.00	-	-97.56	4600.00



Cluster	Province	Overall		Indicator 15		Indicator 16		Indicator 17		Indicator 19	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
South (Gulf of Thailand)	Chumphon	22.01	-41.44	-50.00	-100.00	40.12	-32.36	-69.05	-61.54	-11.22	-77.26
	Nakhon Si Thammarat	57.98	-13.25	-50.37	-35.82	115.65	-10.41	-46.91	-58.14	-32.49	-27.08
	Phatthalung	50.23	19.45	-72.00	114.29	73.85	26.12	-54.55	-40.00	-29.26	-43.49
	Songkhla	-52.78	-56.00	-61.22	-94.74	-49.65	-77.90	-72.50	-45.45	-58.84	2.97
	Satun	47.48	32.79	-88.03	-47.06	71.83	35.79	-30.91	-52.63	-43.52	1.02
	Surat Thani	42.42	-4.64	-36.92	-31.71	66.63	0.75	-31.40	-71.19	-21.21	-37.85
South (Andaman Coast)	Krabi	18.15	-16.83	-50.00	145.45	27.49	-21.35	-53.70	-52.00	-11.48	14.29
	Trang	14.95	-57.53	-93.33	-100.00	38.58	-61.45	-68.12	-59.09	-59.95	-11.87
	Phangnga	18.60	-23.53	150.00	-100.00	-17.39	-57.89	-40.00	33.33	31.58	-12.00
	Phuket	199.35	-69.87	400.00	-100.00	307.62	-69.63	-100.00	-	-39.53	-69.23
	Ranong	56.10	25.94	-	-	64.77	39.71	0.00	-83.33	32.14	-16.22
	Narathiwat	-30.78	-35.18	-40.44	-74.07	-33.85	-66.81	-31.51	-45.00	-29.26	-14.65
Southern Border	Pattani	25.23	-64.15	-59.66	-52.11	54.98	-80.52	-36.13	-18.18	-9.80	-32.50
	Yala	-32.25	1.72	-3.35	-7.92	-58.05	97.79	-33.00	4.48	-19.10	-26.93
East 1	Chachoengsao	108.29	-2.54	-9.09	-100.00	1427.66	11.42	-61.02	-73.91	-49.44	-55.87
	Chonburi	65.45	-5.75	-61.54	0.00	121.07	-4.11	-42.11	9.09	-39.48	-15.41
	Rayong	-12.81	-89.97	-94.74	-100.00	5.52	-97.77	-100.00	100.00	-59.55	-26.77
East 2	Chanthaburi	20.83	14.92	-36.84	-75.00	60.55	33.31	-89.13	0.00	-27.96	-41.19

Cluster	Province	Overall		Indicator 15		Indicator 16		Indicator 17		Indicator 19	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
	Trat	44.75	-24.30	300.00	-100.00	57.24	-22.08	-37.50	-20.00	-3.96	-39.18
	Nakhon Nayok	25.34	-17.69	500.00	-100.00	54.32	-24.69	-91.67	100.00	-45.60	34.34
	Prachinburi	81.85	-39.71	20.00	-100.00	116.17	-36.27	-69.57	-85.71	-35.54	-80.92
	Sa Kaeo	-15.91	-8.32	-66.67	10.00	-3.47	-1.70	-69.83	-82.86	-49.49	-42.28
	Buang Kan	65.59	-15.55	-76.47	-100.00	85.49	-16.10	-43.64	-25.81	-56.86	6.51
	Loei	83.87	-92.24	960.42	-100.00	91.99	-95.54	359.59	-97.76	12.68	-69.77
Upper Northeast 1	Nong Khai	-48.11	-43.57	-82.61	-100.00	-46.09	-38.27	-51.14	-97.67	-57.39	-66.05
	Nong Bua Lam Phu	-96.64	865.96	500.00	-100.00	-98.68	2061.11	-25.93	-60.00	-100.00	11700.00
	Udon Thani	42.36	-28.25	-43.14	-86.21	67.09	-28.15	-59.83	-63.12	-59.20	-22.06
	Nakhon Phanom	-10.04	33.83	-100.00	-	-1.34	40.74	-81.10	-35.48	-51.87	-53.72
Upper Northeast 2	Mukdahan	-79.48	-9.14	100.00	-100.00	-83.54	-8.91	-87.18	-40.00	-58.31	-8.09
	Sakon Nakhon	-6.35	-22.27	55.56	-57.14	-0.62	-19.31	-64.50	-30.00	-48.38	-71.99
	Kalasin	39.16	-17.39	-90.91	0.00	45.58	-16.27	-45.65	-73.33	-8.66	-31.98
Middle Northeast	Khon Kaen	23.43	-26.28	22.58	-88.16	36.50	-26.95	-72.89	-70.13	-50.71	-4.17
	Maharakham	5.04	-62.92	-66.67	-100.00	13.00	-72.34	-66.91	-10.87	-35.25	50.89
	Roi Et	16.96	-24.50	30.00	-100.00	25.13	-24.39	-66.08	-39.66	-35.19	-23.23
Lower Northeast 1	Chaiyaphum	28.37	-27.47	-55.41	-87.88	54.13	-26.66	-79.90	-9.09	-44.04	-33.41
	Nakhon Ratchasima	49.04	-75.36	-68.24	-86.49	74.96	-78.73	-65.90	-55.41	-27.70	-46.52

Cluster	Province	Overall		Indicator 15		Indicator 16		Indicator 17		Indicator 19	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
	Buriram	38.66	-9.39	-79.11	21.21	71.30	-7.25	-58.70	-7.66	-46.13	-30.46
	Surin	-56.39	-20.47	-50.77	-81.25	-58.28	-14.29	-56.75	-10.64	-49.66	-43.60
Lower Northeast 2	Yasothon	29.02	-73.60	-55.56	-75.00	39.95	-75.44	-42.67	-79.07	-60.44	-15.00
	Sisaket	21.06	-15.75	-73.91	-61.11	48.27	-14.62	-56.21	-47.26	-46.04	-21.70
	Amnat Charoen	138.23	-59.97			188.75	-58.13	-73.02	-47.06	0.45	-83.33
	Ubon Ratchathani	66.95	-33.71	-78.43	-63.64	96.05	-33.43	-75.99	-38.26	-64.45	-38.28
Upper North 1	Chiang Mai	-17.69	1.31	-50.00	-47.22	-30.80	40.19	-63.16	-18.57	-14.20	-9.57
	Mae Hong Son	-31.06	-7.54	-87.04	-28.57	58.69	-8.18	-56.25	-30.95	-40.19	-5.87
	Lampang	-14.12	-31.23	66.67	-100.00	-8.56	14.76	-71.43	-50.00	-16.02	-54.87
	Lamphun	-30.63	-15.71	-62.50	-100.00	-75.73	-59.28	-100.00	-	-13.50	-10.22
	Chiang Rai	8.95	-17.88	-47.54	-96.88	53.64	-3.95	-67.98	-18.46	-12.33	-31.64
Upper North 2	Nan	-9.07	-39.99	-43.75	-61.11	8.33	-97.36	-57.33	-56.25	-12.22	-25.20
	Phayao	-66.98	-70.14	-94.44	-100.00	-94.86	238.78	-93.94	-100.00	-56.62	-83.71
	Phrae	-66.39	-54.95	400.00	-100.00	-85.27	-59.28	-70.00	-100.00	-31.64	-52.02
Lower North 1	Tak	31.22	-5.81	-77.27	-62.22	59.35	34.00	-63.11	-60.00	17.12	-37.27
	Phitsanulok	-27.46	-60.73	-48.28	-37.78	-15.58	-88.57	-54.42	-51.02	-41.18	-12.46
	Phetchabun	-39.71	-40.03	-66.18	-95.65	-33.07	-61.49	-68.31	-15.52	-45.08	-4.16
	Sukhothai	-14.39	-83.33	0.00	-92.59	-5.62	-97.00	-26.60	-49.28	-27.09	-57.10

Cluster	Province	Overall		Indicator 15		Indicator 16		Indicator 17		Indicator 19	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
	Uttaradit	29.81	-68.11	-66.67	0.00	53.09	-72.67	-66.04	-38.89	-21.82	-47.98
	Kamphaengphet	37.79	-50.47	220.00	-98.75	182.62	-59.82	-30.26	-62.26	-39.12	-25.19
	Nakhon Sawan	24.69	0.89	-50.88	-100.00	41.76	6.47	-26.60	-68.12	-19.02	-20.62
	Phichit	-32.67	-19.82	116.67	-100.00	-67.77	63.55	-19.61	-60.98	11.48	-48.93
	Uthai Thani	-14.16	-27.25	-100.00	-	-19.33	-12.37	-55.26	-100.00	1.50	-49.89

Note: 1. The data were calculated by the researcher.

2. Indicator 15 is children aged 3-5 years are properly raised and cared for.

Indicator 16 is children aged 6-14 years receive a compulsory education of nine years.

Indicator 17 is children who finished Mathayom 3 are able to continue on to Mathayom 4 or comparable education level.

Indicator 19 is household members aged 15-59 years can read and write Thai and perform basic math calculations.

3.



Increase at an increasing rate  
 Increase at a decreasing rate  
 Decrease - increase  
 Not deprived - increase  
 Increase - decrease  
 Decrease at a decreasing rate, or  
 decrease – unchanged  
 Decrease at an increasing rate  
 Increase – not deprived  
 Decrease, or unchanged – not deprived  
 No deprived people in the latest year  
 Unchanged



Table 4.8 presents the Proportion of educationally-deprived people classified by provincial clusters and indicators from 2017-2019. Overall, the number of deprived people in almost all provincial clusters increased from 2017-2018 and decreased in 2019. Chainat saw the highest reduction of educational poverty, where the number of deprived people declined at an increasing rate (-93.02%), followed by Rayong (-89.97%) and Phetchaburi (-88.36%). The increase in educational poverty concentrated in the upper Central cluster and the Southern cluster (Gulf of Thailand). Satun saw the highest increase in educational poverty, where the number of deprived people increased at a decreasing rate (32.79%), followed by Ranong (25.94%), and Phatthalung (19.45%).

For Indicator 15 “Children aged 3-5 years are properly raised and cared for,” overall, there were almost no deprived people according to this indicator. Chiang Rai saw the highest reduction of educational poverty, where the number of deprived people decreased at an increased rate (-96.88%), followed by Phetchabun (-95.65%), and Songkhla (-94.74%). There were five provinces, where the number of deprived people increased. Krabi saw the highest increase in deprivation, where the number of deprived people increased at an increasing rate (145.45%), followed by Phatthalung (114.29%), Prachuap Khiri Khan (55.56%), Buriram (21.21%), and Sa Kaeo (10.00%).

For Indicator 16 “Children aged 6-14 years receive a compulsory education of nine years,” the study finds that in almost all provincial clusters the number of deprived people according to this indicator increased in 2017-2018 but decreased in 2019. In the lower Northern cluster, the number of deprived people declined at an increasing rate. In Chainat, the number of deprived people declined at the highest rate (-98.04%), followed by Sukhothai (-97.00%), and Phetchabun (-91.49%). The increase in the number of deprived people concentrated in the Southern cluster (Gulf of Thailand). Ranong showed the highest increase in deprivation, where the number of deprived people increased at a decreasing rate (39.71%), followed by Satun (35.79%) and Tak (34.00%).

For Indicator 17, “Children who finished Mathayom 3 are able to continue on to Mathayom 4 or comparable education level,” there were 10 provinces with no deprived people according to this indicator, including, Chainat, Pathum Thani, Ratchaburi, Phetchaburi, Samut Sakhon, Phuket, Lamphun, Phayao, Phrae, and Uthai

Thani. Overall, the number of deprived people decreased at a decreasing rate in almost all provincial clusters. In Nong Khai, the number of deprived people decreased at the highest rate (-97.67%), followed by Prachinburi (-85.71%) and Sa Kaeo (-82.86%). There was a slight increase in the number of deprived people. Prachuap Khiri Khan had the highest increase of deprivation (433.33%), followed by Angthong (166.67%), and Singburi and Nakhon Nayok (100.00%). Samut Songkhram and Rayong had no deprivation according to this indicator in 2017 but the number of deprived people increased in the following years.

Indicator 19, “Household members aged 15-59 years can read and write Thai and perform basic math calculations,” the study finds that the number of deprived people decreased at an increased rate in almost all provincial clusters. The upper Northern cluster 2 is the only cluster where all provinces had a decline in deprivation. In Ayutthaya, the number of deprived people decreased at the highest rate (-89.62%), followed by Phayao (-83.71%) and Chainat (-81.15%). The increase in the number of deprived people concentrated in the lower Central cluster 2. Samut Sakhon showed the highest increase in deprivation (4600.00%), followed by Prachuap Khiri Khan (91.67%) and Mahasarakham (50.89%). Nong Bua Lam Phu initially had no deprivation according to this indicator but the number of deprived people increased in the following years.

#### 4.1.2.4 Income:

Based on the basic minimum survey of the Community Development Department, there are six indicators of income poverty, which consist of:

20) Household members aged 15-59 years have proper jobs and income.

21) Household members aged 60 years and above have proper jobs and income.

22) An average household income is not less than 30,000 Baht per person per year.

23) Household members have regular savings.

24) Nobody in the household drinks alcohol.

25) Nobody in the household smokes cigarettes.

TPMAP adopts only three indicators (20, 21, and 22) to measure poverty in the income dimension. The researcher used the number of people classified as income-deprived from 2017-2019 in TPMAP database to analyze the overview of income poverty in Thailand. The details are shown in Table 4.9.

**Table 4.9** Proportion of Income-Deprived People from 2017-2019 Classified by Provinces

<b>Province</b>	<b>Proportion of income- deprived people in 2017</b>	<b>Proportion of income- deprived people in 2018</b>	<b>Proportion of income- deprived people in 2019</b>
<b>Krabi</b>	0.62	0.73	1.01
<b>Kanchanaburi</b>	1.90	1.25	1.06
<b>Kalasin</b>	0.86	0.83	0.73
<b>Kamphaengphet</b>	1.33	1.64	1.26
<b>Khon Kaen</b>	2.66	2.07	2.13
<b>Chanthaburi</b>	0.53	0.56	0.52
<b>Chachoengsao</b>	1.12	0.93	1.11
<b>Chonburi</b>	0.73	0.77	0.79
<b>Chainat</b>	0.75	0.81	0.64
<b>Chaiyaphum</b>	1.78	1.64	1.82
<b>Chumphon</b>	0.30	0.29	0.31
<b>Chiang Rai</b>	4.25	3.62	3.88
<b>Chiang Mai</b>	4.04	5.18	4.90
<b>Trang</b>	0.98	1.17	1.37
<b>Trat</b>	0.21	0.26	0.26
<b>Tak</b>	1.21	1.51	1.73
<b>Nakhon Nayok</b>	0.44	0.39	0.51
<b>Nakhon Pathom</b>	0.61	0.58	0.52
<b>Nakhon Phanom</b>	1.20	0.30	0.28
<b>Nakhon Ratchasima</b>	4.54	4.97	4.45



<b>Province</b>	<b>Proportion of income- deprived people in 2017</b>	<b>Proportion of income- deprived people in 2018</b>	<b>Proportion of income- deprived people in 2019</b>
<b>Nakhon Si Thammarat</b>	3.32	4.06	4.66
<b>Nakhon Sawan</b>	1.91	2.22	1.95
<b>Nonthaburi</b>	0.58	0.63	0.57
<b>Narathiwat</b>	1.59	1.37	1.44
<b>Nan</b>	2.41	3.38	3.05
<b>Bueng Kan</b>	0.57	0.77	1.36
<b>Buriram</b>	2.80	2.53	2.59
<b>Pathum Thani</b>	0.74	0.72	0.73
<b>Prachuap Khiri Khan</b>	0.39	0.33	0.91
<b>Prachinburi</b>	0.62	0.49	0.40
<b>Pattani</b>	2.07	2.65	2.47
<b>Ayutthaya</b>	1.39	1.67	1.05
<b>Phayao</b>	1.66	1.26	1.11
<b>Phangnga</b>	0.32	0.57	0.45
<b>Phatthalung</b>	0.96	1.10	1.26
<b>Phichit</b>	1.54	1.98	1.85
<b>Phitsanulok</b>	2.39	2.96	3.37
<b>Phetchaburi</b>	0.93	1.08	1.12
<b>Phetchabun</b>	2.01	1.79	1.86
<b>Phrae</b>	1.48	1.33	1.02
<b>Phuket</b>	0.11	0.12	0.09
<b>Maharakham</b>	0.82	0.88	0.94
<b>Mukdahan</b>	0.39	0.14	0.16
<b>Mae Hong Son</b>	1.22	1.18	0.79
<b>Yasothon</b>	0.54	0.44	0.26
<b>Yala</b>	1.41	1.72	2.08
<b>Roi Et</b>	0.85	1.01	0.97

<b>Province</b>	<b>Proportion of income- deprived people in 2017</b>	<b>Proportion of income- deprived people in 2018</b>	<b>Proportion of income- deprived people in 2019</b>
<b>Ranong</b>	0.14	0.20	0.11
<b>Rayong</b>	0.47	0.43	0.38
<b>Ratchaburi</b>	0.78	1.28	1.08
<b>Lopburi</b>	2.17	1.92	2.03
<b>Lampang</b>	2.86	3.28	3.08
<b>Lamphun</b>	1.23	0.65	0.58
<b>Loei</b>	1.31	0.87	0.75
<b>Sisaket</b>	2.80	2.25	1.61
<b>Sakon Nakhon</b>	1.19	0.55	0.43
<b>Songkhla</b>	2.22	2.11	2.63
<b>Satun</b>	1.08	1.22	1.82
<b>Samut Prakan</b>	0.83	1.00	1.42
<b>Samut Songkhram</b>	0.21	0.11	0.14
<b>Samut Sakhon</b>	0.70	0.73	1.13
<b>Sa Kaeo</b>	0.59	0.57	0.52
<b>Saraburi</b>	0.92	1.00	1.23
<b>Singburi</b>	0.26	0.47	0.44
<b>Sukhothai</b>	1.93	1.98	1.80
<b>Suphanburi</b>	1.41	1.35	1.79
<b>Surat Thani</b>	0.95	0.97	1.05
<b>Surin</b>	3.14	1.59	1.72
<b>Nong Khai</b>	0.64	0.49	0.18
<b>Nong Bua Lam Phu</b>	0.25	0.25	0.21
<b>Angthong</b>	0.96	1.16	0.96
<b>Amnat Charoen</b>	0.28	0.25	0.14
<b>Udon Thani</b>	2.09	2.06	2.07
<b>Uttaradit</b>	1.19	1.64	1.40

<b>Province</b>	<b>Proportion of income- deprived people in 2017</b>	<b>Proportion of income- deprived people in 2018</b>	<b>Proportion of income- deprived people in 2019</b>
<b>Uthai Thani</b>	0.79	0.82	0.39
<b>Ubon Ratchathani</b>	1.50	0.91	1.12

**Note:** the proportion of poor people is based on the number of poor people in each province compared to the total number of poor people who are classified as deprived according to the basic minimum need survey and register for the state welfare card in that year.

Table 4.9 shows the proportion of income-deprived people in 76 provinces, excluding Bangkok. The information can be classified by years as follows.

In 2017, the top five provinces with the highest proportion of income-deprived people were Nakhon Ratchasima (4.54%), Chiang Rai (4.25%), Chiang Mai (4.04%), Nakhon Si Thammarat (3.32%), and Surin (3.14%). The five provinces with the lowest proportion of income-deprived people consisted of Phuket (0.11%), Ranong (0.14%), Trat and Samut Songkhram (0.21%), Nong Bua Lam Phu (0.25%), and Singburi (0.26%).

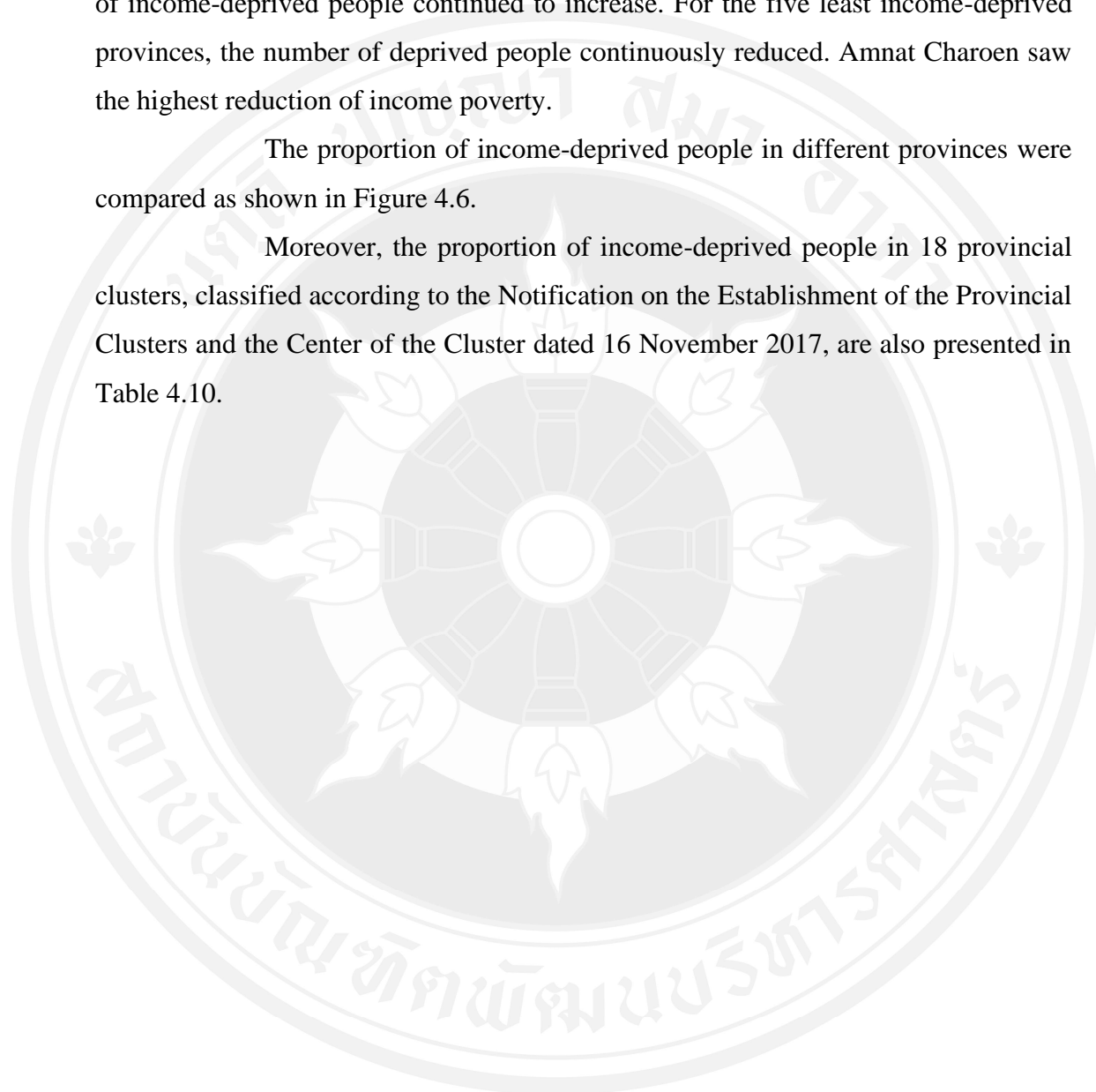
In 2018, the top five provinces with the highest proportion of income-deprived people included Chiang Mai (5.18%), Nakhon Ratchasima (4.97%), Nakhon Si Thammarat (4.06%), Chiang Rai (3.62%), and Nan (3.38%). The five provinces with the lowest proportion of income-deprived people were Samut Songkhram (0.11%), Phuket (0.12%), Mukdahan (0.14%), Ranong (0.20%), Nong Bua Lam Phu and Amnat Charoen (0.25%).

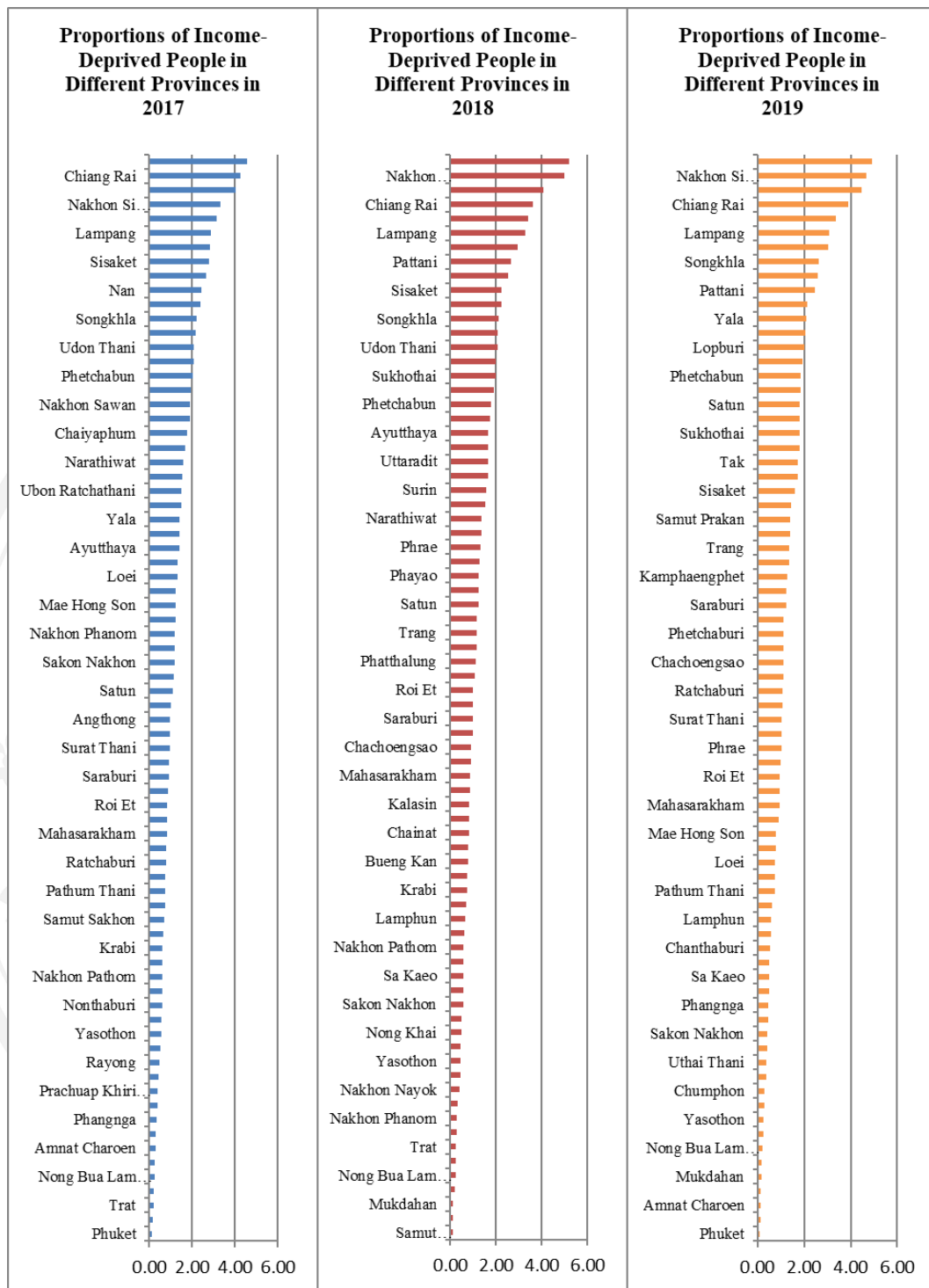
In 2019, the top five provinces with the highest proportion of income-deprived people includes Chiang Mai (4.90%), Nakhon Si Thammarat (4.66%), Nakhon Ratchasima (4.45%), Chiang Rai (3.88%), and Phitsanulok (3.37%). The five provinces with the lowest proportion of income-deprived people were Phuket (0.09%), Ranong (0.11%), Amnat Charoen and Samut Songkhram (0.14%), Mukdahan (0.16%), and Nong Khai (0.18%).

When comparing the number of income-deprived people over the three years, the study finds that, among the five most income-deprived provinces, Chiang Mai saw the highest increase in income poverty, where the number of income-deprived people increased in 2018 and decreased in 2019. In Nakhon Si Thammarat, the number of income-deprived people continued to increase. For the five least income-deprived provinces, the number of deprived people continuously reduced. Amnat Charoen saw the highest reduction of income poverty.

The proportion of income-deprived people in different provinces were compared as shown in Figure 4.6.

Moreover, the proportion of income-deprived people in 18 provincial clusters, classified according to the Notification on the Establishment of the Provincial Clusters and the Center of the Cluster dated 16 November 2017, are also presented in Table 4.10.





**Figure 4.6** Comparing the Proportion of Income-Deprived People in Different Provinces from 2017-2019

**Table 4.10** Proportion of Income-Deprived People from 2017–2019 Classified by Provincial Clusters and Indicators

Cluster	Province	Overall		Indicator 20		Indicator 21		Indicator 22	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
Upper Central	Chainat	-26.54	-40.02	-65.64	-37.41	-26.62	-44.16	-1.47	-15.03
	Ayutthaya	-18.24	-52.00	-33.51	-43.49	-13.36	-53.67	-78.92	-94.29
	Lopburi	-39.89	-18.99	-35.59	-17.42	-21.56	-18.47	-91.76	-52.11
	Saraburi	-26.38	-5.16	-39.45	-4.42	-16.83	0.11	-59.05	-76.53
	Singburi	25.19	-28.16	15.29	-39.35	43.33	-32.63	-52.97	39.81
	Angthong	-18.01	-36.55	-43.54	-26.23	-15.36	-38.30	-0.28	-35.65
Middle Central	Nakhon Pathom	-35.16	-32.06	-25.04	-44.74	-37.23	-29.80	45.45	-21.88
	Nonthaburi	-26.31	-30.94	-53.18	-12.54	-13.85	-33.74	-87.22	-24.56
	Pathum Thani	-33.92	-22.28	-42.23	-25.72	-5.70	-18.87	-68.78	-51.90
	Samut Prakan	-18.18	8.17	-29.13	-8.00	-12.26	15.23	-56.83	-61.75
	Kanchanaburi	-55.36	-35.27	-50.08	-47.52	-38.45	-30.43	-93.89	-75.28
Lower Central 1	Ratchaburi	12.37	-35.68	24.95	-52.56	11.27	-33.77	-38.61	-11.29
	Suphanburi	-34.81	1.35	-53.94	17.39	-25.55	0.23	-77.07	-2.94
Lower Central 2	Prachuap Khiri Khan	-42.32	107.28	-60.62	217.97	-33.06	88.76	-62.76	25.20
	Phetchaburi	-20.93	-20.24	-38.39	-36.44	2.22	-18.22	-94.10	24.71
	Samut Songkhram	-64.14	-1.85	-81.84	53.62	-55.36	-33.87	-72.30	72.03
	Samut Sakhon	-29.30	18.54	-15.31	-4.93	-31.97	23.18	-100.00	4900.00

Cluster	Province	Overall		Indicator 20		Indicator 21		Indicator 22	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
South (Gulf of Thailand)	Chumphon	-33.29	-19.37	-1.72	-48.56	-45.65	12.28	-66.23	-44.23
	Nakhon Si Thammarat	-16.66	-12.13	-29.46	-17.92	-6.52	-7.56	-28.80	-29.02
	Phatthalung	-22.29	-12.35	-26.76	-13.40	-18.01	-12.55	-82.41	-100.00
	Songkhla	-35.43	-4.42	-43.89	9.72	-23.77	-6.37	-72.18	-55.93
	Satun	-22.88	13.96	-26.28	28.76	-16.87	6.65	-80.90	-55.26
	Surat Thani	-30.16	-17.33	-46.21	-3.75	-28.30	-13.66	0.30	-50.90
South (Andaman Coast)	Krabi	-20.96	6.12	-25.95	29.15	-10.27	-0.38	-57.16	5.82
	Trang	-18.89	-10.32	-15.54	-17.52	-21.33	-6.58	2.61	-30.48
	Phangnga	23.50	-39.31	39.39	-41.13	18.72	-39.03	-35.15	-59.54
	Phuket	-23.30	-45.91	93.40	-90.73	-37.65	-28.90	50.00	-66.67
	Ranong	-0.30	-57.69	5.28	-64.62	5.95	-58.88	-72.41	17.50
	Narathiwat	-41.12	-19.68	-48.42	-8.62	-24.92	-26.90	-58.38	-25.73
Southern Border	Pattani	-12.96	-28.68	-13.71	-31.53	-0.36	-19.58	-24.35	-52.29
	Yala	-17.18	-7.76	-26.18	-11.53	-8.82	-4.81	-19.62	-33.61
East 1	Chachoengsao	-43.77	-8.11	-56.81	-44.23	-32.24	-5.13	-73.81	-9.67
	Chonburi	-28.53	-21.45	-41.35	-23.67	-16.01	-19.41	-79.01	-98.73
East 2	Rayong	-37.78	-33.36	-55.50	-60.97	-27.49	-27.63	-86.12	-65.52
	Chanthaburi	-27.94	-29.13	-32.05	-21.44	-7.34	-31.32	-56.41	-30.43

Cluster	Province	Overall				Indicator 20		Indicator 21		Indicator 22	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)		
Upper Northeast 1	Trat	-15.38	-24.35	-10.84	-33.51	-16.37	-24.42	141.67	-34.48		
	Nakhon Nayok	-39.52	-0.47	-62.20	-6.57	-34.03	-10.28	-37.66	197.92		
	Prachinburi	-45.81	-37.38	-34.97	-40.24	-40.94	-36.90	-89.91	-87.27		
	Sa Kaeo	-34.59	-30.30	-38.31	-8.85	-31.98	-38.41	-37.50	-73.33		
	Bueng Kan	-8.23	36.23	-32.15	65.44	-4.62	36.23	12.87	-3.40		
	Loei	-55.02	-33.51	-55.12	-29.18	-48.96	-18.42	-64.86	-54.08		
	Nong Khai	-48.03	-72.15	-30.66	-83.94	-33.85	-73.03	-76.01	-50.69		
	Nong Bua Lam Phu	-31.76	-34.05	-71.89	52.38	-18.84	-52.04	-30.95	-4.74		
	Udon Thani	-32.84	-23.05	-34.59	-19.75	-35.53	-19.02	-32.73	-40.37		
Upper Northeast 2	Nakhon Phanom	-83.01	-27.45	-74.60	-27.02	-73.56	17.75	-88.92	-69.23		
	Mukdahan	-75.55	-9.59	-59.20	50.00	-50.72	40.25	-84.52	-72.15		
	Sakon Nakhon	-68.39	-41.00	-45.98	-37.44	-47.92	-31.82	-91.37	-82.72		
	Kalasin	-34.35	-32.44	-36.76	-42.94	-41.35	-47.33	-23.88	-4.12		
Middle Northeast	Khon Kaen	-47.03	-21.24	-52.92	-23.70	-34.67	-8.93	-63.02	-45.38		
	Maharakham	-27.25	-18.55	-25.64	-45.67	-39.04	-11.75	-18.83	-8.57		
	Roi Et	-19.06	-26.43	-26.83	-45.55	-4.69	-33.59	-24.63	-9.10		
Lower Northeast 1	Chaiyaphum	-37.17	-15.37	-57.22	-31.42	-28.82	-26.47	-46.20	89.75		
	Nakhon Ratchasima	-25.61	-31.36	-21.56	-49.83	-6.94	-27.82	-78.03	-11.70		



Cluster	Province	Overall				Indicator 20		Indicator 21		Indicator 22			
		Change (2017-2018)		Change (2018-2019)		Change (2017-2018)		Change (2018-2019)		Change (2017-2018)		Change (2018-2019)	
Lower Northeast 2	Buriram	-38.50	-21.76	-45.64	-21.69	-39.28	-19.93	-29.55	-21.48				
	Surin	-65.62	-16.94	-52.41	-32.02	-42.56	-8.64	-80.22	-19.99				
	Yasothon	-43.96	-55.63	-46.10	-72.05	-19.37	-52.11	-77.01	-41.24				
	Sisaket	-45.30	-45.25	-48.46	-49.91	-33.51	-51.52	-63.32	-27.18				
	Amnat Charoen	-38.62	-56.84	-41.22	-70.12	-1.50	-54.86	-64.55	-47.01				
Upper North 1	Ubon Ratchathani	-58.69	-6.06	-64.29	-13.80	-46.97	-5.98	-91.90	13.08				
	Chiang Mai	-12.79	-27.66	-14.01	-30.90	-8.65	-27.56	-76.79	10.27				
	Mae Hong Son	-34.55	-48.32	-15.16	-75.58	-28.83	-27.37	-53.15	-56.49				
	Lampang	-22.02	-28.04	-38.84	-31.09	-16.45	-28.40	-47.50	-21.96				
	Lamphun	-64.06	-31.41	-72.90	-44.35	-56.03	-35.39	-88.81	53.55				
Upper North 2	Chiang Rai	-42.12	-17.85	-41.69	-26.26	-31.08	-14.61	-85.16	-35.10				
	Nan	-4.62	-31.10	-28.76	-38.64	1.42	-29.69	1.08	-26.31				
	Phayao	-48.42	-32.18	-43.27	-53.37	-43.53	-23.03	-64.24	-51.69				
	Phrae	-38.83	-41.22	-34.64	-74.51	-14.71	-37.15	-90.50	-5.15				
	Tak	-14.55	-12.68	-13.29	-27.72	-8.46	-19.21	-29.16	16.58				
Lower North 1	Phitsanulok	-15.80	-12.91	-27.23	-19.32	-19.07	0.85	10.90	-66.96				
	Phetchabun	-39.31	-20.40	-62.27	-4.10	-35.83	-20.78	-11.72	-34.17				
	Sukhothai	-30.41	-30.30	-38.02	-51.70	-19.07	-27.05	-57.35	-25.00				

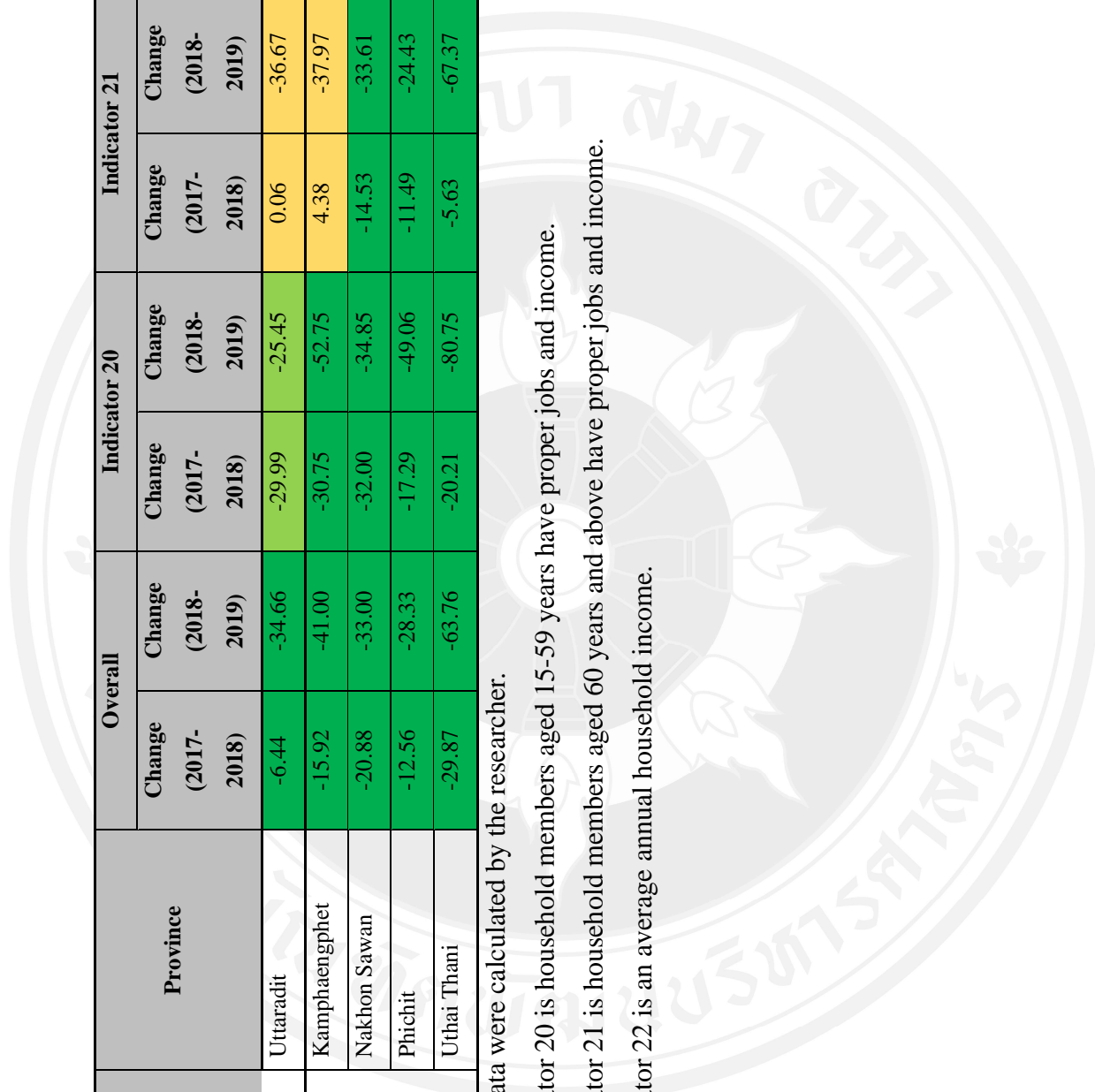
Cluster	Province	Overall		Indicator 20		Indicator 21		Indicator 22	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
	Uttaradit	-6.44	-34.66	-29.99	-25.45	0.06	-36.67	-42.47	2.38
	Kamphaengphet	-15.92	-41.00	-30.75	-52.75	4.38	-37.97	-55.79	-49.46
	Nakhon Sawan	-20.88	-33.00	-32.00	-34.85	-14.53	-33.61	-33.50	-35.58
	Phichit	-12.56	-28.33	-17.29	-49.06	-11.49	-24.43	-22.79	-30.25
	Uthai Thani	-29.87	-63.76	-20.21	-80.75	-5.63	-67.37	-55.86	-48.21

Note: 1. The data were calculated by the researcher.

2. Indicator 20 is household members aged 15-59 years have proper jobs and income.

Indicator 21 is household members aged 60 years and above have proper jobs and income.

Indicator 22 is an average annual household income.



3.



Increase at an increasing rate

Increase at a decreasing rate

Decrease - increase

Not deprived - increase

Increase - decrease

Decrease at a decreasing rate, or decrease - unchanged

Decrease at an increasing rate

Increase – not deprived

Decrease, or unchanged – not deprived

No deprived people in the latest year

Unchanged



Table 4.10 shows the proportion of income-deprived people classified by provincial clusters and indicators from 2017-2019. Overall, the number of income-deprived people decreased in almost all provincial clusters. All provinces within the lower Northern cluster 2 had a continuous decline in the number of deprived people. In Nong Khai, the number of deprived people decreased at the highest rate (-72.15%), followed by Uthai Thani (-63.76%) and Amnat Charoen (-56.84%). The increase in income poverty concentrated in the lower Central cluster 2. Prachuap Khiri Khan had the highest increase in the number of income-deprived people (107.28%), followed by Bueng Kan (56.23%) and Samut Sakhon (18.54%).

For Indicator 20 “Household members aged 15-59 years have proper jobs and income,” the study finds that, overall, the number of people deprived according to this indicator decreased in almost all provincial clusters. The number of deprived people in all provinces within the lower Northern cluster 2 reduced at an increasing rate. In Nong Khai, the number of deprived people reduced at the highest rate (-85.94%), followed by Uthai Thani (-80.75%) and Mae Hong Son (-75.58%). The increase in the number of deprived people concentrated in the lower Central cluster 2 and the Southern cluster (Gulf of Thailand). Prachuap Khiri Khan saw the highest increase in income deprivation (217.09%), followed by Bueng Kan (65.44%) and Samut Songkhram (53.62%).

For Indicator 21 “Household members aged 60 years and above have proper jobs and income,” the number of people deprived according to this indicator declined in almost all provincial clusters. The number of deprived people in the lower Northeastern cluster 2 declined at the highest rate. In Nong Khai, the number of deprived people decreased at the highest rate (-73.03%), followed by Amnat Charoen (-54.86%) and Ayutthaya (-53.67%). An increase in income deprivation was concentrated in the lower Central cluster 2 and the upper Northeastern cluster 2. Prachuap Khiri Khan saw the highest increase in the number of income-deprived people (88.76%), followed by Mukdahan (40.25%) and Bueng Kan (36.23%).

For Indicator 22 “An average annual household income,” the study finds that the number of people deprived according to this indicator declined in almost all provincial clusters. Phatthalung is the only province with no deprived people according to this indicator in 2019. In Chonburi, the number of deprived people declined at the

highest rate (-98.73%), followed by Ayutthaya (-94.29%) and Sa Kaeo (73.33%). On the contrary, all provinces in the lower Central cluster 2 had an increase in income deprivation. Nakhon Nayok saw the highest increase in the number of deprived people (197.92%). Samut Sakhon had no deprivation according to this indicator in 2017 but the number of deprived people increased in the following years.

#### 4.1.2.5 Access to public services

Based on the basic minimum survey of the Community Development Department, the six indicators of poverty in the dimension of access to public services include:

26) Household members aged 6 years and above do religious activities at least once a week.

27) The elderly are properly taken care of by their family, community, government, or private agencies.

28) The disabled are properly taken care of by their family, community, government, or private agencies

29) Chronic patients are properly taken care of by their family, community, government, or private agencies.

30) Household members participate in community activities.

31) The family is warm.

TPMAP adopts only two indicators (27 and 28) to measure poverty in the dimension of access to public services. The researcher used the number of people classified as deprived access to public services from 2017-2019 in TPMAP database to analyze the overview of poverty in the dimension of access to public services in Thailand. The details are shown in Table 4.11.

**Table 4.11** Proportion of People Deprived Access to Public Services from 2017-2019  
Classified by Provinces

<b>Province</b>	<b>Proportion of people deprived access to public services in 2017</b>	<b>Proportion of people deprived access to public services in 2018</b>	<b>Proportion of people deprived access to public services in 2019</b>
<b>Krabi</b>	0.67	0.40	1.53
<b>Kanchanaburi</b>	1.21	0.63	0.62
<b>Kalasin</b>	0.52	3.82	3.16
<b>Kamphaengphet</b>	1.25	1.41	1.96
<b>Khon Kaen</b>	2.49	2.42	2.68
<b>Chanthaburi</b>	0.96	0.44	0.77
<b>Chachoengsao</b>	1.02	0.57	0.43
<b>Chonburi</b>	0.50	0.35	0.10
<b>Chainat</b>	0.42	0.23	0.19
<b>Chaiyaphum</b>	3.26	1.30	1.77
<b>Chumphon</b>	0.72	0.48	0.14
<b>Chiang Rai</b>	6.58	2.79	3.79
<b>Chiang Mai</b>	4.50	2.85	4.46
<b>Trang</b>	1.00	0.40	0.05
<b>Trat</b>	0.16	0.43	0.10
<b>Tak</b>	2.08	1.09	2.92
<b>Nakhon Nayok</b>	0.06	0.17	0.05
<b>Nakhon Pathom</b>	0.30	0.28	0.05
<b>Nakhon Phanom</b>	0.50	0.16	0.96
<b>Nakhon Ratchasima</b>	6.90	2.56	2.92
<b>Nakhon Si Thammarat</b>	3.75	1.82	2.87
<b>Nakhon Sawan</b>	2.81	2.31	1.49
<b>Nonthaburi</b>	0.53	0.12	0.57
<b>Narathiwat</b>	1.25	0.80	2.64
<b>Nan</b>	1.61	1.26	1.15

<b>Province</b>	<b>Proportion of people deprived access to public services in 2017</b>	<b>Proportion of people deprived access to public services in 2018</b>	<b>Proportion of people deprived access to public services in 2019</b>
<b>Bueng Kan</b>	1.44	0.61	0.72
<b>Buriram</b>	6.58	2.88	5.51
<b>Pathum Thani</b>	0.39	0.16	0.14
<b>Prachuap Khiri Khan</b>	0.74	0.21	0.62
<b>Prachinburi</b>	0.20	0.67	0.00
<b>Pattani</b>	1.83	0.57	2.40
<b>Ayutthaya</b>	0.33	0.43	0.05
<b>Phayao</b>	0.67	0.61	0.86
<b>Phangnga</b>	0.05	0.17	0.00
<b>Phatthalung</b>	1.65	0.48	0.19
<b>Phichit</b>	0.19	0.64	0.53
<b>Phitsanulok</b>	2.12	1.69	1.53
<b>Phetchaburi</b>	0.14	0.20	0.48
<b>Phetchabun</b>	1.39	0.74	1.44
<b>Phrae</b>	0.66	0.63	0.86
<b>Phuket</b>	0.14	0.11	0.05
<b>Maharakham</b>	0.64	0.62	6.37
<b>Mukdahan</b>	0.19	0.01	0.77
<b>Mae Hong Son</b>	1.18	0.63	1.05
<b>Yasothon</b>	0.55	0.53	1.29
<b>Yala</b>	1.02	0.54	0.77
<b>Roi Et</b>	0.83	0.59	3.40
<b>Ranong</b>	0.13	0.17	0.19
<b>Rayong</b>	1.03	0.14	0.53
<b>Ratchaburi</b>	0.25	0.25	0.19
<b>Lopburi</b>	1.58	1.58	1.01
<b>Lampang</b>	0.41	0.32	0.34

<b>Province</b>	<b>Proportion of people deprived access to public services in 2017</b>	<b>Proportion of people deprived access to public services in 2018</b>	<b>Proportion of people deprived access to public services in 2019</b>
<b>Lamphun</b>	1.68	0.35	0.86
<b>Loei</b>	2.66	39.99	1.68
<b>Sisaket</b>	4.40	1.61	4.50
<b>Sakon Nakhon</b>	1.47	0.58	2.25
<b>Songkhla</b>	0.91	0.79	1.96
<b>Satun</b>	0.28	0.57	0.48
<b>Samut Prakan</b>	0.52	0.41	0.67
<b>Samut Songkhram</b>	0.17	0.02	0.05
<b>Samut Sakhon</b>	0.05	0.01	0.00
<b>Sa Kaeo</b>	0.61	1.10	1.44
<b>Saraburi</b>	1.60	0.62	0.96
<b>Singburi</b>	0.03	0.01	0.05
<b>Sukhothai</b>	0.96	0.95	2.20
<b>Suphanburi</b>	1.35	0.47	0.10
<b>Surat Thani</b>	1.24	0.75	1.25
<b>Surin</b>	2.41	1.12	3.45
<b>Nong Khai</b>	0.89	0.47	0.62
<b>Nong Bua Lam Phu</b>	0.14	1.32	1.15
<b>Angthong</b>	0.44	0.07	0.53
<b>Amnat Charoen</b>	0.36	0.12	0.91
<b>Udon Thani</b>	2.12	1.12	1.72
<b>Uttaradit</b>	0.53	0.59	0.29
<b>Uthai Thani</b>	0.94	0.32	0.62
<b>Ubon Ratchathani</b>	2.84	1.33	3.59

**Note:** the proportion of poor people is based on the number of poor people in each province compared to the total number of poor people who are classified as deprived according to the basic minimum need survey and register for the state welfare card in that year.



Table 4.11 demonstrates the Proportion of people deprived access to public services in 76 provinces, excluding Bangkok. The information can be classified by years as follows.

In 2017, the top five provinces with the highest proportion of people deprived access to public services consisted of Nakhon Ratchasima (6.90%), Chiang Rai and Buriram (6.58%), Chiang Mai (4.50%), Sisaket (4.40%), and Nakhon Si Thammarat (3.75%). The provinces with the lowest proportion of people deprived access to public services were Singburi (0.03%), Samut Sakhon and Phangnga (0.05%), Nakhon Nayok (0.06%), Ranong (0.13%), and Nong Bua Lam Phu, Phuket, and Phetchaburi (0.14%).

In 2018, the top five provinces with the highest proportion of people deprived access to public services includes Loei (39.99%), Kalasin (3.82%), Buriram (2.88%), Chiang Mai (2.85%), and Chiang Rai (2.79%). The five least deprived provinces were Singburi, Mukdahan, and Samut Sakhon (0.01%), Samut Songkhram (0.02%), Angthong (0.07%), Phuket (0.11%), and Nonthaburi and Phetchaburi (0.12%).

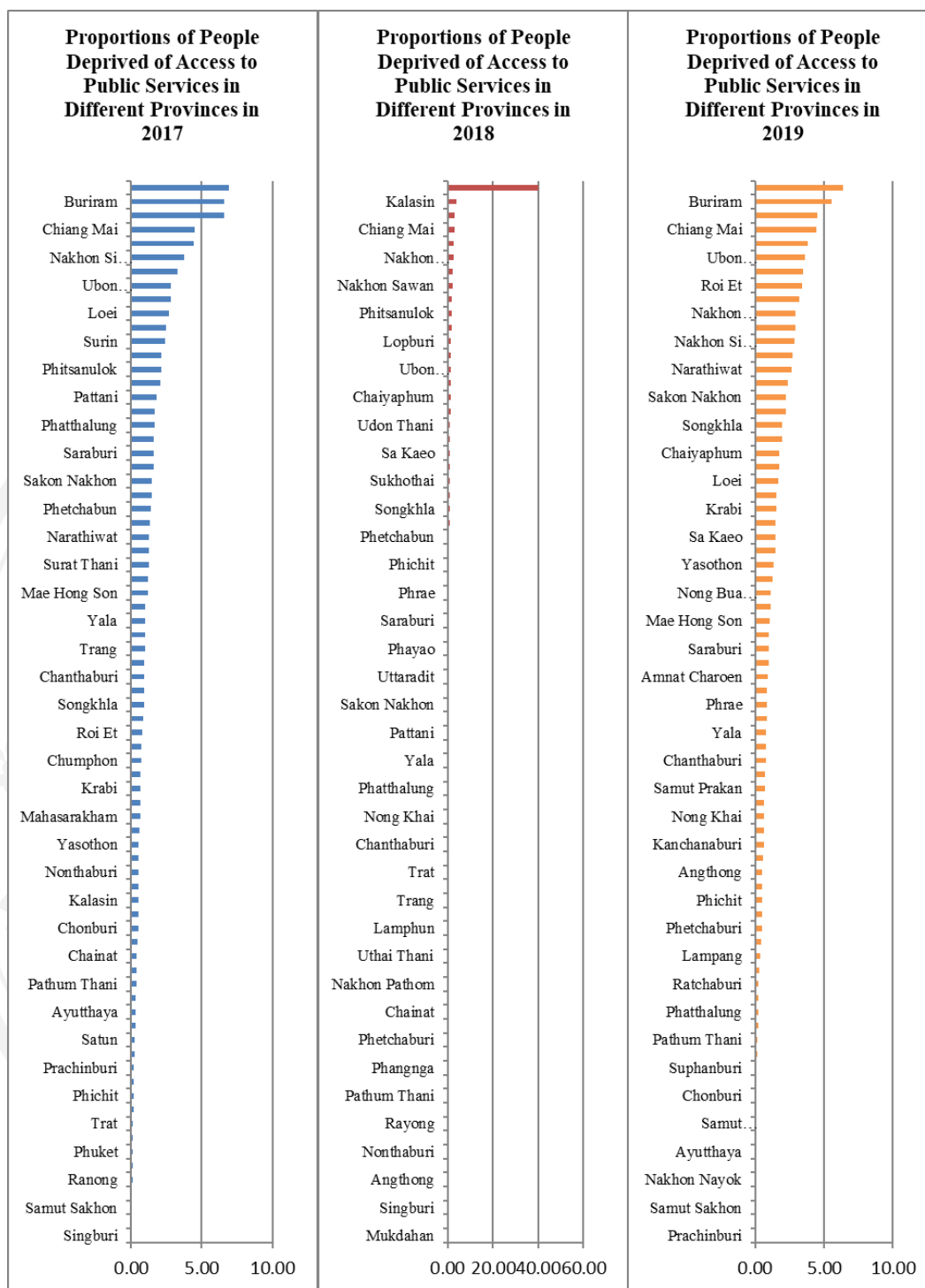
In 2019, the top five provinces with the highest proportion of people deprived access to public services included Mahasarakham (6.37%), Buriram (5.51%), Sisaket (4.50%), Chiang Mai (4.46%), and Chiang Rai (3.79%). The five provinces with the lowest proportion of people deprived access to public services includes Prachinburi, Phangnga, and Samut Sakhon (0.00%), Trang, Nakhon Nayok, Nakhon Pathom, Ayutthaya, Phuket, Samut Songkhram and Singburi (0.05%), Suphanburi, Trat, and Chonburi (0.10%), Pathum Thani and Chumphon (0.14%), and Chainat, Phatthalung, Ranong, and Ratchaburi (0.19%).

When comparing the number of people deprived access to public services over the three years, the study finds that, among the five most deprived provinces, in Loei the number of deprived people increased at an accelerated rate. There were significant differences in the number of deprived people in Loei in 2017, 2018, and 2019. In addition, when compared with other provinces, the number of deprived people in Loei was different from other provinces in the same set of data. The study finds that among the five least deprived provinces were three provinces where the number of deprived people declined to zero.

The proportion of people deprived access to public services in different provinces were compared as shown in Figure 4.7.

In addition, the proportion of people deprived access to public services in 18 provincial clusters, classified according to the Notification on the Establishment of the Provincial Clusters and the Center of the Cluster dated 16 November 2017, are also demonstrated in Table 4.12.





**Figure 4.7** Comparing the Proportion of People Deprived Access to Public Services in Different Provinces from 2017-2019

**Table 4.12** Proportion of People Deprived Access to Public Services from 2017-2019 Classified by Provincial Clusters and Indicators

Cluster	Province	Overall		Indicator 27		Indicator 28	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
Upper Central	Chainat	-29.63	-78.95	-52.00	-100.00	-22.22	-42.86
	Ayutthaya	66.67	-97.14	400.00	-100.00	-66.67	-80.00
	Lopburi	26.73	-83.59	21.59	-91.59	133.33	-65.71
	Saraburi	-50.98	-60.00	-59.77	-68.57	-25.00	-40.00
	Singburi	-50.00	0.00	-100.00	-	100.00	0.00
	Angthong	-78.57	83.33	-100.00	400.00	-57.14	16.67
Middle Central	Nakhon Pathom	21.05	-95.65	150.00	-100.00	-18.18	-88.89
	Nonthaburi	-70.59	20.00	-62.96	-20.00	-57.14	33.33
	Pathum Thani	-48.00	-76.92	-55.00	-100.00	-42.86	-25.00
	Samut Prakan	0.00	-57.58	-19.23	-42.86	71.43	-83.33
	Kanchanaburi	-33.77	-74.51	-83.33	-100.00	75.00	-69.05
	Ratchaburi	25.00	-80.00	260.00	-100.00	-81.82	100.00
Lower Central 1	Suphanburi	-55.81	-94.74	-50.79	-100.00	-74.07	-71.43
	Prachuap Khiri Khan	-63.83	-23.53	-73.81	-18.18	16.67	-42.86
	Phetchaburi	77.78	-37.50	200.00	-100.00	42.86	0.00
	Samut Songkhram	-81.82	-50.00	-100.00	-	100.00	-50.00

Cluster	Province	Overall		Indicator 27		Indicator 28	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
	Samut Sakhon	-66.67	-100.00	-66.67	-100.00	-	-
	Chumphon	-15.22	-92.31	-13.51	-100.00	-36.36	-57.14
	Nakhon Si Thammarat	-38.49	-59.18	-41.33	-62.50	-42.31	-55.00
South	Phattahalung	-62.86	-89.74	-81.18	-100.00	8.33	-84.62
(Gulf of Thailand)	Songkhla	10.34	-35.94	-46.51	-56.52	141.18	-24.39
	Satun	155.56	-78.26	-7.69	-100.00	466.67	-70.59
	Surat Thani	-22.78	-57.38	-4.55	-54.76	-47.22	-57.89
	Krabi	-25.58	0.00	-51.43	-76.47	33.33	81.25
	Trang	-50.00	-96.88	-47.50	-100.00	-54.17	-90.91
South	Phangnga	366.67	-100.00	500.00	-100.00	200.00	-100.00
(Andaman Coast)	Phuket	0.00	-88.89	28.57	-88.89	-100.00	-
	Ranong	75.00	-71.43	250.00	-100.00	33.33	-50.00
	Narathiwat	-18.75	-15.38	-69.81	12.50	63.33	-24.49
Southern Border	Pattani	-60.68	8.70	-73.03	-70.83	-26.67	95.45
	Yala	-32.31	-63.64	-9.52	-84.21	-45.65	-48.00
East 1	Chachoengsao	-29.23	-80.43	-33.33	-86.11	36.36	-73.33
	Chonburi	-12.50	-92.86	-16.13	-96.15	100.00	-50.00

Cluster	Province	Overall		Indicator 27		Indicator 28	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
	Rayong	-83.33	0.00	-91.94	60.00	50.00	-50.00
	Chanthaburi	-40.98	-55.56	-34.78	-86.67	-64.71	100.00
	Trat	250.00	-94.29	320.00	-100.00	240.00	-88.24
East 2	Nakhon Nayok	250.00	-92.86	1300.00	-92.31	-75.00	-100.00
	Prachinburi	315.38	-100.00	1566.67	-100.00	-30.00	-100.00
	Sa Kaeo	128.21	-66.29	68.75	-96.30	191.30	-56.72
	Bueng Kan	-46.74	-69.39	-50.00	-86.67	-40.63	-42.11
	Loei	1803.53	-98.92	2026.52	-99.43	972.50	-95.57
Upper Northeast 1	Nong Khai	-33.33	-65.79	-23.33	-100.00	-48.28	-13.33
	Nong Bua Lam Phu	1088.89	-77.57	3000.00	-96.77	283.33	-8.70
	Udon Thani	-32.59	-60.44	-35.48	-80.00	-35.42	-22.58
	Nakhon Phanom	-59.38	53.85	-83.33	-100.00	-7.14	53.85
Upper Northeast 2	Mukdahan	-91.67	1500.00	-83.33	-100.00	-100.00	1600.00
	Sakon Nakhon	-50.00	0.00	-54.55	-20.00	-37.50	8.00
	Kalasin	836.36	-78.64	1656.25	-98.22	165.00	15.09
Middle Northeast	Khon Kaen	23.27	-71.43	23.77	-88.08	0.00	-15.56
	Maharakham	21.95	166.00	16.00	282.76	31.25	4.76

Cluster	Province	Overall		Indicator 27		Indicator 28	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
	Roi Et	-9.43	47.92	14.81	-100.00	-34.62	317.65
	Chaiyaphum	-49.52	-64.76	-49.62	-90.91	-50.00	-24.39
Lower Northeast 1	Nakhon Ratchasima	-52.95	-70.53	-56.27	-83.48	-46.96	-56.25
	Buriram	-44.52	-50.64	-60.57	-72.00	-1.75	-28.57
	Surin	-40.91	-20.88	-30.39	-77.46	-53.70	124.00
	Yasothon	22.86	-37.21	0.00	-72.41	133.33	35.71
Lower Northeast 2	Sisaket	-53.74	-27.69	-59.79	-22.37	-45.45	-35.19
	Amnat Charoen	-56.52	90.00	-100.00	200.00	-37.50	70.00
	Ubon Ratchathani	-40.33	-30.56	-69.23	-43.75	-1.27	-26.92
	Chiang Mai	-19.51	-59.74	-14.43	-79.65	-29.21	-7.94
Upper North 1	Mae Hong Son	-32.00	-56.86	-70.15	-50.00	210.00	-61.29
	Lampang	0.00	-73.08	-27.27	-100.00	0.00	-61.11
	Lamphun	-73.83	-35.71	-76.62	-100.00	-60.61	38.46
	Chiang Rai	-46.19	-65.04	-50.76	-82.61	-19.61	-34.15
Upper North 2	Nan	-0.97	-76.47	-12.99	-100.00	25.00	-31.43
	Phayao	13.95	-63.27	-29.63	-100.00	105.88	-48.57
	Phrae	21.43	-64.71	17.24	-100.00	30.77	5.88

Cluster	Province	Overall		Indicator 27		Indicator 28	
		Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)	Change (2017-2018)	Change (2018-2019)
Lower North 1	Tak	-33.83	-30.68	-44.76	-53.45	10.34	6.25
	Phitsanulok	1.48	-76.64	-1.52	-66.15	4.35	-86.11
	Phetchabun	-32.58	-50.00	-20.34	-68.09	-48.48	-5.88
	Sukhothai	26.23	-40.26	48.57	-100.00	-3.85	84.00
	Uttaradit	41.18	-87.50	-20.00	-85.00	211.11	-89.29
Lower North 2	Kamphaengphet	42.50	-64.04	127.50	-86.81	-42.50	26.09
	Nakhon Sawan	4.47	-83.42	-38.10	-75.64	100.00	-89.66
	Phichit	333.33	-78.85	1250.00	-96.30	150.00	-60.00
	Uthai Thani	-56.67	-50.00	-52.38	-100.00	-50.00	44.44

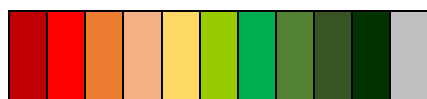
**Note:** 1. The data were calculated by the researcher.

2. Indicator 27 is the elderly are properly taken care of by their family, community, government, or private agencies.

Indicator 28 is the disabled are properly taken care of by their family, community, government, or private agencies



3.



Increase at an increasing rate

Increase at a decreasing rate

Decrease - increase

Not deprived - increase

Increase - decrease

Decrease at a decreasing rate - unchanged

Decrease at an increasing rate

Increase – not deprived

Decrease, or unchanged – not deprived

No deprived people in the latest year

Unchanged



Table 4.12 presents the proportion of people deprived access to public services classified by provincial clusters and indicators from 2017-2019. Overall, the number of people deprived access to public services declined in almost all provincial clusters. All provinces within the eastern cluster 1 and the lower Northeastern cluster 1 had a continuous decline in the number of deprived people. Moreover, there were three provinces (Samut Sakhon, Phangnga and Prachinburi) with no deprived people in this dimension. In Trang, the number of deprived people declined at the highest rate (-96.88%), followed by Suphanburi (-94.74%) and Chonburi (92.86%). An increase in the number of deprived people was concentrated in the upper Northeastern cluster 2 and the middle Northeastern cluster. Mahasarakham showed the highest increase in deprivation where the number of deprived people increased at an increasing rate (166%), followed by Mukdahan (1500%) and Amnat Charoen (90%).

For Indicator 27, “The elderly are properly taken care of by their family, community, government, or private agencies,” there were almost no deprived people according to this indicator in 2019. All provinces in the lower Central cluster 1 had no deprived people according to this indicator. In Chonburi the number of deprived people decreased at the highest rate (-96.15%), followed by Chaiyaphum (-90.91%) and Chanthaburi and Bueng Kan (-86.67%). Overall, there was only a slight increase in the number of deprived people. Mahasarakham showed the highest increase in deprivation where the number of deprived people increased at an increasing rate (282.76%), followed by Rayong (60%) and Narathiwat (12.5%). Angthong and Amnat Charoen had no deprivation according to this indicator in 2017 but the number of deprived people increased in the following years.

For Indicator 28, “The disabled are properly taken care of by their family, community, government, or private agencies,” the study finds that, in almost all provincial clusters, the number of people deprived according to this indicator increased in 2018 but decreased in 2019. Samut Sakhon had no deprived people according to this indicator from 2017-2019, while Phangnga, Phuket, Nakhon Nayok, and Prachinburi had no deprivation according to this indicator in 2019. In Trang, the number of deprived people decreased at the highest rate (-90.91%), followed by Nakhon Pathom (-88.89%) and Ayutthaya (-80.00%). The increase in the number of deprived people concentrated

in the middle Northeastern cluster. Krabi showed the highest increase in deprivation (81.25%), followed by Yasothon (35.71%) and Kalasin (15.09%).

#### 4.2 Government Policies on Multidimensional Poverty Management through Budget Allocation to Provinces and Provincial Clusters Based on TPMAP

The information about integrated provincial and provincial cluster development budget, included in the Revised Expenditure Budget for Fiscal Year 2017-2019 created based on the Annual Budget Expenditure Act, and the Additional Expenditure Budget for Fiscal Year 2017, was analyzed as follows.

**Table 4.13** Provincial and Provincial Cluster Budget Classified by Projects in Fiscal Year 2017

(Unit: Million Baht)

Provincial cluster (Total budget)	Province	Economic development	Social development	Natural resource and environmental development	Security and peace development
<b>Upper</b>	Nonthaburi	203.8664	24.0979	34.6100	-
<b>Central 1</b>	Pathum Thani	142.8057	11.8453	94.9490	10.3076
<b>(1348.9792)</b>	Ayutthaya	153.2929	23.8462	84.2895	-
	Saraburi	176.0430	16.1458	0.9874	22.9322
	Cluster budget	154.5792	-	194.3811	-
	<b>Total</b>	<b>830.5872</b>	<b>75.9352</b>	<b>409.2170</b>	<b>33.2398</b>
<b>Upper</b>	Chainat	149.3861	12.9885	12.8873	-
<b>Central 2</b>	Lopburi	184.9177	5.5513	45.7980	3.7000
<b>(1105.5529)</b>	Singburi	129.3368	18.2148	25.0000	-
	Angthong	166.5540	6.3255	4.7483	-
	Cluster budget	254.2623	-	85.8823	-
	<b>Total</b>	<b>884.4569</b>	<b>43.0801</b>	<b>174.3159</b>	<b>3.7000</b>
<b>Middle</b>	Chachoengsao	219.2932	5.0922	-	4.5000
<b>Central</b>	Nakhon Nayok	168.8135	11.2386	12.5429	-
<b>(1582.6290)</b>	Prachinburi	189.1531	4.4133	34.2775	9.1590
	Samut Prakan	254.4924	16.9496	40.0000	14.7349

<b>Provincial cluster (Total budget)</b>	<b>Province</b>	<b>Economic development</b>	<b>Social development</b>	<b>Natural resource and environmental development</b>	<b>Security and peace development</b>
	Sa Kaeo	73.3848	35.2550	93.0312	6.5551
	Cluster budget	308.8437	-	80.8990	-
	<b>Total</b>	<b>1213.9807</b>	<b>72.9487</b>	<b>260.7506</b>	<b>34.9490</b>
<b>Lower Central 1 (1377.8309)</b>	Kanchanaburi	153.9586	55.1516	-	61.8480
	Nakhon Pathom	139.2462	55.0901	50.2786	-
	Ratchaburi	138.8660	14.6897	90.3262	1.9044
	Suphanburi	191.5265	57.5515	31.6074	-
	Cluster budget	325.2293	10.5568	-	-
	<b>Total</b>	<b>948.8266</b>	<b>193.0397</b>	<b>172.2122</b>	<b>63.7524</b>
<b>Lower Central 2 (1237.3731)</b>	Prachuap Khiri Khan	178.9079	19.9494	3.3270	-
	Phetchaburi	110.5470	37.1160	70.1282	1.2852
	Samut Songkhram	149.3242	4.1743	73.8550	-
	Samut Sakhon	102.3369	26.1151	115.2085	5.9511
	Cluster budget	147.5973	-	191.5500	-
	<b>Total</b>	<b>688.7133</b>	<b>87.3548</b>	<b>454.0687</b>	<b>7.2363</b>
<b>South (Gulf of Thailand) (1350.1444)</b>	Chumphon	138.4195	25.8957	37.1653	-
	Nakhon Si Thammarat	217.3968	13.6440	66.6229	-
	Phatthalung	170.4463	19.7669	12.9520	3.0000
	Surat Thani	146.7253	2.0000	23.2700	62.8000
	Cluster budget	330.7487	-	12.9898	66.3012
	<b>Total</b>	<b>1003.7366</b>	<b>61.3066</b>	<b>153.0000</b>	<b>132.1012</b>
<b>South (Andaman Coast) (1241.6561)</b>	Krabi	136.1352	42.8014	15.6390	-
	Trang	128.7553	23.5316	48.0644	-
	Phangnga	177.3486	6.0650	-	-
	Phuket	116.8789	18.1000	35.2343	20.4553
	Ranong	79.8887	30.1981	35.8850	8.3790
	Cluster budget	232.9763	85.3200	-	-
	<b>Total</b>	<b>871.9830</b>	<b>206.0161</b>	<b>134.8227</b>	<b>28.8343</b>
<b>Southern Border (1632.3818)</b>	Narathiwat	47.9260	183.0147	-	45.0051
	Pattani	99.9324	39.5200	84.3000	20.4419
	Yala	82.7836	42.1537	50.5100	42.9021

<b>Provincial cluster (Total budget)</b>	<b>Province</b>	<b>Economic development</b>	<b>Social development</b>	<b>Natural resource and environmental development</b>	<b>Security and peace development</b>
	Songkhla	85.3985	120.5173	61.1600	53.0172
	Satun	162.7374	26.6914	-	-
	Cluster budget	384.3705	-	-	-
	<b>Total</b>	<b>863.1484</b>	<b>411.8971</b>	<b>195.9700</b>	<b>161.3663</b>
<b>East (1409.8432)</b>	Chanthaburi	180.2810	4.7565	22.0707	-
	Chonburi	297.2259	10.6666	41.8063	-
	Trat	154.4718	4.4500	38.4750	2.0400
	Rayong	231.7735	12.1132	56.4232	-
	Cluster budget	283.6415	-	69.6480	-
	<b>Total</b>	<b>1147.3937</b>	<b>31.9863</b>	<b>228.4232</b>	<b>2.0400</b>
<b>Upper Northeast 1 (1660.3666)</b>	Bueng Kan	193.9615	12.5634	12.4169	-
	Loei	165.9669	4.9800	81.4105	13.1516
	Nong Khai	203.6180	0.0000	35.8940	1.5847
	Nong Bua Lam Phu	251.1337	3.4000	4.7580	-
	Udon Thani	273.7985	3.7030	16.0718	6.4199
	Cluster budget	375.5342	-	-	-
	<b>Total</b>	<b>1464.0128</b>	<b>24.6464</b>	<b>150.5512</b>	<b>21.1562</b>
<b>Upper Northeast 2 (1122.1029)</b>	Nakhon Phanom	239.6009	2.5300	39.6540	6.7157
	Mukdahan	194.0178	0.0000	41.6901	-
	Sakon Nakhon	176.8680	0.0000	126.0782	-
	Cluster budget	208.9632	13.9850	72.0000	-
	<b>Total</b>	<b>819.4499</b>	<b>16.5150</b>	<b>279.4223</b>	<b>6.7157</b>
<b>Middle Northeast (1648.1929)</b>	Kalasin	269.1771	23.2183	76.5181	9.4801
	Khon Kaen	298.2614	0.0000	58.7783	6.0000
	Mahasarakham	227.9732	25.2772	1.9000	5.1500
	Roi Et	242.4199	28.5598	13.2238	12.4896
	Cluster budget	349.7661	-	-	-
	<b>Total</b>	<b>1387.5977</b>	<b>77.0553</b>	<b>150.4202</b>	<b>33.1197</b>
<b>Lower Northeast 1 (1701.6909)</b>	Chaiyaphum	162.9146	83.2850	43.3582	2.7268
	Nakhon	386.0101	1.0000	27.5663	-
	Ratchasima				
	Buriram	312.5336	32.2721	2.6057	3.8000
	Surin	263.9224	9.1476	21.8704	3.4050

<b>Provincial cluster (Total budget)</b>	<b>Province</b>	<b>Economic development</b>	<b>Social development</b>	<b>Natural resource and environmental development</b>	<b>Security and peace development</b>
	Cluster budget	258.2731	-	87.0000	-
	<b>Total</b>	<b>1383.6538</b>	<b>125.7047</b>	<b>182.4006</b>	<b>9.9318</b>
<b>Lower Northeast 2 (1520.1899)</b>	Yasothon	144.3500	20.9769	114.2435	-
	Sisaket	225.5443	23.5427	78.1552	12.6866
	Amnat Charoen	123.9898	54.5607	36.2235	-
	Ubon Ratchathani	286.5553	23.1591	21.0655	11.0190
	Cluster budget	344.1178	-	-	-
	<b>Total</b>	<b>1124.5572</b>	<b>122.2394</b>	<b>249.6877</b>	<b>23.7056</b>
<b>Upper North 1 (1524.0964)</b>	Chiang Mai	316.8760	18.2037	46.7911	4.2416
	Mae Hong Son	164.2647	146.5326	24.8410	11.2333
	Lampang	108.8295	71.0493	38.8239	9.1000
	Lamphun	118.0950	30.3000	78.6390	-
	Cluster budget	327.5989	-	8.6768	-
	<b>Total</b>	<b>1035.6641</b>	<b>266.0856</b>	<b>197.7718</b>	<b>24.5749</b>
<b>Upper North 2 (1445.9718)</b>	Chiang Rai	211.7313	39.8054	58.1310	36.6333
	Nan	56.9660	18.9654	153.3673	12.7788
	Phayao	165.7527	12.6685	24.0525	60.2763
	Phrae	153.3405	35.4303	63.9277	10.2736
	Cluster budget	283.3301	12.1385	36.4026	-
	<b>Total</b>	<b>871.1206</b>	<b>119.0081</b>	<b>335.8811</b>	<b>119.9620</b>
<b>Lower North 1 (1580.6800)</b>	Tak	149.0837	40.7673	56.1208	4.2756
	Phitsanulok	98.7216	4.0351	113.7729	18.6245
	Phetchabun	151.2218	12.1954	111.8884	-
	Sukhothai	202.7803	6.3000	9.2498	1.0569
	Uttaradit	119.4135	14.3910	74.0097	8.1765
	Cluster budget	348.0778	-	36.5174	-
	<b>Total</b>	<b>1069.2987</b>	<b>77.6888</b>	<b>401.5590</b>	<b>32.1335</b>
<b>Lower North 2 (1272.1839)</b>	Kamphaengphet	239.1821	7.2020	0.7814	-
	Nakhon Sawan	241.4546	11.8505	7.5590	-
	Phichit	153.6220	17.9691	45.5087	9.3360
	Uthai Thani	97.5569	102.3414	9.8290	-
	Cluster budget	327.9912	-	-	-
	<b>Total</b>	<b>1059.8068</b>	<b>139.3630</b>	<b>63.6781</b>	<b>9.3360</b>

<b>Provincial cluster (Total budget)</b>	<b>Province</b>	<b>Economic development</b>	<b>Social development</b>	<b>Natural resource and environmental development</b>	<b>Security and peace development</b>
<b>Total budget for 2017 (25761.8659)</b>		18667.9880	2151.8709	4194.1523	747.8547

- Note:** 1. The provincial clusters were classified according to the Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster, dated 18 February 2009.
2. The 2017 budget was classified according to the Bureau of the Budget of Thailand.

According to Table 4.13, a total of 25,761.8659 million Baht was provided to provinces and provincial clusters in fiscal year 2017 in order to conduct development projects in four main areas. The highest amount was allocated for economic development (18,667.9880 million Baht), followed by natural resource and environmental development (4,194.1523 million Baht), social development (2,151.8709 million Baht), and security and peace development (747.8547 million Baht).

For economic development, the study finds that the province that received the highest budget is Nakhon Ratchasima (386.0101 million Baht), followed by Chiang Mai (316.876 million Baht), Buriram (312.5336 million Baht), Khon Kaen (298.2614 million Baht), and Chonburi (297.2259 million Baht). On the contrary, the province receiving the least budget is Narathiwat (47.9260 million Baht), followed by Nan (56.9660 million Baht), Sa Kaeo (73.3848 million Baht), Ranong (79.8887 million Baht), and Yala (82.7836 million Baht).

For social development, the province that was allocated the highest budget is Narathiwat (183.0147 million Baht), followed by Mae Hong Son (146.5326 million Baht), Songkhla (120.5173 million Baht), Uthai Thani (102.3414 million Baht), and Chaiyaphum (83.2850 million Baht). Nakhon Ratchasima (1 million Baht) received the lowest budget, followed by Surat Thani (2 million Baht), Nakhon Phanom (2.5300 million Baht), Nong Bua Lam Phu (3.400 million Baht), and Udon Thani (3.703 million

Baht). It should be noted that Khon Kaen, Mukdahan, Sakon Nakhon, and Nong Khai did not receive any budget.

Nan received the highest budget (153.3673 million Baht) for Natural Resource budget, followed by Sakon Nakhon (126.0782 million Baht), Samut Sakhon (115.2085 million Baht), Yasothon (114.2435 million Baht), and Phitsanulok (113.7729 million Baht). Kamphaengphet (0.7814 million Baht), received the lowest budget, followed by Saraburi (0.9874 million Baht), Mahasarakham (1.9000 million Baht), Buriram (2.6057 million Baht), and Prachuap Khiri Khan (3.327 million Baht). Kanchanaburi, Chachoengsao, Narathiwat, Phangnga, and Satun received no budget.

For security and peace development, the province that was allocated the highest budget is Surat Thani (62.8 million Baht), followed by Kanchanaburi (61.8480 million Baht), Phayao (60.2763 million Baht), Songkhla (53.0172 million Baht), and Narathiwat (45.0051 million Baht). Sukhothai (1.0569 million Baht) received the lowest budget, followed by Phetchaburi (1.2852 million Baht), Nong Khai (1.5847 million Baht), and Ratchaburi (1.9044 million Baht). It should be noted that there were 20 provinces that received no budget in this area.

At the provincial cluster level, the study finds that the lower Northeastern cluster 1 received the highest budget (1,701.6909 million Baht), followed by the upper Northeastern cluster 1 (1,660.3666 million Baht), the middle Northeastern cluster (1,648.1929 million Baht), the Southern border cluster (1,632.3818 million Baht), and the middle Central cluster (1,580.6800 million Baht). The upper Central cluster 2 received the lowest (1,105.5529 million Baht), followed by the upper Northeastern cluster 2 (1,122.1029 million Baht), the lower Central cluster 2 (1,237.3731 million Baht), the Southern cluster (Andaman Coast) (1,241.6561 million Baht), and the lower Northern cluster 2 (1,272.1839 million Baht).

Subsequently, Additional Expenditure Budget for Fiscal Year 2017 was announced, as detailed in Table 4.14.



**Table 4.14** Additional Budget for Provincial Clusters Classified by Multidimensional Poverty Indicators in Fiscal Year 2017

(Unit: Million Baht)

Provincial cluster	Healthcare		Living standard		Education		Income		Access to Public Services		Total
	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	
Upper Central 1	-	-	-	-	-	1119.4694	22	1119.4694	-	-	1119.4694
Upper Central 2	-	-	9,10	1280.1653	-	1014.5307	22	1014.5307	-	-	2294.6960
Middle Central	-	-	9,10	501.4814	-	-	-	-	-	-	501.4814
Lower Central 1	-	-	9,10	625.2967	-	2279.7967	22	2279.7967	-	-	2905.0934
Lower Central 2	-	-	-	-	-	81.3136	22	81.3136	-	-	81.3136
South (Gulf of Thailand)	-	-	9,10	957.9720	-	21.2000	22	21.2000	-	-	979.172
South (Andaman Coast)	7	15.8365	9,10,11	228.4039	-	43.3536	22	43.3536	-	-	287.594
Southern Border	-	-	11	370.0000	-	4263.3802	22	4263.3802	28	6.5680	4639.9482
East	7	20.8250	9,10	581.6002	-	598.6745	22	598.6745	-	-	1201.0997
Upper Northeast 1	-	-	-	-	-	1335.0227	22	1335.0227	-	-	1335.0227
Upper Northeast 2	-	-	9,10,22	1410.9797	18	573.1200	22	573.1200	-	-	2019.0997
Middle Northeast	-	-	9,10	1027.6972	-	57.1033	22	57.1033	-	-	1084.8005
Lower Northeast 1	-	-	9,10	1798.4169	-	1155.6508	22	1155.6508	-	-	2954.0677
Lower Northeast 2	-	-	9,10	672.1863	-	36.3247	22	36.3247	-	-	708.511
Upper North 1	-	-	-	-	-	4.9372	22	4.9372	-	-	4.9372

Provincial cluster	Healthcare		Living standard		Education		Income		Access to Public Services		Total
	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	
Upper North 2	-	9,10	-	687.3070	-	-	20,21,22	120.3792	-	-	807.6862
Lower North 1	-	9,10	-	471.4111	-	-	22	152.0163	-	-	623.4274
Lower North 2	-	9,10	-	955.0381	-	-	22	268.0260	-	-	1223.0641
<b>Total budget for 2017 (additional)</b>		<b>36.6615</b>		<b>11567.9558</b>		<b>35.0000</b>		<b>13124.2989</b>		<b>6.5680</b>	<b>24770.4842</b>

Note: 1. The provincial clusters were classified according to the Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster, dated 18 February 2009.

2. The researcher estimated the budget for each of TPMAP's multidimensional poverty indicators based on the project performance indicators.
3. Other areas refer to other multidimensional poverty indicators that are not included in TPMAP.
4. The total budget corresponds to the multidimensional poverty indicators.

As shown in Table 4.14, the study finds that a sum of 24,770.4842 million additional Baht was provided to provincial clusters in fiscal year 2017 according to TPMAP's multidimensional poverty indicators along the five dimensions. The largest amount of budget was allocated for income dimension (13,124.2989 million Baht), followed by living standards (11,567.9558 million Baht), healthcare (36.6615 million Baht), education (35.0000 million Baht), and access to public services (6.5680 million Baht).

Under the healthcare dimension, only two provincial clusters received budgets, comprised of the Eastern cluster (20.8250 million Baht) and the Southern cluster (Andaman Coast) (15.8365 million Baht).

For the living standards, the lower Northeastern cluster 1 received the highest budget (1,798.4169 million Baht), followed by the upper Northeastern cluster 2 (1,410.9797 million Baht), and the upper Central cluster 2 (1,280.1653 million Baht). The Southern (Andaman Coast) cluster received the lowest (228.4039 million Baht), followed by the Southern border cluster (370 million Baht), and the lower Northern cluster 1 (471.4111 million Baht). In addition, the upper Central cluster 1, the lower Central cluster 2, the upper Northeastern cluster 1, and the upper Northern cluster 1 received no budget for this dimension.

Under the education dimension, only the upper Northeastern cluster 2 received a budget (35 million Baht).

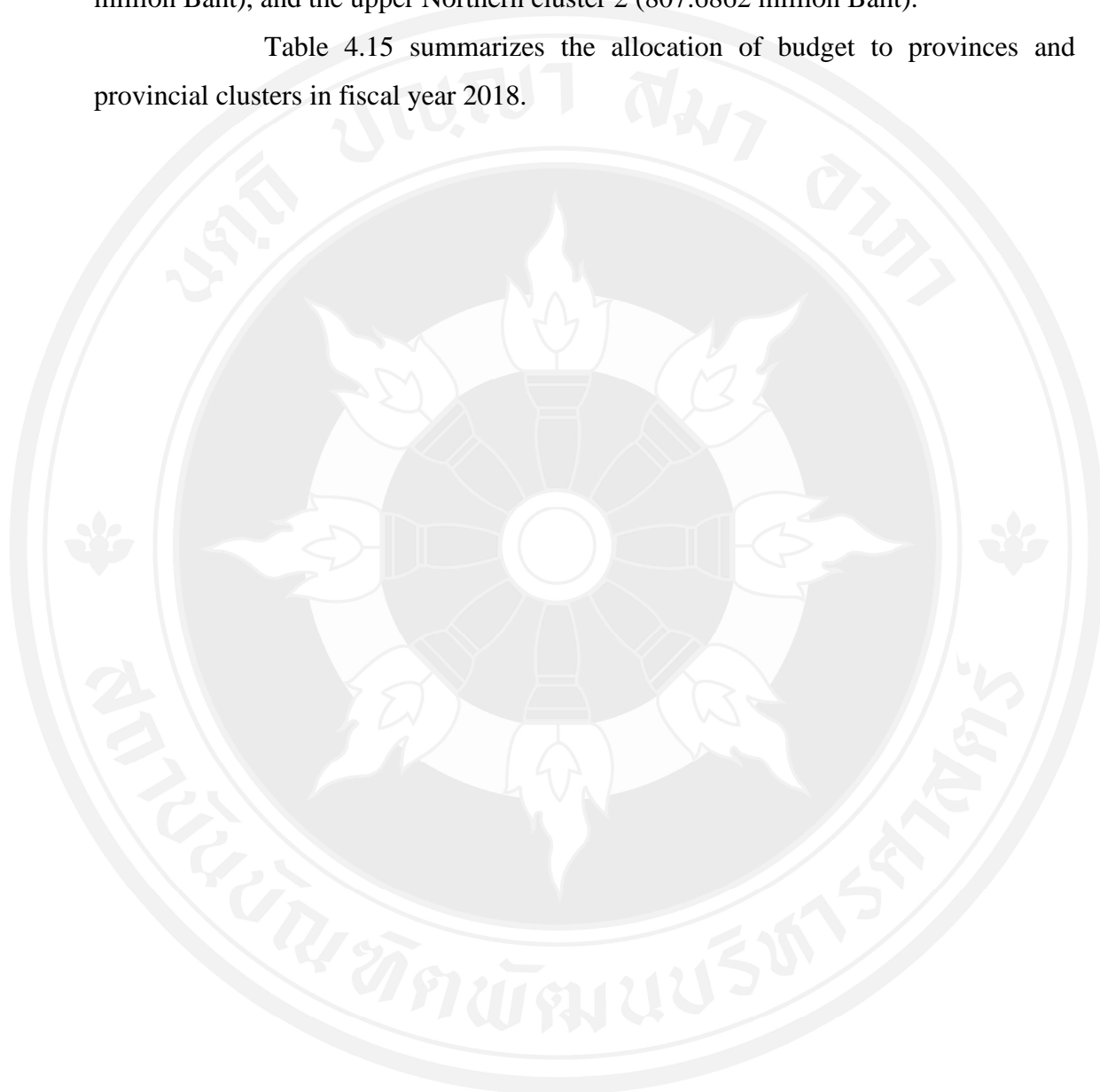
Under the income dimension, the middle Northeastern cluster received the highest budget (4263.3802 million Baht), followed by the upper Northern cluster 1 (2279.7967 million Baht), and the lower Northern cluster 2 (1335.0227 million Baht). The Southern (Andaman Coast) cluster received the lowest (228.4039 million Baht), followed by the middle Central cluster (4.9372 million Baht), the upper Northeastern cluster 2 (21.2 million Baht), and the eastern cluster (36.3247 million Baht). The upper Northeastern cluster 1 did not receive any budget for this dimension.

For access to public services, only the Southern border cluster received the budget (6.5680 million Baht).

In summary, the Southern border cluster received the highest budget (4,722.9482 million Baht), followed by the lower Northern cluster 1 (3,034.0677 million Baht), the lower Central cluster 1 (2,905.0934 million Baht), the upper Central

cluster 2 (2,294.696 million Baht), and the upper Northeastern cluster 2 (2,096.8772 million Baht). The upper Northern cluster 1 received the lowest budget (4.9372 million Baht), followed by the lower Central cluster 2 (81.3136 million Baht), the lower Northeastern cluster 2 (746.417 million Baht), the lower Northern cluster 1 (781.3274 million Baht), and the upper Northern cluster 2 (807.6862 million Baht).

Table 4.15 summarizes the allocation of budget to provinces and provincial clusters in fiscal year 2018.



**Table 4.15** Provincial and Provincial Cluster Budget Classified by Multidimensional Poverty Indicators in Fiscal Year 2018

(Unit: Million Baht)

Provincial cluster (Total budget)	Province	Healthcare			Living standard			Education			Income			Access to public services		
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	
<b>Upper Central 1 (485.3867)</b>	Nonthaburi	-	-	11	2.5000	-	-	22	46.6000	-	-	-	-			
	Pathum Thani	-	-	11	22.3235	-	-	22	8.1000	-	-	-	-			
	Ayutthaya	-	-	-	-	-	-	22	79.8105	-	-	-	-			
	Saraburi	-	-	9,10	20.0000	-	-	22	56.9936	-	-	-	-			
	Cluster budget	-	-	11	70.4704	-	-	22	178.5887	-	-	-	-			
<b>Upper Central 2 (573.5676)</b>	<b>Total</b>	-	-	-	<b>115.2939</b>	-	-	-	<b>370.0928</b>	-	-	-	-			
<b>Upper Central 2 (573.5676)</b>	Chainat	-	-	9,10,11	35.8533	-	-	22	58.8570	-	-	-	-			
	Lopburi	-	-	9,10,11	49.2305	-	-	22	44.8184	27,8	2.0000	-	-			
	Singburi	-	-	9,10,11	2.6799	-	-	4,22	89.8430	27,7	5.2697	-	-			
	Angthong	-	-	9,10,11,12	61.7000	-	-	22	51.2852	27,21	0.2200	-	-			
	Cluster budget	-	-	,13	105.7130	-	-	22	66.0976	-	-	-	-			
<b>Total</b>	<b>Total</b>	-	-	-	<b>255.1767</b>	-	-	-	<b>310.9012</b>	-	-	-	<b>7.4897</b>			

Provincial cluster	Province	Healthcare			Living standard			Education			Income			Access to public services		
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	
<b>Middle</b>	Chachoengsao	7	1.00	-	-	16,17	2.3000	22	166.7976	-	-	-	-	-		
<b>Central (661.2337)</b>	Nakhon Nayok	-	-	-	-	-	-	22	111.0331	-	-	-	-	-		
	Prachinburi	-	-	9,10	121.7310	15	0.3173	20,21,22	15.3737	-	-	-	-	-		
	Samut Prakan	-	-	-	-	-	-	20,21,22	52.3462	-	-	-	-	-		
	Sa Kaeo	-	-	9,10,11	118.6732	-	-	22	15.2270	-	-	-	-	-		
	Cluster budget	-	-	-	-	-	-	22	56.4346	-	-	-	-	-		
	<b>Total</b>	-	<b>1.00</b>	-	<b>240.4042</b>	-	<b>2.6173</b>	-	<b>417.2122</b>	-	-	-	-	-		
<b>Lower</b>	Kanchanaburi	-	-	11	3.0000	-	-	22	179.9810	-	-	-	-	-		
<b>Central 1 (594.3903)</b>	Nakhon Pathom	-	-	9,10	7.3694	-	-	22	44.9992	-	-	-	-	-		
	Ratchaburi	-	-	9,10,11	0.9356	-	-	22	1.6846	27	6.9000	-	-	-		
	Suphanburi	7	4.8126	11	8.3500	-	-	22	68.6700	27,21	0.2000	-	-	-		
	Cluster budget	-	-	9,10	80.0000	-	-	22	187.4879	-	-	-	-	-		
	<b>Total</b>	-	<b>4.8126</b>	-	<b>99.655</b>	-	-	-	<b>482.8227</b>	-	<b>7.1000</b>	-	-	-		
<b>Lower</b>	Prachuap Khiri Khan	-	-	9,10,11	74.5127	-	-	22	107.1520	-	-	-	-	-		
<b>Central 2 (569.5223)</b>	Phetchaburi	-	-	9,10	79.5910	-	-	22	105.0961	-	-	-	-	-		
	Samut Songkhram	-	-	9,10	90.9210	-	-	22	39.9606	-	-	-	-	-		
	Samut Sakhon	-	-	9,10	3.0600	16,17	1.9000	20,22	42.3789	-	-	-	-	-		
	Cluster budget	-	-	-	-	-	-	22	24.9500	-	-	-	-	-		
	<b>Total</b>	-	-	-	<b>248.0847</b>	-	<b>1.9000</b>	-	<b>319.5376</b>	-	-	-	-	-		

Provincial cluster	Province	Healthcare			Living standard			Education			Income			Access to public services		
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	
South (Gulf of Thailand)	Chumphon	-	9,10	6.2650	-	-	-	-	-	-	-	-	-	-	-	
	Nakhon Si Thammarat	-	9,10,11	49.2022	-	-	20,22	49.4290	-	-	-	-	-	-	-	
(184.3959)	Phatthalung	-	9,10	9.9629	-	-	20,21,22	33.0325	-	-	-	-	-	-	-	
	Surat Thani	-	-	-	-	-	20,21,22	36.5043	-	-	-	-	-	-	-	
	Cluster budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	<b>Total</b>	-	-	<b>65.4301</b>	-	-	-	<b>118.9658</b>	-	-	-	-	-	-	-	
South (Andaman Coast)	Krabi	-	9,10	18.8300	16,17	18.0613	22	40.4538	-	-	-	-	-	-	-	
	Trang	-	9,10	23.5490	-	-	20,21,22	50.3065	27,28	16.2334	-	-	-	-	-	
(457.1032)	Phangnga	-	11	4.8425	-	-	22	30.0740	-	-	-	-	-	-	-	
	Phuket	-	9,10	1.0000	-	-	22	14.5622	-	-	-	-	-	-	-	
	Ranong	-	-	-	-	-	22	94.5605	-	-	-	-	-	-	-	
	Cluster budget	-	-	-	-	-	22	144.6300	-	-	-	-	-	-	-	
	<b>Total</b>	-	-	<b>48.2215</b>	-	<b>18.0613</b>	-	<b>374.587</b>	-	<b>16.2334</b>	-	-	-	-	-	

Provincial cluster (Total budget)	Province	Healthcare		Living standard		Education		Income		Access to public services	
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget
<b>Southern</b>	Narathiwat	-	-	-	-	-	-	22	35.2952	-	-
	Pattani	-	9,10,11	30.2540	15,16,17	22.0510	22	45.4360	27,28	14.5200	
	Yala	-	9,10	48.6300	-	-	20,22	134.8722	27,28	12.5789	
	Songkhla	7	8.2449	9,10	32.8880	15	0.2099	22	15.3250	27,28	2.3166
	Satun	7	2.9000	-	-	-	-	20,21,22	68.4398	-	-
	Cluster budget	-	9,10	77.1500	-	-	22	183.8871	-	-	-
<b>East</b> (421.5037)	<b>Total</b>	-	<b>11.1449</b>	-	<b>188.9220</b>	-	<b>22.2609</b>	-	<b>483.2553</b>	-	<b>29.4155</b>
	Chanthaburi	-	-	9,10	6.8000	-	-	20,21,22	51.6942	27	4.0240
	Chonburi	-	-	9,10	4.7650	-	-	-	-	-	-
	Trat	-	-	9,10	20.8695	-	-	22	23.8149	-	-
	Rayong	-	-	-	-	-	-	22	28.3305	-	-
	Cluster budget	-	9,10	65.0000	-	-	22	216.2056	-	-	-
	<b>Total</b>	-	-	-	<b>97.4345</b>	-	-	-	<b>320.0452</b>	-	<b>4.0240</b>



Provincial cluster	Province	Healthcare			Living standard			Education			Income			Access to public services		
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	
<b>Upper Northeast 1 (1143.4438)</b>	Bueng Kan	-	-	9,10,11	19.1370	-	-	-	22	79.9591	-	-	-	-		
	Loei	-	-	-	-	-	-	22	127.6858	-	-	-	-	-		
	Nong Khai	-	-	-	-	-	-	22	127.5968	-	-	-	-	-		
	Nong Bua Lam Phu	-	-	11	6.1925	-	-	22	111.5559	-	-	-	-	-		
	Udon Thani	-	-	9,10,11	45.8000	17	1.2401	20,21,22	236.9924	27,28	0.2476	-	-	-		
	Cluster budget	-	-	-	-	-	-	22	387.0366	-	-	-	-	-		
	<b>Total</b>	-	-	-	<b>71.1295</b>	-	<b>1.2401</b>	-	<b>1070.8266</b>	-	<b>0.2476</b>	-	-			
<b>Upper Northeast 2 (772.3553)</b>	Nakhon Phanom	-	-	-	-	-	-	22	142.2119	-	-	-	-			
	Mukdahan	-	-	9,10	58.3320	-	-	22	102.9445	-	-	-	-			
	Sakon Nakhon	-	-	9,10	83.0904	-	-	22	94.2899	-	-	-	-			
	Cluster budget	-	-	-	-	-	-	22	291.4866	-	-	-	-			
		<b>Total</b>	-	-	-	<b>141.4224</b>	-	-	-	<b>630.9329</b>	-	-	-	-		
	<b>Middle Northeast (1163.8257)</b>	Kalasin	-	-	9,10	17.1750	-	-	22	220.9595	27,28	10.0000	-	-		
Khon Kaen		-	-	9,10	98.2811	-	-	22	217.0647	27,28	10.0000	-	-			
Maharakham		-	-	9,10,11	99.3048	-	-	20,21,22	19.1986	27,28	9.0000	-	-			
Roi Et		-	-	9,10	72.4600	16,17	11.9880	22	137.4590	27	4.0000	-	-			
Cluster budget		-	-	9,10	169.6683	-	-	22	67.2667	-	-	-	-			
		<b>Total</b>	-	-	-	<b>456.8892</b>	-	<b>11.9880</b>	-	<b>661.9485</b>	-	<b>33.0000</b>	-	-		

Provincial cluster (Total budget)	Province	Healthcare		Living standard		Education		Income		Access to public services	
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget
<b>Lower Northeast 1 (727.4319)</b>	Chaiyaphum	-	-	-	-	-	-	22	37.1140	-	-
	Nakhon Ratchasima	-	11	10.2090	-	-	-	22	356.3268	-	-
	Buriram	-	9,10	3.9460	-	-	-	22	5.0000	-	-
	Surin	-	9,10,11	93.5911	-	-	-	-	-	27	0.5500
	Cluster budget	-	9,10	162.0000	-	-	-	22	58.6950	-	-
	<b>Total</b>	-	-	<b>269.7461</b>	-	-	-	-	<b>457.1358</b>	-	<b>0.5500</b>
<b>Lower Northeast 2 (663.5218)</b>	Yasothon	-	9,10	46.2160	16,17	4.0844	20,21,22	22	141.6051	-	-
	Sisaket	-	9,10	137.8133	16,17	3.5000	22	22	62.8411	-	-
	Amnat Charoen	-	9,10	85.8470	16,17	4.5750	22	22	0.5200	-	-
	Ubon Ratchathani	-	9,10	48.1210	15,16,17	0.4752	22	22	21.8628	27	2.2479
	Cluster budget	-	11	0.7100	-	-	-	22	103.1030	-	-
	<b>Total</b>	-	-	<b>318.7073</b>	-	<b>12.6346</b>	-	-	<b>329.9320</b>	-	<b>2.2479</b>
<b>Upper North 1 (930.0303)</b>	Chiang Mai	-	9,10,11	70.0887	-	-	-	22	264.7141	27,28	2.0000
	Mae Hong Son	-	-	-	-	-	-	22	161.0318	27,28	3.9936
	Lampang	-	9,10,11	76.0101	-	-	-	22	46.1590	27,28	3.2401
	Lamphun	-	-	-	-	-	-	22	25.4556	27,28	7.8186
	Cluster budget	-	9,10,11	88.6200	-	-	-	22	180.8987	-	-
	<b>Total</b>	-	-	<b>234.7188</b>	-	-	-	-	<b>678.2592</b>	-	<b>17.0523</b>

Provincial cluster (Total budget)	Province	Healthcare			Living standard			Education			Income			Access to public services		
		TPMAP indicator	Budget	indicator	TPMAP indicator	Budget	indicator	TPMAP indicator	Budget	indicator	TPMAP indicator	Budget	indicator	TPMAP indicator	Budget	indicator
<b>Upper North</b> <b>2</b> <b>(480.0753)</b>	Chiang Rai	-	9,10,11	76.1944	-	-	22	80.3899	27	4.0392	-	-	-	-	-	
	Nan	-	9,10,11	43.9900	-	-	22	18.8500	-	-	-	-	-	-	-	
	Phayao	-	9,10,11	53.6358	-	-	20,21,22	75.8467	28	3.4000	-	-	-	-	-	
	Phrae	-	9,10,11	29.6929	-	-	22	27.7617	27	6.7747	-	-	-	-	-	
	Cluster budget	-	-	-	-	-	22	59.5000	-	-	-	-	-	-	-	
	<b>Total</b>	-	-	<b>203.5131</b>	-	-	-	<b>262.3483</b>	-	<b>14.2139</b>	-	-	-	-	-	
<b>Lower North</b> <b>1</b> <b>(1148.3767)</b>	Tak	-	-	-	-	-	22	181.0427	-	-	-	-	-	-	-	
	Phitsanulok	-	-	-	-	-	22	243.0058	-	-	-	-	-	-	-	
	Phetchabun	-	-	-	-	-	22	193.7236	-	-	-	-	-	-	-	
	Sukhothai	-	-	-	-	-	22	197.5805	-	-	-	-	-	-	-	
	Uttaradit	-	9,10	15.4614	-	-	22	210.1907	-	-	-	-	-	-	-	
	Cluster budget	-	-	-	-	-	22	107.3720	-	-	-	-	-	-	-	
	<b>Total</b>	-	-	<b>15.4614</b>	-	-	-	<b>1132.9153</b>	-	<b>14.2139</b>	-	-	-	-	-	
<b>Lower North</b> <b>2</b> <b>(300.4418)</b>	Kamphaengphet	-	-	-	16	1.2300	22	25.6199	27,8	1.6250	-	-	-	-	-	
	Nakhon Sawan	-	11	0.3000	-	-	20,22	47.8776	-	-	-	-	-	-	-	
	Phichit	-	11	1.2926	16,17	15.3218	22	15.0000	27	4.1399	-	-	-	-	-	
	Uthai Thani	-	9,10,11	35.0671	-	-	20,21,22	46.3500	-	-	-	-	-	-	-	
	Cluster budget	-	9,10	30.0000	-	-	22	76.6179	-	-	-	-	-	-	-	
	<b>Total</b>	-	-	<b>66.6597</b>	-	<b>16.5518</b>	-	<b>211.4654</b>	-	<b>5.7649</b>	-	-	-	-	-	

Provincial cluster (Total budget)	Province	Healthcare		Living standard		Education		Income		Access to public services	
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget
Total budget for 2018 (12011.6046)											
			3136.8701		87.2540		8633.1838		137.3392		

Note: 1. The provincial clusters were classified according to the Notification of the Provincial and Provincial Cluster Administration

Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster, dated 18 February 2009.

2. The researcher estimated the budget for each of TPMAP's multidimensional poverty indicators based on the project performance indicators.
3. Other areas refer to other multidimensional poverty indicators that are not included in TPMAP.
4. The total budget corresponds to the multidimensional poverty indicators.

According to Table 4.15, a total of 12,011.6046 million Baht was provided to provinces and provincial clusters in fiscal year 2018 in accordance with TPMAP's multidimensional poverty indicators according to five dimensions. The highest amount was allocated for the income dimension (8,633.1838 million Baht), followed by living standards (3,136.8701 million Baht), access to public services (137.3392 million Baht), education (87.2540 million Baht), and healthcare (16.9575 million Baht).

For the dimension of healthcare, only four provinces received the budget. Songkhla received the highest budget (8.2449 million Baht), followed by Suphanburi (4.8126 million Baht), Satun (2.9 million Baht), and Chachoengsao (1 million Baht).

For the living standards dimension, Sisaket received the highest budget (137.8133 million Baht), followed by Prachinburi (121.7310 million Baht), and Sa Kaeo (118.6732 million Baht). Nakhon Sawan received the lowest budget (0.3 million Baht), followed by Ratchaburi (0.9356 million Baht), and Phuket (1 million Baht).

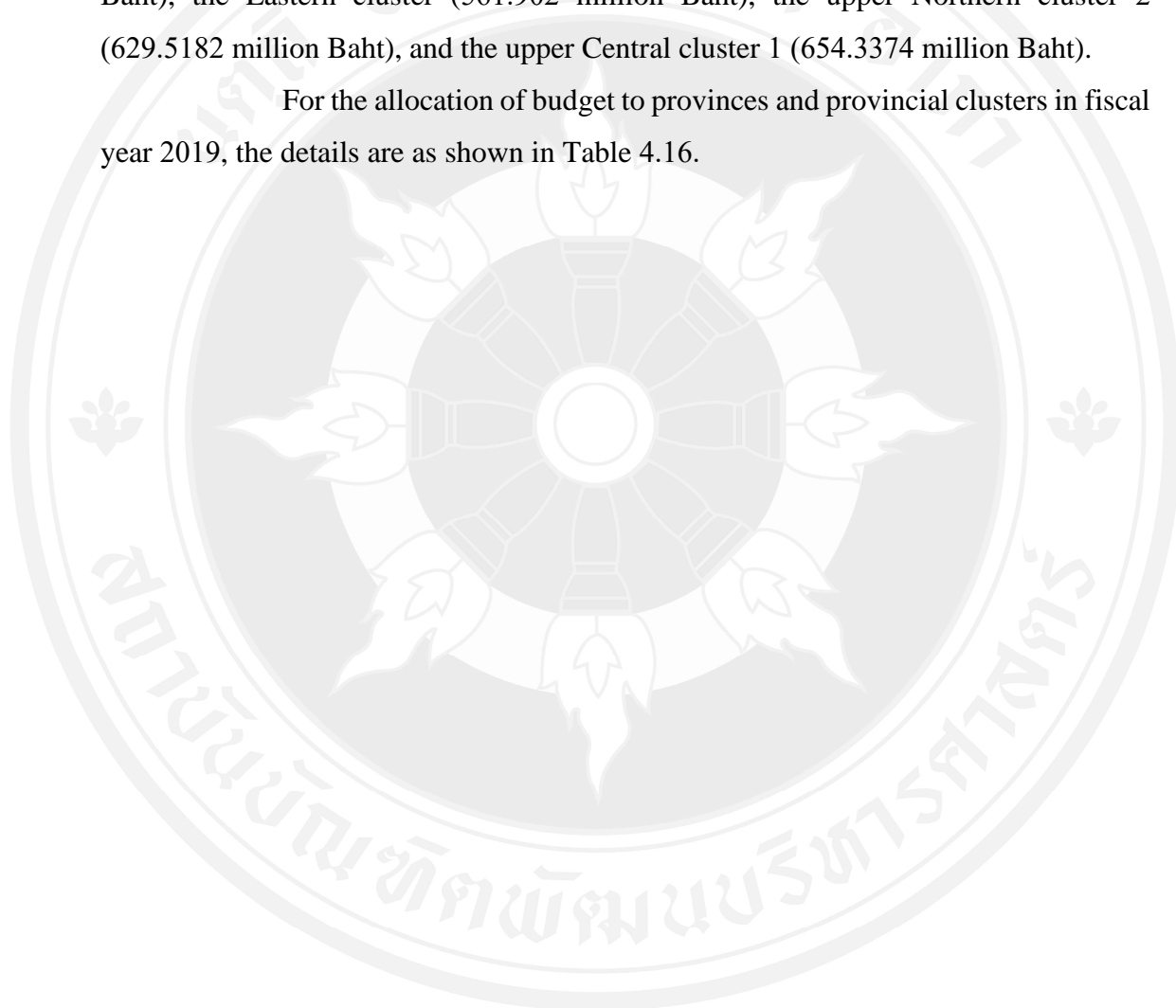
For the education dimension, Pattani received the highest budget (22.0510 million Baht), followed by Krabi (18.0613 million Baht), and Phichit (15.3218 million Baht). Songkhla received the lowest budget (0.2099 million Baht), followed by Prachinburi (0.3173 million Baht), and Ubon Ratchathani (0.4752 million Baht). It should be noted that most of the provinces receiving the budget for this dimension are in the lower Northeastern cluster 2.

For the income dimension, Nakhon Ratchasima received the highest budget (356.3268 million Baht), followed by Chiang Mai (264.7141 million Baht), and Phitsanulok (243.0058 million Baht). On the contrary, Amnat Charoen received the lowest budget (0.52 million Baht), followed by Ratchaburi (1.6846 million Baht), and Buriram (5 million Baht).

For the dimension of access to public services, Trang received the highest budget (16.2334 million Baht), followed by Pattani (14.52 million Baht), and Yala (12.5789 million Baht). Conversely, Suphanburi received the lowest budget (0.2 million Baht), followed by Angthong (0.22 million Baht), and Udon Thani (0.2476 million Baht). It should be noted that all provinces in the middle Northeastern cluster and the upper Northern cluster 1 received the budget for this dimension.

For the allocation of budget at the provincial cluster level, the study finds that the lower Northern cluster 1 received the highest budget (1,210.9127 million Baht), followed by the middle Northeastern cluster (1,208.08 million Baht), the upper Northeastern cluster 1 (1,180.3386 million Baht), the upper Northern cluster 1 (1,041.0801 million Baht), and the Southern (Andaman Coast) cluster (859.7903 million Baht). The Southern (Gulf of Thailand) cluster received the lowest budget (386.1601 million Baht), followed by the lower Northern cluster 2 (472.4283 million Baht), the Eastern cluster (561.902 million Baht), the upper Northern cluster 2 (629.5182 million Baht), and the upper Central cluster 1 (654.3374 million Baht).

For the allocation of budget to provinces and provincial clusters in fiscal year 2019, the details are as shown in Table 4.16.



**Table 4.16** Provincial and Provincial Cluster Budget Classified by Multidimensional Poverty Indicators in Fiscal Year 2019  
(Unit: Million Baht)

Provincial cluster (Total budget)	Province	Healthcare			Living standard			Education			Income			Access to public services		
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	
<b>Upper</b>	Chainat	-	-	-	-	-	-	22	47.2377	-	-	28	1.7869	-	-	
<b>Central (827.8208)</b>	Ayutthaya	-	9,10	25.5400	-	-	22	42.9456	-	-	-	-	-	-	-	
	Lopburi	-	9,10	55.0033	-	-	22	29.8937	-	-	27,28	0.6068	-	-	-	
	Saraburi	-	-	-	-	-	22	72.8306	-	-	-	-	-	-	-	
	Singburi	-	9,10	14.6624	-	-	14,22	52.8903	-	-	-	-	-	-	-	
	Angthong	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Cluster budget	-	9,10	232.1220	-	-	22	252.3015	-	-	-	-	-	-	-	
	<b>Total</b>	-	-	327.3277	-	-	-	498.0994	-	-	-	-	2.3937	-	-	
<b>Middle</b>	Nakhon Pathom	-	-	-	-	-	22	48.3208	-	-	-	-	-	-	-	
<b>Central (333.509)</b>	Nonthaburi	-	-	-	-	-	20,21,22	27.102	-	-	27	25.2298	-	-	-	
	Pathum Thani	-	11	9.9869	-	-	22	67.8728	-	-	-	-	-	-	-	
	Samut Prakan	-	11	1.2700	-	-	18,20,21,	52.5703	-	-	-	-	-	-	-	
	Cluster budget	-	-	-	-	-	22	100.2474	-	-	28	0.9090	-	-	-	
	<b>Total</b>	-	-	11.2569	-	-	-	296.1133	-	-	-	26.1388	-	-	-	
	Kanchanaburi	-	9,10	152.3641	-	-	22	34.1195	-	-	-	-	-	-	-	

Provincial cluster	Province	Healthcare			Living standard			Education			Income			Access to public services		
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	
<b>Lower Central 1 (433.5656)</b>	Ratchaburi	-	-	9,10	12.6180	-	-	-	22	79.879	-	-	-	-		
	Suphanburi	-	-	9,10	2.7900	16,17	4.4850	-	22	138.7958	-	-	-	-		
	Cluster budget	-	-	-	-	-	-	-	22	8.5142	-	-	-	-		
	<b>Total</b>	-	-	-	167.7721	-	4.485	-	-	261.3085	-	-	-	-		
<b>Lower Central 2 (354.2022)</b>	Prachuap Khiri Khan	-	-	11	5.0000	-	-	-	22	122.4819	-	-	-	-		
	Phetchaburi	-	-	-	-	-	-	-	22	153.0826	-	-	-	-		
	Samut Songkhram	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Samut Sakhon	-	-	-	-	15,16,27	11.9145	-	22	16.9392	-	-	-	-		
	Cluster budget	-	-	-	-	-	-	-	22	44.7840	-	-	-	-		
	<b>Total</b>	-	-	-	5.0000	-	11.9145	-	-	337.2877	-	-	-	-		
<b>South (Gulf of Thailand) (478.0283)</b>	Chumphon	-	-	11	3.1434	-	-	-	-	-	-	-	-	-		
	Nakhon Si Thammarat	-	-	9,10	20.0000	-	-	-	22	53.0004	-	-	-	-		
	Phatthalung	-	-	9,10	25.9756	15	1.085	-	22	25.746	-	-	-	-		
	Songkhla	-	-	13,14	46.6895	-	-	-	22	32.134	21,27,28	11.4259	-	-		
	Satun	7	1.7587	9,10	15.2000	-	-	-	22	41.5629	-	-	-	-		
	Surat Thani	7	4.0000	9,10,11	12.7708	-	-	-	22	82.2753	27	1.3193	-	-		
	Cluster budget	-	-	-	-	-	-	-	22	99.9415	-	-	-	-		
	<b>Total</b>	-	5.7587	-	123.7793	-	1.085	-	-	334.6601	-	12.7452	-	-		
	Krabi	-	-	9,10,11	20.1862	-	-	-	22	37.7648	-	-	-	-		



Provincial cluster	Province	Healthcare			Living standard			Education			Income			Access to public services		
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	
<b>South (Andaman Coast) (741.2201)</b>	Trang	-	-	9,10,11	32.4830	-	-	20,21,22	7.5158	27	9,9686					
	Phangnga	-	-	11	1.0000	-	-	22	88.2906	27	10.2558					
	Phuket	-	-	9,10	36.3790	-	-	22	72.2206	-	-					
	Ranong	-	-	9,10	30.2060	15,27	2.6212	22	117.8132	-	-					
	Cluster budget	-	-	-	-	-	-	22	274.5153	-	-					
<b>Total</b>		-	-	-	120.2542	-	2.6212	-	598.1203	-	20.2244					
<b>Southern Border (401.4791)</b>	Narathiwat	7	2.9415	-	-	15	0.5872	22	12.5721	-	-					
	Pattani	7	81.1440	9,10	23.0316	-	-	22	8.7660	-	-					
	Yala	-	-	9,10	35.5780	-	-	22	50.9519	27,28	4.0688					
	Cluster budget	-	-	-	-	-	-	22	181.8380	-	-					
<b>Total</b>		-	84.0855	-	58.6096	-	0.5872	-	254.128	-	4.0688					
<b>East 1 (583.8177)</b>	Chachoengsao	-	-	-	-	-	-	22	165.0874	-	-					
	Chonburi	-	-	11	5.0000	-	-	22	16.9358	-	-					
	Rayong	-	-	9,10	40.2400	-	-	22	87.5784	-	-					
	Cluster budget	-	-	9,10,11	219.248	-	-	22	49.7281	-	-					
<b>Total</b>		-	-	264.4880	-	-	-	319.3297	-	-						
<b>East 2 (458.6285)</b>	Chanthaburi	-	-	9,10	12.3460	-	-	22	12.5000	-	-					
	Trat	-	-	9,10	3.4350	-	-	22	31.0146	-	-					

Provincial cluster (Total budget)	Province	Healthcare			Living standard			Education			Income			Access to public services		
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	
	Nakhon Nayok	-	-	9,10	2,8720	-	-	-	-	22	3,4906	27	2,7452			
	Prachinburi	-	-	9,10	43,4572	-	-	-	-	22	21,1596	27,28	1,3400			
	Sa Kaeo	-	-	9,10	76,3887	-	-	-	-	22	14,7305	-	-			
	Cluster budget	-	-	-	-	-	-	-	-	22	223,0850	27,28	10,0641			
	<b>Total</b>	-	-	-	138,4989	-	-	-	-	-	305,9803	-	14,1493			
<b>Upper Northeast 1</b> <b>(730.8941)</b>	Bueng Kan	-	-	9,10	9,7448	-	-	-	-	22	48,6993	-	-			
	Loei	-	-	9,10	22,8545	-	-	-	-	22	155,8821	-	-			
	Nong Khai	-	-	9,10	41,4280	-	-	-	-	22	39,7796	27	1,7935			
	Nong Bua Lam Phu	-	-	9,10	79,7596	-	-	-	-	16,22	108,6086	-	-			
	Udon Thani	-	-	9,10,11	43,5867	-	-	-	-	22	177,5777	-	-			
	Cluster budget	-	-	-	-	-	-	-	-	22	1,1797	-	-			
	<b>Total</b>	-	-	-	197,3736	-	-	-	-	-	531,727	-	1,7935			
<b>Upper Northeast 2</b> <b>(719.6759)</b>	Nakhon Phanom	-	-	9,10	42,8367	16	3,0000	16	3,0000	22	97,9788	28	1			
	Mukdahan	-	-	9,10,11	91,4658	16	2,0784	16	2,0784	22	87,7485	-	-			
	Sakon Nakhon	-	-	9,10	80,9137	-	-	-	-	22	138,4727	-	-			
	Cluster budget	-	-	9,10	58,0000	-	-	-	-	22	116,1813	-	-			
	<b>Total</b>	-	-	-	273,2162	-	5,0784	-	5,0784	-	440,3813	-	1			
	Kalasin	-	-	-	-	-	-	-	-	22	40,5432	27,28	10			
	Khon Kaen	-	-	9,10	85,3184	-	-	-	-	22	238,2067	27	13,5293			

Provincial cluster	Province	Healthcare			Living standard			Education			Income			Access to public services		
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	
<b>Middle</b>	Maharakham	-	-	9,10	86.4231	-	-	-	20,21,22	17.917	27,28	9	-	-		
<b>Northeast (1052.9158)</b>	Roi Et	-	-	9,10,11	42.1409	-	-	-	22	56.482	-	-	-	-		
	Cluster budget	-	-	9,10	123.4944	-	-	-	22	329.8608	-	-	-	-		
	<b>Total</b>	-	-	-	337.3768	-	-	-	-	683.0097	-	-	-	32.5293		
<b>Lower</b>	Chaiyaphum	-	-	9,10	152.7622	-	-	-	22	66.4748	-	-	-	-		
<b>Northeast 1 (886.834)</b>	Nakhon Ratchasima	-	-	9,10	94.6338	-	-	-	22	112.9863	-	-	-	-		
	Buriram	-	-	11	3.3402	-	-	-	22	2.5	-	-	-	-		
	Surin	-	-	9,10	95.2164	-	-	-	22	8.6744	27	1.1784	-	-		
	Cluster budget	-	-	9,10	118.8000	-	-	-	22	230.2675	-	-	-	-		
	<b>Total</b>	-	-	-	464.7526	-	-	-	-	420.903	-	-	-	1.1784		
<b>Lower</b>	Yasothon	16,17	2.3822	-	-	-	-	-	22	80.9155	-	-	-	-		
<b>Northeast 2 (342.9922)</b>	Sisaket	7	3.5000	9,10	40.1667	-	-	-	22	36.3143	-	-	-	-		
	Amnat Charoen	-	-	9,10	55.2000	-	-	-	22	2.1	27	1.0700	-	-		
	Ubon Ratchathani	4	1.9600	9,10,11	27.2220	15,16,17	4.2907	-	22	4.4908	27,28	3.0420	-	-		
	Cluster budget	-	-	9,10	82.0000	-	-	-	22	6.1802	-	-	-	-		
	<b>Total</b>	-	-	-	204.5887	-	4.2907	-	-	130.0008	-	4.112	-	-		
<b>Upper</b>	Chiang Mai	-	-	9,10,11	44.9928	-	-	-	22	194.1896	27	3.7780	-	-		
<b>North 1 (906.2928)</b>	Mae Hong Son	-	-	9,10,11	21.7805	-	-	-	22	93.4108	-	-	-	-		
	Lampang	-	-	-	-	-	-	-	22	234.7274	-	-	-	-		

Provincial cluster	Province	Healthcare			Living standard			Education			Income			Access to public services		
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	
(Total budget)	Lamphun	-	-	9,10	66.0448	-	-	22	42.3776	-	-	-	-	-	-	
	Cluster budget	-	-	-	-	-	-	22	204.9913	-	-	-	-	-	-	
Upper North 2 (423.7297)	<b>Total</b>	-	-	-	132.8181	-	-	-	769.6967	-	-	-	-	-	3.778	
	Chiang Rai	-	-	9,10,11	114.1799	-	-	22	30.2233	-	-	-	-	-	-	
	Nan	7	7.1798	9,10	41.6058	16	0.9725	22	32.5355	-	-	-	-	-		
	Phayao	-	-	9,10	33.2400	-	-	20,21,22	9.9695	-	-	-	-	-		
	Phrae	-	-	9,10	21.5222	-	-	22	59.252	-	-	27	9	-		
	Cluster budget	-	-	-	-	-	-	22	64.0492	-	-	-	-	-		
	<b>Total</b>	-	7.1798	-	210.5479	-	0.9725	-	196.0295	-	-	-	-	9		
Lower North 1 (793.0429)	Tak	-	-	-	-	-	-	22	211.7802	-	-	-	-	-		
	Phitsanulok	-	-	9,10	4.0246	-	-	22	134.0848	-	-	27	18.3241	-		
	Phetchabun	-	-	-	-	-	-	22	210.9471	-	-	-	-	-		
	Sukhothai	-	-	-	-	-	-	22	62.5388	-	-	-	-	-		
	Uttaradit	-	-	9,10	11.7070	-	-	22	89.6363	-	-	-	-	-		
	Cluster budget	-	-	9,10	50.0000	-	-	-	-	-	-	-	-	-		
	<b>Total</b>	-	-	-	65.7316	-	-	-	708.9872	-	-	-	-	18.3241		
Lower North 2 (339.1845)	Kamphaengphet	-	-	9,10	106.2190	-	-	22	4.8521	-	-	-	-	-		
	Nakhon Sawan	-	-	11	0.4870	-	-	22	31.3611	-	-	-	-	-		
	Phichit	-	-	9,10,11	53.6412	16	4.7490	22	12.8265	-	-	-	-	-		

Provincial cluster (Total budget)	Province	Healthcare		Living standard		Education		Income		Access to public services	
		TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget
	Uthai Thani	-	-	9,10	24.7490	-	-	22	25.2996	-	-
	Cluster budget	-	-	9,10	75.0000	-	-	-	-	-	-
	<b>Total</b>	-	-	-	260.0962	-	4.749	-	74.3393	-	-
	<b>Total budget for 2019</b>		104.8662		3363.4884		35.7835		7160.1018		151.4355
											<b>(10815.6754)</b>

Note: 1. The provincial clusters were classified according to the Notification of the Provincial and Provincial Cluster Administration

Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster (No. 3), dated 16 November 2017.

2. The researcher estimated the budget for each of TPMAP's multidimensional poverty indicators based on the project performance indicators.

3. Other areas refer to other multidimensional poverty indicators that are not included in TPMAP.

4. The total budget corresponds to the multidimensional poverty indicators.

From Table 4.16, in fiscal year 2019, a total of 10,815.6754 million Baht was provided to provinces and provincial clusters according to TPMAP's multidimensional poverty indicators according to five dimensions. The highest amount was allocated for the income dimension (7,160.1018 million Baht), followed by living standards (3,363.4884 million Baht), access to public services (151.4355 million Baht), healthcare (104.8662 million Baht), and education (35.7835 million Baht).

For the healthcare dimension, only eight provinces receiving the budget. Pattani received the highest budget (81.144 million Baht), followed by Nan (7.1798 million Baht), Surat Thai (4 million Baht), and Sisaket (3.5 million Baht).

Chaiyaphum received the highest budget (152.7622 million Baht) for living standards followed by Kanchanaburi (152.3641 million Baht), and Chiang Rai (97.6644 million Baht). Nakhon Sawan received the lowest budget (0.487 million Baht), followed by Phangnga (1 million Baht), and Samut Prakan (1.27 million Baht).

For the education dimension, Samut Sakhon received the highest budget (6.8274 million Baht), followed by Phichit (4.749 million Baht), and Suphanburi (4.485 million Baht). Narathiwat received the lowest budget (0.5872 million Baht), followed by Nan (0.9725 million Baht), and Phatthalung (1.085 million Baht).

For the income dimension, Khon Kaen received the highest budget (238.2067 million Baht), followed by Lampang (234.7274 million Baht), and Tak (211.7802 million Baht). Amnat Charoen received the lowest budget (2.1 million Baht), followed by Buriram (2.5 million Baht), and Nakhon Nayok (3.4906 million Baht).

For the dimension of access to public services, Nonthaburi received the highest budget (25.2298 million Baht), followed by Phitsanulok (18.3241 million Baht), and Khon Kaen (13.5293 million Baht). Lopburi received the lowest budget (0.6068 million Baht), followed by Nakhon Phanom (1 million Baht), and Amnat Charoen (1.07 million Baht).

The study finds that, for the allocation of budget at the provincial cluster level, the middle Northeastern cluster received the highest budget (1,119.0558 million Baht), followed by the upper Central cluster (1,077.431 million Baht), the Eastern cluster (949.9543 million Baht), the Southern cluster (Andaman Coast) (944.748 million Baht), and the upper Northern cluster 1 (942.5581 million Baht). The lower Northern cluster 2 received the lowest budget (351.1845 million Baht), followed by the

lower Northeastern cluster 2 (351.569 million Baht), the lower Central cluster 2 (476.6645 million Baht), the Southern cluster (Gulf of Thailand) (536.2277 million Baht), and the Eastern cluster 2 (539.01 million Baht).

For the comparison of provincial and provincial cluster budget over the three years, the study finds that only the provincial budget in 2018 and 2019 could be compared. This is because provincial clusters in 2018 and 2019 were differently classified according to the Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster, dated 18 February 2009, and the Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster (No. 3), dated 16 November 2017. In addition, the 2017 budget data was collected and stored in a different format than that of 2018 and 2019, causing limitations in data comparison. Thus, only the 2018 provincial budget was compared to the 2019 provincial budget, as shown in Table 4.17 and 4.18.

**Table 4.17** Comparing the Provincial Budget for Fiscal Year 2018 and 2019 in the Dimensions of Healthcare, Living Standard, and Education.

Province	Healthcare						Living standard						Education					
	2018		2019		2018		2019		2018		2019		2018		2019			
	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget		
Krabi	-	-	-	-	9,10	18.8300	9,10,11	20.1862	16,17	18.0613	-	-	-	-	-	-		
Kanchanaburi	-	-	-	-	11	3.0000	9,10	152.364	-	-	-	-	-	-	-	-		
Kalasin	-	-	-	-	9,10	17.1750	-	1	-	-	-	-	-	-	-	-		
Kamphaengphet	-	-	-	-	-	-	9,10	106.219	16	1.2300	-	-	-	-	-	-		
Khon Kaen	-	-	-	-	9,10	98.2811	9,10	85.3184	-	-	-	-	-	-	-	-		
Chanthaburi	-	-	-	-	9,10	6.8000	9,10	12.3460	-	-	-	-	-	-	-	-		
Chachoengsao	7	1.0000	-	-	-	-	-	-	16,17	2.3000	-	-	-	-	-	-		
Chonburi	-	-	-	-	9,10	4.7650	11	5.0000	-	-	-	-	-	-	-	-		
Chainat	-	-	-	-	9,10,11	35.8533	-	-	-	-	-	-	-	-	-	-		
Chaiyaphum	-	-	-	-	-	-	9,10	152.762	-	-	-	-	-	-	-	-		
Chumphon	-	-	-	-	9,10	6.2650	11	3.1434	-	-	-	-	-	-	-	-		
Chiang Rai	-	-	-	-	9,10,11	76.1944	9,10,11	114.179	-	-	-	-	-	-	-	-		
								9										

(Unit: Million Baht)



Province	Healthcare						Living standard						Education					
	2018		2019		2018		2019		2018		2019		2018		2019			
	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget		
Chiang Mai	-	-	-	9,10,11	70.0887	9,10,11	44.9928	-	-	-	-	-	-	-	-	-		
Trang	-	-	-	9,10	23.5490	9,10,11	32.4830	-	-	-	-	-	-	-	-	-		
Trat	-	-	-	9,10	20.8695	9,10	3.4350	-	-	-	-	-	-	-	-	-		
Tak	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Nakhon Nayok	-	-	-	-	-	9,10	2.8720	-	-	-	-	-	-	-	-	-		
Nakhon Pathom	-	-	-	9,10	7.3694	-	-	-	-	-	-	-	-	-	-	-		
Nakhon Phanom	-	-	-	-	-	9,10	42.8367	-	-	-	-	-	-	-	16	3.0000		
Nakhon Ratchasima	-	-	-	11	10.2090	9,10	94.6338	-	-	-	-	-	-	-	-	-		
Nakhon Si Thammarat	-	-	-	9,10,11	49.2022	9,10	20.0000	-	-	-	-	-	-	-	-	-		
Nakhon Sawan	-	-	-	11	0.3000	11	0.4870	-	-	-	-	-	-	-	-	-		
Nonthaburi	-	-	-	11	2.5000	-	-	-	-	-	-	-	-	-	-	-		
Narathiwat	-	-	7	2.9415	-	-	-	-	-	-	-	-	-	15	0.5872	-		
Nan	-	-	7	7.1798	9,10,11	43.9900	9,10	41.6058	-	-	-	-	-	16	0.9725	-		
Bueng Kan	-	-	-	9,10,11	19.1370	9,10	9.7448	-	-	-	-	-	-	-	-	-		
Buriram	-	-	-	9,10	3.9460	11	3.3402	-	-	-	-	-	-	-	-	-		
Pathum Thani	-	-	-	11	22.3235	11	9.9869	-	-	-	-	-	-	-	-	-		
Prachuap Khiri Khan	-	-	-	9,10,11	74.5127	11	5.0000	-	-	-	-	-	-	-	-	-		
Prachinburi	-	-	-	9,10	121.7310	9,10	43.4572	-	-	-	-	-	-	15	0.3173	-		
Pattani	-	-	7	81.1440	9,10,11	30.2540	9,10	23.0316	-	-	-	-	-	15,16,17	22.0510	-		

Province	Healthcare				Living standard				Education			
	2018		2019		2018		2019		2018		2019	
	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget
Ayutthaya	-	-	-	-	9,10	25.5400	-	-	-	-	-	-
Phayao	-	-	9,10,11	53.6358	9,10	33.2400	-	-	-	-	-	-
Phangnga	-	-	11	4.8425	11	1.0000	-	-	-	-	-	-
Phatthalung	-	-	9,10	9.9629	9,10	25.9756	-	-	-	-	15	1.085
Phichit	-	-	11	1.2926	9,10,11	53.6412	16,17	15.3218	16	4.7490	-	-
Phitsanulok	-	-	-	-	9,10	4.0246	-	-	-	-	-	-
Phetchaburi	-	-	9,10	79.5910	-	-	-	-	-	-	-	-
Phetchabun	-	-	-	-	-	-	-	-	-	-	-	-
Phrae	-	-	9,10,11	29.6929	9,10	21.5222	-	-	-	-	-	-
Phuket	-	-	9,10	1.0000	9,10	36.3790	-	-	-	-	-	-
Maharakham	-	-	9,10,11	99.3048	9,10	86.4231	-	-	-	-	-	-
Mukdahan	-	-	9,10	58.3320	9,10,11	91.4658	-	-	16	2.0784	-	-
Mae Hong Son	-	-	-	-	9,10,11	21.7805	-	-	-	-	-	-
Yasothon	-	-	9,10	46.2160	-	-	16,17	4.0844	-	-	-	-
Yala	-	-	9,10	48.6300	9,10	35.5780	-	-	-	-	-	-
Roi Et	-	-	9,10	72.4600	9,10,11	42.1409	16,17	11.9880	-	-	-	-
Ranong	-	-	-	-	9,10	30.2060	-	-	15,27	2.6212	-	-
Rayong	-	-	-	-	9,10	40.2400	-	-	-	-	-	-
Ratchaburi	-	-	9,10,11	0.9356	9,10	12.6180	-	-	-	-	-	-



Province	Healthcare				Living standard				Education			
	2018		2019		2018		2019		2018		2019	
	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget
Nong Bua Lam Phu	-	-	-	-	11	6.1925	9,10	79.7596	-	-	-	-
Angthong	-	-	-	-	9,10,11,12,13	61.7000	-	-	-	-	-	-
Amnat Charoen	-	-	-	-	9,10	85.8470	9,10	55.2000	16,17	4.5750	-	-
Udon Thani	-	-	-	-	9,10,11	45.8000	9,10,11	43.5867	17	1.2401	-	-
Uttaradit	-	-	-	-	9,10	15.4614	9,10	11.7070	-	-	-	-
Uthai Thani	-	-	-	-	9,10,11	35.0671	9,10	24.7490	-	-	-	-
Ubon Ratchathani	-	-	4	1.9600	9,10	48.1210	9,10,11	27.2220	15,16,17	0.4752	15,16,17	4.2907

Note: 1. The researcher estimated the budget for each of TPMAP's multidimensional poverty indicators based on the project performance indicators.

2. Other areas refer to other multidimensional poverty indicators that are not included in TPMAP.

3. The total budget corresponds to the multidimensional poverty indicators.

According to Table 4.17, Satun is the only province to receive a health budget in both years but there was a decline in the amount of budget from 2.9 million Baht in 2018 to 1.7587 million Baht in 2019.

For the living standards dimension, Kanchanaburi had the highest budget increase from 3 million Baht in 2018 to 152.3641 million Baht in 2019, followed by Nakhon Ratchasima (from 10.209 million Baht in 2018 to 94.6338 million Baht in 2019), and Chiang Rai (from 76.1944 million Baht in 2018 to 114.1799 million Baht in 2019). Sisaket had the highest budget reduction from 137.8133 million Baht in 2018 to 40.1667 million Baht in 2019, followed by Prachinburi (from 121.731 million Baht in 2018 to 43.4572 million Baht in 2019), and Prachuap Khiri Khan (from 74.5127 million Baht in 2018 to 5 million Baht in 2019). Moreover, Chachoengsao, Tak, Narathiwat, and Phetchabun did not receive any budget.

For the education dimension, there were only three provinces receiving the budget in both two years. Samut Sakhon had the highest budget increase from 1.9 million Baht in 2018 to 11.9145 million Baht in 2019, followed by Ubon Ratchathani (from 0.4752 million Baht in 2018 to 4.2907 million Baht in 2019). Phichit is the only province that that received a lower budget (from 15.3218 million Baht in 2018 to 4.749 million Baht in 2019).

There were 11 provinces receiving the budget in 2018 only, of which Pattani received the highest budget (22.051 million Baht), while Songkhla received the lowest (0.2099 million Baht).

In 2019, there were seven provinces receiving the budget. Suphanburi received the highest budget (4.485 million Baht), whereas Narathiwat received the lowest (0.5872 million Baht).

**Table 4.18** Comparing the Provincial Budget for Fiscal Year 2018 and 2019 in the Dimensions of Income and Access to Public Services

Province	Income				Access to Public Services			
	2018		2019		2018		2019	
	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget
<b>Krabi</b>	22	40.4538	22	37.7648	-	-	-	-
<b>Kanchanaburi</b>	22	179.9810	22	34.1195	-	-	-	-
<b>Kalasin</b>	22	220.9595	22	40.5432	27,28	10.0000	27,28	10
<b>Kamphaengphet</b>	22	25.6199	22	4.8521	27,8	1.6250	-	-
<b>Khon Kaen</b>	22	217.0647	22	238.2067	27,28	10.0000	27	13.5293
<b>Chanthaburi</b>	20,21,22	51.6942	22	12.5000	27	4.0240	-	-
<b>Chachoengsao</b>	22	166.7976	22	165.0874	-	-	-	-
<b>Chonburi</b>	-	16.9358	22	16.9358	-	-	-	-
<b>Chainat</b>	22	58.8570	22	47.2377	-	-	28	1.7869
<b>Chaiyaphum</b>	22	37.1140	22	66.4748	-	-	-	-
<b>Chumphon</b>	-	-	-	-	-	-	-	-
<b>Chiang Rai</b>	22	80.3899	22	30.2233	27	4.0392	-	-
<b>Chiang Mai</b>	22	264.7141	22	194.1896	27,28	2.0000	27	3.7780
<b>Trang</b>	20,21,22	50.3065	20,21,22	7.5158	27,28	16.2334	27	9.9686
<b>Trat</b>	22	23.8149	22	31.0146	-	-	-	-
<b>Tak</b>	22	181.0427	22	211.7802	-	-	-	-

Province	Income						Access to Public Services					
	2018		2019		2018		2019		2018		2019	
	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget
Nakhon Nayok	22	111.0331	22	3.4906	-	-	27	2.7452	-	-	-	-
Nakhon Pathom	22	44.9992	22	48.3208	-	-	-	-	-	-	-	-
Nakhon Phanom	22	142.2119	22	97.9788	-	-	28	1	-	-	-	-
Nakhon Ratchasima	22	356.3268	22	112.9863	-	-	-	-	-	-	-	-
Nakhon Si Thammarat	20,22	49.4290	22	53.0004	-	-	-	-	-	-	-	-
Nakhon Sawan	20,22	47.8776	22	31.3611	-	-	-	-	-	-	-	-
Nonthaburi	22	46.6000	20,21,22	27.102	-	-	27	25.2298	-	-	-	-
Narathiwat	22	35.2952	22	12.5721	-	-	-	-	-	-	-	-
Nan	22	18.8500	22	32.5355	-	-	-	-	-	-	-	-
Bueng Kan	22	79.9591	22	48.6993	-	-	-	-	-	-	-	-
Buriram	22	5.0000	22	2.5	-	-	-	-	-	-	-	-
Pathum Thani	22	8.1000	22	67.8728	-	-	-	-	-	-	-	-
Prachuap Khiri Khan	22	107.1520	22	122.4819	-	-	-	-	-	-	-	-
Prachinburi	20,21,22	15.3737	22	21.1596	-	-	27,28	1.3400	-	-	-	-
Pattani	22	45.4360	22	8.7660	27,28	14.5200	-	-	-	-	-	-
Ayutthaya	22	79.8105	22	42.9456	-	-	-	-	-	-	-	-
Phayao	20,21,22	75.8467	20,21,22	9.9695	28	3,4000	-	-	-	-	-	-

Province	Income						Access to Public Services					
	2018		2019		2019		2018		2019		2019	
	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget
Phangnga	22	30.0740	22	88.2906	-	-	27	10.2558	-	-	27	10.2558
Phatthalung	20,21,22	33.0325	22	25.746	-	-	-	-	-	-	-	-
Phichit	22	15.0000	22	12.8265	27	4.1399	-	-	-	-	-	-
Phitsanulok	22	243.0058	22	134.0848	-	-	27	18.3241	-	-	27	18.3241
Phetchaburi	22	105.0961	22	153.0826	-	-	-	-	-	-	-	-
Phetchabun	22	193.7236	22	210.9471	-	-	-	-	-	-	-	-
Phrae	22	27.7617	22	59.252	27	6.7747	-	-	27	9	-	-
Phuket	22	14.5622	22	72.2206	-	-	-	-	-	-	-	-
Maharakham	20,21,22	19.1986	20,21,22	17.917	27,28	9.0000	27,28	9	27,28	9	27,28	9
Mukdahan	22	102.9445	22	87.7485	-	-	-	-	-	-	-	-
Mae Hong Son	22	161.0318	22	93.4108	27,28	3.9936	-	-	-	-	-	-
Yasothon	20,21,22	141.6051	22	80.9155	-	-	-	-	-	-	-	-
Yala	20,22	134.8722	22	50.9519	27,28	12.5789	27,28	4.0688	27,28	4.0688	27,28	4.0688
Roi Et	22	137.4590	22	56.482	27	4.0000	-	-	-	-	-	-
Ranong	22	94.5605	22	117.8132	-	-	-	-	-	-	-	-
Rayong	22	28.3305	22	87.5784	-	-	-	-	-	-	-	-
Ratchaburi	22	1.6846	22	79.879	27	6.9000	-	-	27	-	-	-



Province	Income						Access to Public Services					
	2018		2019		2019		2018		2019		2019	
	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget
Lopburi	22	44.8184	22	29.8937	27,8	2.0000	27,28	2.0000	27,28	0.6068	-	-
Lampang	22	46.1590	22	234.7274	27,28	3.2401	27,28	3.2401	-	-	-	-
Lamphun	22	25.4556	22	42.3776	27,28	7.8186	27,28	7.8186	-	-	-	-
Loei	22	127.6858	22	155.8821	-	-	-	-	-	-	-	-
Sisaket	22	62.8411	22	36.3143	-	-	-	-	-	-	-	-
Sakon Nakhon	22	94.2899	22	138.4727	-	-	-	-	-	-	-	-
Songkhla	22	15.3250	22	32.134	27,28	2.3166	27,28	2.3166	21,27,28	11.4259	-	-
Satun	20,21,22	68.4398	22	41.5629	-	-	-	-	-	-	-	-
Samut Prakan	20,21,22	52.3462	18,20,21,22	52.5703	-	-	-	-	-	-	-	-
Samut Songkhram	22	39.9606	-	-	-	-	-	-	-	-	-	-
Samut Sakhon	20,22	42.3789	22	16.9392	-	-	-	-	-	-	-	-
Sa Kaeo	22	15.2270	22	14.7305	-	-	-	-	-	-	-	-
Saraburi	22	56.9936	22	72.8306	-	-	-	-	-	-	-	-
Singburi	4,22	89.8430	14,22	52.8903	27,7	5.2697	27,7	5.2697	-	-	-	-
Sukhothai	22	197.5805	22	62.5388	-	-	-	-	-	-	-	-
Suphanburi	22	68.6700	22	138.7958	27,21	0.2000	27,21	0.2000	-	-	-	-
Surat Thani	20,21,22	36.5043	22	82.2753	-	-	-	-	27	1.3193	-	-

Province	Income						Access to Public Services					
	2018		2019		2018		2019		2018		2019	
	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget	TPMAP indicator	Budget
Surin	-	-	22	8.6744	27	0.5500	27	1.1784	27	0.5500	27	1.1784
Nong Khai	22	127.5968	22	39.7796	-	-	27	1.7935	27	-	27	1.7935
Nong Bua Lam Phu	22	111.5559	16,22	108.6086	-	-	-	-	-	-	-	-
Angthong	22	51.2852	-	-	27,21	0.2200	-	-	-	-	-	-
Amnat Charoen	22	0.5200	22	2.1	-	-	27	1.0700	27	-	27	1.0700
Udon Thani	20,21,22	236.9924	22	177.5777	27,28	0.2476	-	-	-	-	-	-
Uttaradit	22	210.1907	22	89.6363	-	-	-	-	-	-	-	-
Uthai Thani	20,21,22	46.3500	22	25.2996	-	-	-	-	-	-	-	-
Ubon Ratchathani	22	21.8628	22	4.4908	27	2.2479	27,28	3.0420	27,28	2.2479	27,28	3.0420

**Note:** 1. The researcher estimated the budget for each of TPMAP's multidimensional poverty indicators based on the project performance indicators.

2. Other areas refer to other multidimensional poverty indicators that are not included in TPMAP.

3. The total budget corresponds to the multidimensional poverty indicators.

According to Table 4.18, Chumphon is the only province that did not receive an income budget. Among the provinces receiving the budget in both two years, Lampang had the highest budget increase from 46.159 million Baht in 2018 to 234.7274 million Baht in 2019, followed by Ratchaburi (from 1.6846 million Baht in 2018 to 79.879 million Baht in 2019) and Suphanburi (from 68.67 million Baht in 2018 to 138.7958 million Baht in 2019). Nakhon Ratchasima had the highest budget reduction from 356.3268 million Baht in 2018 to 112.9863 million Baht in 2019, followed by Kalasin (from 220.9595 million Baht in 2018 to 40.5432 million Baht in 2019), and Kanchanaburi (from 179.981 million Baht in 2018 to 34.1195 million Baht in 2019).

There were two provinces receiving the budget in 2018 only. Samut Songkhram received the highest budget (39.9606 million Baht), while Angthong received the lowest (51.2852 million Baht).

In 2019, there were two provinces receiving the budget. Chonburi received the highest budget (16.9358 million Baht), whereas Surin received the lowest (8.6744 million Baht).

For the dimension of access to public services, there were nine provinces receiving the budget in both two years. Songkhla had the highest budget increase from 2.3166 million Baht in 2018 to 11.4259 million Baht in 2019, followed by Khon Kaen (from 10 million Baht in 2018 to 13.5293 million Baht in 2019) and Phrae (from 6.7747 million Baht in 2018 to 9 million Baht in 2019). On the contrary, Yala had the highest budget reduction from 12.5789 million Baht in 2018 to 4.0688 million Baht in 2019, followed by Trang (from 16.2334 million Baht in 2018 to 9.9686 million Baht in 2019), and Lopburi (from 2 million Baht in 2018 to 0.6068 million Baht in 2019).

There were 15 provinces receiving the budget in 2018 only. Pattani received the highest budget (14.52 million Baht), whereas Suphanburi received the lowest (0.2 million Baht).

In 2019, there were 10 provinces receiving the budget. Nonthaburi received the highest budget (25.2298 million Baht), while Nakhon Phanom received the lowest (1 million Baht).

It should be noted that there were two provinces receiving the same amount of budget in 2018 and 2019: Kalasin (10 million Baht) and Mahasarakham (9 million Baht).

### **4.3 Relationships between the Status of Multidimensional Poverty and the Government Policies on Multidimensional Poverty Management through Budget Allocation to Provinces and Provincial Clusters**

The above information shows the status of multidimensional poverty in Thailand based on TPMAP and the allocation of budget to provinces and provincial clusters from 2017-2019. Next, the researcher will present the relationships between the status of multidimensional poverty based on TPMAP and the allocation of budget to provinces and provincial clusters.

The following data limitations were identified:

1) In fiscal year 2017, the Bureau of the Budget classified the provincial and provincial cluster budget according to the types of projects without specifying the details and indicators of each project, which are different from the 2018 and 2019 budget data. As a result, the researcher could not classify the 2017 budget data according to TPMAP's multidimensional poverty indicators. Thus, only the 2018 and 2019 budget data could be compared.

2) In fiscal year 2017 and 2018, provincial clusters were classified according to the Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster, dated 18 February 2009. However, in fiscal year 2019, provincial clusters were classified differently according to the Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster (No. 3), dated 16 November 2017.

The researcher adopted the 2019 classification of provincial clusters in fiscal year 2019 to compare the data related to multidimensional poverty. The data analysis was carried out by focusing on the provincial budget data. The provincial cluster budget data were used as supportive data. The researcher assumed that all provinces benefit from provincial budget. This assumption will be presented through TPMAP's indicators according to five dimensions. The details are as follows.

#### **4.3.1 Healthcare**

When comparing the number of health-deprived people classified by provinces, provincial clusters, and indicators with the budget allocated to provinces and provincial clusters in fiscal year 2018-2019, the results are as shown in Table 4.19.













Cluster	Province	Indicator 1		Indicator 4		Indicator 5		Indicator 7	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019
	Phichit	-	-	-	-	-	-	-	-
	Uthai Thani	-	-	-	-	-	-	-	-

Note: 1. Indicator 1 is the weight of a newborn baby is not less than 2,500 grams.

Indicator 4 is everybody in the household has clean and safe food.

Indicator 5 is everybody in the household uses medicines in a suitable manner.

Indicator 7 is household members aged 6 years old up do exercise at least three days a week (30 minutes/day).

2. ✓ means that the provincial budget was allocated in that year.

○ means that the provincial cluster budget was allocated in that year according to the determined classification criteria.

3.



Increase at an increasing rate

Increase at a decreasing rate

Decrease - increase

Not deprived - increase

Increase - decrease

Decrease at a decreasing rate, or  
decrease – unchanged

Decrease at an increasing rate

Increase – not deprived

Decrease, or unchanged – not deprived

No deprived people in the latest year

Unchanged



Table 4.19 shows the number of health-deprived people compared with the budget allocated in 2018-2019. Overall, only 10 provinces received the budget for this dimension. The nine provinces, receiving the budget for Indicator 7 “Household members aged 6 years old up do exercise at least three days a week (30 minutes/day),” included Suphanburi, Songkhla, Satun, Surat Thani, Narathiwat, Pattani, Chachoengsao, Sisaket, and Nan. Ubon Ratchathani is the only province that received the budget for Indicator 4 “Everybody in the household has clean and safe food.”

In addition, Satun is the only province receiving the budget for this dimension in both two years. However, when comparing the allocated budget with the number of deprived people, the study finds that the number of deprived people in Satun continued to increase, although it continually received the budget from 2018-2019. This is similar to Suphanburi, Surat Thani, Narathiwat, Pattani, Chachoengsao, Sisaket and Nan, where the proportion of deprived people increased, although the budget was provided.

It should be noted that, in all indicators, there were provinces that had a higher number of deprived people (marked in dark red, red, and orange) but did not receive the budget. For Indicator 1 and 5, there were provinces that received no budget, although they originally had no deprived people but the number of deprived people increased in the next year.

#### **4.3.2 Living Standard**

When comparing the number of living standard-deprived people classified by provinces, provincial clusters, and indicators with the budget allocated to provinces and provincial clusters in fiscal year 2018-2019, the results are as shown in Table 4.29.

**Table 4.20** Comparing the Number of Living Standard-Deprived People Classified by Provinces, Provincial Clusters, and Indicators with the Budget Allocated to Provinces and Provincial Clusters in 2018-2019

Cluster	Province	Indicator 8		Indicator 9		Indicator 10		Indicator 11	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019
Upper Central	Chainat	-	-	✓/○	○	✓/○	○	✓	-
	Ayutthaya	-	-	-	✓/○	-	✓/○	○	-
	Lopburi	-	-	✓/○	✓/○	✓/○	✓/○	✓	-
	Saraburi	-	-	✓	○	✓	○	○	-
	Singburi	-	-	✓/○	✓/○	✓/○	✓/○	✓	-
	Angthong	-	-	✓/○	○	✓/○	○	✓	-
Middle Central	Nakhon Pathom	-	-	✓/○	-	✓/○	-	-	-
	Nonthaburi	-	-	-	-	-	-	✓/○	-
	Pathum Thani	-	-	-	-	-	-	✓/○	✓
	Samut Prakan	-	-	-	-	-	-	-	✓
Lower Central 1	Kanchanaburi	-	-	○	✓	○	✓	✓	-
	Ratchaburi	-	-	✓/○	✓	✓/○	✓	✓	-
	Suphanburi	-	-	○	✓	○	✓	✓	-
Lower Central 2	Prachuap Khiri Khan	-	-	✓	-	✓	-	✓	✓
	Phetchaburi	-	-	✓	-	✓	-	-	-

Cluster	Province	Indicator 8		Indicator 9		Indicator 10		Indicator 11	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019
South (Gulf of Thailand)	Samut Songkhram	-	-	✓	-	✓	-	-	-
	Samut Sakhon	-	-	✓	-	✓	-	-	-
	Chumphon	-	-	✓	-	✓	-	-	✓
	Nakhon Si Thammarat	-	-	✓	✓	✓	✓	✓	-
	Phatthalung	-	-	✓	✓	✓	✓	-	-
	Songkhla	-	-	✓/○	-	✓/○	-	-	-
	Satun	-	-	○	✓	○	✓	-	-
	Surat Thani	-	-	✓	✓	-	✓	-	✓
	Krabi	-	-	✓	✓	✓	✓	-	✓
	Trang	-	-	✓	✓	✓	✓	-	✓
South (Andaman Coast)	Phangnga	-	-	-	-	-	-	✓	✓
	Phuket	-	-	✓	✓	✓	✓	-	-
	Ranong	-	-	-	✓	-	✓	-	-
	Narathiwat	-	-	○	-	○	-	-	-
	Pattani	-	-	✓/○	✓	✓/○	✓	✓	-
Southern Border	Yala	-	-	✓/○	✓	✓/○	✓	-	-
	Chachoengsao	-	-	-	○	-	○	-	○
	Chonburi	-	-	✓/○	○	✓/○	○	-	✓/○

Cluster	Province	Indicator 8		Indicator 9		Indicator 10		Indicator 11	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019
East 2	Rayong	-	-	○	✓/○	○	✓/○	○	○
	Chanthaburi	-	-	✓/○	✓	✓/○	✓	-	-
	Trat	-	-	✓/○	✓	✓/○	✓	-	-
	Nakhon Nayok	-	-	-	✓	-	✓	-	-
	Prachinburi	-	-	✓	✓	✓	✓	-	-
	Sa Kaeo	-	-	✓	✓	✓	✓	✓	-
	Bueng Kan	-	-	✓	✓	✓	✓	✓	-
	Loei	-	-	-	✓	-	✓	-	-
	Nong Khai	-	-	-	✓	-	✓	-	-
	Nong Bua Lam Phu	-	-	-	✓	-	✓	✓	-
Upper Northeast 1	Udon Thani	-	-	✓	✓	✓	✓	✓	✓
	Nakhon Phanom	-	-	-	✓/○	-	✓/○	-	-
	Mukdahan	-	-	✓	✓/○	✓	✓/○	✓	-
	Sakon Nakhon	-	-	✓	✓/○	✓	✓/○	-	-
	Kalasin	-	-	✓/○	-	✓/○	-	-	-
Upper Northeast 2	Khon Kaen	-	-	✓/○	✓	✓/○	✓	-	-
	Maharakham	-	-	✓/○	✓	✓/○	✓	✓	-
Middle Northeast	Khon Kaen	-	-	✓/○	✓	✓/○	✓	-	-
	Maharakham	-	-	✓/○	✓	✓/○	✓	✓	-

Cluster	Province	Indicator 8		Indicator 9		Indicator 10		Indicator 11	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019
	Roi Et	-	-	✓/○	✓	✓/○	✓	-	✓
	Chaiyaphum	-	-	○	✓/○	○	✓/○	-	-
Lower Northeast 1	Nakhon Ratchasima	-	-	○	✓/○	○	✓/○	✓	-
	Buriram	-	-	✓/○	○	✓/○	○	-	✓
	Surin	-	-	✓/○	✓/○	✓/○	✓/○	✓	-
	Yasothon	-	-	✓	○	✓	○	○	-
	Sisaket	-	-	✓	✓/○	✓	✓/○	○	-
Lower Northeast 2	Amnat Charoen	-	-	✓	✓/○	✓	✓/○	○	-
	Ubon Ratchathani	-	-	✓	✓/○	✓	✓/○	○	✓
	Chiang Mai	-	-	✓/○	✓	✓/○	✓	✓/○	✓
Upper North 1	Mae Hong Son	-	-	○	✓	○	✓	○	✓
	Lampang	-	-	✓/○	-	✓/○	-	✓/○	-
	Lamphun	-	-	○	✓	○	✓	○	-
	Chiang Rai	-	-	✓	✓	✓	✓	✓	✓
Upper North 2	Nan	-	-	✓	✓	✓	✓	✓	-
	Phayao	-	-	✓	✓	✓	✓	✓	-
	Phrae	-	-	✓	✓	✓	✓	✓	-



Cluster	Province	Indicator 8		Indicator 9		Indicator 10		Indicator 11	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019
Lower North 1	Tak	-	-	-	○	-	○	-	-
	Phitsanulok	-	-	-	✓/○	-	✓/○	-	-
	Phetchabun	-	-	-	○	-	○	-	-
	Sukhothai	-	-	-	○	-	○	-	-
	Uttaradit	-	-	✓	✓/○	✓	✓/○	-	-
Lower North 2	Kamphaengphet	-	-	○	✓/○	○	✓/○	-	-
	Nakhon Sawan	-	-	○	○	○	○	✓	✓
	Phichit	-	-	○	✓/○	○	✓/○	✓	✓
	Uthai Thani	-	-	✓/○	✓/○	✓/○	✓/○	✓	-

**Note:** 1. Indicator 8 is the condition of the house is safe to live in.

Indicator 9 is household members have enough drinking water (5 liters per person per day).

Indicator 10 is household members have access to clean water for daily usage (45 liters per person per day).

Indicator 11 is the house is kept tidy and hygienic.

2. ✓ means that the provincial budget was allocated in that year.

○ means that the provincial cluster budget was allocated in that year according to the determined classification criteria.

3.



- Increase at an increasing rate
- Increase at a decreasing rate
- Decrease - increase
- Not deprived - increase
- Increase - decrease
- Decrease at a decreasing rate, or decrease – unchanged
- Decrease at an increasing rate
- Increase – not deprived
- Decrease, or unchanged – not deprived
- No deprived people in the latest year
- Unchanged



Table 4.20 presents the number of living standard-deprived people compared with the budget allocated in 2018-2019. Overall, most provinces received the budget for this dimension, especially for Indicator 9 “Household members have enough drinking water (5 liters per person per day)” and Indicator 10 “Household members have access to clean water for daily usage (45 liters per person per day).” However, when comparing the number of deprived people with the allocated budget, some provinces had increased number of deprived people, although they were provided with the budget in both two years. One of the main reasons is the insufficient amount of allocated budget. Some provinces, such as Roi Et and Prachuap Khiri Khan, received a lower budget for Indicator 11 “The house is kept tidy and hygienic.” For Indicator 8 “The condition of the house is safe to live in,” although the number of deprived people increased, but there was no provinces receiving the budget for this indicator.

It should be noted that in all indicators for which the budget was allocated, every province and provincial cluster was thoroughly provided with the budget, although some of them had no deprived people in those indicators. Therefore, it could be said that the allocation of budget did not pay enough attention to the proportion of deprived people in each indicator. Moreover, some provinces, such as Samut Prakan, had a higher number of deprived people (marked in red or orange) in some indicators but did not receive any budget. The provincial cluster budget was allocated in the same direction as the provincial budget allocation.

### **4.3.3 Education**

When comparing the number of educationally-deprived people classified by provinces, provincial clusters, and indicators with the budget allocated to provinces and provincial clusters in 2018-2019, the results are as shown in Table 4.21.

**Table 4.21** Comparing the Number of Educationally-Deprived People Classified by Provinces, Provincial Clusters, and Indicators with the Budget Allocated to Provinces and Provincial Clusters in 2018-2019

Cluster	Province	Indicator 15		Indicator 16		Indicator 17		Indicator 19	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019
Upper Central	Chainat	-	-	-	-	-	-	-	-
	Ayutthaya	-	-	-	-	-	-	-	-
	Lopburi	-	-	-	-	-	-	-	-
	Saraburi	-	-	-	-	-	-	-	-
	Singburi	-	-	-	-	-	-	-	-
	Angthong	-	-	-	-	-	-	-	-
Middle Central	Nakhon Pathom	-	-	-	-	-	-	-	-
	Nonthaburi	-	-	-	-	-	-	-	-
	Pathum Thani	-	-	-	-	-	-	-	-
	Samut Prakan	-	-	-	-	-	-	-	-
	Kanchanaburi	-	-	-	-	-	-	-	-
Lower Central 1	Ratchaburi	-	-	-	-	-	-	-	-
	Suphanburi	-	-	-	✓	-	✓	-	-
	Prachuap Khiri Khan	-	-	-	-	-	-	-	-
Lower Central 2	Phetchaburi	-	-	-	-	-	-	-	-
	Samut Songkhram	-	-	-	-	-	-	-	-
	Samut Sakhon	-	✓	✓	✓	✓	✓	-	-







Cluster	Province	Indicator 15		Indicator 16		Indicator 17		Indicator 19	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019
	Phichit	-	-	✓	✓	✓	-	-	-
	Uthai Thani	-	-	-	-	-	-	-	-

**Note:** 1. Indicator 15 is children aged 3-5 years are properly raised and cared for.

Indicator 16 is children aged 6-14 years receive a compulsory education of nine years.

Indicator 17 is children who finished Mathayom 3 are able to continue on to Mathayom 4 or comparable education level.

Indicator 19 is household members aged 15-59 years can read and write Thai and perform basic math calculations.

2. ✓ means that the provincial budget was allocated in that year.

○ means that the provincial cluster budget was allocated in that year according to the determined classification criteria.

3.












	Increase at an increasing rate
	Increase at a decreasing rate
	Decrease - increase
	Not deprived - increase
	Increase - decrease
	Decrease at a decreasing rate, or decrease – unchanged
	Decrease at an increasing rate
	Increase – not deprived
	Decrease, or unchanged – not deprived
	No deprived people in the latest year
	Unchanged



Table 4.21 shows the number of educationally-deprived people compared with the budget allocated to provinces and provincial clusters in 2018-2019. Overall, most provinces and provincial clusters were not provided with the budget. There were only 21 provinces receiving the budget for this dimension. The largest amount of budget was allocated for Indicate 16 “Children aged 6-14 years receive a compulsory education of nine years” and Indicator 17 “Children who finished Mathayom 3 are able to continue on to Mathayom 4 or comparable education level,” followed by Indicator 15 “Children aged 3-5 years are properly raised and cared for.”

The three provinces receiving the budget in both two years were Samut Sakhon, Ubon Ratchathani, and Phichit. When comparing the allocated budget with the proportion of deprived people, the study finds that the number of deprived people in Phichit continued to increase despite the fact that it was continuously provided with the budget from 2018-2019.

Interestingly, although there was an overall decline in the number of deprived people in almost all provinces that were provided with the budget for Indicator 15, 16, and 17, there were several provinces that had a higher number of deprived people for these three indicators due to receiving no budget. In other words, the provinces with a lower number of deprived people tended to receive the budget, while the provinces with a higher number of deprived people did not receive any budget. In addition, there were some provinces that had a higher number of deprived people in Indicator 19 “Household members aged 15-59 years can read and write Thai and perform basic math calculations,” but none of them received the budget. Similarly, the provinces, which initially had no deprivation in Indicator 17 and 19 but had a higher number of deprived people in the following years, also received no budget.

For the allocation of provincial cluster budget, the study finds that no provincial cluster budget was allocated for the education dimension.

#### **4.3.4 Income**

When comparing the number of income-deprived people classified by provinces, provincial clusters, and indicators with the budget allocated in fiscal year 2018-2019, the results are as shown in Table 4.22.

**Table 4.22** Comparing the Number of Income-Deprived People Classified by Provinces, Provincial Clusters, and Indicators with the Budget Allocated to Provinces and Provincial Clusters in 2018-2019

Cluster	Province	Indicator 20		Indicator 21		Indicator 22	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019
Upper Central	Chainat	-	-	-	-	✓/○	✓/○
	Ayutthaya	-	-	-	-	✓/○	✓/○
	Lopburi	-	-	-	-	✓/○	✓/○
	Saraburi	-	-	-	-	✓/○	✓/○
	Singburi	-	-	-	-	✓/○	✓/○
	Angthong	-	-	-	-	✓/○	○
Middle Central	Nakhon Pathom	-	-	-	-	✓/○	✓/○
	Nonthaburi	-	✓	-	✓	✓/○	✓/○
	Pathum Thani	-	-	-	-	✓/○	✓/○
	Samut Prakan	✓	✓	✓	✓	✓/○	✓/○
Lower Central 1	Kanchanaburi	-	-	-	-	✓/○	✓/○
	Ratchaburi	-	-	-	-	✓/○	✓/○
	Suphanburi	-	-	-	-	✓/○	✓/○
Lower Central 2	Prachuap Khiri Khan	-	-	-	-	✓/○	✓/○
	Phetchaburi	-	-	-	-	✓/○	✓/○

Cluster	Province	Indicator 20		Indicator 21		Indicator 22	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019
	Samut Songkhram	-	-	-	-	✓/○	-
	Samut Sakhon	✓	-	-	-	✓/○	✓/○
	Chumphon	-	-	-	-	-	-
	Nakhon Si Thammarat	✓	-	-	-	✓	✓/○
	Phatthalung	✓	-	✓	-	✓	✓/○
	Songkhla	-	-	-	-	✓/○	✓/○
	Satun	✓	-	✓	-	✓/○	✓/○
	Surat Thani	✓	-	✓	-	✓	✓/○
	Krabi	-	-	-	-	✓/○	✓/○
	Trang	✓	✓	✓	✓	✓/○	✓/○
	Phangnga	-	-	-	-	✓/○	✓/○
	Phuket	-	-	-	-	✓/○	✓/○
	Ranong	-	-	-	-	✓/○	✓/○
	Narathiwat	-	-	-	-	✓/○	✓/○
	Pattani	-	-	-	-	✓/○	✓/○
	Yala	✓	-	-	-	✓/○	✓/○
	Chachoengsao	-	-	-	-	✓/○	✓/○

Cluster	Province	Indicator 20		Indicator 21		Indicator 22	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019
	Chonburi	-	-	-	-	0	✓/0
	Rayong	-	-	-	-	✓/0	✓/0
East 2	Chanthaburi	✓	-	✓	-	✓/0	✓/0
	Trat	-	-	-	-	✓/0	✓/0
	Nakhon Nayok	-	-	-	-	✓/0	✓/0
	Prachinburi	✓	-	✓	-	✓/0	✓/0
	Sa Kaeo	-	-	-	-	✓/0	✓/0
Upper Northeast 1	Bueng Kan	-	-	-	-	✓/0	✓/0
	Loei	-	-	-	-	✓/0	✓/0
	Nong Khai	-	-	-	-	✓/0	✓/0
	Nong Bua Lam Phu	-	-	-	-	✓/0	✓/0
Upper Northeast 2	Udon Thani	✓	-	✓	-	✓/0	✓/0
	Nakhon Phanom	-	-	-	-	✓/0	✓/0
	Mukdahan	-	-	-	-	✓/0	✓/0
	Sakon Nakhon	-	-	-	-	✓/0	✓/0
Middle Northeast	Kalasin	-	-	-	-	✓/0	✓/0
	Khon Kaen	-	-	-	-	✓/0	✓/0

Cluster	Province	Indicator 20		Indicator 21		Indicator 22	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019
	Maharakham	✓	✓	✓	✓	✓/○	✓/○
	Roi Et	-	-	-	-	✓/○	✓/○
	Chaiyaphum	-	-	-	-	✓/○	✓/○
Lower Northeast 1	Nakhon Ratchasima	-	-	-	-	✓/○	✓/○
	Buriram	-	-	-	-	✓/○	✓/○
	Surin	-	-	-	-	○	✓/○
	Yasothon	✓	-	✓	-	✓/○	✓/○
Lower Northeast 2	Sisaket	-	-	-	-	✓/○	✓/○
	Annat Charoen	-	-	-	-	✓/○	✓/○
	Ubon Ratchathani	-	-	-	-	✓/○	✓/○
	Chiang Mai	-	-	-	-	✓/○	✓/○
Upper North 1	Mae Hong Son	-	-	-	-	✓/○	✓/○
	Lampang	-	-	-	-	✓/○	✓/○
	Lamphun	-	-	-	-	✓/○	✓/○
	Chiang Rai	-	-	-	-	✓/○	✓/○
Upper North 2	Nan	-	-	-	-	✓/○	✓/○
	Phayao	✓	✓	✓	✓	✓/○	✓/○

Cluster	Province	Indicator 20		Indicator 21		Indicator 22	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019	Budget 2018	Budget 2019
	Phrae	-	-	-	-	✓/○	✓/○
	Tak	-	-	-	-	✓/○	✓
	Phitsanulok	-	-	-	-	✓/○	✓
Lower North 1	Phetchabun	-	-	-	-	✓/○	✓
	Sukhothai	-	-	-	-	✓/○	✓
	Uttaradit	-	-	-	-	✓/○	✓
	Kamphaengphet	-	-	-	-	✓/○	✓
Lower North 2	Nakhon Sawan	✓	-	-	-	✓/○	✓
	Phichit	-	-	-	-	✓/○	✓
	Uthai Thani	✓	-	✓	-	✓/○	✓

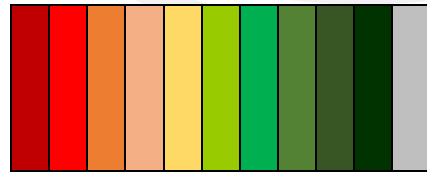
Note: 1. Indicator 20 is household members aged 15-59 years have proper jobs and income.

Indicator 21 is household members aged 60 years and above have proper jobs and income.

Indicator 22 is an average annual household income.

2. ✓ means that the provincial budget was allocated in that year.  
 O means that the provincial cluster budget was allocated in that year according to the determined classification criteria.

3.



Increase at an increasing rate

Increase at a decreasing rate

Decrease - increase

Not deprived - increase

Increase - decrease

Decrease at a decreasing rate, or decrease – unchanged

Decrease at an increasing rate

Increase – not deprived

Decrease, or unchanged – not deprived

No deprived people in the latest year

Unchanged

Table 4.22 presents the number of income-deprived people compared with the budget allocated in 2018-2019. Overall, most provinces and provincial clusters received the budget for this dimension. For Indicator 22, the budget was thoroughly distributed to all provinces and provincial clusters, except Chumphon, although some of them did not have deprived people according to this indicator. It could be said that the allocation of budget did not place importance on the proportion of deprived people in each indicator as much as it should. In addition, despite the budget was continually allocated for this indicator for two consecutive years, the number of deprived people still increased.

For Indicator 20 “Household members aged 15-59 years have proper jobs and income” and Indicator 21 “Household members aged 60 years and above have proper jobs and income,” the allocation of budget for these two indicators was similar. However, there were some provinces that had a higher number of deprived people (marked in red and orange) but did not receive any budget.

For the allocation of provincial cluster budget, most provincial cluster budget was allocated for Indicator 22, which was in line with provincial budget allocation.

#### **4.3.5 Access to public services**

When comparing the number of people deprived access to public services classified by provinces, provincial clusters, and indicators with the budget allocated to provinces and provincial clusters in fiscal year 2018-2019, the results are as shown in Table 4.23.



**Table 4.23** Comparing the Number of People Deprived Access to Public Services Classified by Provinces, Provincial Clusters, and Indicators with the Budget Allocated to Provinces and Provincial Clusters in 2018-2019

Cluster	Province	Indicator 27		Indicator 28	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019
Upper Central	Chainat	-	-	-	✓
	Ayutthaya	-	-	-	-
	Lopburi	✓	✓	✓	✓
	Saraburi	-	-	-	-
	Singburi	✓	-	-	-
	Angthong	✓	-	-	-
Middle Central	Nakhon Pathom	-	-	-	○
	Nonthaburi	-	✓	-	○
	Pathum Thani	-	-	-	○
	Samut Prakan	-	-	-	○
Lower Central 1	Kanchanaburi	-	-	-	-
	Ratchaburi	✓	-	-	-
	Suphanburi	✓	-	-	-
Lower Central 2	Prachuap Khiri Khan	-	-	-	-
	Phetchaburi	-	-	-	-
	Samut Songkhram	-	-	-	-
	Samut Sakhon	-	-	-	-
South (Gulf of Thailand)	Chumphon	-	-	-	-
	Nakhon Si Thammarat	-	-	-	-
	Phatthalung	-	-	-	-
	Songkhla	✓	✓	✓	✓
	Satun	-	-	-	-
	Surat Thani	-	✓	-	-
South	Krabi	-	-	-	-

Cluster	Province	Indicator 27		Indicator 28	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019
(Andaman Coast)	Trang	✓	✓	✓	-
	Phangnga	-	✓	-	-
	Phuket	-	-	-	-
	Ranong	-	-	-	-
Southern Border	Narathiwat	-	-	-	-
	Pattani	✓	-	✓	-
	Yala	✓	✓	✓	✓
East 1	Chachoengsao	-	-	-	-
	Chonburi	-	-	-	-
	Rayong	-	-	-	-
East 2	Chanthaburi	✓	○	-	○
	Trat	-	○	-	○
	Nakhon Nayok	-	✓/○	-	○
	Prachinburi	-	✓/○	-	✓/○
	Sa Kaeo	-	○	-	○
Upper Northeast 1	Bueng Kan	-	-	-	-
	Loei	-	-	-	-
	Nong Khai	-	✓	-	-
	Nong Bua Lam Phu	-	-	-	-
	Udon Thani	✓	-	✓	-
Upper Northeast 2	Nakhon Phanom	-	-	-	✓
	Mukdahan	-	-	-	-
	Sakon Nakhon	-	-	-	-
Middle Northeast	Kalasin	✓	✓	✓	✓
	Khon Kaen	✓	✓	✓	-
	Maharakham	✓	✓	✓	✓
	Roi Et	✓	-	-	-

Cluster	Province	Indicator 27		Indicator 28	
		Budget 2018	Budget 2019	Budget 2018	Budget 2019
Lower Northeast 1	Chaiyaphum	-	-	-	-
	Nakhon Ratchasima	-	-	-	-
	Buriram	-	-	-	-
	Surin	✓	✓	-	-
Lower Northeast 2	Yasothon	-	-	-	-
	Sisaket	-	-	-	-
	Amnat Charoen	-	✓	-	-
	Ubon Ratchathani	✓	✓	-	✓
Upper North 1	Chiang Mai	✓	✓	✓	-
	Mae Hong Son	✓	-	✓	-
	Lampang	✓	-	✓	-
	Lamphun	✓	-	✓	-
Upper North 2	Chiang Rai	✓	-	-	-
	Nan	-	-	-	-
	Phayao	-	✓	-	-
	Phrae	✓	✓	-	-
Lower North 1	Tak	-	-	-	-
	Phitsanulok	-	✓	-	-
	Phetchabun	-	-	-	-
	Sukhothai	-	-	-	-
	Uttaradit	-	-	-	-
Lower North 2	Kamphaengphet	✓	-	-	-
	Nakhon Sawan	-	-	-	-
	Phichit	✓	-	-	-
	Uthai Thani	-	-	-	-

**Note:** 1. Indicator 27 is household members aged 15-59 years have proper jobs and income.

Indicator 28 is household members aged 60 years and above have proper jobs and income.

2. ✓ means that the provincial budget was allocated in that year.

○ means that the provincial cluster budget was allocated in that year according to the determined classification.

3.

	Increase at an increasing rate
	Increase at a decreasing rate
	Decrease - increase
	Not deprived - increase
	Increase - decrease
	Decrease at a decreasing rate, or decrease – unchanged
	Decrease at an increasing rate
	Increase – not deprived
	Decrease, or unchanged – not deprived
	No deprived people in the latest year
	Unchanged

According to Table 4.23, overall, most provinces and provincial clusters received the budget for Indicator 27 “The elderly are properly taken care of by their family, community, government, or private agencies” and Indicator 28 “The disabled are properly taken care of by their family, community, government, or private agencies.”

When comparing the allocated budget and the number of deprived people in Indicator 27, the study finds that there were some provinces that received the budget but had no deprived people in according to this criteria, namely Singburi, Ratchaburi, Suphanburi, Trang, Phangnga, Prachinburi, Nong Khai, Roi Et, Lampang, Lamphun, Phayao, and Phrae. Maharakham, a province where the number of deprived people increased at an increasing rate, also received the budget. Narathiwat and Rayong, which had a higher number of deprived people, did not receive any budget. For Indicator 28, there were several provinces that had a higher number of deprived people (marked in dark red, red, and orange) but did not receive the budget. Kalasin and Maharakham are the only two red provinces that were provided with the budget. In the provinces that received a budget, the number of deprived people tended to decrease. The provincial

cluster budget was mostly allocated to clusters that had no deprived people or had a lower number of deprived people.



## **CHAPTER 5**

### **CONCLUSION, DISCUSSION, AND RECOMMENDATIONS**

This research has four main objectives: 1) to study the status of multidimensional poverty in Thailand based on TPMAP; 2) to investigate government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters based on TPMAP; 3) to examine the relationships between the status of multidimensional poverty and government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters, and; 4) to propose policy recommendations for solving problems related to multidimensional poverty in Thailand. The results of this research can be used as a guideline for developing effective policies to address the problem of poverty in Thailand based on empirical data.

#### **5.1 Conclusion**

##### **5.1.1 The Status of Multidimensional Poverty in Thailand based on TPMAP**

TPMAP measures poverty according to five dimensions: 1) healthcare, 2) education, 3) living standards, 4) access to public services and 5) income. The researcher divided the contents on the status of multidimensional poverty in Thailand into two parts: 1) the overview of multidimensional poverty in Thailand, and; 2) the status of poverty according to each dimension.

###### **5.1.1.1 The overview of multidimensional poverty in Thailand:**

###### **1) Multidimensional poverty at the provincial level:**

When comparing the growth rates of multidimensional poverty at the provincial level from 2017-2019, the study finds that Chiang Mai had the highest proportion of poor people for three consecutive years and the number of poor people

continued to grow at an increased rate. In other high-poverty provinces, the number of poor people decreased in 2018 but increased marginally in 2019. There was almost no change in the list of the five poorest provinces from 2017-2019. Among the five least-poor provinces, Phuket, which was the least-poor province in 2017, was replaced by Samut Songkhram in 2018 and 2019. The proportion of poor people in these two provinces was not significantly different. In addition, there was no major difference in the proportion of poor people in other low-poverty provinces. Each had a similar number of poor people.

#### 2) Multidimensional poverty at the provincial cluster level:

When comparing the growth rates of multidimensional poverty at the provincial cluster level from 2017-2019, the study finds that provincial clusters with no change in the list of the poorest provinces were the Southern cluster (Andaman Coast), the Eastern cluster 1, the upper Northeastern cluster 1, the upper Northeastern cluster 2, the lower Northeastern cluster 2, the upper Northern cluster 1, and the lower Northern cluster 2. Other provincial clusters among the highest poverty provinces were found to have some change. However, it should be noted that, among the clusters with changes in the list of the poorest provinces, Yala, in the Southern border cluster, changed from the lowest-poverty province in 2017 and 2018 to the highest-poverty province in 2019.

#### 5.1.1.2 The status of poverty according to each dimension

##### 1) Healthcare:

##### (1) Health deprivation at the provincial level:

When comparing the number of health-care deprived people over the three observed years, the study finds that, among the five most health-deprived provinces, Bueng Kan had the highest increase in the number of health-deprived people. In Chiang Mai, the number of health-deprived people significantly increased in 2018 but decreased by half in 2019. The number of health-deprived people in the other three provinces in this group similarly decreased. For the five least health-deprived provinces, the number of health-deprived people in Chainat continued to decrease and almost reached zero in 2019, while, in contrast, the number of health-deprived people in Singburi and Nong Bua Lam Phu increased.

(2) Health deprivation at the provincial cluster level:

Overall, most provincial clusters observed a continuous decline in the number of health-deprived people. The number of health-deprived people in the lower Northern cluster 1 continued to decline at the highest rate. Chainat showed the highest reduction rate of health deprivation (-95.50%). An increase in the number of health-deprived people concentrated in the Northeastern cluster took place. Bueng Kan saw the highest growth rate of health deprivation (389.79%), while Sa Kaeo had the lowest growth rate of health deprivation (1.39%).

For Indicator 1, “The weight of a newborn baby is not less than 2,500 grams,” the study finds that most of provincial clusters rarely saw instances of this indicator. In total, six provinces with no deprived people according to this indicator were observed from 2017-2019, comprised of Angthong, Samut Prakan, Samut Sakhon, Phuket, Trat, and Nakhon Nayok. In provincial clusters with a higher number of deprived people, Uttaradit saw the highest increase in deprivation, where the number of deprived people continued to increase at a slowed rate (227.27%). In addition, three provinces (Singburi, Lamphun and Mukdahan) had no instances of deprivation in 2017. However, the number of deprived people increased in the following years.

For Indicator 4, “Everybody in the household has clean and safe food,” the study finds that the number of people deprived according to this indicator decreased in almost all provincial clusters. In Chainat the number of deprived people decreased to zero. Bueng Kan saw the highest rate of deprivation (512.23%).

For Indicator 5, “Everybody in the household uses medicines in a suitable manner,” the study finds that the number of people deprived according to this indicator decreased in almost all provincial clusters. In Chainat, the number of deprived people decreased to zero. On the contrary, Bueng Kan had the highest increase in deprivation (804.65%). Mukdahan initially had no health deprivation according to this indicator but the number of deprived people increased in the following years.

For Indicator 7, “Household members aged 6 years old and above exercise at least three days a week (30 minutes/day),” the study finds that the number of people deprived according to this indicator declined at an increasing rate in



almost all provincial clusters. Chainat is the province, where the number of deprived people declined at the highest rate (-95.01%). However, an increase in the number of deprived people concentrated in the upper Northeastern cluster 1 and the lower Northeastern cluster 1 was observed. Samut Sakhon had the highest increase in deprivation at a decreased rate (5.03%),

## 2) Living standards:

### (1) Living standards deprivation at the provincial level:

The study finds that, among the five most deprived provinces, Nakhon Si Thammarat saw the highest increase in the number of living standards-deprived people. For Chiang Mai, the number of living standards-deprived people increased in 2017-2018 but decreased in 2019. Among the other three provinces in this group, the number of living standards-deprived people decreased. However, it should be remarked that the top five provinces in 2019 were not listed as the highest deprived provinces in 2017 and 2018. For the five least deprived provinces, the number of living standard-deprived people in Nong Bua Lam Phu and Amnat Charoen decreased at an increased rate until almost reaching zero in 2019, while the number of living standards-deprived people in Phuket and Trat continued to increase.

### (2) Living standards deprivation at the provincial cluster level:

Overall, the number of living standard-deprived people decreased at an increased rate in almost all provincial clusters. Every province within the Southern border cluster had a continuous decline in the number of deprived people. Rayong showed the highest reduction rate of deprivation (-85.48%). There was an increase in the number of deprived people concentrated in the lower Central cluster 2 and the Southern cluster (Andaman Coast). Mukdahan showed the highest increase in deprivation, where the number of deprived people increased (72.57%).

For Indicator 8, “The condition of the house is safe to live in,” the study finds that the number of deprived people w Household members aged 6 years old and above do exercise at least three days a week according to this indicator decreased at an increased rate in almost all provincial clusters. The number of deprived people in Ayutthaya decreased at the highest rate (-94.44%). An increase in the number of deprived people

was concentrated in the lower Central cluster 2 and the Southern cluster (Gulf of Thailand). Satun showed the highest increase in the number of deprived people (7.40%). Samut Sakhon had no deprivation according to this indicator in 2017, but the number of deprived people increased in the following years.

For Indicator 9, “Household members have enough drinking water (5 liters per person per day),” nine provinces had no deprived people according to this indicator, namely Singburi, Angthong, Nakhon Pathom, Nonthaburi, Ratchaburi, Samut Songkhram, Samut Sakhon, Phangnga, and Prachinburi. In addition, the number of deprived people decreased in almost all provincial clusters. In Nakhon Phanom, the number of deprived people decreased at the highest rate (-97.78%). An increase in the number of deprived people was concentrated in the lower Northern cluster 1. Phuket showed the highest increase in deprivation, where the number of deprived people increased (1114.29%). Phayao and Nong Bua Lam Phu had no deprivation according to this indicator in 2017 but the number of deprived people increased in the following years.

For Indicator 10, “Household members have access to clean water for daily usage (45 liters per person per day),” the study finds that in 2017-2018 Samut Songkhram and Samut Sakhon had no deprived people. In four provinces, namely Ayutthaya, Nonthaburi, Ratchaburi, and Phangnga, the number of deprived people decreased to zero. In addition, the number of deprived people continued to decrease in almost all provincial clusters. In Lampang the number of deprived people decreased at the highest rate (-99.25%). The increase in the number of deprived people was concentrated in the upper Northeastern cluster 2. Krabi showed the highest increase in deprivation, where the number of deprived people increased at a decreased rate (3.97%). Singburi, Angthong, and Nong Bua Lam Phu had no deprivation according to this indicator in 2017, but the number of deprived people increased in the following years.

For Indicator 11, “The house is kept tidy and hygienic,” the study finds that Chainat is the only province with no deprived people according to this indicator. The number of deprived people continuously declined in almost all provincial clusters. In Phrae, the number of deprived people decreased at the highest rate (-98.24%). Overall, there was a slight increase in the number of deprived people.

Mukdahan saw the highest increase in deprivation, where the number of deprived people increased at an increased rate (127.70%).

### 3) Education:

#### (1) Educational deprivation at the provincial level:

When comparing the number of educationally-deprived people over the three studied years, among the five most deprived provinces, Chiang Mai saw the highest increase in educational deprivation, where the number of educationally-deprived people increased from 2017-2018 but decreased in 2019. Similarly, the number of educationally-deprived people in Buriram also increased at an increasing rate in 2019. Among the other provinces in the most deprived group, the number of educationally-deprived people continued to increase. Among the five least educationally-deprived provinces, the number of educationally-deprived people in Nonthaburi, Chainat, and Phetchaburi decreased at an increasingly rate and almost reached zero in 2019, while the number of educationally-deprived people in the other provinces in this group decreased at a similar rate.

#### (2) Educational deprivation at the provincial cluster level:

Overall, the number of deprived people in almost all provincial clusters increased from 2017-2018 and decreased in 2019. Chainat showed the highest reduction of educational poverty, where the number of deprived people declined at an increased rate (-93.02%). An increase in educational poverty was concentrated in the upper Central cluster and the Southern cluster (Gulf of Thailand). Satun showed the highest increase in educational poverty, where the number of deprived people increased at a decreased rate (32.79%).

For Indicator 15, “Children aged 3-5 years are properly raised and cared for,” overall, almost no deprived people were observed. Chiang Rai showed the highest reduction of educational poverty, where the number of deprived people decreased at an increased rate (-96.88%). There were five provinces, where the number of deprived people increased. Krabi showed the highest increase in deprivation, where the number of deprived people increased at an increasing rate (145.45%), followed by Phatthalung (114.29%), Prachuap Khiri Khan (55.56%), Buriram (21.21%), and Sa Kaeo (10.00%).

For Indicator 16, “Children aged 6-14 years receive a compulsory education of nine years,” the study finds that in almost all provincial clusters the number of deprived people according to this indicator increased in 2017-2018 but decreased in 2019. In the lower Northern cluster, the number of deprived people declined at an increasing rate. In Chainat the number of deprived people declined at the highest rate (-98.04%). The increase in the number of deprived people concentrated in the Southern cluster (Gulf of Thailand). Ranong saw the highest increase in deprivation, where the number of deprived people increased at a decreasing rate (39.71%).

For Indicator 17, “Children who finished Mathayom 3 are able to continue on to Mathayom 4 or comparable education level,” there were 10 provinces with no deprived people according to this indicator, namely Chainat, Pathum Thani, Ratchaburi, Phetchaburi, Samut Sakhon, Phuket, Lamphun, Phayao, Phrae, and Uthai Thani. Overall, the number of deprived people decreased at a decreasing rate in almost all provincial clusters. In Nong Khai, the number of deprived people decreased at the highest rate (-97.67%). Prachuap Khiri Khan had the highest increase of deprivation (433.33%). Samut Songkhram and Rayong initially had no deprivation according to this indicator but the number of deprived people increased in the following years.

For Indicator 19, “Household members aged 15-59 years can read and write Thai and perform basic math calculations,” the study finds that the number of deprived people decreased at an increased rate in almost all provincial clusters. In Ayutthaya the number of deprived people decreased at the highest rate (-89.62%). An increase in the number of deprived people concentrated in the lower Central cluster 2 was observed. Samut Sakhon saw the highest increase in deprivation (4600.00%). Nong Bua Lam Phu had no deprivation according to this indicator in 2017 but the number of deprived people increased in the following years.

#### 4) Income:

##### (1) Income deprivation at the provincial level:

Among the five most deprived provinces, Chiang Mai saw the highest increase in income deprivation, where the number of income-deprived people increased in 2018 and decreased in 2019. In Nakhon Si Thammarat, the number of income-deprived people continued to increase. For the five least deprived provinces, the number of deprived people continuously dropped. Amnat Charoen saw the highest reduction in income deprivation.

##### (2) Income deprivation at the provincial cluster level:

Overall, the number of income-deprived people decreased in almost all provincial clusters. In Nong Khai, the number of deprived people decreased at the highest rate (-72.15%). An increase in income deprivation was concentrated in the lower Central cluster 2. Prachuap Khiri Khan had the highest increase in the number of income-deprived people (107.28%).

For Indicator 20, “Household members aged 15-59 years have proper jobs and income,” the study finds that the number of people deprived according to this indicator decreased in almost all provincial clusters. In Nong Khai, the number of deprived people reduced at the highest rate (-85.94%). An increase in the number of deprived people concentrated in the lower Central cluster 2 and the Southern cluster (Gulf of Thailand) was observed. Prachuap Khiri Khan saw the highest increase in income deprivation.

For Indicator 21, “Household members aged 60 years and above have proper jobs and income,” the number of people deprived according to this indicator declined in almost all provincial clusters. In Nong Khai, the number of deprived people decreased at the highest rate (-73.03%). An increase in income deprivation concentrated in the lower Central cluster 2 and the upper Northeastern cluster 2 was observed. Prachuap Khiri Khan showed the highest increase in the number of income-deprived people (88.76%).

For Indicator 22, “average annual household income,” the study finds that the number of people deprived according to this indicator declined in almost all provincial clusters. Phatthalung was the only province with no deprived

people according to this indicator in 2019. Interestingly, all provinces in the lower Central cluster 2 had an increase in income deprivation. Nakhon Nayok showed the highest increase in the number of deprived people (197.92%). Samut Sakhon had no deprivation according to this indicator in 2017 but the number increased in the following years.

5) Access to public services:

(1) Deprivation of Access to public services at the provincial level:

The study finds that among the five most deprived provinces, in Loei, the number of deprived people increased at an accelerated rate. There were significant differences in the proportion of deprived people in Loei from 2017-2019. In addition, when compared with other provinces, the number of deprived people in Loei was different from other provinces in the same data set. The study finds that among the five least deprived provinces were three provinces where the number of deprived people declined to zero.

(2) Deprivation of Access to public services at the provincial cluster level:

Overall, the number of people deprived access to public services declined in almost all provincial clusters. There were three provinces with no deprived people in this dimension, namely Samut Sakhon, Phangnga and Prachinburi. In Trang the number of deprived people declined at the highest rate (-96.88%). The increase in the number of deprived people concentrated in the upper Northeastern cluster 2 and the middle Northeastern cluster. Maharakham showed the highest increase in deprivation where the number of deprived people increased at an increasing rate (166%).

For Indicator 27, “The elderly are properly taken care of by their family, community, government, or private agencies,” almost no deprived people were found according to this indicator in 2019. In Chonburi, the number of deprived people decreased at the highest rate (-96.15%). Overall, there was only a slight increase in the number of deprived people. Maharakham saw the highest increase in deprivation where the number of deprived people increased at an increasing rate

(282.76%). Angthong and Amnat Charoen initially had no deprivation according to this indicator but the number of deprived people increased in the following years.

For Indicator 28, “The disabled are properly taken care of by their family, community, government, or private agencies,” the study finds that, in almost all provincial clusters, the number of people deprived according to this indicator increased in 2018 but decreased in 2019. Samut Sakhon had no deprived people according to this indicator from 2017-2019, while Phangnga, Phuket, Nakhon Nayok, and Prachinburi had no deprivation according to this indicator in 2019. In Trang the number of deprived people decreased at the highest rate (-90.91%). The increase in the number of deprived people concentrated in the middle Northeastern cluster. Krabi saw the highest increase in deprivation (81.25%).

### **5.1.2 Government Policies on Multidimensional Poverty Management through Budget Allocation to Provinces and Provincial Clusters based on TPMAP**

#### **5.1.2.1 Budget for provinces and provincial clusters in fiscal year 2017**

In 2017, a total of 25,761.8659 million Baht was provided to provinces and provincial clusters to conduct development projects in four main areas. The largest budget was allocated for economic development (18,667.9880 million Baht), followed by natural resource and environmental development (4,194.1523 million Baht), social development (2,151.8709 million Baht), and security and peace development (747.8547 million Baht).

For the dimension of economic development, Nakhon Ratchasima received the highest budget (386.0101 million Baht), whereas Narathiwat received the lowest (47.9260 million Baht).

For the dimension of social development, Narathiwat was allocated the highest amount (183.0147 million Baht), while Nakhon Ratchasima received the lowest (1 million Baht). It should be noted that Khon Kaen, Mukdahan, Sakon Nakhon, and Nong Khai did not receive any budget.

For natural resource and environmental development, Nan received the highest budget (153.3673 million Baht). Kamphaengphet (0.7814 million Baht)

received the lowest. Kanchanaburi, Chachoengsao, Narathiwat, Phangnga, and Satun received no budget in this area.

Surat Thani was allocated the highest budget (62.8 million Baht) for security and peace development, while Sukhothai was allocated the lowest (1.0569 million Baht). It should be noted that 20 provinces received no budget in this area.

At the provincial cluster level, the study finds that the lower Northeastern cluster 1 received the highest budget (1,701.6909 million Baht), whereas the upper Central cluster 2 received the lowest (1,105.5529 million Baht).

#### 5.1.2.2 Additional budget for provinces and provincial clusters in fiscal year 2017

In 2017, an additional budget of 24,770.4842 million Baht was provided to provincial clusters in accordance with TPMAP's multidimensional poverty indicators according to five dimensions. The highest amount was allocated for the income dimension (13,124.2989 million Baht), followed by living standards (11,567.9558 million Baht), healthcare (36.6615 million Baht), education (35.0000 million Baht), and access to public services (6.5680 million Baht). Moreover, an additional budget of 3,075.5782 million Baht was provided for developments in other areas.

For the healthcare dimension, only two provincial clusters received the budget, namely the Eastern cluster (20.8250 million Baht), and the Southern cluster (Andaman Coast) (15.8365 million Baht).

For the living standards dimension, the lower Northeastern cluster 1 received the highest budget (1,798.4169 million Baht), while the Southern (Andaman Coast) cluster received the lowest (228.4039 million Baht). The upper Central cluster 1, the lower Central cluster 2, the upper Northeastern cluster 1, and the upper Northern cluster 1 received no budget.

For the education dimension, only the upper Northeastern cluster 2 received any budget (35 million Baht).

For the income dimension, the middle Northeastern cluster received the highest budget (4263.3802 million Baht), whereas the Southern (Andaman Coast) cluster received the lowest (228.4039 million Baht). The upper Northeastern cluster 1 did not receive any budget for this dimension.



For access to public services, only the Southern border cluster received any budget (6.5680 million Baht).

For developments in other areas, the Southern border cluster received the highest budget (887.2861 million Baht). It should be noted that additional budget was allocated to the three provinces in this cluster for living standards indicators that are not included in TPMAP.

At the provincial cluster level, the study finds that the Southern border cluster received the highest budget (4,722.9482 million Baht), while the upper Northern cluster 1 was provided received the lowest (4.9372 million Baht).

#### 5.1.2.3 Budget for provinces and provincial clusters in fiscal year 2018

In 2018, a total of 14,312.2734 million Baht was provided to provinces and provincial clusters in accordance with TPMAP's multidimensional poverty indicators according to five dimensions. The highest amount was allocated for income dimension (8,633.1838 million Baht), followed by living standards (3,136.8701 million Baht), access to public services (137.3392 million Baht), education (87.2540 million Baht), and healthcare (16.9575 million Baht). A budget of 2300.6688 million Baht was allocated for developments in other areas.

Only four provinces received budgets for healthcare. Songkhla received the highest budget (8.2449 million Baht), followed by Suphanburi (4.8126 million Baht), Satun (2.9 million Baht), and Chachoengsao (1 million Baht).

For the living standards dimension, Sisaket received the highest budget (137.8133 million Baht), whereas Nakhon Sawan received the lowest (0.3 million Baht).

For education, Pattani received the highest budget (22.0510 million Baht), while Songkhla received the lowest (0.2099million Baht). It should be noted that most of the provinces that receiving budgets for this dimension were in the lower Northeastern cluster 2.

For the income dimension, Nakhon Ratchasima received the highest budget (356.3268 million Baht), while Amnat Charoen received the lowest (0.52 million Baht).

For access to public services, Trang received the highest budget (16.2334 million Baht), while Suphanburi received the lowest (0.2 million Baht). All

provinces in the middle Northeastern cluster and the upper Northern cluster 1 received budgets for this dimension.

For developments in other areas, Phuket received the highest budget (134.2718 million Baht).

For the allocation of budget at the provincial cluster level, the lower Northern cluster was found to receive the highest budget (1,210.9127 million Baht), while the Southern (Gulf of Thailand) cluster received the lowest (386.1601 million Baht).

#### 5.1.2.4 Budget for provinces and provincial clusters in fiscal year 2019

In 2019, a total of 13,362.0108 million Baht was provided to provinces and provincial clusters according to TPMAP's multidimensional poverty indicators. The highest amount was allocated for the income dimension (7,160.1018 million Baht), followed by living standards (3,363.4884 million Baht), access to public services (151.4355 million Baht), healthcare (104.8662 million Baht), and education (35.7835 million Baht). Additionally, a budget of 2,546.3354 million Baht was provided for developments in other areas.

Only eight provinces received budgets for healthcare. The highest amount of budget was provided to Pattani (81.144 million Baht), while Satun received the lowest (1.7587 million Baht).

For the living standards dimension, Chaiyaphum received the highest budget (152.7622 million Baht), while Nakhon Sawan received the lowest (0.487 million Baht).

Under the education dimension, Samut Sakhon received the highest budget (6.8274 million Baht), whereas Narathiwat received the lowest (0.5872 million Baht).

Under income dimension, Khon Kaen received the highest budget (238.2067 million Baht), while Amnat Charoen received the lowest (2.1 million Baht).

In the dimension of access to public services, Nonthaburi received the highest budget (25.2298 million Baht), while Lopburi received the lowest (0.6068 million Baht).

In other areas, Pathum Thani received the highest budget (141.1185 million Baht). Most budget was allocated for living standards indicators that are not included in TPMAP.

The study finds that, for the allocation of budget at the provincial cluster level, middle Northeastern cluster received the highest budget (1,119.0558 million Baht), while the upper Northern cluster 2 received the lowest (351.1845 million Baht).

### **5.1.3 Relationships between the status of multidimensional poverty and government policies on multidimensional poverty management through budget allocation to provinces and provincial clusters:**

#### **5.1.3.1 Healthcare:**

Overall, most provinces and provincial clusters did not receive the budget for the healthcare dimension. There were only 10 provinces that were provided with the budget. The nine provinces, receiving the budget for Indicator 7 “Household members aged 6 years old up do exercise at least three days a week (30 minutes/day),” included Suphanburi, Songkhla, Satun, Surat Thani, Narathiwat, Pattani, Chachoengsao, Sisaket, and Nan. Ubon Ratchathani was the only province that received the budget for Indicator 4 “Everybody in the household has clean and safe food.”

Satun is the only province receiving the budget for this dimension in both two years. However, when comparing the allocated budget with the number of deprived people, the study finds that the number of deprived people in Satun continued to increase, although it continually received the budget from 2018-2019. This is similar to Suphanburi, Surat Thani, Narathiwat, Pattani, Chachoengsao, Sisaket and Nan, where the proportion of deprived people increased, although the budget was provided.

It should be noted that for all indicators, there were provinces that had a higher number of deprived people (marked in dark red, red, and orange) but did not receive any budget. For Indicator 1 and 5, there were provinces that received no budget, although they originally had no deprived people but the number of deprived people increased in the next years.

#### **5.1.3.2 Living standards:**

Overall, most provinces received the budget for this dimension, especially for Indicator 9 “Household members have enough drinking water (5 liters

per person per day)” and Indicator 10 “Household members have access to clean water for daily usage (45 liters per person per day).” However, when comparing the number of deprived people with the allocated budget, some provinces had increased number of deprived people, although they were provided with the budget in both two years. One of the main reasons is the insufficient amount of allocated budget. Some provinces, such as Roi Et and Prachuap Khiri Khan, received a lower budget for Indicator 11 “The house is kept tidy and hygienic.” For Indicator 8 “The condition of the house is safe to live in,” although the number of deprived people increased, but there were no provinces receiving the budget for this indicator.

It should be noted that, in all indicators for which the budget was allocated, every province and provincial cluster was thoroughly provided with the budget, although some of them had no deprived people. Therefore, it could be said that the allocation of budget did not pay attention to the proportion of deprived people in each indicator as much as it should. Moreover, some provinces, such as Samut Prakan, had a higher number of deprived people (marked in red and orange) in some indicators but did not receive any budget. For provincial cluster budget, it was allocated in the same direction as the provincial budget allocation.

#### 5.1.3.3 Education

Overall, most provinces and provincial clusters were not provided with the budget. There were only 21 provinces receiving the budget for this dimension. The largest amount of budget was allocated for Indicate 16 “Children aged 6-14 years receive a compulsory education of nine years” and Indicator 17 “Children who finished Mathayom 3 are able to continue on to Mathayom 4 or comparable education level,” followed by Indicator 15 “Children aged 3-5 years are properly raised and cared for.”

There were three provinces receiving the budget in both two years, namely Samut Sakhon, Ubon Ratchathani, and Phichit. When comparing the allocated budget with the proportion of deprived people, the study finds that the number of deprived people in Phichit continued to increase, although it was continuously provided with the budget in 2018-2019.

It should be noted that, despite of an overall decline in the number of deprived people in almost all provinces that were provided with the budget for Indicator 15, 16, and 17, there were some provinces that had a higher number of deprived people

in these three indicators due to receiving no budget. In other words, the provinces with a lower number of deprived people tended to receive the budget, while the provinces with a higher number of deprived people did not receive any budget. In addition, there were some provinces that had a higher number of deprived people in Indicator 19 “Household members aged 15-59 years can read and write Thai and perform basic math calculations,” but none of them received the budget. Similarly, the provinces, which initially had no deprivation in Indicator 17 and 19 but had a higher number of deprived people in the following years, also received no budget. In addition, no provincial cluster budget was allocated for the education dimension.

#### 5.1.3.4 Income

Overall, most provinces and provincial clusters received the budget for the income dimension, especially Indicator 22 “An average annual household income.” For Indicator 22, it should be noted that the budget was thoroughly distributed to all provinces and provincial clusters, except Chumphon, although some of them did not have deprived people according to this indicator. Thus, it could be said that the allocation of budget did not place enough importance on the proportion of deprived people in each indicator. In addition, despite the budget was continually allocated for this indicator for two consecutive years, the number of deprived people still increased.

For Indicator 20 “Household members aged 15-59 years have proper jobs and income” and Indicator 21 “Household members aged 60 years and above have proper jobs and income,” the study finds that the allocation of budget for these two indicators was similar. However, there were some provinces that had a higher number of deprived people (marked in red and orange) but did not receive any budget. For the allocation of provincial cluster budget, most provincial cluster budget was allocated for Indicator 22, which was consistent with provincial budget allocation.

#### 5.1.3.5 Access to public services

Overall, most provinces and provincial clusters received the budget for Indicator 27 “The elderly are properly taken care of by their family, community, government, or private agencies” and Indicator 28 “The disabled are properly taken care of by their family, community, government, or private agencies.”

When comparing the allocated budget and the number of deprived people in Indicator 27, the study finds that there were some provinces that received the budget but had no deprived people according to these criteria, namely Singburi, Ratchaburi, Suphanburi, Trang, Phangnga, Prachinburi, Nong Khai, Roi Et, Lampang, Lamphun, Phayao, and Phrae. Maharakham, a province where the number of deprived people increased at an increasing rate, also received the budget. However, Narathiwat and Rayong, which had a higher number of deprived people, did not receive any budget. For Indicator 28, there were some provinces that had a higher number of deprived people (marked in dark red, red, and orange) but did not receive the budget. Kalasin and Maharakham are the only two red provinces that received the budget. In the provinces that were provided with the budget, the number of deprived people was likely to decrease. The provincial cluster budget was mostly allocated to clusters that had no deprived people or had a lower number of deprived people.

## **5.2 Discussion**

Research results can be discussed in three aspects as follows.

### **5.2.1 Thailand's Multidimensional Poverty based on TPMAP**

TPMAP was further developed to cover broader issues such as newborn children, education, an aging population, and living condition development, while retaining the ability to identify poverty. Therefore, TPMAP can be used to analyze and identify poverty-related problems and issues at the individual, household, community, local, provincial, and national levels in order to find appropriate solutions for each target group and formulate an effective poverty alleviation policy based on actual needs and problems. TPMAP uses the MPI to measure poverty according to five dimensions, including healthcare, education, income, living standards and access to public services. This approach is in line with the absolute measures of poverty and multidimensional-direct method. TPMAP's indicators according to five dimensions are also consistent with the Global MPI that was developed and revised by the Oxford Poverty & Human Development Initiative and the United Nation Development Program.

The study finds that the largest amount of provincial and provincial cluster budget was allocated for income dimension. This is consistent with Hall and Midgley (2004), who point out that although other dimensions have been added into poverty measures, many countries and organizations, especially in the low-income group, still measure poverty based on income, which cannot reflect a holistic approach to, or definition of, poverty.

In addition, the study finds that the indicators of all dimensions, except for income are associated with basic needs, which is in line with the National Council for the Evaluation of Social Development Policy (CONEVAL) of Mexico that uses both income indicators and social rights indicators to measure poverty (CONEVAL, 2010). However, when looking at the indicators shown in Table 2.15, the study finds that some are subjective indicators, especially the 7<sup>th</sup> dimension. Thus, the researcher thinks that after the country is able to eradicate poverty according to five main dimensions, TPMAP should include more subjective indicators to measure multidimensional poverty in order to achieve comprehensive poverty alleviation.

The government has gained big data for poverty identification from a collection of multi-layered poverty data. Although TPMAP explains the calculation method of the MPI, which is consistent with the Alkire-Foster method as summarized in Table 2.3, it has never presented the MPI results in its database. Based on the literature review, previous research usually uses MPI values for data analysis. The fact that the MPI results have never formally been presented has led to limitations in overall poverty analysis and the limited application of data analytics.

TPMAP uses the survey-based basic minimum needs data from the Community Development Department and state welfare card registration data from the Ministry of Finance. Thus, it is important to question the reliability of data from these two sources, which affects the accuracy of the identification of multidimensional poverty in Thailand.

### **5.2.2 Database Systems Related to This Study**

The study finds that related organizations collect data using various criteria. The frequent changes in data collection criteria resulted in data limitations, which can be divided into two parts as follows:

1) The researcher was aware that, unlike in 2018 and 2019, the Bureau of Budget Allocated the budget to provinces and provincial clusters in 2017 according to the type and productivity of the project without specifying project details and indicators. Therefore, the researcher could not classify the 2017 budget according to TPMAP's indicators. As a result, only the 2018 and 2019 budget data could be comparatively analyzed.

2) The researcher recognized that from 2017-2018, provincial clusters were classified according to the Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster dated 18 February 2009, while in 2019, provincial clusters were classified in accordance with the Notification of the Provincial and Provincial Cluster Administration Policy Committee on the Establishment of the Provincial Cluster and the Center of the Cluster (No.3) dated 16 November 2017. The change in classification was partly due to the transferal of responsibility from the Office of the Public Sector Development Commission to the NESDB.

Therefore, related organizations should use the same criteria for data collection in order to facilitate smooth data analysis and effective application in the future.

### **5.2.3 Relationships between the Status of Multidimensional Poverty and Government Policies on Multidimensional Poverty management through Budget Allocation to Provinces and Provincial Clusters**

According to the research results, the allocation of provincial and provincial cluster budgets are not in line with the status of poverty according to five dimensions. The provinces that had no deprived people or had a continued decline in the number of deprived people were provided with budgets, whereas provinces with increased numbers of deprived people tended to receive little or no budget. This might be due to the reduction of provincial and provincial cluster budgets, as shown in Table 1.1. The results of this research are consistent with the findings of Jate Dittaudom (2014, pp. 128-140), which specify that public spending is not directly related to the quality of life of the people at the provincial level because the criteria for the establishment of government agencies and the determination of government personnel and budget



allocation is not consistent with the actual problems and needs of people in provincial areas.

In addition, some indicators did not receive any budget, including Indicator 1: “The weight of a newborn baby is not less than 2,500 grams”, Indicator 5, “Everybody in the household uses medicines in a suitable manner”, Indicator 8 “The condition of the house is safe to live in”, and Indicator 19, “Household members aged 15-59 years can read and write Thai and perform basic math calculations” in the education dimension. When looking at these indicators, the study finds that all of them were under the responsibility of relevant ministries so necessary budget and resources were already allocated through responsible departments and divisions. Thus, no provincial and provincial cluster budgets were provided for these indicators.

The mismatch between the allocation of budget and the status of poverty reflects a lack of participation from local people. It shows that the centralized structure of Thai public administration leaves the needs and problems of local people unsolved. This is against the concept of holistic administration, where the province plays a key role in integrating provincial development plans and strategies, coordinating with other related sectors, such as central, regional, and local government agencies, and acting as a budget unit that can directly submit budget proposals to the Bureau of Budget in order to enhance area-based benefits and improve the quality of life for local people. Moreover, the provincial cluster budget was allocated in the same direction as the provincial budget allocation, leading to spatial inequality in the provincial areas. Thus, this kind of budget allocation does not comply with the main objective of the establishment of provincial clusters that aims to promote area-based integration. The results of this study are in line with the findings of Prince Damrong Rajanupab Institute (2005, pp. (1) - (10)), Sudjai Saadying et al. (2009, pp. 183-184), Prayuth Swadriokul (2009), Farat Somsaen (2012, pp. 235-238), and Jate Dittaudom (2014, pp. 128-140), which discuss similar problems.

Moreover, a continued decline in provincial budget allocation (shown in Table 1.1) is mainly due to changes in budget allocation criteria and components from 2017-2019, which can be summarized into two parts as follows:

- 1) In 2017 and 2018, the allocation of provincial budgets did not place importance on the proportion of poor people. In 2019, the proportion of poor people

was included in the provincial budget allocation criteria for the first time, but its weight was very small compared to other components.

2) According to Table 2.20, the components of provincial budget allocation mostly place an emphasis on the income aspect, followed by the quality of provincial development plans, the provincial budget management efficiency, and the proportion of poor people. However, the evaluation of previous projects, especially projects related to multidimensional poverty management, were not included in the provincial budget allocation criteria. Including project evaluation indicators in the criteria for provincial and provincial cluster budget allocation will help to enhance spending efficiency and effectiveness.

It is noteworthy that the provincial and provincial cluster budget is only part of the country's budget expenditures that include six main categories. When compared with the total area-based budgets, the provincial and provincial cluster budgets allocated in fiscal year 2017, 2018, and 2019 account for only 29.94, 8.58, and 8.64 percent of the total budget. The very small proportion of provincial and provincial cluster budgets might explain the nature of the research results. However, budgets for multidimensional poverty management can also be allocated through five other budget expenditure categories. Thus, further studies should be carried out, focusing on other budget expenditure groups in order to obtain more comprehensive results.

In addition, this study finds that the collection of Thailand's multidimensional poverty data – which only began three years prior – was not given high importance when determining the allocation of provincial and provincial cluster budgets.

### **5.3 Recommendations for Policy and Practice**

The following recommendations are made based on the present research results to improve the allocation of provincial and provincial cluster budgets that have an effect on multidimensional poverty management in Thailand.

1) Apart from the number of poor people, TPMAP should also fully publish the MPI results in order to facilitate extensive analyses of Thailand's multidimensional poverty data, which will contribute to more effective multidimensional poverty alleviation.

2) A lack of systematic data collection criteria and procedures was found to be a major problem. The 2017 budget data was collected differently from other years and so could not be included in the comparative analysis. However, the Bureau of Budget used the same procedures and more detailed criteria to collect budget data in 2018 and 2019. As the classification of provincial clusters in 2017-2018 and 2019 used different criteria, the collected data could not also be compared for provincial cluster budgets. Therefore, the researcher suggests that related organizations should jointly determine appropriate criteria to be used on a continuous basis so that further data analyses and comparisons can be more easily performed. In the long run, using the same data criteria will allow all related parties to spot trends and changes that are useful for planning and formulating policies in the future.

3) The results of this study show that the allocation of provincial and provincial cluster budgets is not correlated with poverty according to the five dimensions, which is mainly due to budget allocation criteria. Thus, the researcher recommends that the components of provincial budget allocation should be adjusted as follows:

(1) The weight of the proportion of poor people is very small (5%) compared to other components. Increasing the weight of the proportion of poor people in the provincial budget allocation criteria will make all provinces and provincial clusters more aware of the importance of this issue.

(2) The evaluation of previous projects: projects related to multidimensional poverty management should be included in the criteria for the allocation of provincial and provincial cluster budgets in order to increase spending efficiency and effectiveness at the provincial and provincial cluster levels.

(3) Based on the research results, some provinces had an increased number of deprived people (marked in dark red, red, and orange) according to several indicators but did not receive any budget. It is essential that a multidimensional poverty analysis based on TPMAP is added to the budgeting process specified in Table 2.19 in order to optimize the use of big data and to allocate provincial and provincial cluster budgets to solve poverty-related problems and issues in an effective and accurate manner.

The allocation of provincial cluster budgets is carried out in the same direction as provincial budget allocation. Provincial clusters that have no deprived people or had a continuous decline in the number of deprived people were provided

with the budget, while provincial clusters with an increased number of deprived people received less or no budget. This kind of budget allocation resulted in spatial inequality and is not in line with the main objective of the establishment of provincial clusters that aims to enhance holistic area-based integration. Therefore, the researcher recommends to add new criterion that the provincial cluster budget must be allocated to reduce poverty and inequality among people in provincial areas based on TPMAP's multidimensional poverty data.

4) The non-correlation between the allocation of budget and the status of poverty reflects a lack of public participation, meaning that the problems and needs of local people remain unsolved. The researcher recommends that a committee consisting of representatives from civil society should be established to participate in the budgeting process shown in Table 2.19 and to prioritize and present their budget allocation needs. This will help to ensure that poverty-related problems and issues are solved according to TPMAP's multidimensional poverty data.

#### **5.4 Recommendations for Further Research**

1) This study investigated multidimensional poverty at the macro level. Thus, future studies should be carried out at the provincial level in order to achieve a more complete understanding, to broaden the overall picture of multidimensional poverty, and to explore additional factors that may have an influence on Thailand's multidimensional poverty management.

2) Future studies should apply different research methods, such as qualitative research design, to examine multidimensional poverty alleviation measures, procedures, and outcomes and to study the problems, advantages, and limitations of each. More quantitative studies should also be conducted to obtain empirical results beneficial to multidimensional poverty alleviation in Thailand.

3) It is important to conduct further research in the provinces with a decreased number of deprived people in order to learn from their success in multidimensional poverty alleviation and to develop an appropriate poverty reduction model in the future.

4) Future research should study Thailand's multidimensional poverty alleviation through the allocation of other types of budget in order to gain a more

complete picture. In addition to budget allocation, the other aspects of multidimensional poverty alleviation, such as the political context, should also be further explored.



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