

CHAPTER I

INTRODUCTION

1.1 Background

The Sustainable Development Goals (SDGs) are sustainable development efforts that are a reference for the preparation and negotiation of a framework by countries around the world to replace the global Millennium Development Goals (MDGs) which ended in 2015. In Indonesia, efforts to localize SDGs have been regulated, both in the Presidential Regulation of the Republic of Indonesia Number 59 of 2017 concerning Implementation of the Achievement of Sustainable Development Goals, as well as in its derivative regulations in the Regulation of the Minister of National Development Planning/Head of Agency 2 of the Republic of Indonesia's National Development Planning Number 7 of 2018 concerning Coordination, Planning, Monitoring, Evaluation, and Reporting on the Implementation of the Sustainable Development Goals (Yazan & Arwemi, 2020).

In the implementation of sustainable development. The SDGs have 17 goals which are reflected in 169 targets and 241 interrelated indicators. In order to succeed and make the SDGs a program capable of providing universal welfare, the SDGs have 3 pillars in their implementation, namely 1) the social pillar, human development in the social sphere; 2) economic pillar, economic development; and 3) environmental pillars, including biodiversity (Murniningtyas and Alisjahbana 2018).

According to Bappenas (SDGs) all health issues in the SDGs are integrated in one goal, namely goal number 3, which is to ensure a healthy life and promote well-being for all people at all ages. There are 38 SDGs targets in the health sector that need to be realized. One of them is a disease that cannot be handled thoroughly, namely malaria which is expected to be resolved in 2030. Malaria is still an infectious disease that is of concern to the World Health Organization (WHO) to eradicate. Malaria is a major focus of SDG 3 because it is a major cause of death and disability. WHO has

reported that in 2019, there were an estimated 229 million cases of malaria worldwide, which caused 409,000 deaths. Most of these deaths occurred in Africa and Southeast Asia. In addition, the percentage of malaria-related deaths in children under 5 years of age was 84% in 2000 but decreased to 67% in 2019 (Report, 2020).

Malaria is an infectious disease caused by the plasmodium parasite, transmitted through the bite of the female Anopheles mosquito. Malaria is an infectious disease that causes the most deaths worldwide after respiratory disease, HIV/AIDS, diarrhea and tuberculosis. Malaria is still rampant in most parts of Indonesia, including in eastern Indonesia such as Papua, Maluku, Nusa Tenggara, Sulawesi, Kalimantan, and even several areas in Sumatra such as Lampung, Bengkulu and Riau. Malaria is a public health problem that can be fatal, especially for vulnerable populations such as young children and pregnant women. Malaria can also cause anemia and reduce work productivity.

Health is one of the human capital needed to support economic growth. This is because health is a prerequisite for increased productivity. Malaria is a health problem that has not been resolved until now, resulting in various interventions from the government such as the Community-Based Total (STBM) program, counseling on the importance of early immunization, malaria eradication programs whose sources of capital come from GRDP budget per province and Foreign Assistance (BLN). According to Tjiptoherijanto (1993), there are various ways that health can affect economic growth. For example, improving one's health will enhance labor force participation. Health improvements can also result in higher educational attainment, which subsequently supports economic growth. Nor Health improvements lead to increased population which will lead to labor force participation rates. Additional workforce productivity showing significant economic growth.

According to (Datta & Reimer) Malaria has the relationship between Economic growths, the countries with lower levels of economic growth, investment, and education have higher levels of Malaria Incidence. Malaria has a significant obstacle

to economic development in many developing countries like a reduced labor productivity, increased health care costs, reduced investment, and reduced trade.

Malaria also affects the growth and development of children in the fields of health and education. In the field of education, the level of attendance and grades of children in school is affected by the incidence of malaria. According to (Cirera et al., 2022) malaria elimination initiatives can positively impact school outcomes. It is hoped that the skills and knowledge acquired can create productive human resources that promote economic growth and development. By maintaining the health quality of human resources, the productive workforce produced will increase every year. A skilled and educated workforce indirectly has a major impact on a country's economic growth.

Per capita expenditure also has a relationship with Malaria. Per Capita expenditure greatly affects health services and utilization of health service facilities by families. According to (Sir et al., 2016) states that there is a relationship between Per Capita Expenditure and the incidence of malaria; Low-income respondents tend to prioritize their income to meet primary needs and pay little attention to health needs, including prevention of malaria incidents. Thus, compared to residents with sufficient income, they are more likely to get malaria.

Malaria, unlike diseases caused by poverty, does not discriminate between the rich and the poor. As long as protection against malaria is imperfect and impractical, wealthy foreign investors and tourists may stay away from malaria-stricken countries for fear of contracting malaria and hampering the economy in malaria-endemic areas (Gallup & Sachs, 2001). In addition to the physical damage and death it causes, malaria has significant socio-economic impacts, especially on poor populations living in endemic locations of the disease.

According to (Yang et al., 2020), drinking water and sanitation are risk factors for malaria infection. An environment with good sanitation can minimize the occurrence of malaria infection, especially in children under five years who are susceptible to malaria. Children under five with access to drinking water and proper

sanitation conditions have a lower risk of malaria infection than children with access to drinking water and poor sanitation conditions. The risk of malaria infection is lowest among children with access to better drinking water and sanitation conditions (Yang et al., 2020).

According to (Inah et al., 2017), poor environmental sanitation practices are strongly associated with high malaria transmission, morbidity, and mortality, especially in low- and middle-income countries. Countries belonging to low and middle economic classes generally have lower middle-income residents whose income is only sufficient for their daily needs and needs health awareness. Even if people with malaria have a higher income, the disease has a high incidence. Shows that people have yet to invest part of their income in avoiding mosquito transmissions, such as buying wire mesh or mosquito coils (Sukiswo et al., 2013).

Indonesia's population growth rate in 2020-2022 decreased from 1.25%, 1.22%, up to 1.17% (bps.go.id). In Indonesia, if you look at the national trend for Annual Parasite Incidence (API) from 2009-2017, the highest number of positive cases of malaria per 1000 people was in 2010, which was 1.96 and the lowest was in 2015, which was 0.85 with an average National API is less than 5%. Every year there are around 15 million cases of malaria and 38,000 deaths in Indonesia. The growth rate in the province of East Nusa Tenggara in 2016-2021 also experienced a slowdown every year, namely 1.63%, 1.61%, 1.59%, 1.58%, 1.56% and 0.87%. The decline in the rate of population growth can occur because of the death rate, the high and irregular birth rate, and the high malaria rate as well. Malaria generally attacks pregnant women and children under the age of 5 because the body's immune system is lower than adults, so that productive human resources are expected to encourage the growth and development of a country slows down every year.

In East Nusa Tenggara Province, the number of malaria cases from 2018 to 2020 was 5,342,456 cases with an Annual Parasite Incidence (API) of 2.88 (mediaindonesia.com). The Directorate General of Disease Control and Environmental

Health of the Ministry of Health determines the stratification of malaria endemic based on Annual Parasite Incidence (API) of a region in Indonesia into 4 (four) strata, namely:

1. High Endemic when $API > 5$ per 1000 population, where areas with a high level of endemic with a possibility of 5 or more than 1000 population may be infected with malaria.
2. Moderately endemic with API 1 -5 per 1000 population, where areas with a middle level of endemic with a possibility of 1 to 5 out of 1000 population may be infected with malaria.
3. Low Endemic when API 0 - 1 per 1000 population, where areas with a lower level of endemic with a possibility of 0 to 1 out of 1000 population may be infected with malaria.
4. Non-endemic if there is no transmission of malaria, where there are indications of endemic areas with no possibility of the population contracting malaria.

Nationally, the province of East Nusa Tenggara (NTT) is an area with a relatively high incidence of malaria. This condition occurs in almost all districts/cities in NTT and is categorized as endemic. Based on data from NTT.BPS.go.id the number of malaria cases from 2016 to 2021 in East Nusa Tenggara Province.

The number of malaria cases in NTT Province in 2021 is 366,632 cases. The highest clinical malaria cases were in Southwest Sumba District with 44,124 cases, and the lowest in Kupang City District with 2,192 cases. (Bps.go.id). In Indonesia there are 15 million cases of malaria and 38,000 deaths per year. It is estimated that 35% of Indonesia's population lives in places at risk of contracting malaria. Of the 484 districts/cities in Indonesia, 338 districts/cities are malaria endemic locations. As an illustration, it can be seen in NTT Province which is the province with the highest API with a value of 12.14 per 1,000 population (Ministry of Health RI, 2010).

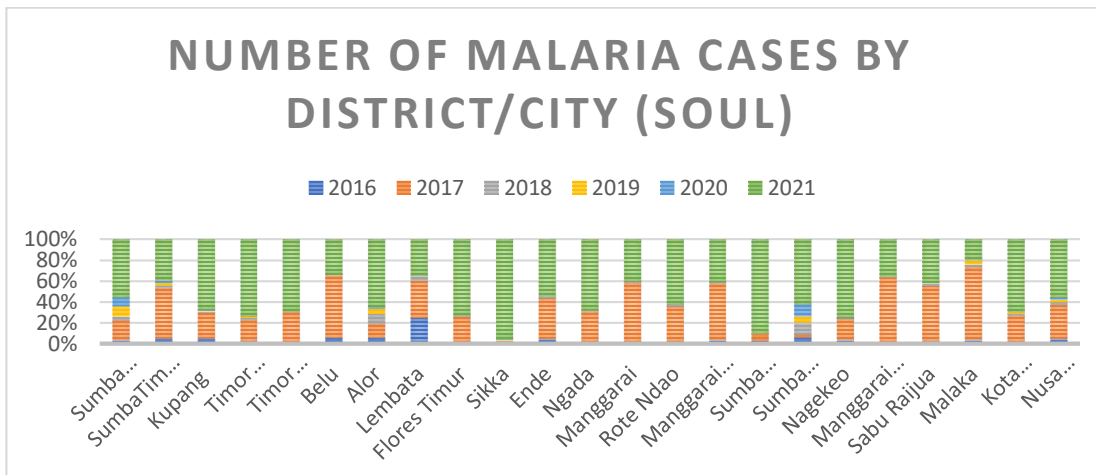


Figure 1. 1 Number of Malaria Cases by District/City (2016-2021)

Source: bps.go.id

The highest clinical malaria cases were in Southwest Sumba District with 44,124 cases, and the lowest in Sikka and Ngada City District with 0 cases in 2017 And 2020 (BPS.go.id). In Indonesia there are 15 million cases of malaria and 38,000 deaths per year. It is estimated that 35% of Indonesia's population lives in places at risk of contracting malaria. Of the 484 districts/cities in Indonesia, 338 districts/cities are malaria endemic locations. As an illustration, it can be seen in NTT Province which is the province with the highest API with a value of 12.14 per 1,000 population (Ministry of Health RI, 2010).

The national annual malaria incidence rate (AMI) is 2.9%, and three provinces have high AMI, namely NTT (14.9%), Papua (18.4%), and West Papua (26.1%). According to the NTT Province AMI statistics, from 2003 to 2009 there was a downward trend in the following six years: 186%, 168%, 167%, 152%, 130%, 92%, and 74%. However, this figure is still far higher than the national target of 50% (Prov.NTT Health Office, 2010).

According to the Ministry of Health (P2P), Dr. Messerassi B. V. Ataupah, the Director of the NTT Health Office, described East Nusa Tenggara Province as the first Eastern Region of Indonesia whose districts and towns successfully eliminated malaria.

Three regencies/cities first Manggarai Regency, East Manggarai Regency, and Kupang City have successfully eradicated malaria. Whereas East Manggarai Regency and Kupang City were able to eradicate malaria in 2020, Manggarai Regency was able to do it in 2019. Aside from that, NTT has 14 districts and cities with low endemic, 2 districts and cities with moderate endemic, and 3 districts and cities with high endemic. On Sumba Island, there are still several areas where malaria is still highly endemic.

If seen from the special budget, the funds for malaria management in East Nusa Tenggara come from APBD I, APBD II, APBN, Global Fund Malaria, and Unicef NTT. In 2018 the allocated budget reached Rp. 8,894 billion for Unicef NTT, reduced to Rp. 7.881 billion in 2019, and decreased sharply to Rp. 4.3 billion. In addition, in 2019-2020 there was no budget allocation from APBD II, while budget funds for the Papua province based on (Ypmak.or.id) each year receive budget funds of IDR 2.3 billion from PT Freeport, the Amungme Community Empowerment Foundation and Kamoro (YPMAC), malaria center, and a budget from the Ministry of Health of IDR 15 billion. So from the explanation above, East Nusa Tenggara is the province that will be studied in this study.

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1.2 Research Problem

According to the above definition, the following are a few crucial issues for this research:

1. Malaria is a major focus of SDG 3 because it is a major cause of death and disability. Malaria is also an infectious disease that causes the fifth death in the world after respiratory infections, HIV / AIDS, diarrhea and tuberculosis. The WHO has reported that in 2019, there were an estimated 229 million malaria cases worldwide, leading to 409,000 deaths. The majority of these deaths occurred in Africa and SouthEast Asia. Additionally, the percentage of malaria-related deaths in children under the age of 5 was 84% in the year 2000, but decreased to 67% in 2019 (Report, 2020). The impact of malaria on developing countries significantly hampers economic development such as reduced labor productivity, increased health care costs, reduced investment, and reduced trade (Datta & Reimer).
2. Several social demographic factors affect malaria incidence such as: Per Capita Expenditure, Economic growth, Population growth, Immunization status, Poverty and Environments Sanitation.
3. The province of East Nusa Tenggara (NTT) is an area with a relatively high rate of malaria. This condition occurs in almost all districts/cities in NTT and is categorized as endemic. Based on mediaindonesia.com, East Nusa Tenggara Province, the number of malaria cases in 2018-2020 was 5,342,456 cases with an Annual Parasite Incidence (API) of 2.88.

Several problem formulations might be suggested in order to describe the issues in this study:

1. How determinants variables have a partial relationship with the incidence of malaria in the province of East Nusa Tenggara?
2. How determinants variables have a simultaneous relationship with the incidence of malaria in the province of East Nusa Tenggara?

1.3 Research Objectives

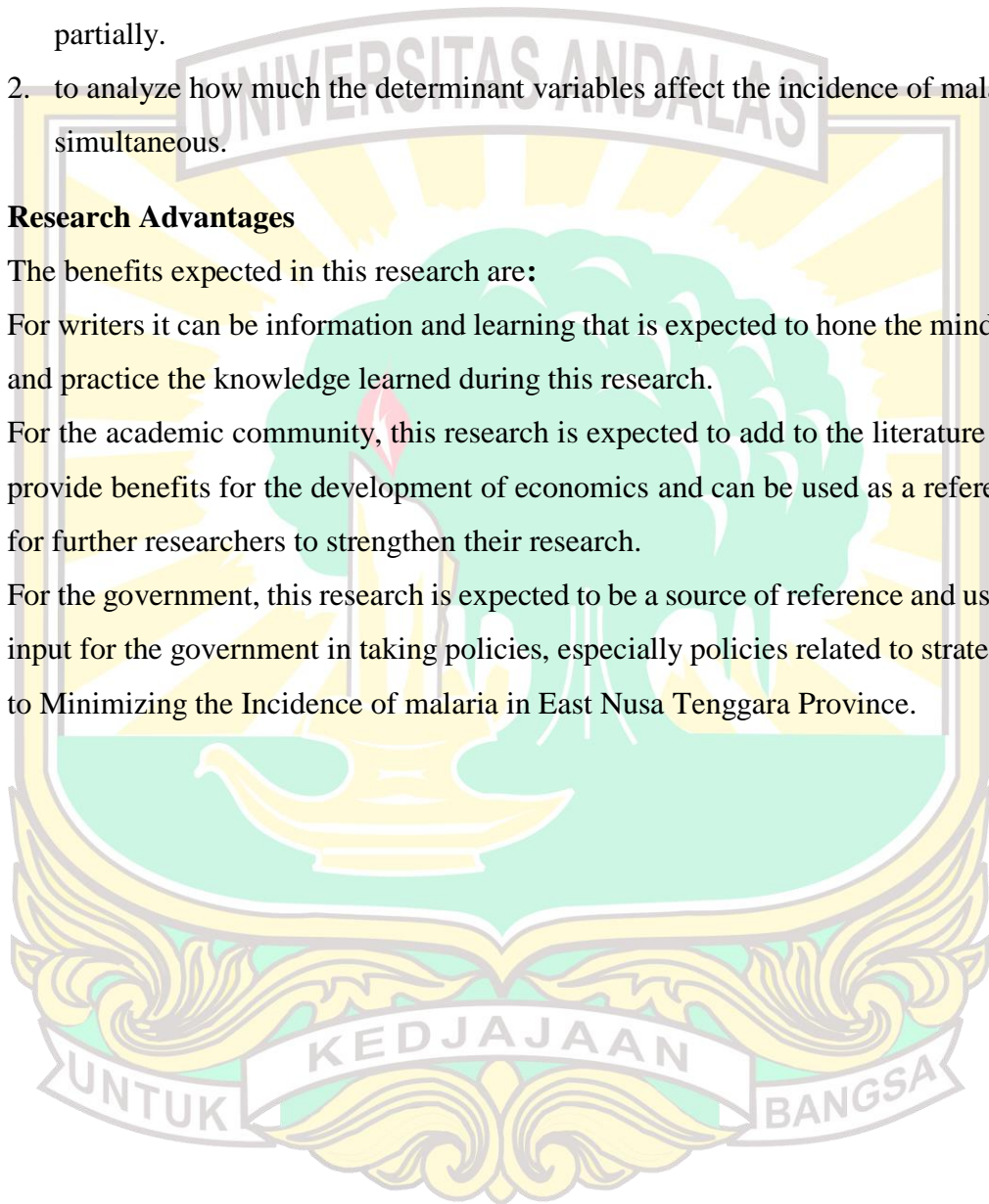
According to the situation that has emerged, this study seeks to:

1. to analyze how much the determinant variables affect the incidence of malaria partially.
2. to analyze how much the determinant variables affect the incidence of malaria simultaneous.

1.4 Research Advantages

The benefits expected in this research are:

1. For writers it can be information and learning that is expected to hone the mind-set and practice the knowledge learned during this research.
2. For the academic community, this research is expected to add to the literature and provide benefits for the development of economics and can be used as a reference for further researchers to strengthen their research.
3. For the government, this research is expected to be a source of reference and useful input for the government in taking policies, especially policies related to strategies to Minimizing the Incidence of malaria in East Nusa Tenggara Province.



1.5 Systemic Writing

This systematics aims to give an overall picture of this research. The following systematic writing:

Chapter I: Introduction

The introductory chapter is composed of five sub chapter, which include the background, research problem, research objectives, research benefits, and systematic writing.

Chapter II: Literature Review

In this chapter, a review of relevant literature is presented, which provides support and relevance to the variables under study. This review is supplemented by previous research that is related to the study's title and hypothesis.

Chapter III: Research Method

This chapter contains types and sources of data, definition of variables, sampling techniques and research model.

Chapter IV: Research Overview

This chapter contains the overview and conditions of the location of the study or research.

Chapter V: Results and Discussion

This chapter outlines the results of research found from statisticl descriptive analysis.

Chapter VI: Conclusion

The conclusion section of this research comprises the final part, which presents the conclusions and recommendations based on the findings obtained from the publications discussed in the preceding chapters.