

# The Role of Geospatial Intelligence to Support Education in Indonesia

**Pramudita Wardani<sup>1</sup>, Sobar Sutisna<sup>2</sup>, Makmur Supryatno<sup>3</sup>, Yulinda Nur Fitriana<sup>4</sup>**

<sup>1</sup>*The Republic of Indonesia Defense University, Indonesia*

<sup>2</sup>*The Republic of Indonesia Defense University, Indonesia*

<sup>3</sup>*The Republic of Indonesia Defense University, Indonesia*

<sup>4</sup>*Universitas Jenderal Soedirman, Indonesia*

**Abstract:** According to Law no. 3 of 2002, its implementation is divided into three components, namely: main components, spare components, and supporting components that are carried out in an integrated manner with the national defense policy. Education is an important part as a component that composes and supports the progress of a nation which is supported by human resources. Equity in Education is a solution to realize quality education so that it impacts the quality of Indonesian human resources who are competent, characterized, competitive and superior. The purpose of this journal is to describe GeoInt supporting Education in Indonesia. This journal uses a qualitative approach with literature review methods, taken from current cases and references from various sources (such as journals, books, articles and others) then taken a summary of the source that is used as one so that it becomes a reference as a research foundation. This journal uses a qualitative approach with literature review methods, taken from current cases and references from various sources (such as journals, books, articles and others) then taken a summary of the source that is used as one so that it becomes a reference as a research foundation. This is an overall depiction of the focus topic of the discussion or theme that will be studied from a theoretical and contextual point of view. The solution to the various problems that have been discussed is to use the GeoInt method. The GeoInt method can help stakeholders develop Education in remote areas, starting from funding providing facilities to educators considering that Indonesia is an Archipelago country consisting of thousands of islands. So it is hoped that Education in Indonesia will produce quality successors for the nation from every region in Indonesia.

**Keywords:** GeoInt, Education, Equity, Indonesia.

## I. INTRODUCTION

Defense includes all efforts to prevent and repel enemies in the context of maintaining state sovereignty, the integrity of the territorial administration of the Unitary State of the Republic of Indonesia, and protecting national security. Defense efforts are carried out by considering the dynamics of the threat. The evolution of the strategic environment is always accompanied by changes in the complexity of threats, both non-military and military. The Defense has the task of realizing and defending the entire territory of the Unitary State of the Republic of Indonesia as a defense unit (Regulation of the Minister of Defense of the Republic of Indonesia No. 16, 2012).

The government organizes Defense to build and advance capabilities and prevention and prepare the defense system from an early age in the face of threats carried out in a total, integrated, directed, and continuous manner. In-Law No. 3 of 2002 concerning Defense, which includes the National Defense System, the national defense system is a universal system that involves all national resources, citizens, regions, and nations to uphold national sovereignty, territorial integrity, and the safety of the entire nation. From all national and global threats. Therefore, there is a need for development related to the potential development of national Defense as an order for changes in the structure of human resources in terms of Defense.

Human resources are very influential on the management of national Defense in all policy determination, planning, implementation, supervision, and control activities. According to Law no. 3 of 2002, its implementation is divided into three components, namely: main components, spare components, and supporting components that are carried out in an integrated manner with the national defense policy. The regulation and development of the quality of human resources aim to educate improve the quality, skills, abilities, and a sense of nationalism, fighting spirit, work ethic, and national values.

Education is an important part as a component that composes and supports the progress of a nation which is supported by human resources. The progress of a nation and state can be measured by the quality and the existing education system[1]. Education can develop one's talents to an optimal level within the limits of individual nature. Education is also an element that cannot be separated from humans, from birth to old age[2]. The importance of Education is in line with the Preamble to the 1945 Constitution (Pembukaan UUD 1945 RI), which reads:

*"...dan untuk memajukan kesejahteraan umum, mencerdaskan kehidupan bangsa, dan ikut melaksanakan dunia..."*. Indonesia has one of the nation's goals to be achieved, namely the intellectual life of the nation.

In order to realize this goal, there is an equal distribution of Education in Indonesia. Equity in Education is a solution to realize quality education so that it impacts the quality of Indonesian human resources who are competent, characterized, competitive and superior. To contribute to national development, benefit the surrounding environment, and encourage establishing a democratic and modern Indonesian nation based on Pancasila values[3]. From the explanation above, the formulation of this research problem universally is: "How the role of Geospatial Intelligence can help education in Indonesia?". The purpose of this journal is to describe GeoInt supporting Education in Indonesia.

## II. METHODOLOGY

This journal uses a qualitative approach with literature review methods, taken from current cases and references from various sources (such as journals, books, articles and others) then taken a summary of the source that is used as one so that it becomes a reference as a research foundation. This is an overall depiction of the focus topic of the discussion or theme that will be studied from a theoretical and contextual point of view.

## III. RESULT AND DISCUSSION

Education is an effort that is planned by providing guidance and learning for students so that they can grow and develop into knowledgeable, civilized, moral, creative, and responsible human beings. This is stated in Law no. 20 of 2003 concerning the National Education System (Depdiknas, 2003) has emphasized that:

*"Pendidikan nasional berfungsi mengembangkan kemampuan dan membentuk watak serta peradaban bangsa yang bermartabat dalam rangka mencerdaskan kehidupan bangsa, bertujuan untuk berkembangnya potensi peserta didik agar menjadi manusia yang beriman dan bertakwa kepada Tuhan Yang Maha Esa, berakhlak mulia, sehat, berilmu, cakap, kreatif, mandiri, dan menjadi warga negara yang demokratis serta bertanggung jawab."*

However, in real life, various problems of Education in Indonesia experience unresolved obstacles, such as political, economic, and socio-cultural aspects. The problems include the irregularity of the government system related to Education, economic structures and policies that are not yet independent, and the declining sense of nationality, religion, and social sense. Other problems that arise on the education side are about the learning curriculum, competence, and the quality and quantity in the hands of teachers and students. In addition, the occurrence of theft and brawls at the student level is rife. This proves the need for development in the education sector[4].

The equitable distribution of Education in all regions of Indonesia is arguably not evenly distributed. Many big cities in Indonesia already have a quality education that meets standards, excellent teachers, and easy access to the road to school. However, students in remote areas have difficulty commuting to school, some on foot, through forests, or across lakes by raft. These problems are caused by rural areas that are remote and far from urban areas and the capital[5]. The remoteness of the remote areas from the capital causes the monitoring of Education in these areas to be less intensive, so this is one of the causes of Education in rural areas that seem lagging[6].

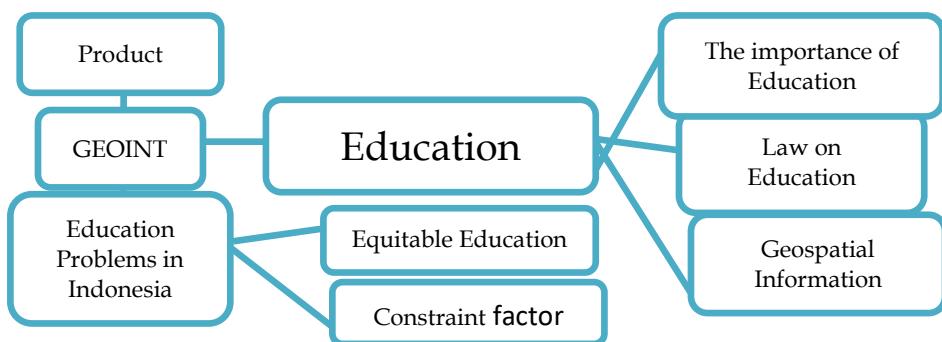
According to[7], several areas in Indonesia are still lagging in terms of Education, namely: the Sukamandang area in Central Kalimantan and the Luwuk District in Central Sulawesi. These two areas are examples of underdeveloped areas that are still lacking in providing educational services to students—for example, starting from the supporting facilities and infrastructure, the lack of teachers, and the minimal Education operational budget. Regarding the fulfillment of teaching staff, stakeholders have tried to fulfill teaching staff in remote areas. However, many teachers are reluctant to be placed in these areas for various reasons. According to[8], the teaching staff is reluctant to teach in remote areas due to the location of schools that are difficult to reach, lack of facilities and entertainment, facilities where teachers live and are far from the center of government.

Intelligence is an organized activity using certain methods to produce products about problems faced from all aspects of life to be submitted to the leadership to make decisions (Regulation of the Minister of Home Affairs Number 16, 2011). The definition of Permendagri is in line with the explanation from[9], who said that intelligence is part of efforts to maintain the existence of the state. Intelligence is needed for the national interest in national security to make policies and decisions in the political or economic, educational, and socio-cultural spheres. According to (National Geospatial-Intelligence Agency, 2006, p.7), there are elements in GeoInt, including Imagery, Imagery Intelligence, and geospatial

information. In collecting data obtained from various sources ranging from IMINT(*Imagery Intelligent*), OSINT (Open Source Intelligent), HUMINT (Human Intelligent), aerial shooting, human geography, and physical geography.

Geospatial intelligence or GeoInt is the analysis of geospatial imagery and information that visually describes geographically referenced physical features and activities on earth. GeoInt will always be related to other sciences such as with computer engineering, in collecting and owning data. GeoInt is also inseparable from Remote Sensing, the science and art of obtaining information (spectral, spatial and temporal) about objects, areas, or phenomena without physical objects and the Geographic Information System, a system for capturing, storing, analyzing and managing data and attributes. run spatially.

GeoInt is a system that can help in educational information systems with a geospatial perspective. This system describes the distribution of Education at the unit, district or city, provincial and national levels, and education levels. Improving the quality of Education in Indonesia is influenced by two factors: first, the concentration of population density in certain areas. Second, accessibility to schools[10]. GeoInt uses distribution maps, indicator maps, and thematic maps with different levels of detailed information depending on the needs of stakeholders. Thus, the GeoInt method can be a solution in planning to improve the quality of Education, allocate facilities and infrastructure, and ensure equal distribution of Education throughout Indonesia.



Source: research result, 2022

#### IV. CONCLUSION

The uneven education system in Indonesia and the lack of supporting facilities and infrastructure make Education in Indonesia far behind other countries. Significant differences between Education in urban and remote areas are visible. The solution to the various problems that have been discussed is to use the GeoInt method. The GeoInt method can help stakeholders develop Education in remote areas, starting from funding providing facilities to educators considering that Indonesia is an Archipelago country consisting of thousands of islands. So it is hoped that Education in Indonesia will produce quality successors for the nation from every region in Indonesia.

#### REFERENCES

- [1] Sujarwo, "PENDIDIKAN DI INDONESIA MEMPRIHATINKAN," *journal.uny.ac.id*.
- [2] E. Nasution, "Problematika Pendidikan di Indonesia," pp. 1-10, 2019, doi: 10.31227/osf.io/u9wg2.
- [3] E. Arditama and P. Lestari, "Jurnal Pendidikan Kewarganegaraan Undiksha Vol. 8 No. 2 (Mei, 2020)," *J. Pendidik. Kewarganegaraan Undika*, vol. 8, no. 2, pp. 157-167, 2020.
- [4] A. Metiadini, *PEMBENTUKAN KARAKTER SISWA SMA DALAM MENDUKUNG SUMBER DAYA MANUSIA PERTAHANAN : STUDI TENTANG PEMBENTUKAN KARAKTER*. 2020.
- [5] A. D. dan Z. Handoyo, "Faktor-faktor Penyebab Pendidikan Tidak Merata di Indonesia," *Pros. Semin. Nas.*, vol. 1, no. 1, pp. 21-24, 2019, [Online]. Available: <https://bimawa.uad.ac.id/wp-content/uploads/Paper-Seminar-Nasional-2.pdf>.
- [6] A. Pratiwi, "Ketidakmerataan Pendidikan di Negeri Indonesia," *kompasiana.com*, 2015. <https://www.kompasiana.com/alyaapratwi/54f5f064a33311d4088b456f/ketidakmerataan-pendidikan-di->

negeri-indonesia.

- [7] Medco Foundation, "Pendidikan di Daerah Tertinggal," *Medco Foundation*. <https://www.medcofoundation.org/pendidikan-di-daerah-tertinggal/>.
- [8] riza D. A.K and P. P. P., "Resiliensi Guru di Sekolah Terpencil," *J. Psikol. Pendidik. dan Perkemb.*, vol. 1, no. 2, pp. 1–6, 2012, [Online]. Available: [http://journal.unair.ac.id/filerPDF/110610017\\_Ringkasan.pdf](http://journal.unair.ac.id/filerPDF/110610017_Ringkasan.pdf).
- [9] D. D. A. R and M. Supriyatno, *Konsep Intelijen Geospasial (GEOINT) Untuk Mendukung Sistem Pertahanan Semesta (SISHANTA)*. Jakarta: CV. Makmur Cahaya Ilmu, 2019.
- [10] K. P. dan Budaya, "Sistem Informasi Pendidikan Berbasis Spasial," p. 56, 2016.