International Journal of Research and Review
Vol.7; Issue: 1; January 2020
Website: www.ijrrjournal.com
Research Paper *E-ISSN: 2349-9788; P-ISSN: 2454-2237*

Analysis Highest and Best Use (HBU) in Optimizing of Empty Land Use in Areas around Kualanamu International Airport Deli Serdang Regency

Nia Lidya Angelina Nainggolan[1], Sukaria Sinulingga[2], Elisabet Siahaan[2]

[1]Postgraduate Students, [2]Postgraduate Lecturer,
Department of Property and Valuation Management at Universitas Sumatera Utara, Indonesia

Corresponding Author: Nia Lidya Angelina Nainggolan

ABSTRACT

Analysis highest and best use (HBU) is one method that can be used in optimizing the utilization of vacant land located in Area Kualanamu International Airport Deli Serdang Regency, Sumatera Utara Province, because there is vacant land that included broad and not yet well developed. The purpose of this study was conducted to identify the need for action is the potential to develop in the area of research, to achieve these targets used analysis tool scoring. At this stage, scoring for each type of land use by using a scale likert and test the feasibility of land use, to achieve this goal used analysis highest and best use. At this stage will be determined alternative types of land use where the most potential to develop and which has the highest value and best use of land in the study area. The results of this study indicate that based analysis highest and best use by physical factors to alternative land use for housing, as warehousing (ware house), and as the hotel is allowed to do, based on legal factors to alternative land use for housing and as warehousing granted, while the use as a hotel is not authorized, based on financial factors to alternative land use for housing meets the four (4) eligibility criteria the best, i.e. NPV, IRR, and Payback Period biggest BCR smallest, based on the highest value is the use of land as a housing based on the highest land value. The value of the land if developed as housing is Rp. 400.792,-/sqm or increase the value of land by 802 percent compared to the market value of vacant land that no research location is Rp. 50.000,-/sqm.

Keywords: Highest and Best Use, Physical Factors, Legal Factors, Financial Factors

INTRODUCTION

Regional development planning is a plan based on community initiatives, namely planning that fully reflects the concrete needs of the community in the process of its preparation, and truly involves the people around the area to be developed. This step requires a change in the old policy that limits and does not recognize the aspirations of the people, and provides political education to the people so that the people are aware of their political role and at the same time trains them to determine and formulate what they have been wanting to actively participate in the development of their residential areas. This does not mean that the role of government will be reduced, but rather it will be even greater, especially in providing guidance to the community. In line with the principles and objectives of such regional development, regional development requires determining the location or area that is appropriate and efficient (Hidayati and Hardjanto, 2003). For this reason, a well-planned plan that involves the participation of the community or the people is needed, or at least accommodates all the aspirations of the people. The results of the formulation are not rigid, but are documents that can always be fought for change, if desired or no longer in line with the interests of the people. However, in cases where the community

does not yet have the ability, the government must take the initiative to facilitate it without giving the impression of dictating. In technical matters, for example, government participation is usually more reliable and reliable than people's participation.

Likewise in the area planning of an area, technically the participation of the government in providing economic considerations is more needed than the considerations of the community. But in the implementation, only then, the participation of the people must be more involved. Regional planning is carried out through survey activities (investigations) that can involve a lot of people's participation, and analysis of areas that involve more government participation but without closing the possibility of popular participation, taking into account various aspects that surround it (Kabul, 2016).

In the development of an area around Kualanamu International Airport, Kab. Deli Serdang, land has a very important role, namely as a container that accommodates various complex airport area activities. The existence of land becomes a limited resource, because the amount is fixed but the need for land continues to increase along with population growth. Land as an element of space and the main capital of development is a basic necessity that concerns the lives of many people and a vehicle for the organization of human activities. Therefore, in the development of land has various dimensions, namely physical, economic, socio-cultural, political and defense and security. Thus, land has a strategic role for development, and therefore the management must be able to guarantee the implementation of environmentally sustainable development. Characterized by a variety of specific characteristics, although in the recent times the role of land as an economic commodity has increasingly become a function of the laws of demand and supply, land will always remain difficult to assimilate with other economic objects in economics. Optimization of land use is not only determined by physical changes, but also influenced by the use of land around the plot of land that is located, the development of social and cultural values, economic elements, and development policies outlined and attached to it. In essence, the emergence of land use problems is caused by the need for land resources that continue to increase, in line with increased development, while the potential and available land area is limited, and most have been controlled and / or owned by people or legal entities with various legal relationship form. The increase in land requirements is not only due to an increase in population and activities, but also as a consequence of successful development that demands a more perfect quality of life. Thus, land use must be carried out optimally so as to provide maximum benefits for all who are interested in the area around the airport.

The reason for choosing the location is because the growth of development that occurred in the area is quite rapid, but the development that occurred seemed less well planned. This is evidenced by the existence of abandoned buildings, where the existence of untapped land in accordance with its function as such can reduce the image of an area. This means that the land has a negative impact on the aesthetics of the region.

According to Prawoto (2012:91), a market analysis is carried out to determine whether there is adequate market support for existing properties based on certain proposed uses in a certain place, in the future. Market analysis is also the basis for determining the highest and best use.

LITERATURE REVIEW

2.1 Definition of Optimization

Optimization according to the Big Indonesian Dictionary is the highest, best, perfect, best, most profitable. Optimizing means making perfect, making the highest, making maximum. Optimization means optimization (Stephen, 2003).

Optimization is the process of finding the best solution, not always the

highest profit that can be achieved if the optimization goal is to maximize profits, or it is not always the smallest cost that can be reduced if the optimization goal is to minimize costs.

2.2 Definition and Use of Land

Land is a physical environment that includes land climate topography, hydrology, and vegetation. Where the basic physical conditions can affect the potential use. This includes a variety of human activities, both past and present and future. Land as one of the most important natural resources for humans, given the needs of the community both to carry out their lives and for the needs of social, economic and socio-cultural life activities. Land is a type of natural resource that cannot be renewed because of its existence as a valuable condition.

According to Ritohardoyo (2013), land use is human interaction and the environment, where the focus of the environment is land, while the attitudes and human policy responses to land will determine the steps of its activities, these activities are human activities on the surface of the earth to meet their needs.

2.3 Land Use Patterns

According to the Spatial Planning Law No. 26 of 2007, land use patterns are defined as a form of spatial use that describes the size, function, and character of human activities, and / or natural activities in it reflected in the form of relationships between various aspects of natural resources, human resources, social, cultural, and environmental aesthetics of spatial dimensions and time that is in a whole unity as a whole and has quality to form space. According to Prayudho (2019), the meaning of a pattern is the uniqueness of the distribution of certain symptoms in a space or region, where the pattern can form a pattern following the path, following the flow of a river and so forth.

Land suitability is essentially a description of the level of land suitability for a particular land use. Land quality that determines the level of land suitability including land water availability, nutrient availability, acidity, erosion resistance, land characteristics, climate conditions, and the condition of plant roots.

2.4 Definition of Highest and Best Use

According to Prawoto (2012) there are two groups of highest and best use (HBU) which are known in the practice of assessment, namely:

a.Highest and Best Use on Vacant Land

The highest and best use of vacant land is to assume that land is vacant or can be made empty through demolition of buildings, taking into account the relationship between current uses and all their potential uses.

b.Highest and Best Use on Land That Has Been Developed

The highest and best use of a land that has been developed is related to the use that should exist on the land in line with its development. Land that has been developed, is valued based on the highest and best use as vacant land and is ready to be built to be the best use economically. The highest and best use is influenced by how much development is there to add or contribute to the value of the property.

2.5 Analysis of Feasibility Test for Land Use

To determine the highest and best use of a vacant plot, several testing steps must be carried out. The testing process involves 4 criteria with each requirement that must be met based on the Indonesian Assessment Standards. These criteria are as follows (Siregar, 2017):

a.Legally Permitted
b.Physically Possible
c.Financially Feasible
d.Maximum Production

RESEARCH METHODS

3.1 Research Types and Concepts

This type of research is a quantitative descriptive study in which data obtained from a sample of the study population were analyzed in accordance with the statistical methods used and then interpreted. The data that has been collected is analyzed so that it can be concluded that

the formulated hypothesis is proven or not (Sugiyono, 2012).

This study uses the concept of highest and best use (HBU) to determine what type of property is most appropriate for the object of research by analyzing based on physical aspects, legal aspects, and financial aspects and considers maximum productivity.

3.2 Research Location and Time

The location of this study is in 4 (four) districts in a radius of 7 km from Kualanamu International Airport, Deli Serdang Regency with an area of ± 2 ha, namely:

a.Jalan Besar Rugpet Village, Pantai Labu Pekan Village, Pantai Labu District.
b.Jalan Setiabudi Hamlet, Penara Kebun Village, Tanjung Morawa District.
c.Tuladenggi Banyan Road, Sidodadi Ramunia Village, Beringin District.
d.Jalan Rumbia, Sena Village, Batang Kuis District.

The owner of the vacant land is the community. This research is planned to take ± 10 (ten) months starting from February 2019 until November 2019.

3.3 Data Analysis Techniques

Highest and Best Use (HBU) analysis

3.3.1 Analysis of Physical Aspects

After finding various alternative uses of land use, an analysis of the physical aspects of each of the alternative uses is then performed.

Some things that are considered by researchers in applying the physical aspects of the analysis of each alternative land use are to:

a.Location and Ease of Access
b.Size and Form
c.Land Width Facing Roads and Dimensions
d.Availability and Capacity of Utilities
e.Topography

3.3.2 Analysis of Legal Aspects

In applying the analysis of legal aspects, the researcher determines what uses are permitted by current regulations, what uses are permitted when changes in designation are given, and what uses are prohibited by restrictions on land, such as restrictions by individuals, due to agreements, or leases long-term.

Some things that researchers consider in the application of the analysis of legal aspects to each alternative land use are:

a.The designation is the designation and spatial planning.
b.Building regulations are the basic coefficients of buildings.
and building floor coefficient, green area coefficient, building border lines.

3.3.3 Analysis of Financial Aspects

To analyze the financial aspects of each alternative land use supported by market studies and also the assumptions used in financial analysis based on the results of the location analysis, demand and supply, and risk analysis.

Then the investment feasibility assessment is carried out on each alternative development using capital budgeting techniques, while the techniques in capital budgeting are the net present value (NPV) method, the internal rate of return (IRR) method, the payback period method, the benefit cost ratio method (B/C Ratio), maximum productivity.

RESULT

4.1 Result of Physical Aspects Analysis

Table 1. Result of Physical Aspects Analysis of Land

Soil Physical Aspects	Use as Housing	Use as Warehouse	Use as a Business Hotel
Size	Allow it	Allow it	Allow it
Shape and Use	Allow it	Allow it	Allow it
Frontage	Allow it	Allow it	Allow it
Ease of Access	Allow it	Allow it	Allow it
Utility Availability	Allow it	Allow it	Allow it
Location in the Market Area	Allow it	Allow it	Allow it
Topography	Allow it	Allow it	Allow it

Source: Data Processing Results, 2019

Based on the description of Table 1 above, for physical aspects namely size, shape and usability, frontage, ease of access, availability of utilities, location in the market area, and topography can allow land to be developed as housing or warehousing and business hotels. And the following data were obtained from data from the Central Statistics Agency (BPS) in Deli Serdang Regency in 2018.

4.2 Result of Legal Aspects Analysis

The legal aspects of land are only alternative land uses as superior housing and alternative land uses as warehousing, while alternative land uses as hotels cannot be allowed in meeting the criteria of the legal aspects. Based on the Aviation Operations Safety Area Regulations (KKOP) and Kualanamu International Airport Authority, which allows high-rise buildings in a radius of 7 KM from the central point of Kualanamu International Airport, and is strengthened by Directorate General of Civil Aviation Regulation No. KP 197 of 2017 concerning Technical Operational Guidelines for Civil Aviation Safety Regulations Section 139-08. So that business hotels that are identical to high-rise are not permitted to be built, therefore alternative land use as a hotel cannot be continued in the next highest and best use (HBU) test.

4.3 Result of Financial Aspects Analysis

Each financial analysis of land development in the form of superior housing and ware house shows operational feasibility, so to determine the alternative chosen highest and best use is to look at each of the eligibility criteria, namely the largest NPV, IRR and BCR, while the payback period is the highest, the smallest. The following is a comparison of the eligibility criteria of each alternative:

Table 2 Comparison of Feasibility of Alternative Development

No	Financial Indicator	Use of Property		
		Complex/ Housing		Ware House
1.	Net Present Value (NPV)	Rp 8.015.840.622	>	Rp. 6.383.763.712
2.	Internal Rate Of Return (IRR)	18,14%	>	7,04%
3.	Payback Period (PP)	0,73	<	0,78
4.	Benefit Cost Ratio (BCR)	1,08	>	0,88

Source: Data Processing Results, 2019

From the research results obtained that the NPV of land use as housing is higher at Rp. 8,015,840,622. while the NPV for land use as Warehousing is lower, that is, Rp. 6,383,763,712. Based on the internal rate of return (IRR), land use as Housing is higher, which is 18.14% compared to IRR for land use as warehousing, which is lower that is 7.04%. Based on the payback period (PP), land use as housing has a faster rate of return, which is 0.73 or six months and four days. while the NPV of land use as a Warehousing takes longer, the rate of return is 0.78 or six months 15 days. Based on the benefit cost ratio (BCR), land use as housing is higher, which is 1.08 more feasible than land use as warehousing, which is 0.88, less feasible for investment. So from the four indicators, it is obtained that financially feasible to do investment is the use of land as housing.

CONCLUSION AND SUGGESTION

CONCLUSION

Based on the results of research conducted on vacant land located in a radius of 7 KM from Kualanamu International Airport, Deli Serdang Regency, Sumatra Utara Province, the following conclusions are obtained:

1.Based on the results of an analysis of various alternative land uses that are optimal and beneficial to respondents in the environment *around* Kualanamu International Airport, Deli Serdang Regency, three alternative land uses are

obtained as housing, as warehouses, and as business hotels.

2.Based on the analysis of the physical aspects of the three alternative land uses, the results are obtained that the use as housing, as warehousing (ware house), and as a hotel is preferred to do.

3.Based on an analysis of the legal aspects that use as housing and warehousing meets the requirements, while use as a hotel is not permitted in the legal aspect because it is not physically or financially feasible.

4.Based on an analysis of the financial aspects of alternative land uses as Housing meet the 4 (four) best eligibility criteria, namely net present value (NPV), internal rate of return (IRR), the biggest benefit cost ratio (BCR) and payback period (PP)) smallest.

5.Based on the above indicators, the results show that the use of land as community housing in Deli Serdang Regency is the highest and best use (HBU) of land assets in a radius of 7 KM from Kualanamu International Airport, Deli Serdang Regency.

SUGGESTION

1.Highest and best use (HBU) analysis is a method used to assess vacant land in a radius of 7 KM from Kualanamu International Airport, Deli Serdang Regency, and can be used again in the future as a research or assessment model, but data used must be renewed in accordance with existing conditions in the future, because the value is influenced by market conditions that can change at any time.

2.In every implementation of development activities to complete all the needs for infrastructure and facilities, if in the future this research is carried out it is necessary to review the environmental aspects.

REFERENCES

1. Hidayati and Hardjanto. 2003. *Konsep Dasar Penilaian Properti*. BPFE: Yogyakarta.
2. Kabul, Ali MS. 2016. *Pengembangan Wilayah, Teori dan Aplikasi*. Edisi Pertama. Penerbit: Kencana: Jakarta.
3. Prawoto, Agus. 2012. *Teori Dan Praktek Penilaian Properti*. Yogyakarta: BPFE Universitas Gajah Mada.
4. Prayudho, B. J. 2019. *Teori Lokasi*. http://prayudho.wordpress.com/2009/11/05/teori-lokasi/feed/.
5. Ritohardoyo, Su. 2013. *Penggunaan dan Tata Guna Lahan*. Penerbit Ombak. Yogyakarta.
6. Siregar, Panangian. 2017. *Analisis Highest and Best Use pada Lahan Eks-Terminal Bus Takengon Kabupaten Aceh Tengah*. Tesis, Sekolah Pasca Sarjana USU Medan.
7. Stephen, F. Fanning. 2003. *Market Analysis for Real Estate*: *Concepts and Applications in Valuati Concepts and Applications in Valuation and Highest and Best Use.* Chicago: Appraisal Institute.
8. Sugiyono. 2012. *Metode Penelitian*.

How to cite this article: Nainggolan NLA, Sinulingga S, Siahaan E. Analysis highest and best use (HBU) in optimizing of empty land use in areas around Kualanamu international airport Deli Serdang Regency. International Journal of Research and Review. 2020; 7(1): 194-199.

******