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Optimization Analysis of PD. Development Empty Land Medan City Government in the Zoo Area

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Abstract: *This study aims to determine the optimal utilization of land by analyzing Highest and Best Use (HBU) on several alternative land use choices. Of the total ± 15 ha of vacant land in Medan Zoo, which is the object of research according to the principles of Highest and Best Use (HBU) and the purpose of use according to the market survey of this study is an area of ± 1 (One) Ha located in the West Medan Zoo area. The results of the HBU analysis show that the utilization of ± 1 (One) Ha of vacant land belongs to PD. The construction of the Medan City Government located in the Medan Zoo area as the Outbound Arena, Arena Camping Ground and mixed use between Arena Outbound and Arena Camping Ground, are in accordance with the rules in the concept of The Highest and Best Use (HBU). Of the three alternative use options, that the alternative uses mix as an Outbound Arena, Arena Camping Ground is the most feasible use based on Capital Budgeting analysis. Calculations based on the payback period method indicate that the return period of investment is 4.9 months for use as an Outbound Arena and Arena Camping Ground, resulting in a positive Net Present Value (NPV) with a value of Rp.9,079,633,858, or Nine Billion Seventy Nine Million Six Hundred Thirty Three Thousand Eight Hundred Fifty Eight Rupiahs, the calculation of the Profitability Index (PI) yields a value of more than 6.18, which means that use as an Outbound Arena and Arena Camping Ground can be accepted because of the PI value > 1. Based on the highest and best use study, the owner should land in this case the Medan City Government can include the results of this study in the priority plan for the development of the Medan Zoo, so that the results of the research can be realized.*

Keywords: *Highest and Best Use (HBU), Net Present Value (NPV), Profitability Index (PI)*

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I. Introduction

Zoos are one of the recreational places that are very educational for the community, especially for families who have children. Ragunan Zoo is the first zoo in Indonesia. The zoo was founded in 1864 under the name Planten En Dierentuin which means "Plants and Zoos. It is located on 10 hectares of land in the Cikini area, Menteng, Central Jakarta. Zoos are recreation areas that are in great demand by the community, both the upper class to the lower classes, in general, almost every region in Indonesia has zoos, especially in the big cities of Indonesia.The zoo assets are managed by the government, but along with its development many zoos are managed by the private sector, for example the zoo in Pematang Siantar, Bali and Gembira Loka in Yogyakarta.

Zoos have enormous tourism potential, both in terms of economics and education. If managed properly, it is able to provide enormous benefits, as a place of recreation that is able to eliminate boredom and fatigue in routines that live in urban areas, presenting a natural atmosphere and zoo environment that also has educative and conservative functions. Based on the press release data from the Ministry of Tourism and the Creative Economy of the Republic of Indonesia on January 26, 2016, the zoo is included as 10 (ten) favorite tourist destinations for families in Indonesia.

Medan Zoo was once on Jalan Brigjen Katamso, Kampung Baru Village, Medan Maimun District, then moved to Simalingkar B Village, precisely at Jalan Pintu Air IV and was inaugurated by Mayor of Medan Abdillah on April 14, 2005. Medan Zoo is a zoo with area of 30 (thirty) Ha. From this area, only around ± 15 hectares are used, both for captivity or cages and for other facilities, such as a place to sell or for a playground.

Surabaya Zoo in East Java with an area of 15 hectares has a collection of nearly 200 species of animals with a total of 3500 animals with a total number of visits per year in 2014 is 1,103,739 people, as well as Gembira Loka Zoo in Yogyakarta with an area of 20 hectares has 311 the type of animal species with a total of 4000 animals has a number of visits per year in 2014 were 1,796,935 people. While the Medan Zoo with an area

of 30 (thirty) Ha only produces 362,738 people per year in 2014 with a growth rate of visits of 18 (eighteen) percent.

From the results of observations in the field that Medan Zoo still has the potential to be developed to the maximum, through optimizing existing land to be able to become a quality zoo and later able to attract more visitors. The following pictures are the real conditions of the land in the Medan Zoo area.

From the use alternatives that are of concern and the choice of respondents, the analysis of the best use must still be done in conducting a market survey.

Market studies (market survey) and property investment feasibility studies in addition to considering the opinions of devoloper parties, property consultants, relevant government parties (Novak, 1996) also must pay attention to the choice of the user, what the user in this study meant was visitors from Medan Zoo , the opinion of each party is very necessary to dig deeper into what alternative uses of property are possible to develop on the vacant land in the Medan Zoo area.

In general, this research is a financial modeling study using the principle of Highest and Best Use. The research method used in this study is survey and interview methods. According to Sugiyono (2012) survey methods are used to obtain data from certain places (not artificial), by distributing questionnaires and structured interviews. Alternative land use is obtained based on the results of questionnaires and interviews with stakeholders or stakeholders who will come in direct contact with the facilities to be built at that location. Furthermore, the alternative was chosen based on the most choices to be used as three alternative land uses to be analyzed later.

This land use analysis can be done using the highest and best use method or better known as HBU. By calculating cash flow, it can be seen which alternative use is the most optimal, namely by comparing the value of Net Present Value (NPV), Internal Rate of Return (IRR) and Pay Back Period (PBP) and Profitabillity Index for 3 (three) choice of utilization of defined property.

II. Theoretical Review

2.1 Highest and Best Use

There are many definitions of the Highest and Best Use, in the assessment literature, according to Grissom (1983) quoting from The Society of Residential, the highest and best definition is a concept of valuation that can be applied to land or buildings that are usually interpreted as land use that will maximize owner's wealth through the use of the most profitable land. The concept of Highest and Best Use is also applied to a property that is built that has the remaining economic life, in this context the highest and best use can refer to the use of the existing property that is most beneficial for the owner.

Hargreaves (1990) distinguishes between the highest and best use definitions according to classical and modern concepts. The classic concept is based on the free market approach proposed by economist Adam Smith that the highest and best use is a use that is used and planned for future use of a land that produces the highest value. Whereas according to the modern concept based on the definition of The Appraisal of Real Estate the highest and best use is the most rational use and possibly those that support the highest present value at the date of assessment, or the use of several rational and legal uses, physically possible, supported by financial feasibility and producing the highest land value.

The Highest and Best Use criteria are as follows:

a. Physically Possible

The size of the soil shape, area, height and contour of the land affect the usability that can be built on it. For example, disproportionate or regular land forms will cause greater costs in building them than land that has a proportional or regular form.

b. Legally Permitted

Legal provisions regarding property development such as Building Base Coefficient, Building Floor Coefficient, Green Base Coefficient, Road boundary conditions, zoning, supervision of assets that have historical values and environmental regulations can affect the highest potential use and the best of a property.

c. Financially Feasible

After passing the two conditions above, then the possible uses are needed to be analyzed further in generating income, the rate of return (return) whether equal to or greater than operating costs. All uses that are expected to provide a positive return are considered financially feasible.

d. Produce Maximum Profit

After analyzing the financial feasibility of each potential use, the utility that produces the highest price or value is the highest and best use.

2.2 Use of Highest and Best Use

As one of the tools in the property sector investment, the analysis of the highest and best use or HBU is widely used today. The definition of HBU which is commonly used in the United States is the best and most legal use of a vacant land or an improved property, physically possible, has local article absorption, financial feasibility and this produce the highest value. The four criteria of HBU must relate to legally possibility, financial possibility, maximum profit (Appraisal Institute, 1993).

III. Materials and Method

3.1 Types and Nature of Research

This research is in the form of asset optimization in PD. The construction of the city of Medan with the object of research, namely the Medan Zoo, uses the principle of the highest and best assessment which aims to find out the best use and which can produce the highest value of the property under study, namely vacant land at the Medan Zoo.

This research is quantitative research, where the observed indicators are relatively fixed, concrete, observable, measurable and causal symptoms. The data collected was analyzed using statistics and econometrics so that it could be concluded that the formulated hypothesis was proven or not (Sugiyono, 2012).

The statistics used are inference statistics that learn how to draw conclusions about the entire population based on data taken in a sample. While econometrics is defined as quantitative analysis of economic phenomena in real terms based on the development of theories and observations that are associated with inference methods (Suliyanto, 2011).

3.2 Location and Time of Research

This research was carried out in the Medan Zoo area located in Simalingkar-B Village, Medan Tuntungan Subdistrict, where the land that was the object of research was mentioned in Figure 1.6 and Figure 1.7 with a land area of ± 10,000 M^2. This research was conducted in April 2016 until June 2016.

3.3 Population and Samples

According to Juliansyah (2011) the population is all elements or members of a region that is the target of research or is the overall object of the research then draw conclusions. The population used in this research is stakeholders or stakeholders in the Medan City Government, property business people and visitors to the Medan Zoo tourist area.

The sample is a number of members selected from the Juliansyah (2011) population. The sampling technique is to conduct questionnaires and structured interviews. The method used in determining the number of samples for samples from the Medan City Government and among property actors in the vicinity of the Medan Zoo area was by interviewing all the populations that were the target of the study, namely 9 (Nine). Obtained the number of samples needed for the market survey is 400 people.

3.4 Steps for Data Analysis

The steps of data analysis that will be carried out are:

1. Establish alternative commercial properties and determine the value of vacant land.
2. Analyzing the physical aspects, which are reviewed from several things, namely the shape and size of the land, public utilities, accessibility and conclusions of physical aspects.
3. Analyzing from the legal aspect based on zoning or zoning regulations and the City Spatial Planning or RTRWK that applies to the research object land.
4. Analyzing the financial aspects.
5. Calculate the maximum productivity of the land.
6. Comparing the value of land per M2 for vacant land and land with commercial property above.

IV. Results and Discussion

a. Analysis of Estimated Land Market Prices without Development

Determination of the value of vacant land in this study is to refer to market prices for land with the same average area and on the same topography by considering the report from the Head of Development Section of Simaskar-B Village, Mr. Marasutan Siregar, that the transaction price on land area is broad and the same topography as the object is Rp.250,000 (two hundred fifty thousand rupiahs) per square meter, this is reinforced based on the assessment report from the Office of Public Appraisal Services (KJPP) Doli Siregar and Rekan

which was held on January 20, 2016 that for land in an area adjacent to the object of assessment with the area and topography with the same indication of the value of Rp.250,000 (two hundred fifty thousand rupiahs) per square meter. Based on the sources of information on this value, it can be assumed that the indication of the market value of land per square meter in the valuation object is Rp.250,000 (two hundred fifty thousand rupiahs) per square meter.

b. Analysis of Alternative Utilization Determination

From the 3 (three) alternatives that have been concluded above, it must also consider legal aspects, namely zoning and the regulations of the Medan City Government regarding spatial and building regulations. In the Medan City Regulation Number 2 of 2015 concerning Spatial Detail Plans (RDTR) and Medan City Zoning Regulations 2015 to 2035 Medan Tuntungan District is set in the Green Open Space Zone (RTH), the designation of spatial pattern areas 5 (five), refers to on the matrix of spatial patterns in the Medan City RDTR In 2015-2035 the alternative choice of respondents in point 2 (two) is that Water Park is prohibited from being established in the RTH-5 area (RDTR zoning regulations attached), based on these alternatives Further requirements for the Highest and Best Use analysis are carried out, so that further analysis in the Highest and Best Use analysis sets out alternative land uses.

c. Physical Analysis

Based on the results of research in the field, Medan Zoo land with an area of 30 (thirty) Ha, the control of the land has not been put together into one proof of ownership. The form of ownership of the land in Medan Zoo still uses the last ownership identity when the land was bought by the Medan City Government, where ownership data is confidential so there is no information on the number of proof of ownership and the size of the letter.

From the results of research in the field, the land designated as the object of research is shaped like a triangle with an equal contour of land ± 80 (eighty) percent and ± 20 (twenty) percent in the form of hills with an average height of 4 (four) meters.

In the land area, the object of research has been available public utilities in the form of electricity networks and clean water supply and means of transportation within the city.

d. Legal Analysis

Based on the Medan City Spatial Planning and Area for 2008-2028, the Medan Zoo is located in Medan Tuntungan Subdistrict as a Green Open Space and as a tourist area with a category of "B" category utilization, namely conditional allowable space utilization in zoning regulations. The zoning regulation in question is derived from the Spatial and Regional Plan, namely the Spatial Detail Plan and the Medan City Zoning Regulations for 2015-2035.

In the Medan City Spatial Planning and Zoning Regulations, tourism businesses that can be run within the scope of the Medan Zoo area are as Camping Ground, Outbound Arena.

e. Outbound Arena Reception

Sources that are income receipts for alternative uses of land use as an outbound arena are as follows:
1. Flying Fox game in 2 units;
2. Game of Water Ball in 15 units;
3. Trampolling games for 10 units;
4. High Rope games of 2 units;
5. ATV games totaling 20 units;
6. Game Arena Paint Ball 1 unit for 30 people (Pax)

Receipts from the outbound game vehicles provided above, with assumptions and rates according to Land Use Financial Analysis as an Outbound Arena on the "a" sub topic point of the Assumption Index with an occupancy growth rate of 10% (ten percent) are the results of the comparison product growth rate.

V. Conclusion and Suggestion

Conclusion

Based on the analysis that has been carried out on the use of empty land on the West side of Medan Zoo which is located at Simalingkar-B Village, Medan Tuntungan District, Medan City, the author concludes as follows:

a. From the results of the respondents' choice of land use determined for analysis after going through a physical analysis test and legal analysis is as follows:
1. Outbound Arena;
2. Arena Camping Ground; and

3. Mixed use as Outbound Arena and Camping Ground.

b. Based on the Highest and Best Use test principles, the use of land use that has maximum feasibility is a mixed use between Outbound and Camping Ground Arena with a Net Present Value (NPV) of Rp. 9,079,633,858, or Nine Billion Seventy Nine Million Six Hundred Thirty Three Thousand Eight Hundred Fifty Eight Rupiahs, with an Internal Rate Return (IRR) of 42.2%, Profitability Index (PI) 6.18 and payback period (PP) 4 years 9 months where maximum productivity increases land value from Rp. 250,000 / M2 becomes Rp. 876,693, - / M2.

Suggestion

a. Medan City Government in this case PD. Development of Medan City as the manager of Medan Zoo should use this research or use the development concept using Highest and Best Use Analysis so that it is able to know the market's desires, while paying attention to environmental studies if implemented later.

b. For Academics and Practitioners, the Highest and Best Use Analysis is a complex analysis, the availability of market data and other supporting data that is accurate will improve and sharpen the depth of analysis.

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