Sustainable Management of Natural Tourism: Effect of Government Expenditure, Income per Capita and Number of Visits to Conservation Forest in Jambi Province

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Abstract

Influence of Government Expenditure, Income per Capita and Number of Visits to Conservation Forest in Jambi Province 2002-2016. The purpose of this research are: 1) to analyze the benefit cost of conservation forest management in Jambi Province; 2) to analyze the effect of number of domestic visits (X1), number of overseas visits (X2), per Capita income of Jambi Province (X3), per Capita income abroad (Japan, South Korea, Netherlands, UK, Germany, USA) (X4), and government expenditure (X5) in total to Non-Tax State Revenues (NTSR) of conservation forest in Jambi Province (Y); 3) to analyze the effect of number of domestic visits (X1), number of overseas visits (X2), per capita income of Jambi Province (X3), per capita income abroad (Japan, South Korea, Netherlands, UK, Germany, USA) (X4), and government expenditure (X5) individually on Non-Tax State Revenue (NTSR) of conservation forest in Jambi Province (Y). Data analysis was performed using benefit cost ratio (BCR) analysis, and multiple linear regression test. The benefit cost ratio analysis is an investment feasibility assessment. If BCR ≥ 1, then the project is feasible, and vice versa.The results of the calculation of BCR all get a value of <1, so the project concluded it is not feasible, because conservation forest management is not to be taken material profit, but more towards environmental services in this case precisely priceless. Partially (individual) only the variables X1, X2, X3 that affect Y, while X4 and X5 have no effect.
Keywords: visits, per capita income, government expenditure, reception, conservation

Introduction

Development is carried out by government and society. Carried out by the general government that is infrastructure, i.e. physical buildings or institutions that have essential functions as an opening opportunity and support activities of production, logistics and marketing of goods and services as well as other activities in the economic, socio-cultural, political and security defense. While the development carried out by the community is generally directly producing, or directly produce goods and services to meet consumer demand, both individuals, households and industries (Muljana, 2001: 1)

In addition to building physical infrastructure, the government also builds a non-physical infrastructure called institutional infrastructure. In non-physical infrastructure, among others, include the determination of various policies, both of general nature, such as monetary policy or a special nature, such as trade policy or in the field of employment. These policies are pursued in order to enable the achievement of various objectives. For example, in order for the inflation rate to be controlled, or that investors are encouraged to make investments, or for employees to earn a reasonable income and more adequate level of prosperity. As a whole various policies are taken so that the state and the people in general are getting closer to the situation as the purpose of development. Furthermore, the government also conducts programs of improvement in other fields, such as improvements in the field of human resources quality, poverty alleviation, and conservation of natural resources and environmental functions (Muljana, 2001: 2).

One form of implementation of conservation policy of natural resources and environment that is done by central government is forestry development program. Forest is one of natural resources that have high economic, ecological and social value. Forests also function as the lungs of the world and the life-support systems of the royalties must be maintained and sustained with proper forestry

development (Hajawa, 2005, p. 59). Based on Forestry Law Number 41 Year 1999, the division of forest in Indonesia based on its function is conservation forest, protection forest and production forest. Conservation forest is a forest with certain characteristics, which has the main function of plant and animal diversity and its ecosystem. Protected forests are forest areas that have the basic function of protecting life-support systems to regulate water systems, prevent floods, control erosion, prevent sea water intrusion, and maintain soil fertility. Production forest is a forest area that has the main function of producing forest products. Production forests consist of fixed production forests, limited production forests, and convertible production forests.

From research conducted by Kartodihardjo and Supriono (2000: 11) it is known that there is a tendency for the community to convert the forest into agriculture, plantation and farm. In relation to this phenomenon, the central government provides gifts to local governments that have conservation forest areas with the aim of preserving forests and empowering communities around forests through various programs and projects that are more short-term development, which can improve the welfare communities surrounding forests, thus reducing their tendency to destroy forests. So here government spending is expected to preserve the concession area and improve the welfare of the community in the forest conservation area.

Forestry sector funds from the state budget allocated by the Central Government to UPT Forestry and Local Government of Jambi Province are aimed at conservation forest conservation. the funds were given to the Jambi Provincial Forestry Ministry to be managed. As stated above, that the main purpose of this funding is to preserve the forest area, but from the management of conservation forest is generated Non-Tax State Revenue (NTSR). On the other hand, the poverty suffered by the community, often has a negative impact on the conservation forest utilization to meet the needs of life. This causes poverty to threaten forest sustainability.

Based on the above background, we examine the effect of government spending, per capita income and number of visits to conservation forests in Jambi Province in 2002-2016, with the following problem: 1) how does the benefit cost of conservation forest management calculated in Jambi Province?; 2) how influenced by number of domestic visits, number of foreign visits, per capita income of Jambi Province, per capita income from abroad (Japan, South Korea, Netherlands, UK, Germany, USA Series), and overall government expenditure to the Non-Tax State Income (NTSR) of conservation forest in Jambi Province? 3) how is the influence of the number of domestic visits, the number of foreign visits, the income per capita of Jambi Province, the per capita income of foreign countries (Japan, South Korea, Netherlands, UK, Germany, USA Serial), and individual government expenditure to Non-Tax State Revenues (NTSR) of conservation forest in Jambi Province?

Methods

This research uses secondary data analysis method and observation method. The secondary data analysis method is used in order to know the influence of the number of domestic visits, the number of foreign visits, the per capita income of Jambi Province, the per capita income abroad (Japan, South Korea, Netherlands, UK, Germany, USA) government as a whole and individual against Non-Tax State Revenues (NTSR) of conservation forest in Jambi Province. Sources of data used are data collected and managed by BPS Jambi Province, year 2002-2016.

To know the comparison between all benefit value to all value of sacrifice (cost) from financing of conservation forest area conducted by central government to Jambi Province conducted analysis of Benefit Cost Ratio.

Formula:

$$BCR = \frac{NTSR}{\text{Forestry Capital Expenditures}}$$

Note:

BCR = comparison or ratio between the cost and benefits

If :

- If BCR ≥ 1, then it is said that the benefits of the project are greater than the sacrifices expended, so the project is acceptable or feasible.
- Conversely, if BCR <1, it is said that the benefit of the project is less than the sacrifice or the project is not feasible.

To know the effect of the number of domestic visits, the number of foreign visits, the per capita income of Jambi Province, the per capita income of foreign countries (Japan, South Korea, the Netherlands, the United Kingdom, Germany, the United States), and the capital expenditures of forestry in total against the conservation forest NTSR, used multiple linear regression analysis method.

Formula (Sugiyono, 2008, p. 277):

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + e$$

Information:

a   = constant

$b_1 - b_3$ = regression coefficient

e   = error

X_1 = number of domestic visits

X_2 = number of foreign visits

X_3 = income per capita of Jambi Province

X_3 = Foreign Income per Capita

X_5 = Government Spending

Y   = NTSR conservation forest

Testing is done by using F test, with the following provisions:

- If the pvalue ≤ α (0.10) means the overall number of domestic visits, the number of foreign visits, the per capita income of Jambi Province, the per capita income of foreign countries, and the capital expenditure on the non-tax revenues (NTSR) conservation forest in Jambi Province.
- If pvalue> α (0.10) means the overwhelming number of domestic visits, the number of foreign visits, the per capita income of Jambi Province, the per capita income of foreign countries, and the non-taxable government capital expenditure (non-tax revenues) conservation forest in Jambi Province.

To facilitate the analysis, use the e-Views program tool.

Results

Benefit Cost Analysis

Benefit Cost Ratio is one of the methods of investment feasibility. Basically the calculation of this method of investment feasibility is more emphasis on the benefits and sacrifices (cost) an investment that can be a business or project. In general, the type of investment that is often used is government projects where the type of benefit is a direct benefit, that is the benefits felt directly to many people.

In this case if BCR ≥ 1, then it is said that the benefits of the project is greater than the sacrifices expended, so that the project can be accepted or feasible. Conversely if BCR <1 then the project is not feasible

Based on the results of BCR analysis in Table 1 it can be seen that the ratio of BCR produced all <1 so that based on the feasibility of project financing, the project is not feasible. In this case, however, the conservation forest management project is managed not to be tangibly benefited in the form of forest products such as timber and other forest products such as rattan, resin, etc., but rather towards

environmental services in this case precisely priceless, so that the maintenance of conservation area management is still done.

Based on the calculations performed, the results obtained benefit cost analysis as follows.

Table 1. Benefit Cost Analysis of Conservation Forest Management in Jambi Province

Year	NTSR (Non-Tax Revenue)	Government Expenditure	B/C *Ratio*
2002	32.184.500	5.422.400.370,00	0,005935
2003	32.763.200	7.083.100.394,00	0,004626
2004	25.296.000	10.061.370.497,60	0,002514
2005	36.617.000	12.422.358.828,80	0,002948
2006	32.723.000	6.845.664.185,00	0,004780
2007	38.780.000	8.752.884.112,20	0,004431
2008	38.458.200	8.497.252.345,60	0,004526
2009	30.351.075	9.057.849.957,40	0,003351
2010	36.134.700	11.845.448.109,00	0,003051
2011	42.631.040	20.308.433.499,40	0,002099
2012	70.837.615	23.779.625.163,40	0,002979
2013	72.481.660	27.627.973.317,40	0,002623
2014	186.730.679	21.389.993.885,00	0,008730
2015	101.686.500	23.737.121.346,20	0,004284
2016	177.092.000	19.992.306.558,40	0,008858

Multiple Linear Regression Analysis

Therefore independent variable more than one, then we used approach multiple regression, in order to view the influence of independent variable to dependent variable.

This analysis was conducted to find out the effect of the number of domestic visits, the number of foreign visits, the per capita income of Jambi Province, the per capita income of foreign countries (Japan, South Korea, Netherlands, UK, Germany, USA), and shopping - the overall order of Non-Tax State Revenues (NTSR) of conservation forest in Jambi Province.

From the analysis conducted using program eviews version 8 obtained the results of multiple linier regression analysis as follows.

$$Y = -10109506 + 251578,9X_1 - 10625179X_2 + 3,062298X_3 - 214,8698X_4 - 0,003082X_5 + e$$

Sig X_1	= 0,2564
Sig X_2	= 0,3371
Sig X_3	= 0,0000
Sig X_4	= 0,4455
Sig X_5	= 0,0007
R-Square	= 0,728907
Adjusted R-Square	= 0,712770

| *F-Statistics* | = 45,17126 |
| *Prob (F-Statistics)* | = 0,000000 |

From the probability value of F-statistic (significance F) which get <0,05 (value of sig F = 0,000000) means overall there is significant influence from independent variable to dependent variable. This means that overall there is the influence of the number of domestic visits, the number of foreign visits, the per capita income of Jambi Province, the per capita income overseas (Japan, South Korea, the Netherlands, the UK, Germany, the United States), and government expenditure on Non- Tax (NTSR) of conservation forest in Jambi Province.

Furthermore from the analysis also known value of R-square and Adjusted R-Square. R-Square is the amount of influence or ability of predictor variables simultaneously in explaining the se-response variable. If the value is> 0.5 then the ability of the predictor variable is strong in explaining the response variable. While vice versa if the value <0,5 then the ability of the predictor variable is not strong in explaining the response variable. In the regression of panel data obtained R-Square value of 0.728907, which means strong predictor variable in explaining the response variable.

Adjusted R-Square is the magnitude of the overall influence or ability of the predictive variants in explaining the response variable by observing the standard error. The explanation is the same as R-Square but this value has been corrected by standard error. From the test, Adjusted R-Square value is 0.712770, which means strong predictor variable in explaining the response variable.

Simple Linear Regression Analysis. This analysis to determine the extent to which one independent variable influence dependent variable.

To know more clearly, the effect of each independent variation-free bell on the bound variabel is done by simple linear regression test.

a. Effect of Domestic Visits (NTSR). This analysis to examine the effect of Domestic Visits (NTSR) to Non Taxes State Revenue (NTSR).

Simple linear regression test that gets the following results.

Y = -54349462 + 85856,09X+ e

Sig	=	0,0000
R-Square	=	0,548863. E. E
Adjusted R-Square	=	0,543376

The above equation gets the sig <0,05 meaning that there is individually significant influence of the number of domestic visits to the Non-Tax State Revenue (NTSR) of conservation forest in Jambi Province. This is reinforced by the R-square and Adjusted R-Square tests, each of which has a value of 0.548863 and 0.543376, which means a strong predictor variable in explaining the response variable.

b. Effect of Foreign Visits. This analysis to examine the effect of Foreign Visits to Non Taxes State Revenue (NTSR).

Simple linear regression test that gets the following results.

Y = -53489095 + 4275191X+ e

Sig	=	0,0000
R-Square	=	0,547301
Adjusted R-Square	=	0,542157

The above equation gets the sig <0,05 meaning that there is individually significant influence of the number of foreign visits to Non-Tax State Revenues (NTSR) of conservation forest in Jambi Province. This is reinforced by R-square and Adjusted R-Square test results that each get a value of 0.547301 and 0.542157 which means a strong predictor variable in explaining the response variable.

c. Effect of Jambi Province Per Capita Income.

Simple linear regression test that gets the following results.

Y = 2570475 + 2,586583X+ e

    Sig   =   0,0000
    R-Square   =   0,639217
    Adjusted R-Square =   0,635117

The above equation gets the sig <0,05 meaning that there is individually significant influence of Jambi Province per capita income on Non-Tax State Revenues (NTSR) of conservation forest in Jambi Province. This is reinforced by R-square and Adjusted R-Square test results which each get a value of 0.639217 and 0.635117 which means a strong predictor variable in explaining the response variable.

d. Effect of Foreign Countries Per capita Income.

The per capita income of foreign countries in this study is taken from the countries most populated to visit conservation areas in Jambi Province, namely Japan, South Korea, the Netherlands, Britain, Germany and the United States.
Simple linear regression test that gets the following results.
Y = 57719602 + 147,4019X+ e

    Sig   =   0,5758
    R-Square   =   0,003788
    Adjusted R-Square =   -0,068227

The above equation obtains a sig> 0.05 meaning that there is no significant influence of foreign income per capita on Non-Tax State Revenues (NTSR) of conservation forest in Jambi Province. This is reinforced by R-square and Adjusted R-Square test results, each of which gets a value of 0.0037880 and -0.068227 which means that the predictor variable is less strong in explaining the response variable.

e. Effect of Forest Capital Expenditures.
Simple linear regression test that gets the following results.
Y = 541728,5 + 0,004366X+ e

    Sig   =   0,0000
    R-Square   =   0,389062
    Adjusted R-Square =   0,382119

The above equation gets the sig <0,05 meaning that there is no significant influence on the forest capital expenditure on Non-Tax State Revenues (NTSR) of conservation forest in Jambi Province. This is reinforced by the result of R-square and Adjusted R-Square test which each get value equal to 0,3890620 and 0,382119 which mean predictor variable not strong enough to explain response variable.

Implications of Research Results Policy

From the multiple linear regression analysis conducted it is known that there is a significant influence of the number of domestic visits, the number of overseas visits, the income per capita of Jambi Province, the per capita income of foreign countries (Japan, South Korea, Netherlands, UK, Germany, USA), and overall government expenditure on Non-Tax State Revenues (NTSR) of conservation forest in Jambi Province. In this case, there are only two variables that have significant influence in this multiple linear regression test, that is per capita income of Jambi Province (X3) and forestry capital expenditure (X5).

To know more how the influence of independent variable to dependent variable, simple linear regression test. From this test is known individually, variables that have significant influence on the dependent variable there are three, namely the number of domestic visits (X1), the number of visits abroad (X2), and income per capita Jambi Province (X3).

From the value of R-Square and Adjusted R-Square it is known that the highest value is the income per capita of Jambi Province, the number of domestic visits, and the number of foreign visits. Thus it can be recognized that those with the largest contribution of NTSR are the per capita income of Jambi Province.

The magnitude of the influence of per capita income on NTSR is caused, the higher the per capita income of Jambi residents, the greater the ability to finance travel. In practice, the cost of tourism to the conservation area is quite large because it is located far from the city (located in inland). To reach the conservation area of   Kerinci Seblat National Park for example, the trip takes at least 10 hours if travelers come from Jambi using the route from Jambi City to Sungai Penuh Town. If from West Sumatra, there are several alternative routes that can be used. One of them from Padang to Tapan then continued to Sungai Penuh Town. This route takes about 7 hours by road. There is also another alternative that is through Muaralabuh, South Solok District. This route is closer, with a distance of about 5 to 6 hours of travel (https://www.tempat.co.id accessed on February 10, 2018).

In addition to considerable travel costs due to long distances, rental of tourist equipment at conservation tourism sites is also quite expensive. For example, to use boats to wade through the swamp in the Berbak conservation area which is a conservation area for the conservation of the largest swamp forests in Southeast Asia that have not yet been exploited by human exploitation, the cost of IDR 1.5 million for a boat of eight people .

The huge cost needed to enjoy the beauty of nature in the conservation area in Jambi Province, requires the readiness of funds from the travelers. This is why per capita income has the greatest role to NTSR. The positive coefficient value in this equation shows that the greater the income per capita the greater the value of NTSR (the effect is to increase NTSR).

Other variables that have a significant and positive influence on NTSR are the number of domestic and foreign visits. This is very clear the effect, the more the number of visitors, the higher the value of NTSR. The positive and significant influence of the number of visits to NTSR comes from the contribution of ticketing services to conservation areas, tourism activities, parking fees, research costs, the cost of vehicles related to nature tourism, and transfers of plants and wildlife.

From the benefit cost ratio analysis, it is known that the ratio of BCR produced all <1. This shows that economically, conservation area management is not feasible because the cost does not provide economically viable profit. The value of benefits generated in this calculation, among others, comes from the entrance fee services to conservation areas, tourism activities, parking fees, research costs, vehicle costs related to nature tourism, transfers of plants and wildlife as well as environmental services in the form of social cost to the community externalities of conservation). However, in this case, the feasibility of the management of the conservation area is not merely to consider the economic benefits of the economy, but rather the services of the conservation area.

As is known, the environmental services provided by conservation forests are to maintain a balance of local water and climate, to prevent flooding, to control erosion, to prevent sea water intrusion, to maintain soil fertility, to protect the life support system, to preserve plant-type biodiversity and animals and their ecosystems in the area (in-situ conservation) and outside areas (ex-situ conservation), sustainable use of biological natural resources and their ecosystems, protection of springs, cliffs, river banks, lakes and ravines, maintenance of hydrological functions of forests, coastal protection, watershed management, protection against unique symptoms and natural beauty, and others.

All the environmental services provided by the above conservation forest are very beneficial to the human life and well-being. However, the value cannot be calculated with certainty, so it is not included as a valued benefit with rupiah. Whereas it could be, the value is much greater than the non-tax revenue that is used as a proxy in calculating the benefits in the calculations performed in this study. This is the limitations in this study, ie there is no data that takes into account the environmental services of conservation forests. In this case, NTSR data in this study comes from ticketing services to conservation areas, tourism activities, parking fees, research costs, vehicle costs related to nature tourism, plant and wildlife transactions, as well as vehicle costs related to nature tourism, transactions of plants and animals wild and environmental services in the form of social costs to the community(conservation externalities).

The fact that environmental services are difficult to assess with money is therefore not feasible in BCR judgment due to difficulties in responding when asked "what is the value of the value of

environmental services in terms of money, such as rupiah?". Difficulties in responding to the question are due to the biological nature resources and environmental services of the conservation area has not been measured its market value so it does not yet have a clear market price. Many examples of environmental services products, such as the comfort of natural atmosphere, clean and fresh air, clear water that is always flowing so that can be utilized by the community, etc., are not traded in the market, so people face difficulties in determining the value of services the environment is in the size of money.

Conclusions

Based on the results of research and discussion conducted, it can be concluded as follows:

1. The calculation of the benefit cost of conservation forest management in Jambi Province all resulted in a ratio of <1. If using the project financing feasibility guidelines, projects with a BCR <1 ratio are not feasible, so they should not be implemented. Only projects with a ratio of BCR ≥ 1 are eligible for that. In this case, however, the conservation forest management project is funded. These forests are managed not to be tangibly benefited in the form of forest products such as timber and other forest products such as rattan, resin, etc., but rather towards environmental services, which in this case are priceless, the management of these conservation areas remains to be done.

2. Regression test results get the following results.

a. Test *Overall*

Overall there is the influence of the number of domestic visits, the number of foreign visits, the per capita income of Jambi Province, the per capita income of foreign countries (Japan, South Korea, the Netherlands, the United Kingdom, Germany, the United States), and government expenditure on Non- Tax (NTSR) of conservation forest in Jambi Province. It is known from the probability value of F-statistic (significance F) that get <0,05 and from result of R-Square and Adjusted R-Square test which get value> 0,05 which means strong predictor variable in explaining response variable.

b. Partial Test (Individual)

Partially (individual) variables only the number of domestic visits, the number of visits abroad, and income per capita Jambi Province that has a significant influence on Non-Tax State Revenues (NTSR) conservation forest in Jambi Province. It is known from significance test at α (0,05)

Recommendations

Based on the conclusions taken, can be given suggestions as follows.

1. In order for ordinary people and researchers interested to visit the national park, the National Park Office is advised to create and complete the database and web containing the beauty and beauty of the national area, so that it can increase the number of tourist and researcher visit, which in the end can increase NTSR from the forestry sector.

2. Considering the main services provided by the conservation area are environmental services, so that the calculation of the value of the benefits provided by the conservation area can be more accurate, it is suggested that the National Park Office managing the National Park in Jambi Province determines the value of environmental services benefits from conservation areas that can "Into rupiah income", so that in terms of financing feasibility using analysis such as b / c ratio can be done with objective.

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