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# Macro Study of Spatial Development Area on Tourism Village, Tabanan Regency, Bali Province

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## *Abstract*

*Macro study is one approach that combines the rational method based on the results of previous studies by the authority with the empirical method utilizing the survey techniques. The purpose of this macro study is to identify and analyze the potentials, problems, and the limiting factors, and the needs of the regency; and to recommend the programs and models required by the community to achieve the sustainable development. This research uses the Participatory Rural Appraisal method, the interview techniques (Semi Structured Interview), the technique of focused group discussion (FGD), the Rapid District Appraisal (RDA), then it is analyzed by the empirical and dynamical systems. The overview of macro studies is particularly relevant in developing the regions, especially the rural areas, based on the existing advantages, such as in Tabanan Regency. Tabanan Regency is a granary in Bali Province and the zoning of agricultural commodities in quadrant III, which is the rural farming area with combined functions between the cultivated and rural areas supported by the tourism department. The studies of the areas in the form of potential analysis, problem analysis, requirement analysis become the guidelines for preparing the development scenarios and program formats. The studies will then constitute the factors driving the realization of sustainable development of tourism villages in supporting the sustainable agriculture.*

**Keywords:** macro study, potential analysis, problem analysis, requirement analysis, scenario analysis, format program

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## INTRODUCTION

Regional development planning is a blend of the sectoral approach with a regional approach. The need for the regional development requires a preliminary study that is often formatted as the planning. Setiono (2011) describes the planning definition stated by Nehru. Nehru defines planning in a simple and pragmatic way that "planning is the exercise of intelligence to deal with facts and situations as they are and find a way to solve problems." Planning is a projection that is expected to occur within a certain period in the future so that the planners need to calculate, analyze, and make assumptions that the projections will be achieved. The development planning requires the sectoral and regional approaches.

The sectoral approach is the approach that previouslyy neglected the spatial factor. The sectoral approach pays more attention to the sector or commodity then after being analyzed it results in the proposed projects to be implemented. Once the project is known then the location and the project are determined. The regional approach is the one that pays attemtion to the space with all the conditions. This regional approach views the region as a collection of smaller parts of regions with each potential and attractiveness (Tarin, 2006).

Today there is a great tendency of the government, especially the local governments, to pay more attention to the rural development as a strong foundation for further development. This is conducted for overcoming the misleading policy in the past, where the top-down planning hatching at that time still dominated than the bottom-up planning. In realizing the integration, it is necessary to do the initial review before launching a program through the macro study.

This macro studies aim to prepare an integrated development plan for the regency. The specific objective is to identify and analyze the potentials, weaknesses, limiting factors, and the needs in the regency that will ultimately recommend the programs that people need sustainably.

Tabanan Rregency is one of regencies in Bali that has the largest rice fields (22,453 ha) with 228 subak, which experienced the land conversion very rapidly after Badung regency. In 2013 it was recorded that the land conversion amounted 204 hectares, which is greater than the one in 2009 amounted 97 ha (Department of Agriculture and Food Crops of Tabanan Regency 2014). This condition is very contradictory with the Tabanan predicate as the rice granary of the island of Bali. It is necessary to do the arrangement of integrated and sustainable development through the management of regional development.

The Economic Condition in Tabanan Regency from the composition of the GDP distribution per sector for five years of period (2009 to 2013), the agricultural sector is still occupying the highest position to the GDP of Tabanan Regency. The average contribution of the agricultural sector to the GDP of Tabanan Regency is at 30.63 percents.

The BPS data of Tabanan Regency (2014) showed the fluctuating rate of GDP growth in Tabanan Regency. It decreased in 2013 compared to 2012 that is 7.57 percents to 6.01 percents. The development of the agricultural sector has not been followed by the development of the raw material processing industry of agricultural products. The growth rate of the industrial sector

decreased from 12.45 percent in 2012 to 0.25 percent in 2013.

Tabanan Regency is influenced directly or indirectly by the economic development in Bali. In the era of the 1970s until the 1980s the economy of Bali was still concentrated on the reliability of the agricultural sector as a major source of the Balinese people's life. But along with the development of the national economy and the development of other sectors such as trade, hotels and restaurants, the proportion of the role of agriculture sector in GDP formation of Bali becomes smaller.

Balinese economy built by relying on the tourism industry as a "leading sector" has been able to enhance the economic structural changes in Bali.

The similar condition is also indicated by the development of Tabanan Regency. This figure gives an indication that there is a movement towards a balance in the structure of the Balinese economy, followed by the same conditions in Tabanan Regency. This can be seen from the economic structure of Tabanan Regency when compared with the economic structure of Bali Province, where it appears the sharpening pattern of sectoral role that has been consistent, which is a decline in the contribution of agricultural sector and leads to the increasing contribution of the tertiary sector.

The Government of Tabanan Regency has a big challenge in exploring the potential and the regional leading sector (core competition), especially the agricultural commodities that have high competitiveness followed by encouraging the growth of the processing sector and the other downstream sectors that encourage the growth of the industrial field either the secondary or tertiary sector. The role of the tertiary sector is relatively high to the GDP formation of Tabanan, exceeding the primary sector.

The conventional development theory or later known as the theory of modernization explains that the progress or backwardness is measured by how high the economic growth is (Hudiyanto, 2008). This growth strategy is focused on the industrial development on so large scale that the government plays the role of as the entrepreneurs rather than as the service provider.

**Table 1.** Percentage Distribution of Tabanan Regency GRDP by Industrial Field based on Current Market Prices, Period 2009-2013 (%)

| Employment | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Agriculture | 32,43 | 31,50 | 30,23 | 29,46 | 29,55 |
| Mining/Excavation | 0,39 | 0,39 | 0,40 | 0,42 | 0,37 |
| Industry | 6,84 | 6,97 | 6,83 | 6,95 | 6,56 |
| Electricity and drinking water | 1,15 | 1,19 | 1,24 | 1,28 | 1,23 |
| Buildings | 4,22 | 4,27 | 4,39 | 4,52 | 4,56 |
| Trade, hotels and restaurants | 23,07 | 23,46 | 24,04 | 24,59 | 23,06 |
| Transportation and communication | 5,88 | 5,82 | 5,76 | 5,83 | 5,42 |
| Banks and other financial institutions | 6,69 | 6,74 | 6,68 | 6,60 | 6,76 |
| Services | 19,32 | 19,67 | 20,43 | 20,35 | 22,49 |
| Gross Regional Domestic Product (PDRB) | 100 | 100 | 100 | 100 | 100 |

Source: Statistics Central Bureau (Badan Pusat Statistik) of Tabanan Regency (2014)

**Table 2.** Growth Rate of Tabanan Regency GRDP at Current Market Prices,

Period 2009-2013 (%)

| Employment | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Agriculture | 7,54 | 8,57 | 5,03 | 7,57 | 6,01 |
| Mining/Excavation | 9,53 | 10,63 | 11,94 | 16,25 | -6,12 |
| Industry | 10,09 | 13,88 | 7,16 | 12,45 | -0,25 |
| Electricity and drinking water | 23,08 | 16,40 | 14,23 | 13,92 | 1,06 |
| Buildings | 13,40 | 12,93 | 12,55 | 13,60 | 6,67 |
| Trade, hotels and restaurants | 16,57 | 13,68 | 12,14 | 12,91 | -0,89 |
| Transportation and communication | 14,33 | 10,65 | 8,31 | 11,68 | -1,77 |
| Banks and other financial institutions | 9,07 | 12,56 | 8,53 | 9,07 | 8,27 |
| Services | 14,24 | 13,82 | 13,67 | 9,93 | 16,84 |
| Gross Regional Domestic Product (PDRB) | 11,90 | 11,80 | 22,34 | 10,39 | 5,69 |

Source: Statistics Central Bureau (Badan Pusat Statistik) of Tabanan Regency (2014)

Development can also be interpreted as the transformation of economic, social, and cultural deliberately through the policies and strategies towards the desired direction. The transformation of the economic structure can be seen through the rapid increase or growth of production in the industrial and service sectors, so that it gives a very large contribution to the national income. Social transformations can be seen through the distribution of prosperity through equitable access to socio-economic resources. Cultural transformation is associated with the national spirit and nationalism, besides the changes in values and norms in the society (Nurman, 2016).

Structuring the regional development should be planned through the management of local development. Wrihatnolo (2009) explained that the management of regional development is a pattern layout of the formulation, implementation, control implementation, monitoring, and post-evaluation of the development programs and policies in the long, intermediate, and annual operational terms. The management of regional development must be integrated between the top-down with the bottom-up approach, which is often referred to as the synthesis model approach.

Synthesis model is a mix between the top- down and bottom-up approach. The synthesis model is an issue existing in the implementation of policies that emerges from each approach. It means that the synthesis model approach will minimize the occurrence of failures in the implementation of public policy. The model of top-down approach outlines that the development strategy formulation is united and coordinated by the supreme leader and lowered to the lower level. This strategy is comprehensive. The advantages of this model is the ability to integrate the sectoral and regional development, while the weakness of this approach is sometimes it is difficult to apply to the local development related to the different local development planning with regard to the uniqueness of geographical, socio-cultural, and economic conditions. The bottom-up approach outlines that the development strategy initiatives come from various units that are delivered from the lower level to the upper level (Wrihatnolo, 2008). These approaches require further review of macro studies that are then incorporated into the matrix of potentials, problems, needs, and

scenarios, so that in the end it can structure the development format required by the community.

Terluin research results (2003) on the development of rural areas in the Europian Union explained that one of the successes of the sustainable development must involve the increasing capacity (knowledge, skills, and attitudes) of the local actors to build and sustain the development in the region. This capacity is related to the rate at which the actors deal with the situation and their prospects in the wider context of national and international.

Jones (2005) explained that the development of tourism village-based environment (ecotourism) should include the element of social capital from the local community. The social capital has the important role in the establishment of tourism villages and the improvement of the environment that have been threatened because the social capital is also as the driver of the carrying capacity of a region.

Ecotourism can also succeed if the local communities have some measure of control over them and if they equitably obtain the benefits from the ecotourism activities (Scheyvens 2009). An empowerment framework is proposed as a suitable mechanism for the analysis of social, economic, psychological, and ecotourism political impacts in the local communities in achieving the sustainable development.

The cases above can be formulated that the sustainable efforts of improving the tourism village will involve several things, such as the local community, the development of rural tourism product quality, and coaching the group of local businessmen. The principle of sustainable development of tourism village is one of the alternative tourism products and the spatial arrangement to provide the encouragement for the sustainable rural development that has the management principles, including:

1. Utilizing the facilities and infrastructure of the local community
2. Giving advantage to the local community
3. Having the small scale to facilitate the establishment of a reciprocal relationship with the local community
4. Involving the local community
5. Applying the rural tourism product development

## RESEARCH METHODS

The research was conducted in Tabanan Regency for six months. This research uses a macro approach, which is a scientific method that combines the rational method that is based on the results of previous studies by the authorities with the empirical method that utilizes the survey techniques. This macro study generally aims to prepare an integrated development planning for the regency/city. The specific objectives of the macro study approach are: (1) to identify and analyze the potentials, the problems, the limiting factors, and the needs in the regency, and (2) to recommend the programs that people need to realize the sustainable development.

The searching of the macro study data is obtained through the primary and secondary data.

The secondary data are obtained from the searching of various agencies, while the primary data is obtained using the methods of Participatory Rural Appraisal (PRA), the interview techniques (Semi Structured Interview), the technique of focused group discussion (FGD), and the Rapid District Appraisal (RDA) or translated as the

assessments / studies / research of the participatory local circumstances.

Rapid Appraisal District (RDA) is a process of assessment of the conditions, problems, and needs of the region related to the public services by using a set of techniques and tools. RDA encourages the community involvement and the stakeholders to improve the capacity in analyzing their situation on the life and conditions in order to be able to plan and act independently. Specifically RDA aims: (1) to identify the characteristic patterns of the carrying capacity of the region to the growth and changes in the community and the region in an integrated manner; (2) to map the social, economic, ecological, cultural, and security conditions in the region; (3) to identify the social conditions that lead to the inequality between the groups or stakeholders; (4) to provide the information needed to formulate the management strategies and the conflict prevention and the peace building to the future life in an integrated manner; and (5) to determine the main problems and the critical issues that need to be managed through a variety of indicative sectoral development program (Sumpeno, 2006) .. RDA includes four main stages as follows: (1) The first stage (screening, or a descriptive analysis of the region) refers to some descriptive regional analysis methods and techniques using the secondary data, then it is formulated in a preliminary assessment of the state of the regional development. The main output of this phase is in the form of mapping or scanning the overall conditions and the relevant specific data that is an overview of social, economic, ecological, and institutional conditions; (2) The second stage (scoping, or an assessment of the main issues quickly) is based on the screening results in the first phase by using a qualitative approach so that the community and its representatives can learn to understand the causality relationship (cause and effect) that occurs in the current situation. The main output of this phase is in the form of identifying the critical issues faced by the region that requires the immediate settlement in the local development plans and the sectoral programs within the government; (3) The third stage (focus, or a participatory assessment) is a continuation of the searching process of problems that have been carried out at the community level through the field research by the PRA, which further is identified by a different process to be analyzed in a broader level (regency/city); (4) The fourth stage (an interpretation of finding and further utilization) obtains the information and study materials that are packaged in the form of work reports, drawings, focused diagrams, study results. This report can be a profile of the region in the form of the reports of conditions and the problems faced that will be the key in the process and substance of the planning (Laderach, 2007).

The development-structuring model of tourism village area is analyzed by the dynamic system. Dynamic system is a representation of the behavior of a system that has an interdependent relationship and changes with time. It can be said that the dynamic system is a feedback structure that is interrelated and leads to the equilibrium (Sterman et al., 2007).

According to Daalen and Thissen (2001), the validating in the modeling of dynamic systems can be done in several ways including the direct structure test without operating the model, the structure-oriented behavior test by operating the model and comparing the behavior of the model with the real systems (quantitative behavior pattern

comparison). The validation used in this research is the AME (Absolute Mean Error) and AVE (Absolute Variation Error). AME isa deviation (difference) between the average value (mean) of results of simulation and the actual value. AVE is a deviation of variance value of the actual simulation. The limit of the acceptable deviation is between 1-10 percents.

$$AME = [(Si - Ai) / Ai ]$$

*Si* = *Si N, S = simulation value*
*Ai* = *Ai N, A = actual value*
*N* = *observation time interval*
*AVE* = *[(Ss - Sa) / Sa ]*
*Ss* = *[( Si - Si)2 N ] = simulation value deviation*
*Sa* = *[(Ai - Ai)2 N] = actual value deviation.*

## RESULTS AND DISCUSSION

### Potential analysis

The potential of the development of the natural resources and the environment in Tabanan Regency can be grouped into three categories as follows:

1. The potential of natural resources: Tabanan Regency has the potential of forests, water resources, agriculture (agro and granary of Bali Province), all of which are the basis of tourism development.
2. The potential of human resources: there are more than 70 percents of the productive ages and 56.46 percents of the population working in agricultural sector.
3. The potential of institutions: the indigenous village, subak and Village Credit Institutions (LPD) are the collaborative institutions to encourage the development in agriculture, tourism, and other sectors.

To identify the most influencial potentials on the development, a matrix of potential is used as shown in Table 3. Table 3 shows that the potential supporting the development in Tabanan Regency is the institutional of Subak and ecotourism. Tabanan is an area 70 percents of which is the rural areas, where as a regency in Bali Province that provides the food stocks. This regency that is known as the "granary" has also the potential in the tourism sector, especially in the development of tourism villages.

### Problem Analysis

The problems in Tabanan Regency are analyzed through three approaches those are: through in-depth interviews with the policy makers in the local government (Bappeda of the regency and the related agencies), the subject of development (farmers, traders, members of Subak), and through the direct observation. Such problems are divided into five groups those are: (1) the problems of development administration; (2) the environmental problems; (3) the economic problems; (4) the social and cultural problems; (5) the problems of regional infrastructure.

**Table 3.** Matrix of Potential Analysis

| Number | Basic potential | Derived potential |
|---|---|---|

| | | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|---|
| 1 | Forest | | | | | * | | |
| 2 | Water resources | | | | | * | | |
| 3 | Granary | * | | | | | | |
| 4 | More than 70 percens of productive ages | * | | | | | * | |
| 5 | More than 50 percents of agricultural workforces | * | | | | | * | |
| 6 | Subak | * | * | * | * | | * | * |
| 7 | Indigenous villages | * | * | | | | * | * |
| 8 | Village Credit Institutions (LPD) | | * | * | | | * | * |
| 9 | Natural tourism | * | | | | | | |
| 10 | Historical tourism | * | | | | | | |
| 11 | Agrotourism | * | | * | | | * | * |
| 12 | Ecotourism | * | | * | * | | * | * |
| 13 | Mutual cooperation and Tri Hita Karana | | | | | | * | * |

Source: Results Analysis (2015)
Information:
A Tourism industry
B Services
C Trade
D Conservation of natural resources
E Development of the reserves (for ground water reserves)
F Development of human resources
G Bottom-up planning

| | |
|---|---|
| * | Linkage between the basic potential with the derived potential |
| | There is no linkage between the basic potential with the derived potential |

Table 4 shows that the problems that arise are due to the non-integrated planning (score = 11). From the aspect of regional development planning, the planning only sees the point of views of one party, from the central/local government planner that has less knowledge of the circumstances of a region, especially rural areas. The bias happens mainly due to the differences in interests and goals expected by the local community with what is thought by the central/local government. The planning at the central/ local government level, which is outside the region and not directly involved with the activities that lead to the interaction between the local community and the natural environment, tends to have the interests and goals that are inconsistent with the actual development objectives.

## Analysis of Needs

Analysis of needs is also used to identify the problems, needs, potentials of several different groups within a region. These groups include the farmers, the productive age population, the small-scale entrepreneurs at the village level, the middlemen (particularly for the agricultural products), the investors, the local governments, subak, and the indigenous villages. The analysis of needs can be seen in Table 5.

**Table 4.** Matrix of Issues in Tabanan

| **Number** | **Issue--> consequence** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | Issue--> cause | | | | | | | | | | | | | | | | | Consequence |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Village expansion | | * | | | | | | | | | | | | | | * | 2 |
| 2 | Vigilantes | | | * | * | * | * | * | | | * | * | | | | | * | 8 |
| | Without legal authority | | | | | | | | | | | | | | | | | |
| 3 | Declining in forest area | | | | * | | | * | | | | | | | * | | * | 4 |
| 4 | Rather critical of protected forest | | | * | | | | * | | | | | | | * | | * | 4 |
| 5 | Not applied border | | * | | | | | | | | | | | | | * | * | 3 |
| | coast and border gap | | | | | | | | | | | | | | | | | |
| 6 | Highland agricultural conversion | | * | | | | | | * | * | | * | | * | | | * | 6 |
| 7 | Encroachment into high protected areas | | * | * | * | | | | | | | | | | | | * | 4 |
| 8 | Lack of agricultural added value | | | | | | * | | | * | | | | * | | | * | 4 |
| 9 | Lack of labor in agriculture sector | | | | | | * | | | | | * | | | | | * | 3 |
| 10 | Endangerment sacred area and Holy place | | * | | | | | | | | | | | | | | * | 2 |
| 11 | Endangerment of Balinese land ownership | | * | | | | * | | | | | | | | | | * | 3 |
| 12 | Disproportionate of High School buildings | | | | | | | | | | | | | | | * | * | 2 |
| 13 | Increasing of poverty | | | | | | * | | | | * | | | | | | * | 3 |
| 14 | The breakage of road facility | | * | | | | | | | | | | | | | | * | 2 |
| 15 | Lack of water and electricity | | | * | * | | | * | | | | | | | | | * | 4 |
| 16 | Limited of development budget | | | | | | | | | | | | | | | | * | 1 |
| 17 | Disintegrated planning | * | * | * | * | * | * | * | | | * | * | | | * | * | | 11 |
| | **Cause Total** | 1 | 8 | 5 | 5 | 2 | 6 | 5 | 1 | 2 | 3 | 4 | 0 | 2 | 0 | 3 | 3 | 16 | 66 |

Source: Analysis Results (2015)

Note:

* Existence of causal link ; No existence of causal link

## Alternative Development Goals and Strategies

The findings of the development cannot be done only through a limited discipline even now the economic development is no longer monopolized by the economists. In discussing the meaning of development, it often takes place the mixing sense with the meaning of others. For example, modernization means the social change where the economic component in development is false when used to express the comprehensive development.

**Table 5.** Analysis of Needs

| Group | Issue | Need | Potency |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Farmers | 1. The price of production facilities is still high<br>2. Limited agricultural land<br>3. Limited capital<br>4. Limited processing of agricultural products | 1. The warranty price for agricultural products<br>2. Wages of farm workers increased<br>3. Technology / capital / credit aid from the government and private sector<br>4. Regulation and awig awig that restrict the sale and purchase of agricultural land<br>5. Tax relief of paddy field ownership | 1. Labor force in agricultural sector<br>2. Have an entrepreneurial spirit<br>3. The response to innovation and technology adoption<br>4. Participate as a subject in the development program |
| Productive age population | 1. High school buildings are not evenly distributed to each district | 1. High school buildings are evenly distributed to each district<br>2. The availability of educational skills through qualified courses | 1. High population of productive age in Tabanan |
| Small-scale entrepreneurs | 1. Limited capital for export-oriented<br>2. Limitations of entrepreneurial skills development from local government | 1. Memerlukan bantuan modal dan pinjaman dari pihak pemerintah dan swasta<br>2. Requirment of entrepreneurial skills exercises from local government | 1. Having a strong motivations and entrepreneurial spirit |
| Middlemen | 1. Price and seasonal fluctuation of agricultural products is unpredictable | 1. Products availability requirements | 1 Having marketing channels and credit services from village credit institutions |
| Tourism investors | 1. Limited investment opportunities due to limited infrastructure in rural area | 1. Infrastructure Improvement | 1. Strong financial investors<br>2. Provide ideas and new technologies |
| Local government | Financial limited<br>Lack of qualified human resources<br>Miscoordination with the center | Financial management administered by the local government<br>Improving the quality of human resources<br>Financial assistance from the center and external parties<br>Cooperation with local institutions | Planning from the rural level to the provincial level<br>Have attendants and escorts from rural area |
| Subak | 1. Authority in spatial land use is very small<br>2. The limited number of members because of the switch to the non-agricultural sector<br>3. Limited funds<br>4. The involvement of the great sedahan is very small in fostering Subak | 1. Directly involved and have the same authority in structuring<br>2. Formed new subak in areas with no Subak<br>3. Funds aid from local government<br>4. Great Sedahan routinely conduct training to Subak | 1. Gotong royong tinggi<br>2. Legal awig-awig<br>3. Based on Tri Hita Karana philosophy |

| | | | |
|---|---|---|---|
| | 5. Decreasing of agricultural land | 5. Awig awig governing the transaction of agricultural land | |
| Indigenous villages | 1. It's hard to foster communities drifting certain political elite | 1. Their special training from local governments to the community | 1. Incorporated Awig awig in traditional village |
| | 2. Setting the boundaries of the traditional village with other indigenous villages somewhat ambiguous | 2. Boundaries between indigenous villages is clearly established through a legal entity | 2. Based on Tri Hita Kraana Philosophy |

Source: Analysis Results (2015)

The institutional strengthening is conducted by making the local regulations on the spatial planning for tourism villages based on the agriculture. The local institutions in every village are directly involved in the spatial planning and the evaluation of the layout itself. Of course, the local regulations must also be strengthened with the incorporated institutions under the laws governing the details of buying and selling of the agricultural land.

**Development Scenario**

The setting of program priorities is not sufficiently taken into account for the short term, but it is also accounted for the long term, given the benefits and impact of the development will usually look at the long term.Therefore, the future conditions need to be analyzed with the scenario analysis (Polk, 2010).

Scenario analysis is a technique of planning that makes up the sequence of events in logic to show how the present situation and the future situation can develop gradually. This analysis is divided into two: the status quo scenario and the normative scenario. The assumptions used for the status quo scenario are: (a) the rural industrialization is not affected by the social or environmental issues, and (b) the average economic growth is ten percents. The assumptions on the normative scenario are: (a) the sustainable development; (b) the high community participation; (c) the decentralization; (d) the development based on the enviroment and the efficient use of natural resources; and (e) the equitable growth (Sumpeno, 2006).

The result of the scenario analysis is the next step in making the rural development policy. The rural development policy is the framework of the development program format.

**Table 6.** Matrix of Alternative Development Program

| Criteria | Program | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | F | | |
| | Bt | N | Jml | Bt | N | Jml | Bt | N | Jml | Bt | N | Jml | Bt | N | Jml | Bt | N | Jml |
| Increased productivity | 15 | 3 | 45 | 5 | 1 | 5 | 15 | 2 | 30 | 10 | 1 | 10 | 10 | 2 | 20 | 5 | 1 | 5 |
| Carrying capacity of land and water | 15 | 3 | 45 | 5 | 1 | 5 | 25 | 3 | 75 | 5 | 1 | 5 | 5 | 1 | 5 | 5 | 1 | 5 |
| Rural economic activities | 25 | 3 | 75 | 15 | 2 | 30 | 10 | 1 | 10 | 25 | 3 | 75 | 25 | 3 | 75 | 20 | 3 | 60 |
| Increased non-governmental organization | 5 | 1 | 5 | 15 | 2 | 30 | 10 | 1 | 10 | 10 | 1 | 10 | 10 | 1 | 10 | 10 | 2 | 20 |
| Job creation | 20 | 3 | 60 | 10 | 1 | 10 | 10 | 1 | 10 | 20 | 2 | 40 | 20 | 3 | 60 | 30 | 3 | 90 |
| Relations between villages | 5 | 1 | 5 | 15 | 2 | 30 | 10 | 1 | 10 | 10 | 3 | 30 | 10 | 1 | 10 | 5 | 1 | 5 |
| Village revenue | 10 | 2 | 20 | 10 | 1 | 10 | 10 | 1 | 10 | 10 | 1 | 10 | 15 | 1 | 15 | 5 | 2 | 10 |
| Community revenue | 5 | 1 | 5 | 25 | 3 | 75 | 10 | 1 | 10 | 10 | 1 | 10 | 5 | 1 | 5 | 20 | 2 | 40 |
| Number of program level | 100 | 16 | 260 | 100 | 13 | 205 | 100 | 11 | 165 | 100 | 13 | 190 | 100 | 13 | 200 | 100 | 15 | 235 |
| Program level | I | | | III | | | VI | | | V | | | IV | | | II | | |

*Source: Analysis Results (2015)*

*Note:*

*A. The program of sustainable tourism villages toward sustainable agricultural development*

*B. Program to improve the quality of human resources*

*C. The environmental conservation program*

*D. Physical infrastructure development program '*

*E. Rural industrialization (agro-processing and tourism) program*

*F. The program to strengthen local institutions*

*Bt = weight*

*N = value*

*Tot = total (weight x value)*

## Development Program Format

The concept of integrated rural development should include two aspects: the functional integration and the spatial integration. The functional integration is an integration of all social and economic activities that affect the social life of the population, education, agriculture, industry, and all aspects of the community life. Each of development activities should be concerned with the use of changes in the relationships among the sectors besides pursuing the classic goal, which is the target.

Within the scope of these, an integrated rural development strategy must be directed and addressed together. The development approach used for the regency/city (especially rural) is an approach that is spatial, multi-sectoral and integrated, paritisipatory, and sustainable, which is implemented through the format development.

## Models of Sustainable Tourism Village in Tabanan Regency

In the program alternative matrix, the program of sustainable tourism villages into the sustainable agricultural development is a number one priority. Awirya (2011) explained that the sectors with relatively large contribution to the economy have higher degree of efficiency. The sectors are agriculture and tourism in Bali. This condition is equally common for Tabanan Regency, where both sectors support each other so that the tourism villages can be realized. Models of sustainable tourism villages are analyzed by the dynamic model that can be seen in Figure 1.

**Table 7.** Analysis Scenario

| Number | Perspective | Scenario I (Status Quo) | Scenario II (Normative Scenario) |
|---|---|---|---|
| 1 | Agriculture | 1. Reduced forest area<br>2. Encroachment protection forests still occurs<br>3. The transformation of agricultural land occurs every year<br>4. The labor force in the agricultural sector began to decrease<br>5. Factor input still be the deciding factor to increase production and productivity of the land<br>6. Guarantee for agricultural commodity prices have not been realized<br>7. Processing of agricultural products to realize the added value is still limited | 1. The forest area is maintained<br>2. Spatial and Detailed Spatial Plan to guide the protection of forests and agricultural land use<br>3. Providing incentives for farmers to not switch to non-agricultural sector<br>4. Bylaw details the use of the area of cultivation (agriculture) including the sale and purchase of agricultural land<br>5. The government guarantees the availability of input factors for farmers<br>6. The government guarantees the price of agricultural commodities<br>7. Horticulture and plantations intensively developed<br>8. Imported agricultural products are prohibited entry<br>9. Diversification of agricultural products can add value |

| | | | |
|---|---|---|---|
| 2 | Processing industry of agricultural and tourism products | 1. Agro-processing industry scale is small<br>2. More than 30 percent of the workforce in the tourism sector comes from the agricultural sector<br>3. The increasing of additional tourism area without mature planning<br>4. Investment in tourism sector is increasing<br>5. Travelers like nature | 1. Agro-processing industry has expanded its value<br>2. Incentives for farmers to not switch to non-agricultural sector<br>3. The workforce in the tourism sector comes from local villagersat their productive age<br>4. Local regulations should set a maximum limit to tourism area<br>5. Ecotourism also become an alternative options for tourist<br>6. Planning of the agricultural and the tourism sector should be mutually supportive without making a loss to each other |
| 3 | Environment | 1. Encroachment persists<br>2. Water reserves are limited to the agricultural sector and the tourism sector<br>3. Coastal erosion is resolved | 1. Strengthened the customary rights of forest dwellers through a legal entity and sanctions against illegal forest encroachment<br>2. Created more detailed rules regarding the use of water for agriculture and other sectors<br>3. Excavated other water sources |
| 4 | Human resources | 1. Poor population is higher compared to other districts in Bali<br>2. Human resources at the village level is still limited in quality<br>3. Skills-building for human resources in the village are limited | 1. Poverty must be reduced by creating jobs<br>2. Conducted skills training and entrepreneurship at the village level |
| 5 | Physical infrastucture | 1. High School facilities are not evenly distributed in every district<br>2. Damaged roads are persists<br>3. Water service facilities are sometimes unavailable for all villages need | 1. Built high school buildings in every district<br>2. Good road access and can be reached to all villages<br>3. Built shelters for more adequate water |
| 6 | Local institutions | 1. Institutional Subak exist and potential for social and economic activities<br>2. Traditional village institutions are able to mobilize society participation<br>3. Tri Hita Karana philosophy is inherent in people's lives | 1. All awig awig written and incorporated<br>2. Institutional local (Subak and indigenous villages) as subjects in spatial planning and evaluation |

*Source: Result Analysis (2015)*

**Table 8.** Program Format

| Program | Project Description | Goals | Target | Expected Benefit | Period | Responsible authority |
|---|---|---|---|---|---|---|
| Agriculture | 1. Development of integrated agricultural community<br>2. The development of facilities and infrastructure resources<br>3. Agricultural development<br>4. Management of water resources<br>5. Development of horticulture and plantation<br>6. Provision of soft loans by SMEs | 1. Increase the sensitivity and the ability of farmers to diversify food<br>2. Increase productivity<br>3. Fixing the level of wages in the agricultural sector<br>4. Enhancing the role and access to credit for farmers<br>5. Lifting the selling power of farmers supported by a policy option for the farmers | Farmers | Farmers were able to be the subject of agricultural policy makers | 5 years | The department of agriculture, the financial institutions that provide credit to farmers |
| Human resources development | 1. Development of general secondary education facilities<br>2. Management training and improvement of labor skills | 1. Cultivate the spirit of entrepreneur-ship<br>2. Improve producti-vity and quality of labor | Productiv e age populatio n | Improving the quality and skills of the workforce | 5 years | Department of education and employment agencies |
| Environmenta l conservation | 1. Preservation of protected forest<br>2. Food reserve forest development<br>3. Management of water resources and land management | 1. Controlling illegal logging<br>2. Replenishing the groundwater<br>3. Minimize land degradation and conversion | Surround-ing communit ies | Being able to control the degradation and able to manage it into produc-tive land | 10 years | The depart-ment of agriculture, the forestry department, BPS, Bappeda |
| Development of rural industrializati on | 1. The construction market in each village<br>2. Development cen-ters of agricultural products<br>3. The provision of soft loans for small industrial entrepreneurs | 1. Improving agricultural activity<br>2. Mobilize financial resources<br>3. Improving cooperation among villages | Farmers | The increasing of farmers' income | 5 years | The department of agriculture, department of trade (koperasi) |
| Strengthen the institutional development | 1. Subak development as an economic institution on a competitive basis<br>2. Improved security of the region to strengthen the presence of the traditional village<br>3. Structuring space-based sustainable tourism villages by involving Subak, Pakraman | 1. Improving the strong role of Subak and indigenous villages<br>2. Integrating development planning | Subak dan indigenou s village | Strengthenin g the role of Subak and indigenous villages in managing land and region by providing limited authority of awig awig | 5 years | Great sedahan, the Indigenous Board of Trustee |

Source: Analysis Results (2015)

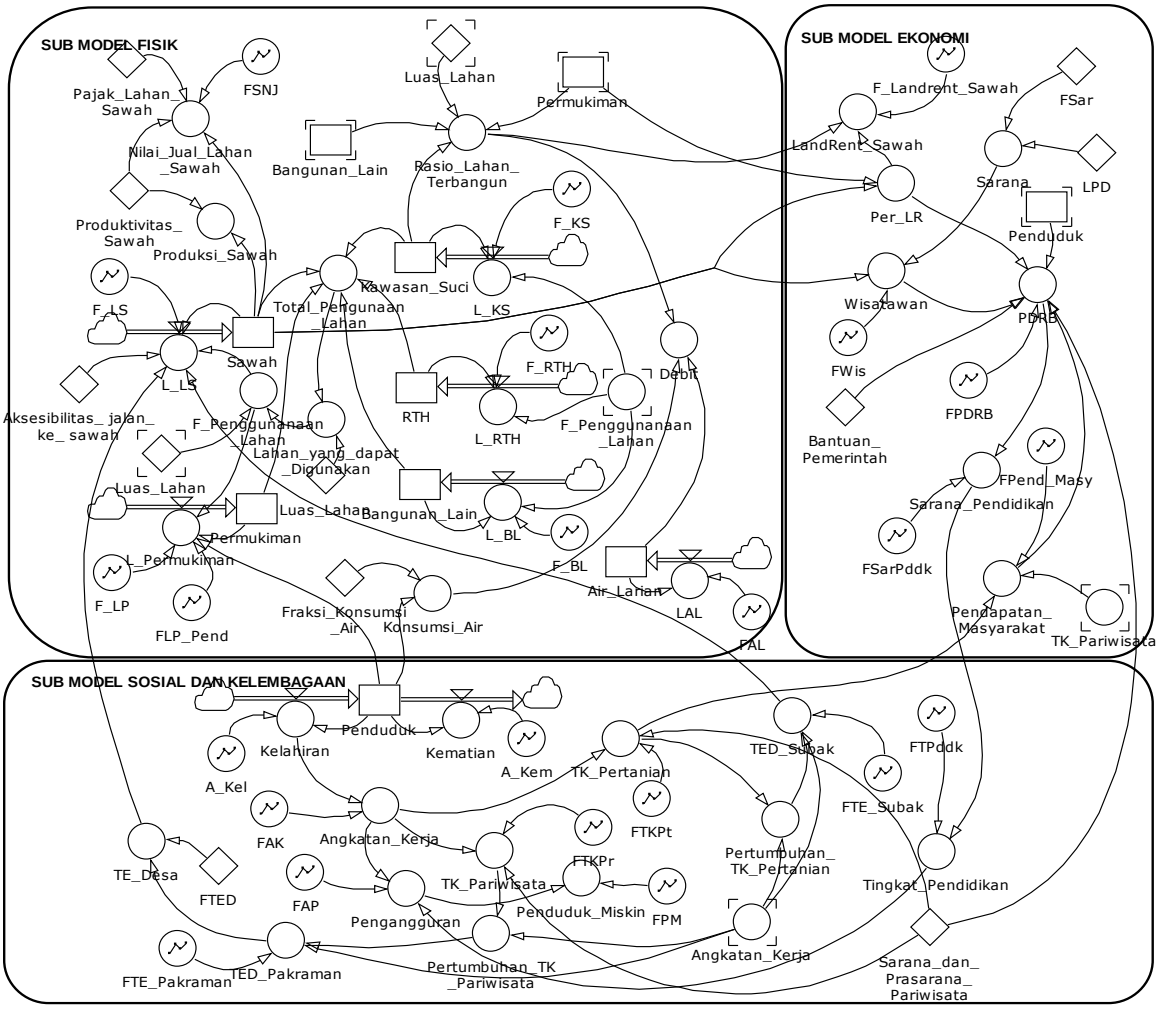


**Figure 1.** Models of Sustainable Tourism Village Development Planning in Tabanan
Source: Analysis Results (2016)

Model of structuring the sustainable tourism village areas is composed by three sub-systems that are interconnected those are: physical sub-systems (rice field, road accessibility to the fields, the land area of green open space, land settlements, extensive sacred area, other building areas) and water, economic sub-systems (the land rent, the number of LPD, the GDP, the governmentaid, the amount of rice production, the public income levels), social sub-systems and institutional (the total population, the number of workers in agriculture and tourism, the tourism facilities and infrastructure, the education levels, the number of unemployed, the number of poor, the level of institutional effectiveness). This model shows that well-organized tourism villages in a sustainable manner can be realized if all sub systems (physical, economic, social and institutional) are studied simultaneously and not spatially and also by incorporating the elements of local institutions as a planner and evaluator of development programs in a region.

The model of structuring the development of sustainable tourism villages has the system dynamic model formulation.

The formulation is as follows:

1. Physical sub-system
   a. Land area = Land area in Tabanan =

83.933 Ha
b. Paddy field area = 22.465 Ha
c Settlement area = 6.047 Ha
d. RTH area = 12.582 Ha
e. Sacred area = 4.603 Ha
e. Other building area = 18.440 Ha
f. Total of land use = Paddy fieldarea+Settelment area+RTH area+ Sacred area+Other building area
g. Land that can be used = Land area-Total of use
h. Land use fraction Land that can be used/land area
i. Building land ratio = (Other building area+Sacred area +Settlement area)/ Land area

2. Economy sub-system
a. Land rent growth = Paddy field area/ Settlement area
b. Paddy field rent land = F paddyfield landrent*Buiding land ratio
c. Village credit = 273 units
d. Tourism supporting facilities = Supporting facility fraction*Village credit
e. Total of tourist = Paddyfield area*Tourists fraction*Supporting facilities
f. PDRB( GRDP)
g. (Tourist/Land rent growth)* (Population/income)* GRDP Fraction Growth
h. Education facilities = GDRP/Education facilities fraction
i. Community income = (Tourism workforce+agriculture workforce)*Community income fraction

3. Social and institutional sub-systems
a. Population = total population in Tabanan = 421.843 people
b. Birth = Total population*Birth number
c. Death = Total population*Death number
d. Workforce = Birth*Workforce fraction
e. Agricultural workforce=Workforce* Agricultural workforce fraction
f. Tourism workforce=Workforce* Tourism workforce fraction
g. Education level=Education facilities/ Education level fraction
h. Unemployed=(Workforce*Unemployed number fraction)/Education level
i. Poor population=Poor population fraction*unemployed
j. Subak level of effectiveness= Agricultural workforce fraction* Subak level of effectiveness fraction*Work force
k. Pakraman level of effectiveness= Tourism workforce growth* Pakraman level of effectiveness fraction*Workforce
l. Village effectiveness level=Pakraman level of efectiveness*Village effectiveness level fraction

Overall, the arrangement of development in the tourism village areas, especially those that have beautiful views of the fields, should be able to reduce the rate of land conversion through the local institutional role. The decline in the rate of land conversion in the end is able to maintain the sustainability of the local area and to maintain the food stability.

## CONCLUSION

Based on the results of discussions, it can conclude several things as follows:

1. The macro study is one analysis tool in the integrated development planning in the region.

2. The macro study analyzes the existing situation, identifying the problems and the needs of each sector, identifying and analyzing the potential and limiting factors in the regency, and ultimately can provide the recommendations on programs that people need to realize the sustainable development.
3. Tabanan Regency is a tourism-based agriculture 70 percents of which is the rural areas so that the potential development tends to come from the agricultural sector and the tourism sector.
4. The matrix of problems, potentials, and needs is the basic framework in making the regional development program format. These programs then will be used as a base setting and control of the natural resources (forests, land, water) in a region so that the development of the sustainable tourism villages toward the sustainable agricultural development can be planned more mature.
5. The program priorities in Tabanan Regency aim at the development program of the sustainable tourism villages to reach the sustainable agriculture.
6. The model of structuring the sustainable development of tourism villages can be described through a dynamic system, in which the three subsystems (physical, economic, social and institutional) are studied simultaneously and interlinked with each other.

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