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IMPLEMENTATION OF SOCIAL ACCOUNTING MATRIX IN CALCULATING TOURISM LEAKAGE OF ACCOMMODATION IN BALI

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Abstract: *The aim of this study was to calculate the amount of tourism leakage in Bali based on the macro analysis. Social Accounting Matrix (SAM) approach was undertaken based on the Social Accounting Matrix of Bali Province 2010. Sample was designed based on the Probability Proportional to Size methods with the number of sample was 79 accommodations which consist of Non-star rated hotels; 1,2 and 3 Star-rated hotels; 4 and 5 Star-rated non-chain hotels; and 4 and 5 Star-rated chain hotels. The results showed that the highest percentage of tourism leakage was found on 4 and 5 Star-rated chain hotels (55.31%), followed by 1,2 and 3 Star-rated hotels (15.66%), and 4 and 5 Star non-chain hotels (7.14%). The lowest leakage was found on Non-star rated hotels (2.0%). Causes of leakage were payments for capital ownership and payment for labour which were transferred to overseas. Reducing import components used in the accommodation sectors is crucial as long as local products are available to substitute the imported products.*

Keywords: *leakage, balance account, accommodation, Social Accounting Matrix, Bali.*

INTRODUCTION

Bali is one of popular world tourist destinations due to its cultural activities and natural scenery, therefore tourism is a driving force in the economic development of Bali Province. As Bali's economy has been developed mostly through tourism, it has resulted in changing in economic sectors of Bali Province from agricultural sector to service sector. The contribution of agricultural sector to the Gross Domestic Product (GDP) of Bali has decreased dramatically from 61.21% in 1969 to 16.84% in 2012 while the contribution of service sector (trade, hotels, and restaurants) have increased from 9.52% in 1969 to 30.66% in 2012. Meanwhile, the contribution of industrial sector (such as handicraft industry, etc.) has fluctuated but showing a growth trend from 1.67% in 1969 to 9.97% in 2010 (Erawan, 1994; Bali Statistical

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Office, 2013). Even though the contribution of agricultural sector has decreased, it still has a crucial role in Bali's economy, as source of jobs and income, raw materials for industry, and foreign exchange earnings, and and tourist attractions (Antara, 1999; Wiranatha, 2001).

Tourism in Bali has been developed significantly. The number of direct arrivals of foreign visitors to Bali increased dramatically from 23,340 visitors in 1970 to reach 3.278.598 visitors in 2013 (Bali Government Tourism Office, 2014). However, there were several downturns in number of foreign visitors visiting Bali due to Bali bombings on 12th October 2002 and in 1st October 2005. The Bali bombs had the greatest impact on number of foreign visitors to Bali than other crisis in the history of tourism in Bali. Efforts were undertaken by the government to convince foreign visitors to visit Bali after the Bali bombing tragedy, it was resulted in gradual increases of foreign visitor direct arrivals since year 2007. During the period of 2007 up to 2013, the average growth rate of direct arrivals of foreign visitors to Bali was 14.9% per year (Bali Government Tourism Office, 2014). Regarding the growth of number of tourists , it seems that tourism in Bali will keep being promising as a source of household income for Balinese inhabitants, contribute to the national exchange rate as well as increase the number of job opportunities.

Even though tourism brings about development for Bali's economy for many years, however, the economic impacts of tourism development has not been convinced to be fully beneficial for Balinese community (Dermawan, 1999; Dewi, 2009). One of the reasons could be tourism leakage that occurs when the industry imports both products and services to support tourism industry in Bali. In economic terms, leakage is defined as losses from the national income flow which have been generated during the transition from the local/national consumption income cycle to the spending chain (Bull, 1991; Lundberg *et. al.*, 1991). Imports of consumption and resources to support tourism industry are the major a leakage that limits the positive impact of expenditure on a destination (Harrison, 1992). In Bali, tourism facilities such as big accommodations and big travel agents have been mostly owned by investors from outside Bali (national or international investors). In these cases, the economic benefits of tourism is likely to go mainly outside Bali or other countries, with a small proportion trickling down to the local Balinese community (Dermawan, 1999). The amount of import leakage of international standard hotels in Bali was estimated about 40% (based upon Nusa Dua Project) and the import leakage of small economy standard hotels was assumed about 20% in 1977 (Rodenburg, 1980). In addition, research on the calcultaion of tourism leakage on accommodation in Bali was undertaken by Suryawardani 2014a in terms of micro economic analysis. Thus, this research was focussed on the calculation of tourism leakage of accommodation in Bali based on the macro analysis by implementing Social Accounting Matrix (SAM).

LITERATURE REVIEW

Leakage is one cause of unbalanced economic distributions and limits the positive impacts of tourists' expenditures on a destination (Unluonen *et. al.*, 2011). Information from United Nation Environment Program (2010) states that there are two main ways of leakage, namely import leakage and export leakage. Import leakage occurs when tourists demand standards of equipment, food, and other products cannot be supplied by the host country, especially in less-developed countries. Much of the income from tourist expenditures leaves the country again to pay for these imports. On the other hand, export leakage arises when overseas investors who finance the resorts and hotels take their profits back to their country of origin (United Nation Environment Program, 2012). Furthermore, causes of leakage are namely:

(i) import goods and services for consumption or investment in tourism;
(ii) payments for foreign tour operators and agencies;
(iii) payment to foreigners for management contract and royalties;
(iv) profits which are paid to foreign stakeholders;
(v) interest paid for external credits in the tourism sector;
(vi) exchange costs for tourism investment;
(vii) advertising in international marketing and promotion expenditures;
(viii) commissions paid to foreign banks, credit cards and for agency used by tourists;
(ix) savings of foreign employees;
(x) education abroad and training costs of tourism employees;
(xi) saving of employers, employees, and entrepreneurs; and
(xii) taxes paid to government (Hudman and Hawkins, 1989).

Reduce leakage is important in order to increase economic benefits of tourism in a destination. To optimize economic benefits of tourism, leakage should be minimized (Zheng, 2011). Leakage can be minimized by developing stronger links between tourism and other sectors in the local economy. Moreover, government policy needs to concentrate on strengthening the economic linkages between tourism and agriculture to support import substitution by encouraging and strengthen development of local products (Meyer, 2007). A study by (Lacher and Nepal, 2010) found that by using precise strategy based on the authenticity of local products at destination, therefore economic leakage can be reduced, improve locl economic development, balance distribution in all sectors and improve community participation as well as community welfare in tourism development. In addition, they also said that it should be focused in using more local employees

to reduce leakage. Therefore, improvement of local human resourse is very important. The role of government and stakehoders are crucial in terms of development of infrastructure and tourism facility, controlling equitable development to create balance development for speading out income generating for the local community.

Social Accounting Matrix (SAM): an Accounting System and Conceptual Framework

According to (Thorbecke, 1988), the genesis of the Social Accounting Matrix (SAM) goes back to Richard Stones pioneering work on social accounts. Subsequently Pyatt and Thorbecke (1976) cited in (Thorbecke, 1988) formalized the SAM and showed how it could be used as a conceptual and modular framework for policy and planning purposes. As a data framework, the SAM is a comprehensive and disaggregated picture of the socioeconomic system during a given year. It provides a classification and organizational scheme for the data useful for analysts and policymakers. A SAM is a comprehensive accounting framework as a circular flow of income in an economy which captures transaction among variables. SAM represents all of transactions between different factors of production, institutions (households, companies and government), production activities within an economy with respect to the rest of the world (Thorbecke, 1988).

Methodology

Type of data used in this research was quantitative data. Types of collected data used in the macro analysis were as follow:

(a) Social Accounting Matrix (SAM) of Bali Province 2010,
(b) Sectoral value added *i.e.* wages, profit, indirect tax of Bali Province 2010,
(c) Sectoral final demand of Bali Province 2010, such as government consumption, expenditure, investment and export,
(d) Household expenditure of Bali Province,
(e) Sectoral number of labour of Bali Province 2010,
(f) Allocation of labour income and capital of Bali government to household,
(g) Allocation of transfer income between household,
(h) Allocation of transfer incomes between accommodations,
(i) Allocation of income transferred from household to government outside province/overseas *vice versa*,
(j) Allocation of income transferred from accommodation sector to government outside of Bali province/overseas *vice versa*,

(k) Allocation of household saving,

(l) Allocation of income of production factors especially capital to companies and outside of Bali province,

(m) Allocation of income transferred outside of Bali province as well as other related data which were collected through primary research on all types of accommodation were: imported foods, imported beverages, imported utensils and equipment and other imported raw materials that have been used in the operational hotels, foreign payments such as commission for travel agents, payment for foreign employees, services abroad such as promotion, public relation, profit transfer as well as management fees.

Sources of Data

Calculation of tourism leakage on accommodation sector in Bali was undertaken by using macro analysis approach based on secondary data from Bali Government Statistical Office. The basic data in generating SAM Hotel was Social Accounting Matrix (SAM) of Bali Province 2010. This data was disaggregated to SAM Matrix 31 × 31 describing four types of accommodations, namely Non-star rated hotels; 1, 2 and 3 Star-rated hotels; 4 and 5 Star-rated non-chain hotels and 4 and 5 Star-rated chain hotels. Other related data were National Survey on Social and Economic 2010, Survey on Labour Force 2010, Indicator of Indonesia Economy qualitative analysis was carried out regarding gaining points of view of hotel's managers on reasons in choosing imported.

Identification of Accounts in the SAM Hotel of Bali

Identification of accounts used in the SAM Hotel of Bali 2012 was as follow:

1. Account of Production Factors

This account explains interaction between supply and demand of production factors. It provides data related to receipt in the column side and payment in the row side. Factors of production are workers (labour), physical capital (like factories and equipment), natural resources and other factors that are used to resources and other factors that are used to produce goods and services.

2. Account of Institutions

Account of institution shows transaction of three accounts *i.e.* households account, companies account and government account as well as transaction to other accounts. Source income of institutions were income from factors of production as well as from account of Rest of the World (domestic or international transactions).

3. Account of Production Sectors

This account represents balance transaction between receipt and expenditure that has been used during production process either good or services.

4. Current Account

Current account is part of the balance of payments that records a country's net exports, net income on investments, and net transfers. It is defined as the sum of the balance of trade (goods and services exports less imports), net income from abroad and net current transfers. It expresses the difference between a nation's savings and its investment.

5. Capital Account

Capital Account is an account stating the amount of funds and assets invested in a business by the owners. In terms of economic, capital account is part of the balance of payments recording a nation's outflow and inflow of financial securities.

6. Indirect tax netto account describes indirect tax minus subsidies. In one side explains about government receipt and the other side explain about tax need to be paid by producer on selling price of the products.

7. Rest of the World Account comprises accounts to capture the range of transactions that take place between domestic and international transaction.

8. Account of Receipt and Expenditure

This account describes balance of circular flow on receipt and expenditure accounts of accommodation sectors in Bali tourism.

9. Account of Production of Hotel

This account describes balance of circular flow on production process in accommodation sectors in Bali tourism.

Size of SAM Hotel of Bali

SAM Hotel of Bali was developed in this research based on SAM Bali 2010 through endogenous and exogenous accounts. Endogenous accounts consist of account of production factors, account of institutions and account of production sectors. Account of institutions will be grouped into account of household, account of companies and account of government. In this research, company is accommodation in tourism which was classified into four types of accommodation, namely Non-star rated hotels; 1, 2 and 3 Star-rated hotels, 4 and 5 Star-rated non-chain hotels, and 4 and 5 Star-rated chain hotels. Total income of each type of

accommodation becomes focus of the analysis on institutional income distribution. Meanwhile, exogenous account consists of supply of commodities from hotel and non-hotel, capital account, current tax account and Rest of the World Account. Total receipts or revenues are described in rows side, meanwhile total expenditure are described in columns side. It is easier to understand that total receipts from the row side are used to some activities in the column side. In SAM account, balance is made in every transaction between rows and column. SAM Hotel 2010 was developed in this research in the form of SAM Matrix_31 × 31 (Appendix 1).

Calculation of Tourism Leakage Based on Macro Analysis

Before calculating tourism leakage of Bali tourism, discussion is focused on analysing transactions between accounts of receipts and account of expenditures of each type of accommodation. Furthermore, analysis is continued on production account of each type of accommodation. Calculation of tourism leakage is undertaken based on the above accounts. The sources of tourism leakage based on macro analysis were as follows:

(i) transfer to overseas from production factors, which consists of payment for labour and payment for capital ownership; and

(ii) transfer to overseas from institution for payment of non labour, this includes payment for goods and services.

Therefore, the calculation of tourism leakage from accommodation sector in Bali was calculated by using the formula below:

$$\text{Leakage} = \frac{\begin{array}{c}\text{Transfer of income from Production factors to overseas} \\ + \text{Payment of Non Labour to overseas}\end{array}}{\text{Total of Production}} \times 100\%$$

where:

- Transfer of income from production factors to overseas was income from production factors which was transferred to overseas. It consisted of:
  - Payment for labour (row 31 column 1 up to row 31 column 4 of Matrix SAM_31 × 31), and
  - Payment for capital ownership (row 31 column 6 up to row 31 column 9 of Matrix SAM_31 × 31).
- Payment of non labour to overseas was income transferred to overseas from institution or company (row 31 columns 12 up to row 31 column 15 of Matrix SAM_31 × 31).
- Total production was total income generated during production process (production account for each hotel).

Account of Receipt and Expenditure of Hotels in Bali

Account of receipt and expenditure of hotels describes the balance of circular flow on receipt and expenditure accounts of each type of accommodation. Transactions on receipt side show income of each hotel. These transactions consist of:

(i) Payment of production factors from labour;
(ii) Payment of production factors from non labour; (iii) Transfer from household;
(iv) Transfer between companies;
(v) Transfer from government as payment for subsidies;
(v) Transfer from overseas on the Rest of the World Account. Meanwhile, transactions on expenditure side describe expenditure of each hotel.

These transactions consist of:

(i) Transfer to household;
(ii) Transfer between companies;
(iii) Direct tax;
(iv) Saving (undistributed profit); and
(v) Non labour payment to overseas.

Design of account of receipt and expenditure of accommodation can be seen in Table 1.

Table 1
Receipt-Expenditure Accounts of Hotels in Bali

Expenditure	*Receipt*
• Transfer – transfer to household – transfer between companies • Direct tax • Saving (undistributed profit) • Non labour payment to overseas	• Payment for production factors: – Labour – Non labour • Transfer – from household – between companieso – from governmento – from overseas

Remaks: Created based on the SAM of Bali Province 2010 ′ framework

Account of Productions of Hotel in Bali

Account of productions of hotel describes balance of circular flow on production process in accommodation sector in Bali. Transactions on receipt side show income generated during production process. These transactions consist of:

(i) Selling of intermediate demand;

(ii) Selling of goods and services;

(iii) Selling of capital goods; and

(iv) Import.

Meanwhile, transactions on expenditure side describe expenditure of each hotel during production process. These transactions consist of:

(i) Purchasing intermediate demand;

(ii) Wages and salaries;

(iii) Company's surplus; and

(iv) Indirect tax. Design of account of productions of hotels in Bali is shown in Table 2.

Table 2
Productions Account of Hotel in Bali

Expenditure	*Receipt*
• Purchasing intermediate demand	• Selling intermediate demand
• Wages and salaries	• Selling goods and services
• Company's surplus	• Selling capital goods
• Indirect tax	• Export
	• Import

Remaks: Created based on the SAM of Bali Province 2010 ' framework

DATA ANALYSIS

According to Thorbecke (1988) cited in Archer and Fletcher (1996), SAM model consists of four basic accounts, namely:

(i) account of production factors,

(ii) account of institutions,

(iii) account of production sectors, and

(iv) other accounts or Rest of The World.

The first three accounts are called endogenous accounts while the last account is called exogenous accounts (Thorbecke, 1988), see Table 3.

Table 3 shows that Social Accounting Matrix (SAM) illustrates interrelated between sectors, such as income distribution and the impact of Consumption, Investment as well as Export-Import to regional income and job opportunities. From the Table 3 can be formulated matrix equation as follow:

$$Y = T + X \qquad ...(1)$$

Table 3. Scheme of Social Accounting Matrix (SAM)

		Endogenous Account				
Expenditure Receipt		*Factors of Production*	*Institutions*	*Production Sectors*	*Exogenous Account*	*Total Account*
		1	*2*	*3*	*4*	*5*
Endogenous Account						
Factors of Production	1	T_{11} 0	T_{12} 0	T_{13} Allocation of value-added to production factors	X_{14} Revenue of production factors from overseas	Y_1 Factorial distribution of revenue
Institutions	2	T_{21} Allocation of revenue to the institution	T_{22} Transfer between institution	T_{23} 0	X_{24} Transfer from overseas	Y_2 Distribution of institutio-ional revenue
Production Sectors	3	T_{31} 0	T_{32} Domestic demand	T_{33} Intermediate goods	X_{34} Export and investment	Y_3 Total output on product-ion sectors
Exogenous Account	4	T_{41} Allocation of revenue to overseas (Leakage)	T_{42} Saving	T_{43} Import and tax	X_{44} Other transfers	Y_4 Total revenue from other accounts
Total	5	Y'_1 Sum of expenditure from produc-tion factors	Y'_2 Sum of expenditure from institutions	Y'_3 Total input	Y'_4 Sum of other expenditures	

Source: Thorbecke (1988)

where

Y = national/regional income

T = endogenous income

X = exogenous income

Income distribution of endogenous and exogenous account can be formulated as follow:

$$Y_1 = T_{13} + X_{14} \quad ...(2)$$

$$Y_2 = T_{21} + T_{22} + X_{24} \quad ...(3)$$

$$Y_3 = T_{32} + T_{33} + X_{34} \quad ...(4)$$

$$Y_4 = T_{41} + T_{42} + T_{43} + X_{44} \quad ...(5)$$

Equation (2) shows factorial income distribution, while equation (3) shows institutional income distribution, equation (4) shows total output on production factors, and equation (5) shows other total income (exogenous).

Social Accounting Matrix (SAM) model has a number of limitations with some assumptions. The assumptions are:

(i) all of the products produced by each sector consumed at a certain period;

(ii) the input-output relationships in the production activities are linear or constant returns to scale;

(iii) there is no substitution between production factors that have been used in production process;

(iv) a group of products do not produced at the same time by two or more companies;

(v) constant prices;

(vi) the economy is in an equilibrium condition (Thorbecke, 1988).

RESULTS AND DISCUSSION

Receipt-Expenditure Account of Non-star Rated Hotels

Receipt-Expenditure account depicts linkages between receipt account and expenditure account. Based on Matrix SAM_31x31 (see Appendix 1), sources of receipt of Non Star-rated hotels in Bali were:

(i) Income which was generated as payment of production factors of non labour. It was about 269.56 billion rupiah (row 12 column 6 of Matrix SAM_31 × 31 in Appendix 1);

(ii) Transfer from household was about 24.20 million rupiah (row 12 column 11);

(iii) Transfer between hotels was about 77.06 billion rupiah (sum of row 12 column 12 up to row 12 column 16);

(iv) Transfer from government was about 61.02 million rupiah (row 12 column 17); and

(v) Transfer from overseas was about 3.39 billion rupiah (row 12 column 31). Total receipt of Non-star rated hotels was the sum of all the above incomes, *i.e.* 350.10 billion rupiah (row 12 column Total).

Summary of the receipt-expenditure account of Non-star rated hotels is presented in Table 4.

Table 4
Receipt-Expenditure Account of Non-star rated Hotels in 2012

Expenditure	*Amount (Million Rupiah)*	*Receipt*	*Amount (Million Rupiah)*
1. Transfer:		1. Payment for production factors:	
• Transfer to household	16,581.61	• Labour	0.00
• Transfer between companies	160,682.08	• Non labour	269,563.38
2. Direct tax	107, 420.53	2. Transfer:	
3. Saving (undistributed profit)	62,812.44	• From household	24.20
		• Between companies	77,063.87
4. Non labour payment to overseas	2,604.21	• From government	61.02
		• From overseas	3,388.40
Total	350,100.87	Total	350,100.87

Remark: based on SAM of Bali 2010.

The above results show that receipt of Non-star rated hotels was dominated by income which was generated as payment of production factors from non labour. It was about 269.56 billion rupiah or 77.00% of the total income. It then followed by transfer between hotels about 77.06 billion rupiah or 22.01% of the total income. Furthermore, the total receipt of Non-star rated hotels was used as expenditure (see SAM_31x31 at Appendix 1). This expenditure included:

(i) Transfer to household was about 16.58 billion rupiah (row 11 column 12 of SAM_31 × 31);

(ii) Transfer between companies (hotels and non-hotels) was about 160.68 billion rupiah (sum of row 12 column 12 up to row 12 column 16);

(iii) Direct tax to the government was about 107.42 billion rupiah (row 17 column 13);

(iv) Undistributed profit (saving) was 62.81 billion rupiah (19.94% of the total receipt) was used as capital account for the companies (row 29 column 12); and

(v) Payment of non labour to other regions or overseas was about 2.60 billion rupiah (row 31 column 12).

The results show that direct taxes paid by Non Star-rated hotels were really high, about 107.42 billion rupiah or 30.68% of the total receipt (see Table 4).

Production Account of Non-star rated Hotels

Production account describes linkages between transactions on production process. Based on Matrix SAM_31 × 31 (see Appendix 1), total receipt of production account was 136.58 billion rupiah. The sources of receipt on production account were as follows:

(i) Selling of intermediate input was 26.79 billion rupiah;

(ii) Selling of goods and services for final consumption was 107.60 billion rupiah (row 24 column 11 plus row 24 column 17);

(iii) Export was 2.46 billion rupiah (row 24 column 31);

(iv) Import was 276.25 billion rupiah (row 30 column 24).

Summary of the receipt of production account of Non-star rated hotels is presented in Table 5.

Table 5
Production Account of Non-star rated Hotels in 2012

Expenditure	*Amount (Million Rupiah)*	*Receipt*	*Amount (Million Rupiah)*
1. Purchasing intermediate demand	58,432.32	1. Selling intermediate demand	26,793.04
2. Wages and salaries	53,292.15	2. Selling goods and services	107,603.11
3. Companies' Surplus	23,338.94	3. Selling capital goods	0.00
4. Indirect tax	1,515.46	4. Export	2,458.97
		5. Import	276.25
Total	136,578.87	Total	136,578.87

Remark: based on SAM of Bali 2010

Furthermore, the receipt of Non-star rated hotels was used to some activities or expenditures, as follow:

(i) Purchasing for intermediate input was about 58.43 billion rupiah (sum of row 24 column 18 up to row 28 column 18 of SAM_31 × 31);

(ii) Payment for labour wages and salaries was about 53.29 billion rupiah (row 1 column 18);

(iii) Surplus of the companies was about 23.34 billion rupiah (row 6 column 18);

(iv) Payment for indirect taxes was about 1.52 billion rupiah (row 30 column 24).

Summary of the production account of Non-star rated hotels is presented in Table 5. As shown in Table 5, the highest expenditure of Non-star rated hotels was

for purchasing intermediate input (raw materials). It was about 58.43 billion rupiah or 42.78% of the total expenditure. It was followed by purchasing for labour payment about 53.29 billion rupiah or 39.02% of the total expenditure.

Receipt-Expenditure Account of 1, 2 and 3 Star-rated Hotels

Based on Matrix SAM_31 × 31 (see Appendix 1), sources of receipt of 1, 2 and 3 Star-rated hotels in Bali were:

(i) Income which was generated as payment of production factors of non labour. It was about 8.13 trillion rupiah (sum of row 13 column 6 up to row 13 column 10 of Matrix SAM_31 × 31);

(ii) Transfer from household was about 1.41 billion rupiah (row 13 column 11);

(iii) Transfer between hotels was about 183.03 billion rupiah (sum of row 13 column 12 up to row 13 column 16);

(iv) Transfer from government was about 911.28 million rupiah (row 13 column 17); and

(v) Transfer from overseas about 79.70 billion rupiah (row 13 column 31).

Total receipt of 1, 2 and 3 Star-rated hotels was 8,391.84 billion rupiah (row 13 column Total). Summary of the receipt-expenditure account of 1, 2 and 3 Star-rated hotels is presented in Table 6.

Table 6
Receipt-Expenditure Account of 1, 2 and 3 Star-rated Hotels in 2012

Expenditure	*Amount (Million Rupiah)*	*Receipt*	*Amount (Million Rupiah)*
1. Transfer:		1. Payment for production factors	
• Transfer to household	850,397.93	• Labour	0.00
• Transfer between companies	283,036.74	• Non labour	8,126,785.73
2. Direct tax	4,254,761.85	2. Transfer:	
3. Saving (undistributed profit)	2,487,904.13	• From household	1,413.18
		• Between companies	183,033.59
4. Non labour payment to overseas	515,744.49	• From government	911,28
		• From overs	79,701.36
Total	8,391,845.14	Total	8,391,845.14

Remark: Based on SAM of Bali 2010

The results in this table show that the highest contributor to the receipt account of 1, 2 and 3 Star-rated hotels was payment from production factors from non labour. It was 96.84% of the total receipt. Others were very small, such as income

between companies (2.18%) and transfer from overseas (0.95%). Meanwhile, referred to Matrix SAM_31 × 31 (see Appendix 1), the expenditure of 1, 2 and 3 Star-rated hotels consisted of several activities, namely:

(i) Transfer to household was 850.39 billion rupiah (row 11 column 13 of SAM_31 × 31);

(ii) Transfer between companies (hotels and non-hotels) was 283.04 billion rupiah (sum of row 12 column 13 up to row 16 column 13);

(iii) Direct tax to the government was 4.25 trillion rupiah (row 17 column 13);

(iv) Undistributed profit (saving) was 2.49 trillion rupiah (row 29 column 12); and

(v) Payment of Non labour to other regions or overseas about 515.74 billion rupiah (row 31 column 13).

Summary of the receipt-expenditure account of 1,2 and 3 Star-rated hotels is presented in Table 6. The results in this table show that the highest expenditure of 1,2,3 Star-rated hotels was direct tax (50.70% of the total expenditure). It was followed by saving or undistributed profit (29.65%), and transfer to household (10.13%). Others were small, such as non labour payment to overseas and transfer between companies.

Production Account of 1, 2 and 3 Star-rated Hotels

According to production account of 1, 2 and 3 Star-rated hotels (see Matrix SAM_31x31 in Appendix 1); total receipt was 3.32 trillion rupiah. The sources of receipt were as follow:

(i) Selling intermediate demand was about 939.55 billion rupiah;

(ii) Selling goods and services of final consumption was about 314.55 billion rupiah (sum of row 25 column 11 and row 25 column 17);

(iii) Export was about 2.72 trillion rupiah (row 25 column 31); and

(iv) Import was about 649.79 billion rupiah. This receipt was used for some transactions, as follow:

(i) Purchasing for intermediate input was 1.26 trillion rupiah (sum of row 24 column 20 up to row 28 column 20);

(ii) Payment for labour wages and salaries was 1.11 trillion rupiah (row 2 column 19);

(iii) Company's surplus was 803.08 trillion rupiah (row 7 column 19); and

(iv) indirect tax was about 142.59 trillion rupiah (row 30 column 25).

Summary of production account of 1, 2 and 3 Star-rated hotels is shown in Table 7.

Table 7
Production Account of 1, 2 and 3 Star-rated Hotels in 2012

Expenditure	*Amount (Million Rupiah)*	*Receipt*	*Amount (Million Rupiah)*
1. Purchasing intermediate demand	1,262,595.29	1. Selling intermediate demand	939,554.19
2. Wages and salaries	1,111,268.03	2. Selling goods and services	314,549.85
3. Company's Surplus	803,078.43	3. Selling capital goods	0.00
4. Indirect tax	142,585.86	4. Export	2,715,220.17
		5. Import	649,796.60
Total	3,319,527.61	Total	3,319,527.61

Remark: Based on SAM of Bali 2010

Receipt-Expenditure Account of 4 and 5 Star-rated Non-Chain Hotels

Total receipt for 4,5 Star-rated Non-chain hotels in Bali was about 6.13 trillion rupiah (see Matrix SAM_31 × 31 in Appendix 1 Based on this matrix, the sources of receipt were as follow:

(i) Income from the payment of production factors of non labour was about 5.59 trillion rupiah (sum of row 14 column 6 up to row 14 column 10 of Matrix SAM_31 × 31);

(ii) Transfer from household was about 4.26 billion rupiah (row 14 column 11);

(iii) Transfer between companies was about 354.12 billion rupiah (sum of row 14 column 12 up to row 14 column 16);

(iv) Transfer from government was about 2.47 billion rupiah (row 14 column 17); and

(v) Transfer from overseas was about 172.73 billion rupiah (row 14 column 31). The summary of receipt-expenditure account of 4 and 5 Star-rated non-chain hotels is presented in Table 8.

The results show that the highest contributor to the receipt account of 4 and 5 Star-rated Non-chain hotels was payment from production factors of non labour (91.30% of the total receipt). It was followed by income between companies (5.78%), and receipt from overseas (2.82%). Meanwhile, total expenditure of 4 and 5 Star-rated Non-chain hotels was 6.13 trillion rupiah, and it consisted some transactions, as follow:

(i) Transfer to household was 401.26 billion rupiah (row 11 column 14 of SAM_31 × 31);

Table 8
Receipt-Expenditure Account of 4 and 5 Star-rated Non Chain Hotels in 2012

Expenditure	*Amount (Million Rupiah)*	*Receipt*	*Amount (Million Rupiah)*
1. Transfer:		1. Payment for production factors:	
• Transfer to household	401,256.81	• Labour	0.00
• Transfer between companies	173,140.53	• Non labour	5,596,190.75
2. Direct tax	3,256,473.49	2. Transfer:	
3. Saving (undistributed profit)	1,904,170.93	• From household	4,261.47
		• Between companies	354,119.95
4. Non labour payment to overseas	394,736.13	• From government	2,472.60
		• From overseas	172,733.12
Total	6,129,777.89	Total	6,129,777.89

Remark: based on SAM of Bali 2010

(ii) Transfer between companies (hotels and non-hotels) was 173.14 billion rupiah (sum of row 12 column 14 up to row 16 column 14);

(iii) Direct tax to government was about 3.26 billion rupiah (row 17 column 14);

(iv) Undistributed profit (saving) was 1.90 trillion rupiah (row 29 column 14); and

(v) Payment of non-labour to other regions or overseas was about 394.73 billion rupiah (row 31 column 14).

The summary of expenditure of receipt-expenditure account of 4 and 5 Star-rated non-chain hotels is presented in Table 8 From this table, it can be said that the highest expenditure of 4 and 5 Star-rated Non-chain hotels was direct tax (53.13% of the total expenditure). It was followed by saving (31.06%), transfer to household (6, 55%), non-labour payment to other regions and overseas (6.44%), and transfer between companies (2.82%).

Production Account of 4 and 5 Star-rated Non-Chain Hotels

From receipt side of production account (see Matrix SAM_31 × 31 in Appendix 1), total receipt was 7.19 trillion rupiah. It was obtained from some transactions as follow:

(i) Selling intermediate input was about 2.15 trillion rupiah;

(ii) Selling goods and services of final consumption was about 540.59 billion rupiah (sum of row 26 column 11 and row 26 column 17 of SAM_31 × 31);

(iii) Export was about 6.38 trillion rupiah (row 25 column 31); and

(iv) Import was about 1.88 trillion rupiah. Summary of the receipt side of production account of 4 and 5 Star-rated Non-chain hotels is shown in Table 9.

On the other hand, the total receipt of 4 and 5 Star-rated Non-chain hotels was used to some activities as follows:

(i) Purchasing intermediate input was about 3.82 trillion rupiah (sum of row 24 column 20 up to row 28 column 20 of SAM_31 × 31);

(ii) Payment for labour wages and salaries was about 1.68 trillion rupiah (row 3 column 20);

(iii) surplus of the company was about 1.39 trillion rupiah (row 9 column 21); and

(iv) Payment for indirect tax was about 309.02 billion rupiah (row 30 column 26).

Summary of the expenditure side of production account of 4 and 5 Star-rated Non-chain hotels is shown in Table 9.

Table 9
Production Account of 4 and 5 Star-rated Non-Chain Hotels in 2012

Expenditure	*Amount (Million Rupiah)*	*Receipt*	*Amount (Million Rupiah)*
1. Purchasing intermediate demand	3,815,216.11	1. Selling intermediate demand	2,153,770.52
2. Wages and salaries	1,683,787.70	2. Selling goods and services	540,587.20
3. Company's Surplus	1,386,236.92	3. Selling capital goods	0.00
4. Indirect tax	309,019.83	4. Export	6,377,602.16
		5. Import	1,877,699.32
Total	7,194,260.56	Total	7,194,260.56

Remark: Based on SAM of Bali 2010

Receipt-Expenditure Account of 4 and 5 Star-rated Chain Hotels

Total receipt for 4 and 5 Star-rated Non-chain hotels in Bali was 3.81 trillion rupiah (see Matrix SAM_31 × 31 at Appendix 1). Sources of receipt were:

(i) Income generated from payment of production factors of non labour. It was about 3.65 billion rupiah (sum of row 15 column 6 up to row 15 column 10 of Matrix SAM_31 × 31);

(ii) Transfer from household was about 46.08 million rupiah (row 15 column 11);

(iii) Transfer between companies was about 114.97 billion rupiah (sum of row 15 column 12 up to row 15 column 16);

(iv) Transfer from government was about 2.47 million rupiah (row 15 column 17); and

(v) Transfer from overseas was about 49.91 billion rupiah (row 15 column 31). The summary of receipt account of 4 and 5 Star-rated chain hotels is presented in Table 10.

Table 10
Receipt-Expenditure Account of 4 and 5 Star-rated Chain Hotels in 2012

Expenditure	*Amount (Million Rupiah)*	*Receipt*	*Amount (Million Rupiah)*
1. Transfer:		1. Payment for production factors:	
• Transfer to household	68,467.14	• Labour	0.00
• Transfer between companies	379,320.97	• Non labour	3,647,217.64
2. Direct tax	1,559,211.55	2. Transfer:	
3. Saving (undistributed profit)	911,724.08	• From household	46.08
		• Between companies	114,972.47
4. Non labour payment to overseas	893,689.99	• From government	263.33
		• From overseas	49,914.21
Total	3,812.413.73	Total	3,812,413.73

Remark: Based on SAM of Bali 2010

The results showed that the receipt account of 4 and 5 Star-rated chain hotels was dominated by payment from production factors from non labour (95.67% of the total receipt). It was followed by income between companies (3.02%) and transfer from overseas (1.31%). Meanwhile, total expenditure of 4 and 5 Star-rated chain hotels was 3.81 trillion rupiah (see Matrix SAM_31 × 31 at Appendix 1). The expenditure account consisted of several transactions, as follow:

(i) Transfer to household was 68.47 billion rupiah (row 11 column 15 of SAM_31 × 31);

(ii) Transfer between companies (hotels and non-hotels) was 379.32 billion rupiah (sum of row 12 column 15 up to row 16 column 15);

(iii) Direct tax to the government was about 1.56 trillion rupiah (row 17 column 15);

(iv) Undistributed profit (saving) was about 911.72 billion rupiah (row 29 column 15); and

(v) Payment for non labour to other regions or overseas was about 893.69 billion rupiah (row 31 column 15).

Summary of expenditure account of 4 and 5 Star-rated chain hotels is presented in Table 10.

Production Account of 4 and 5 Star-rated Chain Hotels

From receipt side of production account, total receipt of 4 and 5 Star-rated chain hotels was about 2.03 trillion rupiah (see Matrix SAM_31 × 31 at Appendix 1). The receipt account consisted of several transactions, as follow:

(i) Selling intermediate input was about 658.87 billion rupiah;

(ii) Selling goods and services of final consumption was about 173.82 billion rupiah (sum of row 27 column 11 and row 27 column 17 of Matrix SAM_31 × 31);

(iii) Export was about 2.64 trillion rupiah (row 26 column 31); and

(iv) Import was about 2.44 trillion rupiah.

From expenditure side of production account, total receipt of 4 and 5 Star-rated chain hotels was 2.03 trillion rupiah. The expenditure account consisted of some transactions, as follow:

(i) Purchasing for intermediate input was about 935.53 billion rupiah (sum of row 24 column 21 up to row 28 column 21 of SAM_31 × 31);

(ii) Payment for labour wages and salaries was about 434.94 billion rupiah (row 4 column 21);

(iii) Surplus of the company was about 619.14 billion rupiah (row 9 column 21);

(iv) Payment for indirect tax was about 44,65 billion rupiah (row 30 column 27). Summary of production account of 4 and 5 Star-rated chain hotels is presented in Table 11.

Table 11. Production Account of 4, 5 Star-rated Chain Hotels in 2012

Expenditure	*Amount (Million Rupiah)*	*Receipt*	*Amount (Million Rupiah)*
1. Purchasing intermediate demand	935,532.71	1. Selling intermediate demand	658,874.73
2. Wages and salaries	434,938.91	2. Selling goods and services	173,822.83
3. Company's Surplus	619,137.41	3. Selling capital goods	0.00
4. Indirect tax	44,648.30	4. Export	2,643,230.95
		5. Import	2,441,671.18
Total	2,034,257.33	Total	2,034,257.33

Remark: Based on SAM of Bali 2010

Results of Calculation of Tourism Leakage

Based on the formula of calculation of tourism leakage from accommodation sector in Bali, the amount of tourism leakage were as follows:

Tourism Leakage on Non-star rated hotels (see Table 12):

$$= \frac{(0 + 127.15) + (2,604.21)}{136,578.87} \times 100\% = 1.99\% = 2.0\%$$

Based on the above formula, leakage of other types of accommodations was calculated. The results are as follows (Table 12):

(i) Leakage of 1,2 and 3 Star-rated hotels was 15.66%;

(ii) Leakage of 4 and 5 Star-rated Non-chain hotels was 7.14%;

(iii) Leakage of 4 and 5 Star-rated chain hotels was 55.31%; and

(iv) The average leakage of hotels was 19.48%.

Table 12 shows the amount of tourism leakage from each type of accommodation in Bali. Detail of the amount of tourism leakage on each type of accommodation is outlined as follow:

(i) The amount of tourism leakage of Non-star rated hotels was 2,0%. It consisted of capital ownership (127.15 million rupiah or 0.09%) and payment of non labour (2.6 billion rupiah or 1.91%).

(ii) The amount of tourism leakage of 1,2 and 3 Star-rated hotels was 15.66%. It consisted of capital ownership (3.9 billion rupiah or 0.12%), and payment of non labour (515.7 billion rupiah or 15.54%).

(iii) The amount of tourism leakage of 4 and 5 Star-rated non-chain hotels was 7.14%. It consisted of payment for labour (933.02 billion rupiah or 0.01%), payment for capital ownership (118.37 billion rupiah or 1.64%), and payment of non labour (394.74 billion rupiah or 5.49%).

(iv) The amount of tourism leakage of 4 and 5 Star-rated chain hotels was 55.31%. It consisted of payment for labour (41.66 billion rupiah or 1.43%), payment for capital ownership (669.58 billion rupiah or 23.08%) and payment of non labour (893.69 billion rupiah or 30.80%). It can be seen that the highest percentage of tourism leakage was found on 4 and 5 Star-rated chain hotels (55.31%), followed by 1,2 and 3 Star-rated hotels (15.66%); 4 and 5 Star Non-chain hotels (7.14%); and the lowest leakage was on Non-star rated hotels (2.0%). The average of leakage of all types of accommodation was 19.48%.

Based on the Table 12, the causes of a high leakage on 4 and 5 Star-rated chain hotels were the payments on production factors which were transferred to overseas and the payment of non labour to overseas. More detail explanation is described as follow:

(i) Payment from institution (companies/hotels) for non labour to other regions outside Bali and overseas was 893,689.99 billion rupiah or 30.80% of the total production.

(ii) Payment for capital ownership which was transferred to other regions outside Bali and overseas was 669,584.74 billion rupiah or 23.08% of the total production.

(iii) Payment for labour which was transferred to other regions outside Bali and overseas was 41,659.82 billion rupiah or 1.43% of the total production.

Furthermore, type of accommodation 1, 2 and 3 Star-rated hotels was the second highest on tourism leakage from accommodation sector in Bali. It was higher than leakage of 4 and 5 Star-rated non-chain hotels. It is because of a high percentage of payment on non labour either to other regions outside Bali or to overseas. The leakage from non labour of 1, 2 and 3 Star-rated hotels was 15.53% of the total production. Meanwhile payment for non labour on 4 and 5 Star-rated Non-chain hotels was 5.49% of the total production. In fact, payment for capital ownership of 4 and 5 Star-rated Non-chain hotels was higher than those on 1, 2 and 3 Star-rated hotels. It was 118,373.85 billion rupiah (23.08%) for 4 and 5 Star-rated hotel, meanwhile payment for capital ownership of 1, 2 and 3 Star-rated hotel was 3,945.79 billion rupiah or 0.12%. These results show that accommodation that is managed by international chain systems and/or owned by foreigners had higher leakage than other types of accommodation who managed and/or owned by local people. The more leakage, therefore the less revenue from tourism is received by the host country and community. In another word, more revenue from tourism goes to outside the destination region or country.

Similar results have been found by Suryawardani et al (2014a) when the calculation of tourism leakage in accommodation in Bali was undertaken based on the micro analysis (industrial analysis), which found that the highest percentage of tourism leakage was found on 4 and 5 Star-rated chain hotels, however a bit different had been found on the results of the calculation of tourism leakage on 1,2 and 3 star-rated hotels and 4,5 star-rated non chain hotel. Reason of a slight different result from these two analyses is that macro analysis was undertaken by using SAM Hotel included transactions between sectors in detail. These transactions included transactions between factors of production, production sectors, institutions, commodities, capital account and indirect taxes, as well as transactions between domestic and foreign activities including imported of capital goods, raw materials as well as the use of foreign employments. According to (Thorbecke 1988), transactions between domestic and foreign activities are recorded in the Rest of the World (ROW) accounts. Some of these transactions were not calculated in the micro analysis. By using SAM for macro analysis, it means that the analysis was comprehensive, disaggregated, consistent and using complete data system that captures the interdependence that exists within a socioeconomic system (Thorbecke 1988). This argument also supported by Thorbecke (1988) who said

Table 12
Percentage of Tourism Leakage of Bali Tourism on Accommodations Sector 2012

		Types of Accommodation				
No.	*Production Activities rated Hotels*	*Non-Star Star-rated (Million Rupiah) Rupiah)*	*1, 2 and 3 Star-rated Hotels (Million Rupiah)*	*4 and 5 Star-rated Non Chain Hotels (Million Rupiah)*	*4 and 5 Rupiah) Chain Hotels (Million*	*Total (Million*
1.	Total of Production	136,578.87	3,319,527.61	7,194,260.56	2,901,333.11	13,551,700.15
2.	Income from production factors which was transferred to overseas:					
	(a) Labour	–	–	933.02 (0.01%)	41,659.82 (1.43%)	42,592.84 (0.31%)
	(b) Capital ownership	127.15 (0.09%)	3,945.79 (0.12%)	118,373.85 (1.64%)	669,584.74 (23.08%)	792,031.54 (5.84%)
3.	Payments of Non Labour to overseas	2,604.21 (1.91%)	515,744.49 (15.54%)	394,736.13 (5.49%)	893,689.99 (30.80%)	1,806,774.83 (13.33%)
	Leakage (%)	2.00	15.66	7.14	55.31	19.48

Remark: Based on SAM of Bali 2010.

that SAM shows how the money flows in the economy/society involving three important entities, namely production factors, production sector and institution. So that, by using SAM approach, transaction between production factors, production sector and institution related to four types of accommodations give more detail results.

Tourism leakage impacts on multiplier effect. Archer and Fletcher (1996) reveale that an increasing in the amount of leakage in any tourist-based economy in a country or region, therefore its multiplier effect decreases. Furthermore, Var and Quayson (1985) state that the magnitude of tourism multiplier coefficient depends on tourist spending, the economic base of a region/country and its economic relations. When a destination region/country is self-sufficient in capital, production and services, so that it has a greater multiplier coefficient.

Moreover, when there is an extended economic base in a destination region/country, therefore the multiplier effect will be greater due to less import and greater value added. Regarding the percentage of tourism leakage from other countries, it was reported by United Nation Environment Program (2010) that tourism leakage of Thailand was 70% and India was 40% in 2000. According to report by United Nation Economic Comission Report (2010) tourism leakage of Caribbean was

estimated about 80%, Mauritius was 90%, Seychelles was 60%, Saint Lucia was 44.8%, and Jamaica was 40% in 1991. Hemmati and Koehler (2000) reveale that leakage was ranging between 40% to 60% of total tourism earnings for many small island destinations. However, it has not been found how much is the percentage of leakage that can be tolerant. In this study, the percentage of leakage was calculated only based on leakage that was occurred in accommodation sector. So that, a further research need to be undertaken in order to obtain the percentage of leakage from total tourism revenue in Bali.

Reasons for the tourism leakage in surrounding tourism destinations are multifaceted (Chirenje et al. 2013). Some of the main reasons are the lack of local ownership, local employment, and local capital, as well as inability to link tourism to the local economy. Local ownership is crucial to be developed as the owners of major tourism businesses. This will keep a majority of the profits in the destination region. In addition, tourism leakage can be reduce by employing more locals and buying more locally produced goods as well as creating strong linkages to local industries (Chirenje et al. 2013; Kontogeorgopoulo 1998; Milne 1987). Unfortunately, local entrepreneurs frequently lack of capital, education and experience (Ashraful and Chowdhury 2012). As a result, foreign investors will dominate the owner of large tourism firms, therefore profits are kept by the outsiders who own the firms. Management and marketing may also be a major problem for local ownership as local entrepreneurs typically do not have the experience or education to market products to foreigners, and their ability to educate themselves is often limited (Thorbecke, 1988). Local employment will also have a strong effect on reducing tourism leakage as wages are generally not leaked (Thorbecke, 1988). However, local residents are often not ideally suited for the jobs as they lack of proper education, experiences and language skills. Therefore, large chain firms frequently import more skilled labour from urban areas to fill these positions (Goodwin, 2008; Hemmati and Koehler, 2000, and Mbaiwa, 2005).

Many studies found that the majority of locals worked as unskilled labour and earned fewer wage, while expatriates were employed in management positions and earned very high wages (Thorbecke 1988). Tourist destinations that do not promote high multipliers and high level of linkages will not produce substantial economic development. So that, linkages between tourism industry and local economy are very important which lead to increase the multiplier effect (Hampton, 1998; Scheyvens and Russel, 2012; Smith and Jenner, 1992). It is crucial to increase the amount of locally produced goods which can increase multiplier effect. To maximize the economic impact of tourism, it is suggested that region should attempt to increase the connections between tourism and local businesses rather than depend on imported goods and services (UNWTO, 2010).

Demand for local fruits has increased not only to fulfill demand for tourists, but also for making offering by Balinese community. In other hand, there was insufficient supply to fulfill the demand. So that, imported fruits cannot be avoided. To minimize leakage, cooperation between government, industry and farmer is crucially needed . Several efforts have been undertaken by government of Bali province to protect and develop local products especially local fruits. Empowerment of local products has been undertaken by Bali government through "Regulation of Bali Government No. 3/2012 regarding Empowerment, Protection and Development of Small-scale Industry". Ketut Wija, one of Bali Government's official said that this regulation requires involvement of tourism industry and other related industry to give chance for local products to be promoted to and served for tourists. It was realised that the quality of local products was lower than imported products. So that, some efforts have been undertaken to improve the quantity, quality and continuity of local products. He also revealed that local community should participate in developing fruit farms in Bali that can produce fruits similar to imported fruits (Bali Post 2013). Improvement benefit of tourism could also be enhanced through stronger linkages between regional handicraft producers and artisans. Building synergies with such producers could enable them to become significant suppliers of interior design elements, such as handicrafts, paintings, and other furniture. This will be able to reduce leakage significantly (Scheyvens and Russel, 2012; Thorbecke, 1988).

Finally the results also show that efforts in reducing tourism leakage are crucially needed through optimize the potential of local products, develop agriculture, livestock, fisheries and handicraft industry, empowerment of local community, reduce the use of imported products for tourists, increase export of local products, improve government's role in every strategy related to minimize tourism leakage, involvement of community leaders in community empowerment, empower community organization in developing agriculture, livestock, fisheries and handicraft industry, urge government to develop and implement supporting policies in order to minimize leakage, establish international trade policy that gives priority to reduce import and to increase export of local products, stabilize the foreign currencies fluctuation by Indonesian Government, establish policy on restriction of foreign investment on accommodation sector in Bali, facilitate public-private partnership on investment in tourism and encourage tourists to consume local products in priority.

CONCLUSION

The highest percentage of tourism leakage was found on 4 and 5 Star-rated chain hotels (55.31%), followed by 1,2 and 3 Star-rated hotels (15.66%), and 4 and 5 Star non-chain hotels (7.14%). The lowest leakage was found on Non-star rated hotels (2.0%) and the average leakage of all types of hotels was 19.48%. The causes of

leakage were payments of non labour, payment for capital ownership, payment for labour which were transferred to overseas These results indicate that 4 and 5 Star-rated chain hotels bring about more tourism leakage than other types of accommodation as they use many imported goods and services, foreign labour as well as capital ownership. These results show that accommodation that is managed by international chain systems and/or owned by foreigners has higher leakage than other types of accommodation. The more leakage the less revenue from tourism is received by the host country and community. In another word, more revenue from tourism goes outside the destination or outside of the country. Therefore, less contribution to local economy which means that less benefit for Balinese. Reducing import components used in the accommodation sectors is crucial as long as local products are available to substitute the imported products.

Recommendation

Efforts in minimizing tourism leakage need to be focused through development of local products and human resources, such as optimize the potential of local products, develop agriculture, livestock, fisheries and handicraft industry; empower community, urge government to develop and implement supporting policies, establish international trade policy that reduce import and increases export of local products, facilitate public-private partnership on investment in tourism, establish policy on restriction of development new accommodation in Bali, reduce the use of imported products for tourists encourage tourists to consume local products and improve local human resources through better education and training.

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Appendix 1.

Social Accounting Matrix (SAM) of Hotel of Bali 2010

			Code	I. Production Factors										II. Institution							III. Production Sectors					IV. Trade & Transport Margin	V. Commodity					VI. Capital Balance	VII. Indirect Tax - Subsidies	VIII. External Balance	TOTAL
				Labour					Non-Labour					Household	Company					Government															
				Non Star Hotel	1,2,3 Star-rated Hotel	4,5 Star-rated Non Chain Hotel	4,5 Star-rated Chain Hotel	Non Hotel	Non Star Hotel	1,2,3 Star-rated Hotel	4,5 Star-rated Non Chain Hotel	4,5 Star-rated Chain Hotel	Non Hotel		Non Star Hotel	1,2,3 Star-rated Hotel	4,5 Star-rated Non Chain Hotel	4,5 Star-rated Chain Hotel	Non Hotel		Non Star Hotel	1,2,3 Star-rated Hotel	4,5 Star-rated Non Chain Hotel	4,5 Star-rated Chain Hotel	Other Accomodation		Non Star Hotel	1,2,3 Star-rated Hotel	4,5 Star-rated Non Chain Hotel	4,5 Star-rated Chain Hotel	Other Accomodation				
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
I. Production Factors	Labour	Non Star Hotel	1																		53,292	0	0	0	2,316,195									222	2,369,709
		1,2,3 Star-rated Hotel	2																		0	1,111,268	0	0	2,217,516									7,843	3,336,628
		4,5 Star-rated Non Chain Hotel	3																		0	0	1,683,788	0	3,393,382									31,167	5,108,337
		4,5 Star-rated Chain Hotel	4																		0	0	0	434,939	4,379,849									14,421	4,829,208
		Non Hotel	5																		0	0	0	0	17,101,714									310,682	17,412,396
	Non-Labour	Non Star Hotel	6																		23,339	0	0	0	2,230,776									375	2,254,490
		1,2,3 Star-rated Hotel	7																		0	833,078	0	0	1,363,251									3,441	2,199,770
		4,5 Star-rated Non Chain Hotel	8																		0	0	1,386,237	0	2,712,701									53,200	4,157,137
		4,5 Star-rated Chain Hotel	9																		0	0	0	619,137	2,725,401									23,744	3,368,283
		Non Hotel	10																		0	0	0	0	18,419,394									960,367	19,379,761
II. Institution	Household		11	2,369,709	3,336,628	5,107,404	4,737,548	16,699,832	1,984,800	831,264	1,127,396	1,657,247	3,054,016	2,055,831	16,582	850,398	401,257	65,467	2,752,582	5,425,089														998,000	54,523,747
	Company	Non Star Hotel	12						259,563	0	0	0	0	24	50,096	0	160	0	26,808	61														3,388	350,101
		1,2,3 Star-rated Hotel	13						0	1,354,464	1,251,905	203,773	5,316,643	1,413	0	114,832	58,033	0	10,169	911														73,701	8,391,845
		4,5 Star-rated Non Chain Hotel	14						0	10,096	1,659,763	252,948	3,663,385	4,261	0	70,569	56,127	213,919	13,205	2,473														172,733	6,129,778
		4,5 Star-rated Chain Hotel	15						0	0	0	574,730	3,072,487	46	0	0	2,941	111,897	129	263														46,914	3,812,414
		Non Hotel	16						0	0	0	0	2,907,573	237,911	110,586	97,336	55,874	53,505	11,310	17,727														884,625	4,376,446
	Government		17											1,087,132	107,421	4,254,762	3,256,475	1,559,212	329,579	1,825,690													1,561,748	2,145,116	16,127,132
III. Production Sectors		Non Star Hotel	18																								135,063	0	0	0	0				135,063
		1,2,3 Star-rated Hotel	19																								0	3,176,942			0				3,176,942
		4,5 Star-rated Non Chain Hotel	20																								0	0	6,885,241		0				6,885,241
		4,5 Star-rated Chain Hotel	21																								0	0		1,989,609	0				1,989,609
		Other Accomodation	22																								0	0	0	0	109,546,489				109,546,489
IV. Trade and Transportation Margin			23																								0	0	0	0	15,704,829				15,704,829
V. Commodity		Non Star Hotel	24											102,490						5,113	1,902	0	0	0	24,892	0						0		2,459	136,855
		1,2,3 Star-rated Hotel	25											130,734						183,796	0	44,727	0	0	894,827	0						0		2,715,220	3,969,324
		4,5 Star-rated Non Chain Hotel	26											118,116						422,471	0	0	96,936	0	2,016,535	0						0		6,377,602	9,071,960
		4,5 Star-rated Chain Hotel	27											44,244						129,578	0	0	0	28,011	630,864	0						0		3,643,231	4,475,929
		Other Accomodation	28											41,020,107						4,093,696	56,331	1,217,868	3,718,281	907,522	49,046,893	15,704,829						16,871,847		51,045,731	183,685,304
VI. Capital Balance			29											9,561,738	62,612	2,487,904	1,904,177	911,724	192,716	2,530,520															17,751,586
VII. Indirect Tax Minus Subsidies			30																								1,515	142,586	309,020	44,648	1,065,978				1,561,748
VIII. External Balance			31	0	0	933	41,660	712,564	127	3,346	118,374	659,585	1,365,657	59,678	2,604	515,744	394,736	893,690	1,039,950	489,743							276	649,797	1,877,699	2,441,671	37,370,008	879,739			69,528,182
TOTAL				2,369,709	3,336,628	5,108,337	4,829,208	17,412,396	2,254,490	2,199,770	4,157,137	3,368,283	19,379,761	54,523,7473	350,101	8,391,845	6,129,778	3,812,414	4,376,446	16,127,132	135,063	3,176,942	6,885,241	1,989,609	109,546,489	15,704,829	136,855	3,969,324	9,071,960	4,475,929	183,685,304	17,751,586	1,561,748	69,528,182	