



INTERNATIONAL TROPICAL TIMBER ORGANIZATION

Participatory Forest Management for Sustainable Utilization
of Non Timber Forest Products (NTFP) surrounding the
Protected Area of Rinjani and Mutis Timau Mt,
Nusa Tenggara Indonesia
PD.521/08 Rev. 3 (I)

TECHNICAL REPORT IV - 2012

DEALING WITH NTFPs FOR INCOME GENERATING OF LOCAL
COMMUNITIES IN PILOT VILLAGES (RINJANI AND MUTIS)



Ir. TASLIM SJAHA, M.App.Sc.,Ph.D



MINISTRY of FORESTRY of REPUBLIC of INDONESIA
WORLD WILD FUND – INDONESIA
FORESTRY SERVICE of NUSA TENGGARA BARAT PROVINCE

Serial Number : PD 521/08 Rev.3(I)

Starting Date of the Project : June 2011

Actual Duration of the Project : 27 months

Original Budget (USD) : US\$ 490,374.00 (ITTO)
Switzerland : \$ 400,000.00
Japan : \$ 45,187.00
U.S.A. : \$ 45,187.00

Actual Project Cost (USD) : US \$ 400.402

Type of Report : Project Technical Report IV - 2012

Executing Agency : Directorate General of Watershed
Management and Social Forestry
Development, Ministry of Forestry of Republic
of Indonesia - Manggala Wanabakti Building
Block I, Floor 12, Jl Gatot Subroto Senayan
Jakarta
Telp/Fax : +62 21 5704501 ext. 477/5730136
Email : sahalasimanjuntak@yahoo.com
In collaboration with:
(1)WWF Indonesia Program Nusa Tenggara Jl.
Arief Rahman Hakim No. 43 A Mataram,
Lombok. NTB Indonesia Telp/Fax: +62
(370) 642401; 630505;
Email:RHakim@wwf.or.id
(2)Forestry Service of West Nusa Tenggara
Province (*Dinas Kehutanan Provinsi Nusa
Tenggara Barat*) Jl. Majapahit No. 54
Mataram, West Nusa Tenggara Indonesia
Phone (+62-370) 633071; fax (+62-370)
633961 Email:Kehutananntb@yahoo.com

Place of Issued : Jakarta

Date of Issued : October 2012

LIST OF CONTENTS

	Page
LIST OF CONTENTS.....	ii
SUMMARY.....	iii
I. INTRODUCTION.....	1
2. APPLIED METHODOLOGY.....	1
2.1. Study locations.....	2
2.2. Identification of respondents and informants.....	2
2.3. Data collection methods.....	2
3. PRESENTATION OF THE DATA.....	3
4. DATA ANALYSIS.....	9
5. CONCLUSIONS.....	11
6. RECOMMENDATIONS.....	11
7. IMPLICATIONS FOR PRACTICE.....	12
BIBLIOGRAPHY.....	13

Summary¹

Forests such as Rinjani area in Lombok (NTB) and Mutis in Timor (NTT) play important roles to produce timber and non-timber products as well as providing environmental service for societies surrounding the forest or for those in distance. Recently the role of non-timber forest products (NTFPs) is encouraged to be improved to support the roles of other functions of the forest directly or indirectly. One of the ways to utilize the NTFPs for better income and supporting other functions of the forest is by developing suitable business model for those commodities.

That main goal is studied in this project by collecting relevant data from the entrepreneurs (farmers, processors, and traders) and other stakeholders. Data collection was done through structured interviews, in-depth interviews, Focus Group Discussion (FGD), secondary data collection methods, in or related to the two mountain areas. Data were analyzed accordingly to gain understanding of the topics investigated. Among the results are that there are 6 alternative models for developing small business of potential NTFPs in the two forest areas, and the implementation of the models requires strategic moves, including dissemination of information regarding of the models and improving the capacity of stakeholders involved.

¹ Part of a project entitled "Participatory Forest Management for Sustainable Utilization of Non Timber Forest Products (NTFP) surrounding the Protected Area of Rinjani and Mutis Timau Mt, Nusa Tenggara Indonesia".

1. Introduction

The provinces of West Nusa Tenggara (*Nusa Tenggara Barat-NTB*) and East Nusa Tenggara (*Nusa Tenggara Timur-NTT*) have substantial areas of forest. This resource plays vital roles in supporting community livelihood, including production of varieties timbers and non-timbers, as well as provision of environmental service. One of the forest areas in NTB is Rinjani, while in NTT is Mutis. The important roles of these two areas brought them to be classified legally as protected areas. However, the condition of the areas gets worse recently. Accordingly, the areas need better management than the current one, not only to conserve them but also provide its surrounding communities with improved livelihood. Local community surrounding the forest can harvest non timber products (NTFPs) with permission from relevant authorities. The communities have been collecting the products since permissions were granted.

The government of Indonesia (GoI), by a new policy in forestry, has mandate to develop forest with non-timber products, as well as non-timber farming practiced by local communities. In particular, the development of NTFPs is expected to bring benefits as to: (1) reduce dependency on timber products; (2) increase income of surrounding forest community and increase their awareness to protect environment; (3) increase foreign exchange from NTFPs; (4) create new jobs in from NTFPs; (5) optimize the utilize of NTFPs, including its quantity, types, form, processed, and quality; (6) increase the production of NTFPs to 30 % through to 2029; (7) optimize the potential of region in developing NTFPs as alternatives for food sources, medicine sources, fiber products, sap products, and others that can lift national economic condition; (8) manifest regulation from planning through to post harvest that ensure the involvement of entrepreneurs, stakeholders, general communities in the development of NTFPs; and (9) produce manuals for developing NTFPs for entrepreneurs, stakeholders, and communities in general in developing NTFPs.

The next step needs to be done in relation to NTFPs that have been or will be produced is to direct those production to markets that will give benefits for those who do it. This will need to search for products (raw materials of processed) that will generate the highest income for those entrepreneurs. Transforming these potential to be realities is done through developing business models suitable for the conditions in the two mountain areas.

2. Applied methodology

Methodology selected and applied in this research is grounded on its appropriateness on obtaining data in achieving the research objectives, and in facilitating understanding of the topics investigated. This methodology is described in each sub section below.

2.1. Study Locations

This study takes object of NTFPs in the region of Rinjani (NTB) and Mutis (NTT). Therefore, the focus of data collection for this study is on those two areas, with supporting data are collected from outside the areas.

Rinjani area includes the villages of Karang Sidemen, Lantan, Aik Berik, dan Setiling (in the district of Batukliang Utara, Lombok Tengah Regency); Sedau (di district of Narmada, Lombok Barat Regency); Mumbul Sari (in the district of Bayan, Lombok Utara Regency); Santong and Salut (in the district of Kayangan, Lombok Utara Regency). Meanwhile, Mutis area covers the villages of Nenas and Fatumnasi, in Timor Tengah Selatan Regency.

2.2. Identification of respondents and informants

For the purpose of obtaining appropriate data, respondents in this study are entrepreneurs including farmers, processors, and traders. For each selected NTFP in each selected village, 3 respondents of each type of entrepreneurs were chosen (if the numbers are sufficient), and they are selected on the ground of their availability. In addition to entrepreneur respondents, some informants including officers of related services, extension workers, management of groups, and others were also selected.

2.3. Data collection methods

Data for this study were collected through four methods, i.e.:

1. *Structured interviews*. These are applied to entrepreneur respondents, with guidance from prepared questionnaires.
2. *In-depth interviews* are conducted to key informants, according to list of question topics.
3. *Focus group discussion (FGD)*, is conducted in a meeting attended by persons holding position similar to those selected in the in-depth interviews.
4. *Secondary data collection* that is, collecting relevant data from sources those are already available.
5. *Field observation*, for close look at the conditions of the locations
6. *Workshop and discussion*, for verification of the models

3. Presentation of the Data

Summaries of major data are presented below.

Table 1 Summary of various products of NTFP (*avocado*) and its profit

No	Product name	Profit (Rp)	Condition	Location	Note
1	Fruit	1.328	Actual	Rinjani	Per kg avocado
2	Juice	8.470	Actual	Rinjani	Per kg avocado
3	Soap 1	17.875	Potential		Per kg avocado
4	Soap 2	74.000	Potential		Price per piece of soap
5	Soap 3	60.000	Potential		Price per piece of soap
6	Masker	58.500	Potential		Per kg avocado
7	Flour	5.085	Potential		Per kg flour
8	Cream	250.000	Potential		Price per package of cream



Avocado tree



Avocado

Table 2 Summary of various products of NTFP (*durian*) and its profit

No	Product name	Profit (Rp)	Condition	Location	Note
1	Fruit	5.017	Actual	Rinjani	Per fruit
2	Juice	13.079	Potential		Per fruit
3	Fruit bar	10.688	Potential		Per fruit
4	Jelly	18.197	Potential		Per fruit
5	Durian seed crisp	217.435	Potential		Per kg durian seed



Table 3 Summary of various products of NTFP (*candlenut*) and its profit

No	Product name	Profit (Rp)	Condition	Location	Note
1	Candlenut with skin	5.303	Actual	Rinjani	Per kg
2	Candlenut with skin	293	Actual	Rinjani	Per kg



Table 4 Summary of various products of NTFP (*jackfruit*) and its profit

No	Product name	Profit (Rp)	Condition	Location	Note
1	Young fruit (vegetable)	1.482	Actual	Rinjani	Per fruit
2	Ripe fruit	10.880	Actual	Rinjani	Per fruit
3	Fruit bar	71.596	Actual	Rinjani	Per fruit
4	Crisp	62.020	Potential		Per fruit



Lunkhead jackfruit



Jackfruit

Table 5 Summary of various products of NTFP (*bamboo*) and its profit

No	Product name	Profit (Rp)	Condition	Location	Note
1	Bamboo bar	3.008	Actual	Rinjani	Per bamboo bar
2	Chair	7.100	Actual	Rinjani	Per bamboo bar
3	Baby swing	65.685	Actual	Rinjani	Per bamboo bar
4	Sofa	17.806	Actual	Rinjani	Per bamboo bar
5	Bucket	6.073	Actual	Rinjani	Per bamboo bar
6	Bedek (for house ceiling)	8.269	Actual	Rinjani	Per bamboo bar
7	Fence	3.556	Actual	Rinjani	Per bamboo bar
8	Stair	14.332	Actual	Rinjani	Per bamboo bar
9	Rice bucket	4.333	Actual	Rinjani	Per bamboo bar
10	Bucket for fish	56.222	Actual	Rinjani	Per bamboo bar
11	Mat	159.333	Actual	Rinjani	Per bamboo bar
12	Tobacco base (for drying)	19.300	Actual	Rinjani	Per bamboo bar
13	Bamboo bar	2.568	Actual	Mutis	Per bamboo bar
14	Hat	150.000	Actual	Mutis	Per bamboo bar
15	Nyiru (for rice sortation, etc)	125.000	Actual	Mutis	Per bamboo bar
16	Bedek (for house ceiling)	50.000	Actual	Mutis	Per bamboo bar
17	Newspaper bucket	135.000	Actual	Mutis	Per bamboo bar
18	Flower vast	250.000	Actual	Mutis	Per bamboo bar



Various products of Bamboo

Table 6 Summary of various products of NTFP (*honey*) and its profit

No	Product name	Profit (Rp)	Condition	Location	Note
1	Honey 240 ml	6.656	Actual	Mutis	Per 100 ml
2	Honey 340 ml	5.308	Actual	Mutis	Per 100 ml
3	Honey 620 ml	4.815	Actual	Mutis	Per 100 ml
4	Honey bulk	3.200	Actual	Mutis	Per 100 ml



Honey from Rinjani Mt, NTB



Honey from Mutis Timau Mt, NTT

Table 7 Summary of various product of NTFP (*tuber crop for herb, empon-empon*) and its profit

No	Product name	Profit (Rp)	Condition	Location	Note
1	Turmeric (raw material)	92	Actual	Mutis	Per kg
2	Turmeric (raw material)	1.396	Actual	Rinjani	Per kg
3	Traditional medicine from Turmeric	33.425	Actual	Mutis	Per kg

4	Traditional medicine from Turmeric	17.221	Actual	Rinjani	Per kg
5	Spice of Turmeric	125.363	Actual	Rinjani	Per kg
6	Drink of Turmeric and Tamarind	43,611	Potential		Per kg
7	Instant drink of Turmeric and <i>sirih</i> (Betel leaf)	48.500	Potential		Per kg
8	Ginger (raw material)	5.034	Actual	Mutis	Per kg
9	Ginger (raw material)	8.402	Actual	Rinjani	Per kg
10	Galangal (raw material)	1.334	Actual	Rinjani	Per kg



Ginger



Ginger drink



Galangal



Table 8 Problems faced in the management of NTFP

No	Problem
1	NTFPs have not yet managed well
2	Management of NTFPs is individual, subsistence, without added value
3	Producers of NTFPs are controlled by middlemen and involved in borrowing with informal money lenders
4	Skills of processing are low
5	Prices of products are low
6	Marketing is difficult (products are made based on order)
7	Only honey that has been managed in group



Kiosk the community forum on Rinjani forest area in project area



Various NTFPs from Rinjani and Mutis Timau Mt.

Table 9 Expected conditions for the management of NTFP

No	Aspect	Expected condition
1	Production	High production, productivity and quality; intensively managed; kinds are identified; agronomic techniques available; specified seedlings; extending the implementation; prospected NTFPs are grown
2	Processing	Human resources as managing persons are skillful in management and processing techniques; there is supervision (mentoring); products diversification; processing groups are strong; processing industries are developing and strong; equipment are available and complete.
3	Marketing	Marketing institution available; partnership established for share profits; policies are supporting; networking are developing; prices are stable; government takes roles in partnership facilitation; market information available; bargaining positions are strong.

4. Data analysis

Collected data were analyzed according to the needs to interpret them and to understand the situation of topics investigated. Among analyses applied are descriptive, profit, and comparison. The major data in the Section 3 were analyzed to calculate the profit of each product (both in the forms of raw material and of processed products). A profit equals to subtracting total cost from total revenue. The profits of each product are then compared, and from these comparisons then conclusions are drawn on which products have higher profits than others and therefore need to be developed further in the region. The identified profit promising products are then further developed into business models that are implementable for being realized. The results of the analysis are summarized below.

Table 10 Kinds of NTFPs to be developed in the regions of Rinjani and Mutis

No	NTFP	Product to be developed
1	Avocado	a. Cosmetics (soap, masker, and cream) b. Juice
2	Durian	a. Fresh fruit b. Fruit bar c. Seed crisp
3	Candlenut	a. Candlenut with skin b. Candlenut without skin
4.	Jackfruit	a. Fruit bar b. Ripe fruit
5.	Bamboo	<i>All existing current products in each region</i>
6	Honey	240 ml package
7	Tuber crops for herbs (<i>Empon-empon</i>)	a. Raw material b. Cook spice c. Drink d. Traditional medicine

In essence this study found that most NTFPs need to be developed to become processed products (as listed in the column 3 of Table 10), so that they generate more income for the entrepreneurs. Parts of several NTFPs also need to be marketed in their fresh forms (raw material), as they already give profits and are practical to be run in that way, and this include durian, candlenut, jackfruit, bamboo, and tuber crops for herbs (*empon-empon*). Tabel 11 indicates that depending on the types of products and whether tthey are processed or not, the businesses require to be run in one of the six models listed.

Table 11. Alternative models for developing business of NTFP

No	Model	Main features
1	Household scale business	<ul style="list-style-type: none"> • Need intervention for increasing added value • Not improve bargaining power yet
2	Group business (KUB)	<ul style="list-style-type: none"> • Need intervention in techniques • Need to improve bargaining position in marketing • Improve capacity
3	Cooperative of processors	<ul style="list-style-type: none"> • Start to consider networking (amongst processor groups in the areas and with those outside the areas)
4	Production center (of processed NTFPs)	<ul style="list-style-type: none"> • Adopt (with modification) successful models in other production • Involve many intervention in many scales (household, group, village, and area) • Need facilitation in developing capacity of individual, group, marketing network • Supply of raw materials is managed well
5	Partnership	<ul style="list-style-type: none"> • Between small individual businesses with company • Small individual businesses act as suppliers of raw materials, semi raw materials, and final products; company provides supports of capital, techniques of agronomic and processing, and marketing • Need identification of potential partners • Need to initiate relationship, to facilitate understanding and collaboration agreement, to supervise and mentor, and to maintain and improve relationship
6	Network	<ul style="list-style-type: none"> • Particularly of marketing of raw materials, semi raw materials, and final products • Between many groups of above products, including producers, processors, and traders • Collaborate in information exchange is vital

5. Conclusions

The conclusions of this study are as follows:

- (1) The management of NTFPs in the protected forests of Rinjani and Mutis has not well implemented such that NTFPs have not contributed significantly to income of community who manage the forest, and not providing substantial jobs in rural areas. The management is still in traditional way with relatively limited technology.
- (2) Nevertheless, there is awareness in the level of decision makers and community leaders that NTFPs can be developed to be source of income and provide jobs.
- (3) Strategic efforts and plan are needed to reduce the gap between current conditions and expected conditions in the management of NTFPs.
- (4) There are 6 alternative models for managing business of NTFPs, i.e., (i) model of individual or household scale, (ii) model of group business (KUB), (iii) model of cooperative, (iv) model of partnership, (v) model of production center, and (vi) model of network.
- (5) The implementation of the models requires strategic moves, targeting on increasing prosperity producers of NTFPs while attempting to manage forest in sustainable way.
- (6) Required strategic moves for implementing the models cover six points (i) information dissemination and agreement on the best models that have potential and possibilities of success, (ii) capacity building for stakeholders to support the implementation and effectiveness of the models, (iii) developing action plan and implementation of the models, (iv) supervision and mentoring on the implementation of the models, (v) evaluation, observation, and revision of the models – following “action-learning” approach, which is expected to result in the best performance of the models, and (vi) developing and implementing policies that supports the implementation of the models (i.e. Policy that supports all sub systems of the management of NTFPs, from the sub systems of input/production, processing, and marketing).

6. Recommendations

Following up on the drawn conclusions that potential higher profits will be gained when the businesses of NTFPs are implemented properly.

- (1) Concrete and strategic moves need to be taken to develop industry center for bamboo in Rinjani and Mutis
- (2) Management of NTFPs can be developed through partnership, under which groups and network need to be established and then strengthened. The

groups and networks consist of entrepreneurs in an institution that make them strong in producing NTFPs in amount and quality as required.

- (3) Capacity building need to be done for network and groups so that they can manage production, processing, and marketing better than before, resulting in better income for many groups or networks involved in the business. In other words, groups and networks can become strong in many aspects of business, including in working capital management, technical skills. In addition, within network, there will information exchange amongst groups' members or networks.

7. Implications for practice

The findings of this study imply that businesses of NTFPs in Rinjani and Mutis can generate higher profits than current ones, by processing most all of NTFPs into more valuable products suitable to consumer needs. The changes into the more valuable products can be developed through 6 models of business development, from which they can be selected to suit with types of products to be developed. Then the move to that better economic conditions require entrepreneurs to have higher capacity than now and outsiders (including government or others) need to intervene and facilitate for improving the capacity of the entrepreneurs as well as creating conducive condition for NTFPs business development. Further, those intervention and facilitation will require more fund to be committed to these related economic activities. In brief, many stakeholders including government, other bodies, farmers, processors, and traders, and others will involve and they need collaborate to make these business opportunities become realities. Bigger roles are expected from the government through related offices dealing with or care of the development of NTFPs and with the management of forest in sustainable way.

Bibliography

- Adiwibowo S, Sjaf S, S. DDP. 2006. *Evaluasi dan pembelajaran proyek pembangunan dan konservasi berbasis komunitas: Cagar Alam Mutis, Nusa Tenggara Timur*. WWF Indonesia dan Sains: Bogor
- Amiruddin. 2012a. *Rencana Pengelolaan Hasil Hutan Bukan kayu di Kabupaten Lombok Tengah*. WWF Indonesia Program Nusa Tenggara: Mataram
- Amiruddin. 2012b. *Rencana Pengelolaan Hasil Hutan Bukan kayu di Kabupaten Lombok Utara*. WWF Indonesia Program Nusa Tenggara: Mataram
- Babbie E. 2004. *The practice of social research* (10 ed.). Wadsworth: Belmont
- Beierlein JG, Schneeberger KC, Osburn DD. 1986. *Principles of Agribusiness Management*. Prentice-Hall: Englewood Cliffs, New Jersey
- Bontkes TS, van Keulen H. 2003. Modelling the dynamics of agricultural development at farm and regional level. *Agricultural Systems* 76(1): 379-396
- BPS Lombok Barat. 2011. *Lombok Barat Dalam Angka 2010 (West Lombok in Figures 2010)*. Badan Pusat Statistik Lombok Barat (Central Body of Statistics of West Lombok): Gerung
- BPS Lombok Barat. 2012. *Kecamatan Narmada Dalam Angka 2011*. Badan Pusat Statistik Lombok Barat (Central Body of Statistics of West Lombok): Gerung
- BPS Lombok Tengah. 2011. *Lombok Tengah Dalam Angka 2010 (Central Lombok in Figures 2010)*. Badan Pusat Statistik Lombok Tengah (Central Body of Statistics of Central Lombok): Praya
- BPS Lombok Tengah. 2012. *Batukliang Utara Dalam Angka 2011*. Badan Pusat Statistik Lombok Tengah (Central Body of Statistics of Central Lombok): Praya
- BPS Lombok Utara. 2011. *Lombok Utara Dalam Angka 2010 (North Lombok in Figures 2010)*. Badan Pusat Statistik Lombok Utara (Central Body of Statistics of North Lombok): Tanjung
- BPS Lombok Utara. 2012a. *Kecamatan Bayan Dalam Angka 2011*. Badan Pusat Statistik Lombok Utara (Central Body of Statistics of North Lombok): Tanjung
- BPS Lombok Utara. 2012b. *Kecamatan Kayangan Dalam Angka 2011*. Badan Pusat Statistik Lombok Utara (Central Body of Statistics of North Lombok): Tanjung
- BPS TTS. 2009. *Kecamatan Fatumnasi Dalam Angka 2009*. Badan Pusat Statistik Timor Tengah Selatan: Soe
- Casavant KL, Infanger CL, Bridges DE. 1999. *Agricultural economics and management*. Prentice Hall: Upper Saddle River, New Jersey
- Cooper DR, Schindler PS. 2003. *Business Research Methods* (8 ed.). McGraw-Hill: New York

- Cramer GL, Jensen CW, Southgate DDJ. 2001. *Agricultural Economics and Agribusiness* (8th ed.). John Wiley dan Sons: New York
- Downey WD, Erickson SP. 1987. *Agribusiness Management*. McGraw-Hill: New York
- Drestha M. 2011. *Nilai Ekonomi Hasil Hutan Bukan Kayu di Batukliang Utara*. World Neighbours dan Ford Foundation: Denpasar
- Jackson J, McConnell CR. 1984. *Economics*. McGraw-Hill: Roseville
- Maikhuri RK, Senwal RL, Rao KS, Saxena KG. 1997. Rehabilitation of degraded community lands for sustainable development in Himalaya: a case study in Garhwal Himalaya, India. *International Journal of Sustainable Development and World Ecology* 4(3): 192-203
- Menteri Kehutanan RI. 2009. *Strategi Pengembangan Hasil Hutan Bukan Kayu Nasional 2010-2014 (Lampiran Permenhut Nomor: P35/Menhut-II/2007* Kementerian Kehutanan RI: Jakarta
- Menteri Kehutanan RI. 2010a. *Grand Strategi Pengembangan Hasil Hutan Bukan Kayu Nasional 2010-2014*. Kementerian Kehutanan RI: Jakarta
- Menteri Kehutanan RI. 2010b. *Rencana Strategis Kementerian Kehutanan 2010-2014*. Kementerian Kehutanan RI: Jakarta
- Moore DS. 2000. *The Basic Practice of Statistics*. W.H. Freeman: New York
- MPR RI. 1945. *Undang-Undang Dasar Negara Republik Indonesia 1945 (Fundamental Law of the Republic of Indonesia, 1945)*. MPR RI (the House of Representatives of the Republic of Indonesia): Jakarta
- MPR RI. 2002. *Undang-Undang Dasar Negara Republik Indonesia 1945 Dalam Satu Naskah (Fundamental Law of the Republic of Indonesia, 1945, in one document)*. MPR RI (the House of Representatives of the Republic of Indonesia): Jakarta
- Muktasam. 2012. *Penguatan Kapasitas Kelompok Masyarakat Dalam Rangka Pengelolaan Hasil Hutan Bukan Kayu (HHBK) Secara Berkelanjutan*. WWF Indonesia Program Nusa Tenggara: Mataram
- Ripsas S. 1998. Towards an interdisciplinary theory of entrepreneurship. *Small Business Economics* 10(2): 103-115
- Seitz WD, Nelson GC, Halcrow HG. 2002. *Economics of resources, agriculture, and food* (2 ed.). McGraw-Hill: New York
- Sjah T. 2010. *Ekonomi Pertanian*. Mataram University Press: Mataram
- Sjah T. 2011. *Metodologi Penelitian Sosial Ekonomi*. Mataram University Press: Mataram
- Sjah T. 2012. *Rencana Bisnis: Untuk pengusaha kecil dan pemula dalam usaha pengolahan hasil pertanian*. Mataram University Press: Mataram
- Tregarthen T. 1996. *Economics*. Worth Publishers: New York
- Truett LJ, Truett DB. 1995. *Managerial Economics* (5 ed.). South-Western College: Cincinnati

WWF Indonesia Program Nusa Tenggara. 2011. *Identifikasi Hasil Hutan Bukan Kayu Kawasan Rinjani, Lombok*. WWF Indonesia Program Nusa Tenggara (Unpublished): Mataram