

DECODING HOLISTIC MANAGEMENT MODEL AT DOI TUNG

ALONGKORN VIVATTANAKULCHAI

**A THEMATIC PAPER SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF BUSINESS ADMINISTRATION
(BUSINESS MODELING AND ANALYSIS)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2012**

COPYRIGHT OF MAHIDOL UNIVERSITY

Thematic Paper
entitled
DECODING HOLISTIC MANAGEMENT MODEL AT DOI TUNG

.....
Mr. Alongkorn Vivattanakulchai
Candidate

.....
Lect. Chairawee Anamthawat-Kierig,
Ph.D.
Major advisor

.....
Lect. Malinvisa Sakdiyakorn, Ph.D.
Co-advisor

.....
Prof. Banchong Mahaisavariya,
M.D., Dip Thai Board of Orthopedics
Dean
Faculty of Graduate Studies
Mahidol University

.....
Lect. Ornlatcha Sivarak, Ph.D.
Program Director
Master of Business Administration
Program in Business Modeling and
Analysis
International College
Mahidol University

Copyright by Mahidol University

Thematic Paper
entitled
DECODING HOLISTIC MANAGEMENT MODEL AT DOI TUNG

was submitted to the Faculty of Graduate Studies, Mahidol University
for the degree of Master of Business Administration (Business Modeling and Analysis)
on
September 5, 2012

.....
Mr. Alongkorn Vivattanakulchai
Candidate

.....
Lect. Nopporn Raungwanit, Ph.D.
Chair

.....
Lect. Malinvisa Sakdiyakorn, Ph.D.
Member

.....
Lect. Chairawee Anamthawat-Kierig,
Ph.D.
Member

.....
Prof. Banchong Mahaisavariya,
M.D., Dip Thai Board of Orthopedics
Dean
Faculty of Graduate Studies
Mahidol University

.....
Prof. Maleeya Kruatrachue, Ph.D.
Dean
International College
Mahidol University

ACKNOWLEDGEMENTS

I wish to express sincere thank to my thematic paper advisor, Dr. Chairawee Anamthawat-Kierig for her valuable advice and support. Without her, this research cannot be completed or even initiated so I am really thankful for her invitation to attend Doi Tung internship program. She and Dr. Malinvisa Sakdiyakorn who is my co-advisor gave the great suggestions for this thematic paper.

Moreover I would like to thank chairman of Doi Tung Development Project, Mom Rajawongse Disnadda Diskul and chief development officer, Mom Luang Dispanadda Diskul for their kind welcome at Doi Tung, great development vision, and significant information. In addition, I am grateful for the Doi Tung Development Project officers and people at Doi Tung for their generousness.

Finally, I most gratefully acknowledge my parents and my friends for all their support throughout the period of this research.

Alongkorn Vivattanakulchai

DECODING HOLISTIC MANAGEMENT MODEL AT DOI TUNG

ALONGKORN VIVATTANAKULCHAI 5238795 ICMA/M

M.B.A. (BUSINESS MODELING AND ANALYSIS)

THEMATIC PAPER ADVISORY COMMITTEE: CHAIRAWEE ANAMTHAWAT-KIERIG, Ph.D., MALINVISA SAKDIYAKORN, Ph.D.

ABSTRACT

This is qualitative research focusing on gaining insights about the Sustainable Alternative Development (SALD) model, following the footsteps of the Princess Mother of King Rama IX of Thailand. This model has been used to convert opium fields to economic crops. By understanding the root cause of poverty, gaining access to the people's trust, and finally developing their livelihood, the social and environment problems in Doi Tung were eradicated within fifteen years.

Content analysis was used to analyze the development philosophies, operational process, and results of Doi Tung Development Project (DTDP). The data used are from secondary sources, field observation, and in-depth interviews of key personnel, locals, and M.L. Dispanadda Diskul, the Chief Development Officer of DTDP.

The analysis shows that DTDP comprises three concepts, which are people-centric development, SALD, and sustainable development. The development activities under these concepts are successful and are easy to apply in other areas. However, the final objective of DTDP is transferring ownership of businesses and development activities to local people. So, the author recommends a transfer model for DTDP by applying principles of community enterprise, cooperation, and a sense of employee ownership.

KEY WORDS: DOI TUNG / SUSTAINABLE DEVELOPMENT/ SOCIAL ENTERPRISE / MAE FAH LUANG FOUNDATION / HOLISTIC MANAGEMENT MODEL

122 pages

ถอดรหัสต้นแบบการจัดการแบบองค์รวมของโครงการพัฒนาคอยตุง
DECODING HOLISTIC MANAGEMENT MODEL AT DOI TUNG

อลงกรณ์ วิวัฒนกุลชัย 5238795 ICMA/M

บธ.ม. (การวิเคราะห์และการสร้างตัวแบบธุรกิจ)

คณะกรรมการที่ปรึกษาสารนิพนธ์: นายวี อนามัย – คีริก Ph.D., มาลินวิศา ศักติยากร Ph.D.

บทคัดย่อ

ความยากจน คือต้นเหตของปัญหาสังคมและสิ่งแวดล้อมที่เกิดขึ้นบนคอยตุง ชาวบ้านตัดไม้ทำลายป่าและใช้พื้นที่ในการปลูกฝิ่นเพื่อความอยู่รอด ดังนั้นมูลนิธิแม่ฟ้าหลวงจึงเข้ามาช่วยแก้ไขปัญหาเหล่านี้ และสร้างการพัฒนาที่ยั่งยืนในพื้นที่ โดยใช้จัดการแบบองค์รวมของโครงการพัฒนาคอยตุง

ผู้วิจัยได้ใช้การวิเคราะห์เนื้อหา ในการวิเคราะห์ปรัชญา, กิจกรรม, และผลของโครงการพัฒนาคอยตุง ซึ่งข้อมูลที่ทำกรวิเคราะห์นั้น ได้มาจากการเก็บข้อมูลทางเอกสาร, การสังเกตการณ์การฝึกงานที่คอยตุง, และการสัมภาษณ์.ม.ดศปนัดดา ดิสกุล รองประธานเจ้าหน้าที่บริหารฝ่ายการพัฒนา โครงการพัฒนาคอยตุง งานวิจัยนี้ศึกษาการปรับใช้ปรัชญาการพัฒนาสู่การปฏิบัติจริง และผลของการพัฒนา

รูปแบบการจัดการของโครงการพัฒนาคอยตุงนั้นประกอบด้วยสามหลักการคือ การพัฒนาโดยเอาคนเป็นศูนย์กลาง, การพัฒนาทางเลือกในการดำรงชีวิตที่ยั่งยืน, และการพัฒนาที่ยั่งยืน และการใช้รูปแบบการจัดการนี้ในการพัฒนาพบว่า ผลสัมฤทธิ์ที่ได้นั้นออกมาในทางที่ดี และยังง่ายในการปรับใช้สำหรับการพัฒนาในพื้นที่อื่นๆด้วย อย่างไรก็ตามจุดมุ่งหมายสูงสุดของโครงการพัฒนาคอยตุง คือการถ่ายโอนความเป็นเจ้าของให้แก่ชุมชน ทั้งกิจกรรมทางธุรกิจและการพัฒนา ซึ่งขณะนี้อยู่ในช่วงการดำเนินงานอยู่ ผู้วิจัยจึงมีคำแนะนำรูปแบบการถ่ายโอน โดยอาศัยหลักการของวิสาหกิจชุมชน, สหกรณ์, และความรู้สึกรักเป็นเจ้าของธุรกิจของลูกค้า

คำสำคัญ: คอยตุง / การพัฒนาที่ยั่งยืน / กิจกรรมเพื่อสังคม / มูลนิธิแม่ฟ้าหลวง / การบริหารจัดการแบบองค์รวม

CONTENTS

	Page
ACKNOWLEDGEMENTS	iii
ABSTRACT (ENGLISH)	iv
ABSTRACT (THAI)	v
LIST OF FIGURES	x
CHAPTER I INTRODUCTION	1
1.1 Background and Statement of the Problem	1
1.1.1 The State of the Problem	1
1.1.2 The History of Doi Tung Development Project	1
1.1.3 The Sustainable Alternative Livelihood Development	2
1.1.4 The Past Performance of DTDP	3
1.1.5 The Partners and Supporters	5
1.1.6 The Doi Tung Holistic Management Model	6
1.2 Objectives of the Study	7
1.3 Scope of Research	8
1.3.1 Doi Tung Holistic Management Model	8
1.3.2 Supported Philosophies and Concepts	8
1.3.3 The DTDP Operation Detail	8
1.4 Conceptual Framework	9
1.5 Term Definitions	10
1.6 Abbreviation Content	11
CHAPTER II LITERATURE REVIEW	13
2.1 The Doi Tung Holistic Management Model	13
2.1.1 The Concept of People-Centered Development	13
2.1.2 The Concept of Sustainable Development	14
2.1.3 The Concept of Sustainable Livelihood	16

CONTENTS (cont.)

	Page
2.2 The supported philosophies and concepts	18
2.2.1 The Concept of Social Enterprise	18
2.2.2 The Concept of Sufficiency Economy	19
2.2.3 The Concept of Knowledge Management	21
2.2.4 The Concept of Community Enterprise	22
2.2.5 The Concept of Co-operative	23
2.2.6 Sense of Employee Ownership	24
CHAPTER III RESEARCH METHODOLOGY	26
3.1 Data Collection	26
3.1.1 Secondary Data	26
3.1.2 Primary Data	27
3.2 Data Analysis	27
CHAPTER IV DATA ANALYSIS	29
4.1 Objective of DTDP	29
4.2 The Doi Tung Holistic Management Model	30
4.3 The people-centric development	31
4.4 The Sustainable Alternative Livelihood Development	34
4.4.1 Health development	34
4.4.2 Livelihood development	38
4.4.3 Education development	43
4.5 The sustainable development	46
4.5.1 Economic development	47
4.5.1.1 Food	48
4.5.1.2 Handicraft	49
4.5.1.3 Horticulture	51
4.5.1.4 Tourism	51
4.5.2 Social development	53

CONTENTS (cont.)

	Page
4.5.3 Environment development	56
4.6 The support concepts and philosophies	62
4.6.1 The Living University (The knowledge management)	62
4.6.2 Navuti Company Limited (The social enterprise)	63
4.6.3 The sufficiency economy	64
4.7 Project administration and business model of DTDP	65
4.8 The ownership transfer	68
4.9 The timeframe of DTDP	39
CHAPTER V CONCLUSION	71
5.1 Conclusion	71
5.2 Recommendation for Doi Tung Development Project	73
5.2.1 Organization Administration	73
5.2.2 Health development	74
5.2.3 Livelihood development	75
5.2.4 Education development	75
5.2.5 Social development	76
5.2.6 Environment development	76
5.2.7 Economic development	77
5.3 Research implication	78
5.3.1 Implication for academic	79
5.3.2 Implication to Business Developers	79
5.3.3 Implication to Government Policy Makers	79
5.4 Limitation and future suggestion	80
BIBLIOGRAPHIES	81

CONTENTS (cont.)

	Page
APPENDICES	95
Appendix A The population data of Doi Tung Development Project area	96
Appendix B The Health and Livelihood data of people in Doi Tung Development Project area	102
Appendix C The Education data of people in Doi Tung Development Project area	109
Appendix D The Social data of Doi Tung Development Project area	111
Appendix E The environmental data of Doi Tung Development Project	113
Appendix F The economic data of Doi Tung Development Project	114
BIOGRAPHY	122

LIST OF FIGURES

Figure	Page
1.1 Average Annual Income Level of Local People at Doi Tung Area	3
1.2 Level of Education of Local People at Doi Tung Area	4
1.3 The Doi Tung Holistic Management Model	7
2.1 Key Element of the Sustainable Development Triangle	16
2.2 Sufficiency Economy Philosophical Framework	20
2.3 Knowledge Management Model	21
4.1 Death Rate in DTDP Area	35
4.2 The Achievement Evaluation of Doi Tung Development Project	36
4.3 Type of Congenital Disease of People in DTDP Area in 2009	37
4.4 Lavatory Type in DTDP Area	37
4.5 Occupations of People in DTDP Area	40
4.6 Unemployment Rates of People in DTDP Area	41
4.7 Cause of Unemployment of People in DTDP Area	41
4.8 Working Areas of Local People in DTDP Area in 2009	42
4.9 Working Areas of Local People in DTDP Area in 2009 (Categorized by Occupations)	42
4.10 Understanding rate of Thai Language of People in DTDP Area	44
4.11 Education Levels of People in DTDP Area	45
4.12 People's Income in DTDP Area	52
4.13 Family Planning of People in DTDP Area	54
4.14 Birth rate of People in DTDP Area	54
4.15 Total Populations in DTDP Area	55
4.16 Citizenship Statuses of People in DTDP Area	56
4.17 Area Utilization in DTDP	59
4.18 Forest Types in DTDP Area in 2009	59
4.19 Waste Management of People in DTDP Area	60
4.20 Source of Drinking Water in DTDP Area	60

LIST OF FIGURES (cont.)

Figure	Page
4.21 Source of Consuming Water in DTDP Area	61
4.22 Sustainable Poverty Alleviation Principle	62
4.23 Business Model of Doi Tung Development Project	67

CHAPTER I

INTRODUCTION

1.1. Background and Statement of the Problem

1.1.1. The State of the Problem

The social and environmental problems, for example, deforestation for agricultural, national park area encroachment, migration to urban areas, and spreading out of drugs, that presently incur in Thai society seem like to be unrelated each other and some of problems may be too far away from us. But if we carefully consider about these problems, the real root cause of problem derives from the “poverty”.

In Thailand, most of rural people are the agriculturists who grow the food for us all. By using marketing middlemen, their income is definitely controlled to be very low and cannot adequately support their family expenses. Some of them have to do the illegal activities because of the necessity to survive. Although the Thai government has supported them for a long time but the policies that they used cannot create sustainability for these people. The popularize policy has been applied by various governments to only win the election votes, but not improving the quality of their lives. However, the real important issues that sustainably support these people are how to manage the current resources, how to increase value of agricultural products, and how to live by themselves without supports from others. Eventually, they have to do all of development activities by themselves because the ownership will be transferred to them at the end of the Doi Tung Development Project (DTDP) timeframe in 2017. Nevertheless, now the DTDP is still working to find the best way to transfer ownership for the local people that can create real sustainability.

1.1.2. The History of Doi Tung Development Project

The Doi Tung area where located in Mae Fah Luang district, Chiangrai province also has the same problem. Other than farm plants by mobile plantation, the

plant which local people choose to cultivate is opium, the raw material of heroine and other narcotics. The Princess Mother saw this problem so she came to Doi Tung and established Mae Fah Luang Foundation (MFLF) in 1985. The first objective is to help local people improving their quality of life and stop opium plantation (MFLF, 2011).

To support the MFLF activities at Doi Tung area, the DTDP has started at 1988, the project area covers around 150 square kilometers with 29 villages and approximately 11,000 people. The DTDP had 30 years project time and was separated into three phases. The first phase (1988-1993) focuses on stopping a mobile plantation and other illegal activities by providing the job for local people. The second phase (1994-2002) process was to develop workers' skill and product value added knowledge. Some businesses were transferred ownership to communities. The third phase (2003-2017) is developing local people to manage organizations by themselves and supporting the communities to create their own regulation (Charin, 2001).

1.1.3. The Sustainable Alternative Livelihood Development

The model that the DTDP used at that time is Sustainable Alternative Livelihood Development (SALD) model. The SALD model is a people-centric development approach with a mission of providing people with sustainable and legal livelihoods by focusing on health, livelihood, and education development (MFLF, 2011). The basic health problem is the first issue to solve because sick people are not able to work. When people are healthy and able to work, livelihood should be developed by legal job creation which gives people immediate income to spend in daily life. Then skill improvement will be provided for local people to increase income. After people income is adequate, the children have not to help family works. It's a great opportunities to develop education for the next generation (MFLF, 2009b).

To create sustainability, the "Sufficiency Economy" principle of His Majesty was utilized to help people living by themselves without other supports because the main objective of the SALD model is to create ownership of local people. Thus, the communities have to participate with the development from the beginning and include in all activities. Lastly, the communities have to operate the development process by themselves and become the owners of the "Social enterprise".

1.1.4. The Past Performance of DTDP

For 24 years, since 1988, the tribal people who used to generate income by deforesting for the opium cultivation have changed their lives to be self-sufficient, happy, and healthy nowadays. They have become knowledgeable agriculturists and skillful in many professions that increase their incomes and education level, thus eliminating poverty, which is the root cause of problem. Moreover the forest area was recovered 14,962 hectares (or around 150 square kilometers) (MFLF, 2009b).

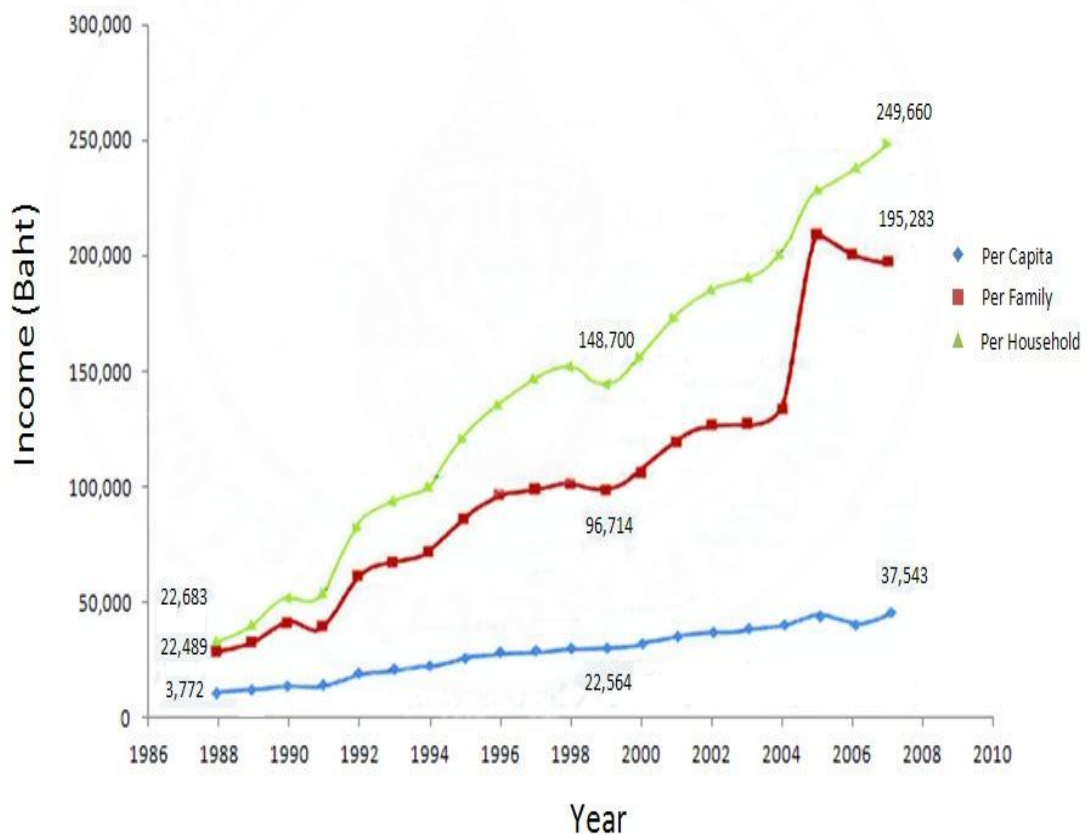


Figure 1.1 Average Annual Income Levels of Local People at Doi Tung Area

Source: Adapted from Mae Fah Luang Foundation, 2009. The Thai Approach to Sustainable Alternative Livelihood Development (SALD) Brochure

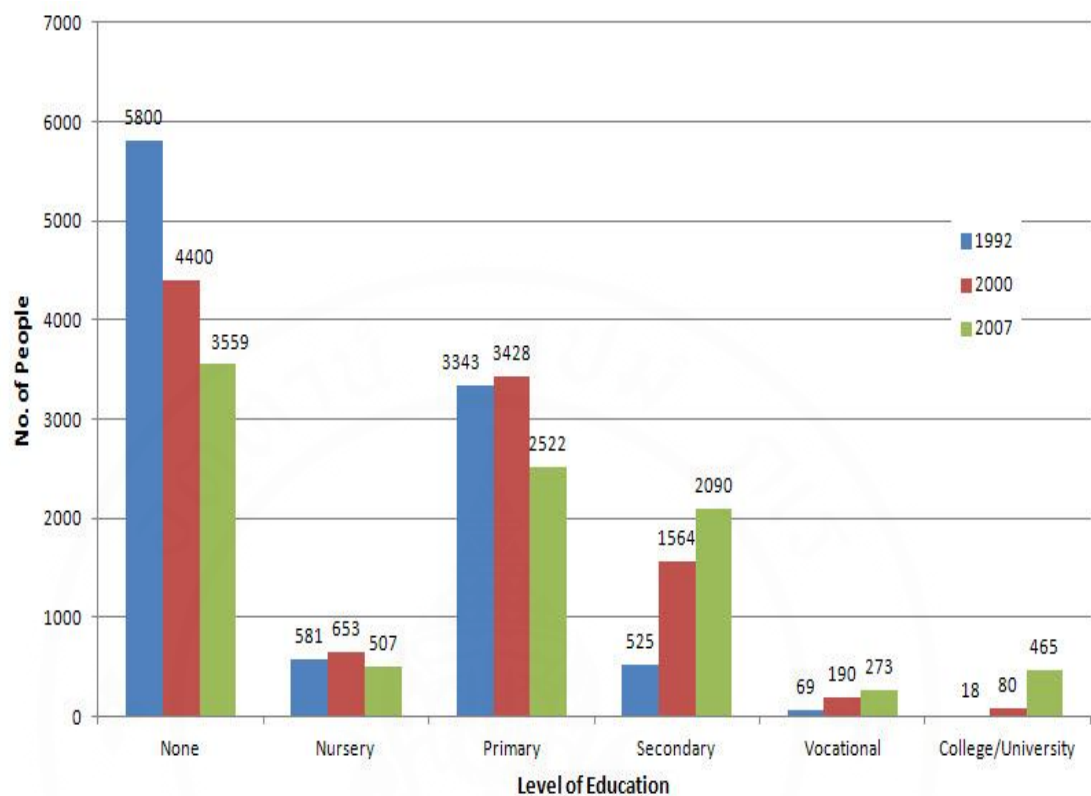


Figure 1.2 Level of Education of Local People at Doi Tung Area

Source: Adapted from Mae Fah Luang Foundation, 2009. The Thai Approach to Sustainable Alternative Livelihood Development (SALD) Brochure

Because of the success of Doi Tung Model, it has been applied in Pang Mahan and Puna Mountains successfully within 7 years. Nan province, the 45% source of central plain floods, has been using this model and seen successful results within two years already. Furthermore, the Foundation has spread the concept to apply in Udonthani, through identifying local leaders to explode from within. And, the good result is seen only within 3 months since the beginning of 2011. The MFLF also provides the real life classrooms named “Living University” for domestic and international representatives to learn the life of local people and the SALD concept. The representatives and MFLF can mutually share knowledge and experiences by using “Knowledge Management” concept (MFLF, 2011).

The United Nations Office on Drugs and Crime (UNODC) Regional Centre for East Asia and the Pacific recognized the importance of the SALD model and hold regional seminar to share and discuss about alternative development in 2003

(UNODC, 2004). Moreover UNODC also counts the DTDP as the one of the world's most successful projects in Sustainable Alternative Livelihood Development. Therefore, the Doi Tung Model has been known worldwide as the ultimate SALD. Hence, the governments of Myanmar and Afghanistan, where largest opium cultivation are seen have invited MFLF to advise to help develop their country and people. In 2009, the chief executive officer (CEO) of the DTDP was awarded the Social Entrepreneur of the year for East Asia Region from the Schwab Foundation which is social entrepreneurship has the intention to encourage entrepreneurial solutions for grassroots level (MFLF, 2009a).

1.1.5. The Partners and Supporters

Furthermore, the MFLF and other royal related organizations also mutually support and share knowledge to expand development into other area in Thailand. The Chaipattana Foundation which is the His Majesty established organization to support people throughout development activities in various ways. The Chaipattana Foundation cooperates with the MFLF in the "Black Bengal" goat development project for livestock purpose and the DTDP in the Camellia oil plantation and development project (The Chaipattana Foundation, 2011). The Royal Initiative Discovery Foundation focuses on learning and creating direct experiences from the royal project principle and supporting local people to conserve the natural and culture resource. This foundation adjusts and applies the DTDP and the His majesty's knowledge to develop in Nan province area as a prototype project (Royal Initiative Discovery Institute, 2010).

The government sectors also have an important role to contact with communities and support local area development. The MFLF have cooperated with Sub-district level in Doi Tung area such as Mae Fah Luang, Pong Ngam, Pong Pha, Toedthai, and Wiang Pang Kam Sub-district Administration Organization (MFLF, 2011). To create sustainable development conscious in the new generation, the MFLF collaborate with The Royal Initiative Discovery Foundation and Students in Free Enterprise (SIFE) to connect the knowledge in the education system and social problem together (Royal Initiative Discovery Institute, 2010). SIFE is global Non-profit organization that supports university students to transfer economic knowledge

and business skill to the communities, solve community's problems, and develop local area by people requirement (SIFE, 2011). The universities in Thailand that are direct partners with the MFLF are Chulalongkorn, Thammasat, and Mahidol University (MFLF, 2011).

Moreover, private sector also supports Doi Tung Project by establishing social enterprise named Navuti Co., Ltd. which is the cooperation of the private business group and the crown property bureau. Navuti Co., Ltd. invests in coffee and macadamia nut plantation in Doi Tung area to create job and income of local people. The social enterprise concept is the form of commercial enterprise where ownership, manage and wealth sharing are more equally expand, leading to a more inclusive and reasonable society. Social enterprise is found on the values of fairness in ownership and wealth distribution, equality of participation, unity of people (Spreckley, 2011).

1.1.6. The Doi Tung Holistic Management Model

So MFLF improved sustainable development model throughout the work in Doi Tung and beyond, refining customary Alternative Development and harvest replacement techniques to undertake poverty through three interferences; resolving the health, livelihood and education problems and combine this model with the sustainable development concept of society, economic and environment to be a "Doi Tung holistic management model" by using people as a core of development. The key purpose of SALD is to convert poor and weak communities from socio-economic dependency on existent living, to full socio-economic sufficiency in a participatory manner.

With successful of DTDP in Thailand and other countries, this study attempts to provide knowledge and decode the process of the Doi Tung Development Project. The outcome of this study may be utilized to develop a macro-marketing plan for any business that wishes to see sustainability side of our society, economy, and environment simultaneously.

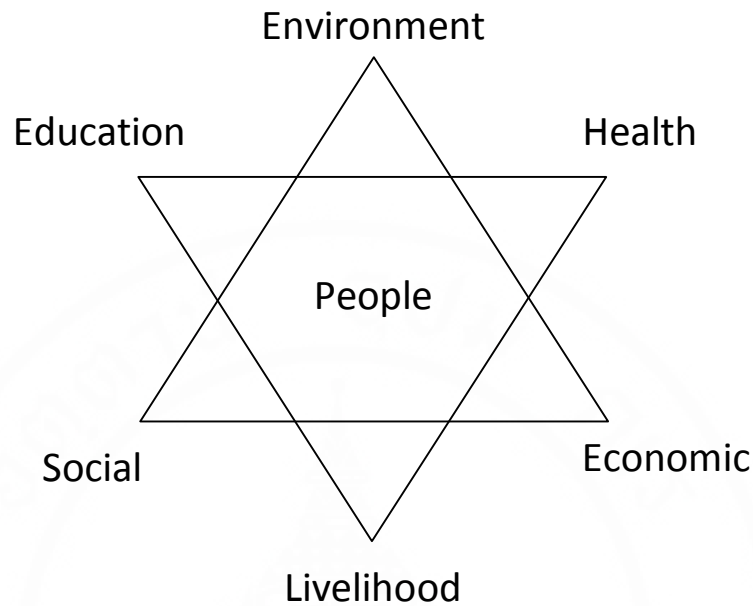


Figure 1.3 The Doi Tung Holistic Management Model

Source: Adapted from Narong, 2011. (The lecture of MUIC Bachelor's Degree internship at Doi Tung, August-September 2011)

1.2. Objectives of the Study

1.2.1. To study operation and development process of the Doi Tung Holistic Management model, philosophies and concepts applying to support this model

1.2.2. To recommend the ownership transferred model for the Mae Fah Luang Foundation

1.3. Scope of Research

1.3.1. Doi Tung Holistic Management Model

The combination of the people centric development, the sustainable livelihood, and the sustainable development concepts, the six main factors of the model which are economic, social, environmental, health, education, and livelihood

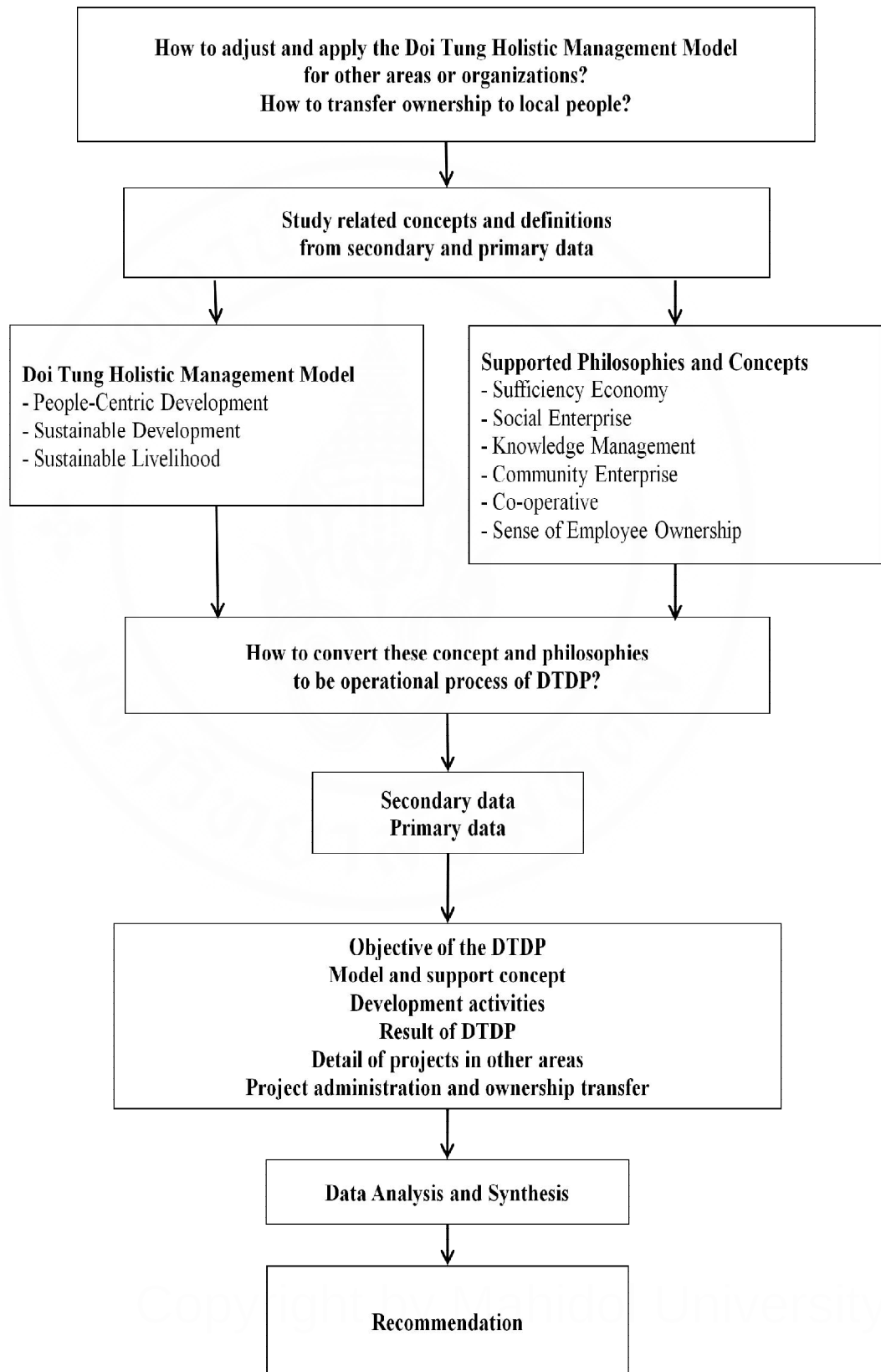
1.3.2. Supported Philosophies and Concepts

The philosophies and concepts that are applied to support the Doi Tung Holistic Management Model, such as, Sufficiency economy, Social enterprise, and Knowledge management

1.3.3. The DTDP Operation Detail

The objective of the DTDP, The past process of the DTDP phase 1 and 2, The current operation in phase 3, The operation in other areas in Thailand and other countries, The project administration and the ownership transfer.

1.4. Conceptual Framework



1.5. Term Definitions

Decoding is one of the communication processes which starts from speakers encoding their thoughts into words, phrases, and sentences, and the listeners decoding these signals in order to recover the underlying ideas (Krauss, 2002)

Knowledge Management concept is about creation, learning, sharing (transferring) and using leverage knowledge as a set of social and dynamic process that is necessary to be managed (Sveiby, 2001).

People-Centric Development is about extending the alternatives accessible to people that live meaningful lives. A basic part of extending those options is creating human abilities, people's well-being, and their quality of life (UNDP, 2011).

Social Enterprise concept is the form of commercial enterprise where ownership, manage and wealth sharing are more equally expand, leading to a more inclusive and reasonable society. Social enterprise is found on the values of fairness in ownership and wealth distribution, equality of participation, unity of people (Spreckley, 2011).

Sufficiency Economy philosophy includes three parts and two essential conditions. The first three parts are Moderation, Reasonableness, and Self-Immunity. The second essential conditions to accomplish sufficiency are Knowledge and Morality (Piboolsravut, 2004).

Sustainable Development normally is a procedure for improving the series of opportunities that will allow individual human beings and communities to accomplish their ambitions and full capability over a sustained period of time, while preserving the elasticity of economic, social and environmental systems (Munasinghe, 2009).

Sustainable Livelihoods are able to apply in development researches, given that it contributes to understanding personals' livelihoods and has chiefly been exploit for poverty reduction (UNODC, 2011).

Community Enterprise is managed by community. The business profits are distributed to community's members or community's development. The business activities are operated by community's members as cooperation (Development Trusts Association, 2008).

Cooperative is the one type of business that operates in the economic system but the objective of cooperative may be different depending on the demand of cooperative members. However the business operation focuses on the collaboration of each member (Karnyuenyong, 2011).

Sense of employee ownership means the employees own the company or have right to manage the operation. So the ownership can be in shareholder form or the right to vote as one of the committee shareholder (Postlethwaite, Michie, Burns, & Nuttall, 2005).

1.6. Abbreviation Content

AIDS	-	Acquired Immune Deficiency Syndrome
AREDP	-	Afghan Rural Enterprise Development Program
BIS	-	Department for Business, Innovation and Skills
CDA	-	Co-operative Development Agency
CDS	-	Co-operative Development Scotland
CEO	-	Chief Executive Officer
CSR	-	Corporate Social Responsibility concept
CT	-	Computed Tomography
DTDP	-	Doi Tung Development Project
EOA	-	Employee Ownership Association
GI	-	Geographical Indication
GMS	-	Greater Mekong Sub-Region
HIV	-	Human Immunodeficiency Virus
ICA	-	International Co-operative Alliance
ICT	-	Information and Communication Technology
IIED	-	International Institute for Environment and Development
JICA	-	Japan International Cooperation Agency
JIFF	-	Japan International Friendship and Welfare Foundation
KM	-	Knowledge Management
MAIL	-	Ministry of Agriculture, Irrigation, and Livestock

MFLF	-	Mae Fah Luang Foundation
MRRD	-	Afghan Ministry for Rural Rehabilitation and Development
MVUs	-	Mobile Veterinary Units
NESDB	-	National Economic and Social Development Board of Thailand
NGO	-	Non-Governmental Organization
PATA	-	Pacific Asia Tourism Association
RIDI	-	Royal Initiative Discovery Institute
SALD	-	Sustainable Alternative Livelihood Development
SCAA	-	Specialty Coffee Association of America
SE	-	Social Enterprise
SHRDC	-	SAARC Human Resource Development Centre
SIFE	-	Students in Free Enterprise
TAO	-	Tambon (Sub-district) Administrative Organization
TB	-	Tuberculosis
TICA	-	Thailand International Cooperation Agency
UN	-	United Nations
UNDP	-	United Nations Development Program
UNECA	-	United Nations Economic Commission for Africa
UNODC	-	United Nations Office on Drugs and Crime

CHAPTER II

LITERATURE REVIEW

The research of Doi Tung Holistic Management Model is based on these concepts as follow:

- 2.1 The Doi Tung Holistic Management Model
- 2.2 The supported philosophies and concepts

2.1 The Doi Tung Holistic Management Model

The SALD model which the MFLF use for DTDP in the beginning is the combination of people centric development and sustainable livelihood. The model initially applies to solve the basic element problem of local people by focusing on health, livelihood, and education. The Doi Tung Holistic Management Model was developed to utilize in the long run and larger scale by combining sustainable development concept with the SALD model.

2.1.1. The Concept of People-Centered Development

A people-centered development concept is developing under fairness-led. The developments firstly focus on welfare and life structure of people by improving economy and environment. Improvements have to be evenly given out with their own ambition. The social members have to improve their individual and organizational capability to collect and manage resources. It emphasizes on improving individual and organization ability. The development of people in society and active participation in the improvement course are very significant for this concept (Korten, 1990). Societies must study how to resolve problems but it has to start by themselves with their sources (SHRDC, 2008).

The development ought not to be top-down that an outer organization informs the society how to act but it should not be completely bottoms-up. The society

has to cooperate with the organization (Landsberg & Mwaniki, 2008). The beginning is to find the social members' requirement and encourage them to develop in action so they choose the best development processes by themselves. The concept of people's centered development is normally applied for local society which is a small-scale plan (Landsberg & Mwaniki, 2008). But it can be utilized for larger scale such as communal organization. People have to be the center of public policy and should be approved by government in both formality and mind (SHRDC, 2008).

The key concepts in a people-centered development have three parts: participation, capacity building for empowerment, and local knowledge as the basis of empowerment. The core element of participation is decision making. Any decision has to be chosen cognitively, emotionally and bodily to connect in recognizing, designing, creating, executing and assessing national and local programs. Participation can be considered as a decision making procedure, happening at the personal and communal level (Van Vlaenderen, 2001). Empowerment refers to a personal knowledge and the purpose realism and is both a procedure and an objective (Yeich & Levine, 1992). At the personal level empowerment means a mental sense of individual management or persuasion (Zimmerman, 1990). At the macro-level, empowerment can be identified by set of ownership of real communal persuasion, political authority and lawful civil rights (Swift & Levin, 1987). Local knowledge can be described to as native knowledge, upcountry people's knowledge and local knowledge. Local knowledge is necessary for empowerment because it represents prosperous ways in which people have handled with their surroundings in the earlier period and provides a source to build upon (Van Vlaenderen, 2001).

2.1.2. The Concept of Sustainable Development

In the past, the conception of Sustainable Development was obviously created that it was feasible to accomplish economic growth and industrialization without environmental harmfulness (McCormick, 1992). Sustainable Development is common consideration to contain three factors: environment, society, and economy. The development of these three factors is interlaced, not divide. The sustainability cannot allow the competition that hurts in the environmental and social domains are unavoidable and agreeable effects of economic improvement (McKeown, 2002).

Suchaya, (2002) who studies about eco-tourism management in Doi Tung suggests about Sustainable Development concept that local people, especially juvenile, should obtain knowledge about service, tourism, and environment conservative. In case of environment conservative, nature conservation conscious ought to add into study program. Moreover the environment conservation organization should be established for justice purpose and equal benefit contribution while government sectors should seriously work to control regulation and penalize for illegal action. The participation of local people in activities is also significant for Sustainable Development. The participation will let local people to realize about importance of their culture and habit area that can be good resources to generate income from tourism. Patompattapun (2004) researches in economic evaluation and environment effect of tourism at Mae Fah Luang district. The research mention that local people who received knowledge about benefit of environment conservation give precedence for community conscious, problem solving participation, environment protection, and recovery. The local community supports the public utility development however the management from government sector should be operated mutually with local community.

Over decades, the explanation of Sustainable Development has evolved. The economy, society, and environment are the key elements of which purposes are to reduce poverty, control production and consumption, and conserve natural resources (UN, 2005). Because only government sector support cannot completely accomplish Sustainable Development for this reason the support from private sector should be included in the development planning (Hemmati & Whitfield, 2003). The Corporate Social Responsibility concept (CSR) which contains civil rights, working class standard, public health, education, child labor, poverty elimination and environmental effects (IIED, 2005). CSR is occasionally applied for shortcut of Sustainable Development (UNECA, 2008).

The Sustainable Development model currently adjusts to be equilibrium triangular model which each component has various own principle and purposes. The model still focuses on the same factor which are economy, social and environment (Munasinghe, 2009).

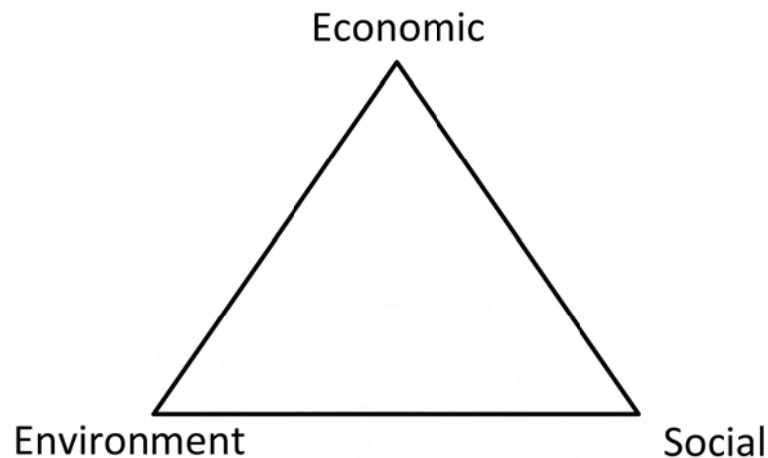


Figure 2.1 Key Element of the Sustainable Development Triangle

Source: Adapted from Munasinghe, 2009. Sustainable Development in Practice

The problem may occur when trade-offs is allowance so the policy makers have to indicate that the Sustainable Development model can be trade-offs or not. Because the most of development policies will emphasize in economy and society that always affects environment in the degenerate way. If the economy develops rapidly, the natural resource will be consumed abundantly. Without social support for regeneration, the environment will be degradation day by day (Adams, 2006).

2.1.3. The Concept of Sustainable Livelihood

A livelihood contains capabilities, assets, and necessary actions for daily life. The livelihood will be sustained when individuals and community can manage from pressure and shocks. Moreover, the sustainable has to be transferred to next generation and the benefits have to be distributed to others at society and international level (Chambers & Conway, 1991). However UN (2011) focuses on the concept of sustainable livelihoods that is chiefly applied to reduce poverty and develop individuals' livelihoods. The term of poverty has to be the limitations of abilities and the livelihoods are active and diverge broadly as they are specific area counted on national development level of region objective, letting for an overall viewpoint of poverty.

In the operation phases, Scoones (1997) separates five main parts to sustain livelihoods. The first three parts emphasize on livelihoods which support

poverty reduction, work creation by enlarging the sufficiency, safety, prosperity, and capability issues. The other two parts relate with sustainable that focus on a livelihoods flexibility and the natural resource.

The first part is about capability to create permanent employment for a stable proportion of the year. The work can be agriculture, labor industry and subsistence production. Sen (1975) mentions three elements of employment: income (wage or salary of employees), production (employment procuring a consumable material) and recognition (where employment procuring acknowledgment for being involving in something valuable). The second part is poverty reduction that is a main standard in livelihood evaluation. Diverse assessments can be applied to build up a complete 'poverty line' assessment founded on earning or spending levels (Ravallion, 1992) and (Baulch, 1996).

The third part is capabilities and well-being. Capabilities are the rights of people to do anything under the law and regulation. An idea which covers further than the material considers of food consumption or earnings (Sen, 1984). The well-being in the poverty and livelihood analysis can permit people to determine their own significant criterion (Chambers, 1997) that can be the abstract factors such as self-esteem, safety, pleasure, pressure, weakness, power and material concerns (Chambers, 1989). The fourth part is livelihood adaptation, defenselessness and flexibility. Such flexibility in the encounter of pressures and shocks is core to both livelihood adaptation and dealing (Davies, 1996). Various kinds of shocks and pressures can response in different ways such as evasion, distribution, opposition or patience mechanisms. But whoever that are not able to temporarily adjust or long-term adapt are unavoidably vulnerable and difficultly to accomplish sustainable livelihoods (Payne, Lipton, Longhurst, North, & Treagust, 1994).

The last one is sustainability of natural resource. The natural resource is important to continue production but the problems as "stress" (tiny, usual and predictable) and "shock" (huge, occasional and unpredictable) can occur anytime. The natural resource management is to control the consumption adequately by generating most benefit for living and avoiding stock depletion (Conway, Agroecosystems analysis, 1985) and (Holling, Investing in research for sustainability, 1993).

The strategies of sustainable livelihood should support to develop poor people participation and manage excess assets while developing the livelihoods and assisting them to create less defenseless to uncertainty incidents and pressures (such as severe sickness, natural disasters or unemployment) that can shift to be poverty and create the debts in the future (Farrington, Ramasut, & Walker, 2002).

Chambers & Conway (1991) gives suggestion for policy makers by using sustainable livelihood aspects in three points: (1) Enhancing capability by developing the education, health, agriculture, transportation, communication and credit policy, (2) Improving equity by fair separating tangible assets, conserving natural resource for next generation, protecting the rights of poorer to access the services and removing restriction that deteriorate the poor and (3) Increasing social sustainability by legislating fairness law and regulation, protecting disaster, supporting fundamental materials for living in severe time and giving family planning knowledge.

2.2 The supported philosophies and concepts

The Holistic management model is main concept to operate the DTDP but the MFLF also apply some philosophies and concepts to make the model more efficient.

2.2.1. The Concept of Social Enterprise

There are diverse names for the concept of Social Enterprise. They were called “voluntary and community sector”, “social economy”, “social enterprise (SE)”, “social entrepreneur”, “civil society” and the “third sector”. But most of researches generally use for two terms, Social Enterprise and Third sector. Both of them have a little different characteristics and advocates (Haugh & Kitson, 2007).

The concept of Social Enterprise was mention in different terms as social entrepreneurship, social entrepreneur or social venture (Borzaga & Defourny, 2001). SE has more significant role in globalization although the concept’s meaning and operation process are still unclear (Borzaga & Defourny, 2001). Sometimes, SE is related for economy, nation and society. For some researcher, SE acts like a common merchandiser in the market (Thompson & Doherty, 2006). There are various model of

SE but the main process of SE is providing the products to generate profit and distribute to society (Babos, Clarence, & Noya, 2007). All of these activities have to perform with legal operation and management (Bull & Crompton, 2006).

The participation of members and officers with democracy procedure is important for SE management (Crossan, Bell, & Ibbotson, 2004). SE is attractive for both of employees and customers. With participation and democratic system, the employees recognize more for ownership aspect. SE has to communicate to customers about value of the products that the part of their expenditure will support for society and environment (Spreckley, 2011).

SE has to continually generate profit to operate business hence marketing objective has significance as much as social objective. The marketing evaluation and communication instruments have to be applied to study consumers' demand. Because of each market has its own characteristic so the local SE strategies are different from regional and global strategies. Nevertheless the fundamental market theories about market segmentation have to be used (Allan, 2005).

2.2.2. The Concept of Sufficiency Economy

Thailand's Sufficiency Economy philosophy focuses on the middle path as prescribed by Buddhism principle. The conduct has guided Thai people's way of living at the personal, family, and society levels. The three parts follow in the Middle Path: Moderation, Reasonableness, and Immunity development (Indaratna, 2007).

Three factors are introduced in the concept of sufficiency economy: moderation, reasonable, and resilience (Wachwithan, Solheim, & Popovich, 2009). These three principles are interconnected and interdependent. (Mongsawad, 2010). Moreover, content of the vision should contain Knowledge and Morality (Kantabutra, 2010b). The meaning of "Moderation" in the Sufficiency Economy is adequacy for necessity and suitable with the current position of themselves, society, local culture and environment. Moderation means not too much, not too little, and not to exploit others (NESDB, 2008). Moderation has conducted the thoughts of Thai people in living on the middle path, not on the extreme for quite a while (Mongsawad, 2010)

Reasonableness is defined that it is cautiousness before making any decision. The people have to carefully think about the law, ethic and culture issues.

Hence, reasonableness is needed to improve moderate life styles. Such reasonableness delegates an improvement of critical view that is helpful for studying, developing and knowledge finding (Indaratna, 2007). The third principle, Self-immunity means preparation to encounter the effect and changes in economy, society, environment, and culture by adapting and dealing with the problem (NESDB, 2008). Mongsawad (2010) mentions self-immunity is regarded as one's capability to prevent oneself from any external confusion and to manage the unexpected.

In decision making and doing any activities, two conditions, knowledge and morality should be considered. These conditions are required to create the values of Sufficiency Economy (Buasai, 2006). Knowledge includes experience and information with comprehension to know its importance and the wisdom required to apply it (Mongsawad, 2010). However knowledge alone is not enough, the application with morality is needed. The people have to train for self-controlling by utilizing Buddhist philosophy (Wachwithan, Solheim, & Popovich, 2009). Morality refers to honesty, reliance, moral activities, attempt, and endurance. (Mongsawad, 2010). Such attributes are essential for life in concord with others along with nature. A Tolerance, sympathy, and positive thinking are needed qualities to be a happy person (Indaratna, 2007).

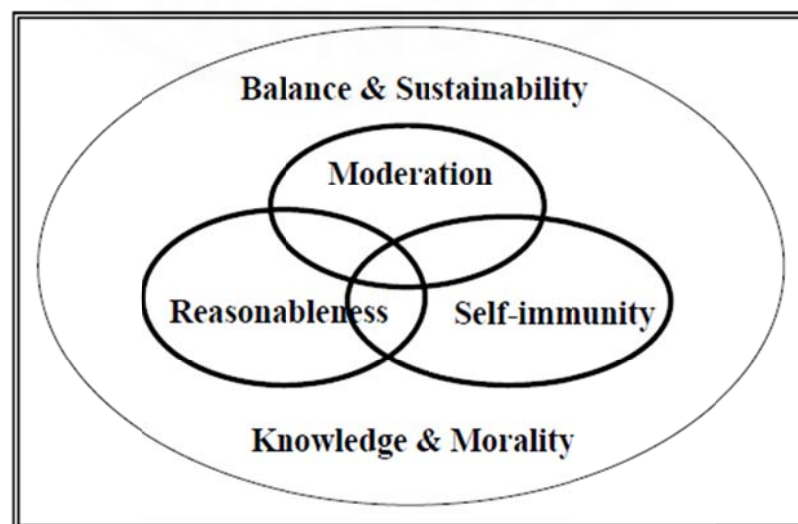


Figure 2.2 Sufficiency Economy Philosophical Framework

Source: Kantabutra, Sooksan, 2010 Development of the Sufficiency Economy
Philosophy in the Thai Business Sector

2.2.3. The Concept of Knowledge Management

In the beginning period of Knowledge Management (KM) utilization, the concept focuses on knowledge sharing system development and the gathering and classifying knowledge tools in order to support the organization operate more efficiently (McElroy, 2000). Afterwards, KM is one of the competitive advantages that emphasize more on processes and innovation (Savage, 2000). KM utilizations cannot rely on only technology so KM has to comprise process into the applications (Binney, 2001).

After knowledge creation, the transferring will be operated by SECI model which contain four processes as socialization (tacit to tacit), externalization (tacit to explicit), combination (explicit to explicit), and internalization (explicit to tacit) (Nonaka & Takeuchi, 1995).

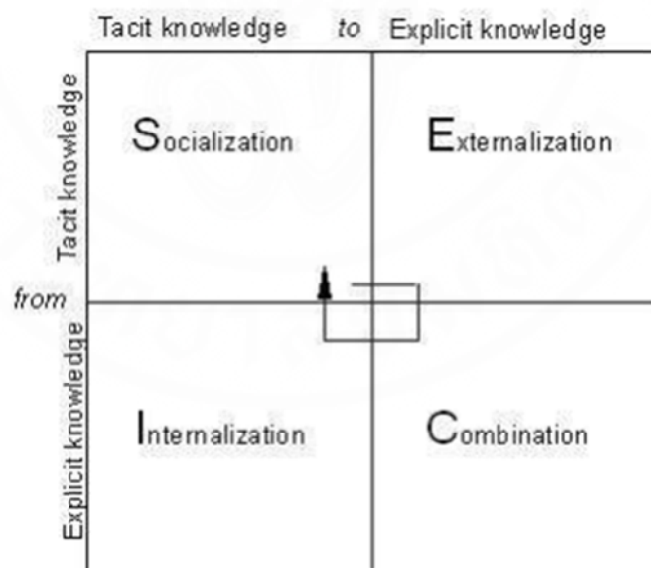


Figure 2.3 Knowledge Management Model

Source: Stephen Gourlay, 2007. The SECI model of knowledge creation, pp.2

The first process is socialization which is new tacit knowledge transferring from one person to another one by sharing experiences. But tacit knowledge nature is still quite difficult to transfer (Nonaka, Toyama, & Konno, 2000). However, technology can help to transfer knowledge conveniently for socialization process (Nonaka & Takeuchi, 1995). In internet era, Email and social network are the simple

tools to share or response with the new knowledge. Externalization is the second process of SECI model. The tacit knowledge will be interpreted to explicit knowledge with documentary and technical standard (Nonaka, Toyama, & Konno, 2000). In this process, the knowledge will be more understandable (Nonaka & Takeuchi, 1995).

The third one, combination, is the process that develop current explicit knowledge to be more details and applicable (Nonaka, Toyama, & Konno, 2000). This process can be separated into three steps as (1) collecting and combining external and internal data of organization, (2) informing and sharing the new knowledge to the members of organization by discussion or presentation, and (3) adapting explicit knowledge to be more utilizable (Nonaka & Takeuchi, 1995). Internalization is the last process that transfers approval knowledge to personal stage (Nonaka, Toyama, & Konno, 2000). The explicit knowledge can be turned to be tacit knowledge throughout activity and practice (Nonaka & Takeuchi, 1995).

2.2.4. The Concept of Community Enterprise

The community enterprises are the organizations that support community requirements. The main objective is to create social outcome throughout business activities. The community participation is very important to develop and create opportunities. The business profit must be reinvested in community development after the businesses have financial sustainability (St Laurence, 2007). To create social value, both of market and non-market activities are applied (Antinori & Bray, 2005). The structures of organizations are cultural empowerment and socio-economic development with commerce connection (Cornell & Kalt, 1998).

The community enterprise can be called as the social enterprise but it is operated by community. The profit from business should be distributed to community's members or utilize for development. The enterprise activities are done by community's members as cooperation (Development Trusts Association, 2008). The community enterprise creates jobs and skill practice for community's members, generate and sustain community's prosperity, and change the local people living, especially during the economic recession (Communities, 2010).

When the community enterprise is established, the business situation has to be evaluated then set operation goals and objectives. Same as simple enterprise, the

strategies and action plans are applied to generate income for enterprise. However the overall training and operation should be monitored and adjusted to match with current situation (FAO, 2005).

2.2.5. The Concept of Co-operative

Normally business enterprise comprises of three parts, customer (C), owner (O), and employee (E). The profit maximization is the main objective of the enterprise. The profit will be distributed for owner and employee (Karnyuenyong, 2011). However the conflicts occur when profits are not suitably distributed in the organization and cannot increase the price of product and service. To solve this problem, the employees are able to establish the enterprise that they are owner and employee in the same time. So this enterprise still operates to seek for profit from customers but the profit will be equally distributed for each of member. It is called Workers' Cooperatives or Production Association/Production Cooperatives (CDA, 2003).

In case, the customers have not many alternatives and feel unfair to purchase products and services. The cooperative enterprise can be founded to strengthen the customers bargaining power. This type of cooperative is not to operate for profit because the owners and customers are the same person. However the external employees have to be hired to operate the enterprise. The other type of cooperative can be established when both of customers and employees are the large number. The production and consumption occur in the same place. Hence the objective of cooperative is self-reliance creation in the group (Karnyuenyong, 2011).

The new international cooperative principles which were approved by the International Co-operative Alliance (ICA) have 7 parts to operate the co-operative organization. The first principle is "the membership has to voluntarily be opened for everyone without gender, society, race, politic, and religion obstruction". The second principle is "Each of co-operative members has one right for one person as democracy principle". The third principle is "At least one part of capital has to be public capital of co-operative. The members manage excess profit to achieve the cooperative's objective". The fourth principle is "The co-operative is the self administrative organization by membership management". The fifth principle is "The co-operative

should support education and training for memberships, representatives, and officers to develop the organization and communicate with public. The sixth principle is “The co-operative is able to collaboration with local, national, and international organization to maximize service efficiency and empower the organization”. The last one is “The co-operative should be operated to create sustainability in community as the membership approved policy (ICA, 1995).

The structure of cooperative can be categorized into three types. The centralized cooperatives operate direct service for the members. The profit from operation will be returned to the members. For the larger scale, the federated cooperatives contact and collaborate with other local and regional cooperatives. The reimbursement profit will be reimbursed via the interregional to regional to local cooperatives and then to members. And the last one is combination of centralized and federated cooperatives (Vogelsang, Bailey, Biser, Eversull, & Mather, 1988).

2.2.6. Sense of Employee Ownership

The employee is the important factor to drive an organization to reach the objective. As the part of organization, employees have to be involved and empowered. The employee should be included in the decision making process and sense successful with the organization. Moreover the employees have to be realized that they are the persons who can fix the organization’s problems to accomplish the goals (Apostolou, 2000). To increase efficiency, job ownership should be given for employees under the company’s rule. The employees have freedom to manage their works and find the best way to accomplish the goal. Simultaneously, any information ought to be disclosed and informed employees. The company’s goals and future plans are the significant issues that the employees should know other than their responsibilities. So they know where they are in the organization and feel more meaningful (Nelson, 2006).

Financial incentive is another way to improve productivity. The “financial” term does not include commission, bonus, and profit sharing as common business but the company’s shares are issued and acquired by the employees. They will gain the dividend and can vote as one of the shareholder (Postlethwaite, Michie, Burns, & Nuttall, 2005). The participation positively motivates employees to improve

more effort and indirectly decrease labor turnover. Eventually, the company's productivity and profitability will be increased (Michie, Oughton, & Benn, 2002).

Many companies give employees shares without any payment or employees can buy shares with special price. Sometimes, the companies may spend profit-sharing bonuses in the form of company's share. The employees held shares may not be permitted to sell for other people outside the companies to remain the ownership of organization (Pérotin & Robinson, 2002). However the employee ownership has not to be direct employee ownership that employees are the individual shareholders. The employee trust can be created as indirect employee ownership. The trustees are elected by employees to make a decision how the employees have right to vote in the meeting, earn financial benefit, or even get company's shares that change from direct to indirect employee ownership (BIS, 2011).

CHAPTER III

RESEARCH METHODOLOGY

This is a qualitative research by design. Depth interviews, field observation and secondary data analysis are used throughout the study. The data collected from secondary and primary sources were about the Doi Tung Development Project and other related projects. Then, data analysis has been done, using “content analysis” method to justify the research objectives. The philosophy, actions, results, and applications are linked together to find interrelationships among them. This chapter will show main research activities as follow:

3.1. Data Collection

The Mae Fah Luang Foundation (MFLF) has direct responsibility to operate the Doi Tung Development Project (DTDP). So, the research focuses on the applied philosophies and the foundation activities.

3.1.1. Secondary Data

The secondary data comes from documentary research, journal article, and the MFLF website. The history of the DTDP, the project timeframe, the operation process in the past, the project expansion, and the detail of applied concepts were investigated from secondary data sources. The philosophies and speeches of The Princess Mother that the MFLF applied in development project were included in secondary data. The related statistics and current operation data are directly gathered from the MFLF head office and updated documents of the DTDP. The speeches and vision of DTDP management level, especially from Mom Rajawongse Disnadda Diskul, who is Chairman of DTDP who directly inherited the knowledge and philosophies from The Princess Mother.

3.1.2. Primary Data

The author experienced the socio-economic data of local people in Doi Tung area and information of the DTDP by observing the 1st Internship Program at Doi Tung of Mahidol University International College in August, 2011. The internship program provided the visitors to learn the local people lifestyle by observing the development project at Doi Tung, Pang Mahan, and Puna sub-districts of Chiangrai province.

The author learnt how the local people live, how they generate income, and how they cooperate with the DTDP. Then, the program passed on knowledge about development principle, the DTDP development activities, and the project expansion detail. The author had a chance to meet the administration of MFLF and recognized the vision of Doi Tung development in the future. Also, the author visited the Doi Tung product factory to see the production line and talked with some local workers. Moreover, the researcher had a chance to interview Mom Luang Dispanadda Diskul, Chief Development Officer (CDO) of DTDP.

3.2. Data Analysis

The content of primary and documentary data was concluded by content analysis. This method analyzes document, vocal, and actual communication message (Cole, 1988). The content analysis is able to test the theory to improve understanding of the data. The words can be refined to categorize the words and sentences that have the same meaning (Cavanagh, 1997). The purpose is to achieve distilled and wide information of incidents. The result of analysis is model or sorts explaining the incidents (Kyngas & Vanhanen, 1999)

Moreover it is possible to create the replicable and applicable implication from data to their circumstance. The objective is to provide knowledge, comprehension, and illustration of real data and actual guide to activity (Krippendorff, 1980). Refer to Weber (1990) in case the researcher lack of analytic skills, the result can be achieved by applying simple way (Neundorf, 2002).

In the analysis, the development philosophy and principles were analyzed by comparing with the operation and the detail in operation process. Significant

factors that affect the Doi Tung Holistic Management Model are numbered. The project outcomes were linked with the operation processes to evaluate the result of the DTDP. The expansion projects were analyzed for future model adjustment and application for each development factor. The current project administration, business model, and transfer of ownership activities are studied to support recommendation for future activities of DTDP.

CHAPTER IV

DATA ANALYSIS

The data collected from secondary and primary sources are separated into 10 topics for analysis as follows:

- 4.1 The objective of Doi Tung Development Project (DTDP)
- 4.2 The Doi Tung Holistic Management Model
- 4.3 The people-centric development concept
- 4.4 The sustainable alternative livelihood development (SALD)
- 4.5 The sustainable development philosophy
- 4.6 The support concepts and philosophies
- 4.7 The project administration and business model of DTDP
- 4.8 The ownership transfer

4.1 Objective of DTDP

The DTDP was initiated in 1988 from the belief of The Princess Mother to turn around drug addicted people and the opium producing area into better livelihood people and productive cultivated land. The DTDP initially tried to solve the basic problems of local people such as health and illegal activities (Diskul, 2005).

“No one wants to be a bad person. They are not good because they lack opportunity and alternatives” (The Princess Mother, 1988)

From the above quote, the project has tried to improve the quality of lives and eventually creates sustainability in the communities by transferring ownership to local people. Three phases of thirty years inclusively have been planned ever since. The objectives of DTDP from the beginning are as follow (Charin, 2001):

4.1.1 To protect shifting cultivation and deforestation and develop agriculture and forest area systemically.

4.1.2 To preserve environment, create natural resource sustainable mind in people, support reforestation, and commercially develop natural resources such as water, soil, and minerals.

4.1.3 To improve economy, especially local people income that let them live by themselves with least supports from others, while improving agricultural production efficiency and developing micro community enterprises

4.1.4 To improve quality of life in Doi Tung area in education, health, welfare, and security by focusing on local people participation. To develop people to be able to collaborate well with government and private sectors in development projects.

4.1.5 To organize the administration system to be under the law and national security.

4.1.6 To develop and support the Doi Tung area to be national and international tourist attraction.

4.2 The Doi Tung Holistic Management Model

The word “Holistic” for the DTDP means the big picture of a development system. The development does not focus only on the environment or social factor but every factors in the model have to be simultaneously developed (MFLF, 2010).

“The Doi Tung Development Project is the prototype of integration development that cooperates with every department so we can succeed it and be different from the others. The word “integration” also means quality of life development in economic and social factors of people at Doi Tung” (M.R. Disnadda Diskul, 2011).

The Doi Tung Holistic Management Model is the combination of three concepts as follows:

1. The people-centric development concept
2. The sustainable alternative livelihood development concept
3. The sustainable development concept

People are the core concept of the DTDP because the development activities are eventually transferred to the people. The sustainable alternative livelihood development concept is applied to eradicate poverty in the initial stage. And, the sustainable development concept is applied for sustainability creation in the long run. So, the significant factors that DTDP focuses on development are health, livelihood, education, social, economic, and environment (Apichai, 2011).

4.3 The people-centric development

Landsberg & Mwaniki, (2008) mentioned that the first step of People-Centered Development is searching for the community's needs and attracting people to develop with their own actions. Coincidentally, The Princess Mother also mentioned ten years earlier that:

“It is important to help them to help themselves because when the project ends, people will still be able to continue the process of development on their own.” (The Princess Mother, 1988)

The project applied The King's “Understand, Approach, and Develop” principle to be the core of operation. To know the real problem of local people, the significant issue before developing is the data collection. The DTDP use the local volunteer to collect census data that is the fast way to get in-depth data from the local people. The data should be explored from everyone in the community to know all problems. Nevertheless, the project has to create understanding about development process, what the projects are trying to do. The data will return to community to discuss together with the project and conclude the actual problem and requirement in the future (Apichai, 2011).

To resolve problems at the basic level, support fundamental needs, and create better opportunities, the DTDP focuses on the people-centric development concept (MFLF, 2011). The concept is composed of three parts, participation, capacity building for empowerment, and local knowledge (Van Vlaenderen, 2001). So the DTDP separated the development plans into 3 phases. The short-term phase or survival stage is the “Quick Hit” activities to make sure that the local people have sufficient food and legally generate income within 10-150 days. Because the most

important issue is people participation so the project has to create people's trust and confidence by showing them the concrete and quick results (MFLF, 2009a). The project supported people to crop fast growing plants and create jobs that generate income within 1-3 years while waiting for the medium and long-term phases (Apichai, 2011). However the people should not rely on loan (MFLF, 2010).

The medium-term phase, or sufficiency stage, emphasizes on people's knowledge and abilities improvement (Apichai, 2011). The people have to know how to manage the on-hand resources (MFLF, 2010). With sufficient needs, the self-sufficient mind has to be instilled, thus the people gradually pay back debt. This phase takes approximately 4-7 years (MFLF, 2009a). The long-term, or sustainability stage, strengthens the people to be self-reliant. The education is focused on this stage to improve local people's vision. The people are able to develop and manage social enterprises and local social organization (MFLF, 2010). The marketing knowledge, such as value-adding, brand creation, and global marketing must be passed on (Apichai, 2011). Along with economic development, the people have to simultaneously concern about the environment and society which brings sustainability to the community (MFLF, 2009b).

The MFLF also separated the DTDP which is 30 years project into 3 phases. The period in each phase is longer than the People-Centered Development concept because the DTDP is the prototype project that the developers are growing and developing with local people simultaneously.

"I purpose the 30 years project. If we suppose to be the global prototype, we have to majestically leave here. The people have to rely on themselves without the DTDP that is the sustainability. This is the first idea and target since the project started." (M.R. Disnadda Diskul, 2012)

The first phase (1988-1993): The project immediately solve public health problems by giving public health knowledge and practice, protecting disease, and develop fundamental structure (MFLF, 2011). The purpose is to stop mobile plantation and illegal plantation by creating legal job for local people and allocating the land for them. The land was managed under soil and water conservation and utilization principle. The reforestation for the King project and plant species development create the job and generate income for the people. The local people's role has changed to be

the agriculture employees instead of doing illegal activities as in the past. The project expected for 20% of population having job and income for living. Then, the workers were improved their job skill level by learning and practicing (Charin, 2001).

The second phase (1994-2002) emphasized on income and quality of life development by adding product value (MFLF, 2011). To continue the first phase plan, this phase focused on increasing production efficiency in response to the market, by quality and quantity. Some businesses were transferring ownerships to local people, such as coffee plant and flower crafting. Considering by habit, interest, and seniority, local people were taught to improve job skills that can reduce production cost so the product can compete in the market.

The project established various job practice centers from the traditional knowledge of local people. For example, the group of woman weavers and producers used to produce simple clothes that sell at low price, and resulting in very low daily income. The project supports them by improving their weaving skills and marketing technology to increase product quality, thus increasing in value and much higher income. There are other practice centers such as coffee, ceramic, carpet, and etc. The annual income target is over than 30,000 Baht per person per year (Charin, 2001).

The third phase (2003-2017) is developing local people to manage organizations by themselves and supporting the communities to create their own regulation (Charin, 2001). To create sustainable development in the DTDP and Doi Tung communities, this phase concentrates on strengthening “Doi Tung” brand and supports education and efficiency of people in the communities. However the final objective of DTDP is transferring business management and development for the new generation of community leader. The DTDP will gradually withdraw from the system when the communities can operate the organizations by themselves (MFLF, 2011).

Although the Doi Tung Holistic Management model comprise of three concepts combining together, but the core concept is people development. So, the most important issue is people’s participation. The development starts from people and people have to do it by themselves in the future. If they do not know how to do or just receive the development from the others, the development cannot be sustainable. However, the good point of people centric development is the timeframe and development method that can be different, depending on the community’s context.

4.4 The Sustainable Alternative Livelihood Development

The Sustainable Alternative Livelihood Development model (SALD) which found on the Princess mother's development principle was applied in the DTDP by the MFLF. UN (2011) defined "poverty" as the limitation of opportunity. In the same way, the Princess Mother believed that no one wants to be a bad person but they lack the opportunity. As Scoones (1997) suggested, the five parts of sustainable livelihood are poverty reduction, work creation, well-being life, livelihood adaptation, and natural resource management. However The Princess Mother believed that the actual causes of social problems are sickness, poverty, and ignorance as the causes of poverty cycle.

"In the Mae Fah Luang Foundation, we always keep in mind that our job is to return pride and dignity to the people, to their communities, and to the land. By "people" we mean the poor, the underprivileged. And our development principle is to solve problems at the root cause. First are health problems, because sick people cannot work. Second is poverty: we need to encourage self-reliance among them. Third is ignorance: Give them education. According to the Princess Mother's philosophy, this is sustainability." (M.R. Disnadda Diskul, 2008)

Hence, the SALD model attempts to solve these problems by supporting in health, economic livelihood, and education.

4.4.1 Health development

The health problems should be solved before the other issues because sick person cannot efficiently work. Regard to The Princess Mother speech:

"Helping people must begin first with the improvement of health and livelihood. As once there is no hunger and sickness, people will have the strength to move forward." (The Princess Mother, 1988)

Some diseases are the main cause of high mortality rate in the area such as malaria and Human Immunodeficiency Virus (HIV). Moreover, drug addiction is also the cause of health vulnerability. As the "Quick Hit" activities, mobile doctors unit of the Princess Mother had started with the basic medical cures wherever she went in the village visits (MFLF, 2011). After that, the local volunteers will be trained to do

simple sickness protection and treatments. The training centers were established for the community's volunteers. However, the cooperation with the government sector is significant to create the public health infrastructure and sanitation system in local area, such as building construction and health service system.

For the drug problems, the people who are addicted to drugs have to attend the drug rehabilitation program. The treatment processes are not only detoxification, but they are also monitoring, job practicing, and result evaluation (MFLF, 2009b). The DTDP established 2 health services center, 6 health stations, village drug storehouse, iodine funds, and dental center. Supporting people to have a toilet in each house was also an urgent agenda. Giving people knowledge about fatal disease such as Human immunodeficiency virus (HIV) and malaria had been done. Moreover, Drug-addict treatment and recovery project was established at Pha Mhee village. So, the mortality rate of people in Doi Tung area has been reduced to around 1 percent (Charin, 2001).

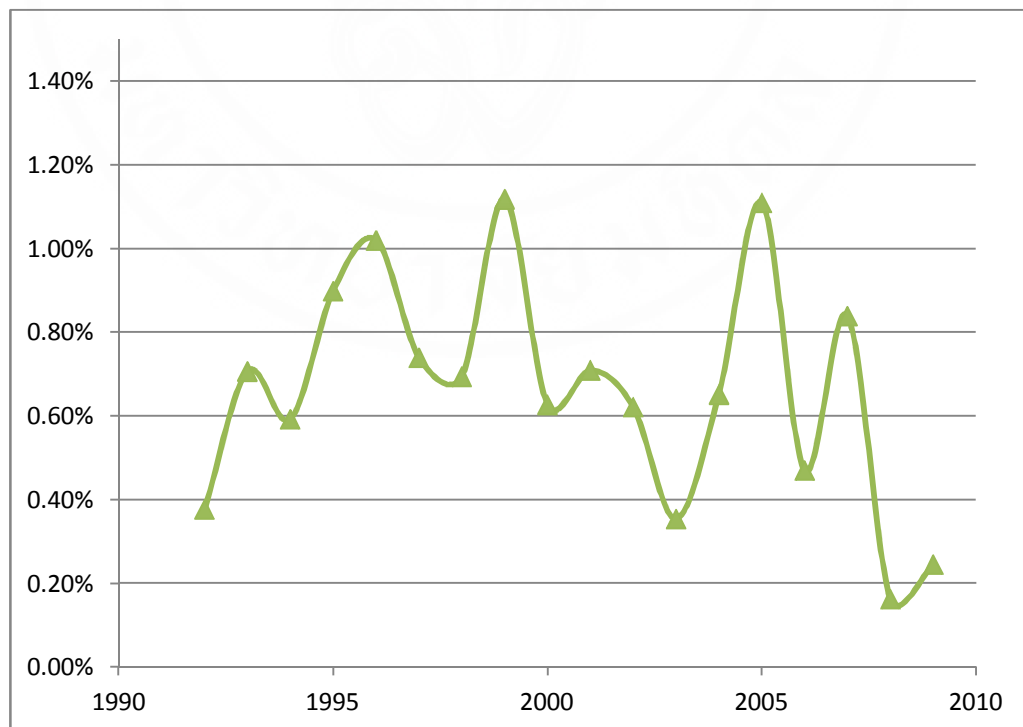


Figure 4.1 Death Rate in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

Because of the health development from the DTDP, local people change their behavior from receiving treatment by village healers to going to the community medical center and receiving modern medical treatments instead. Although the infected diseases had been eradicated in Doi Tung area but the some people have congenital disease around 10 percent of the population. The congenital disease problem may be occurred in the near future because the quality of life is better and the number of old age people increase every year.

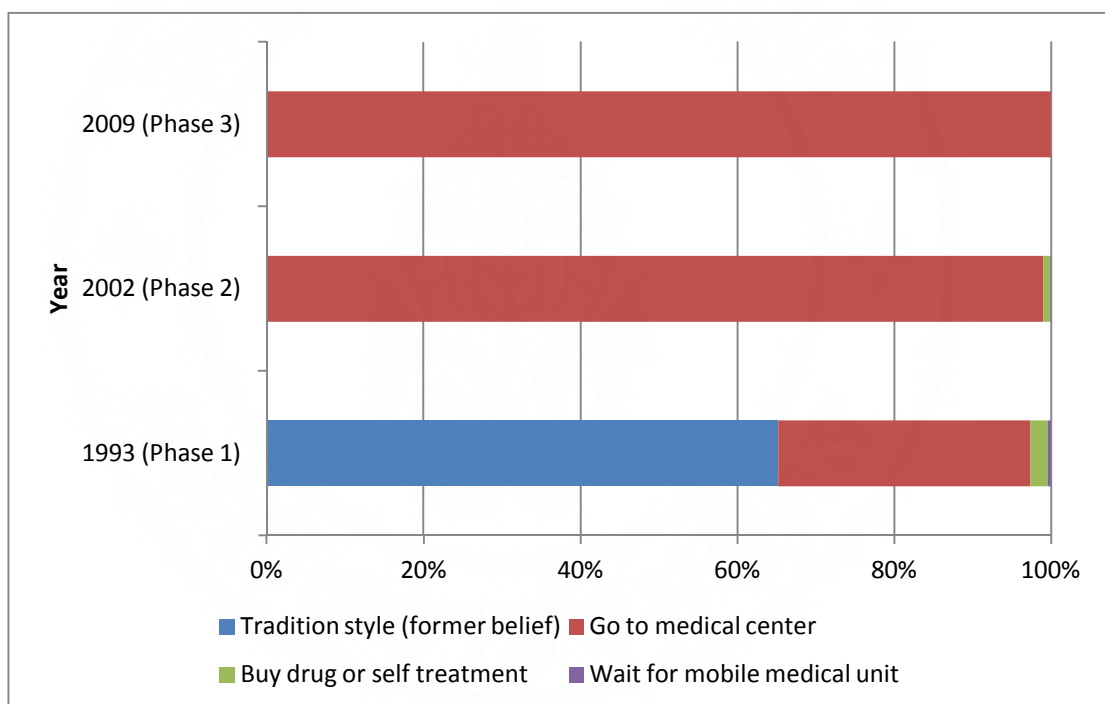


Figure 4.2 The Achievement Evaluation of Doi Tung Development Project

Source: Adapted from Mae Fah Luang Foundation, 2011.

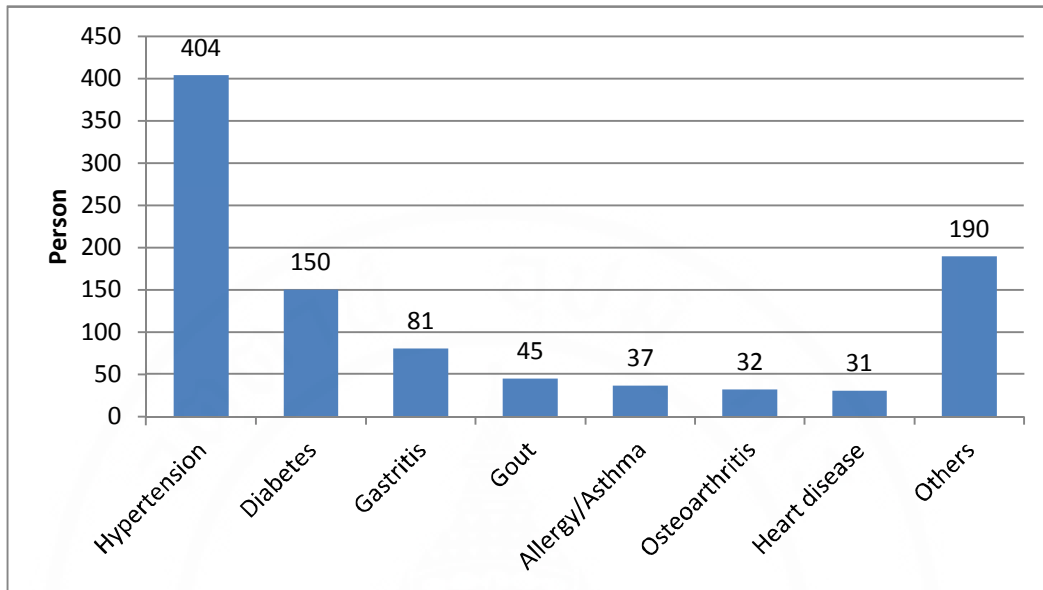


Figure 4.3 Type of Congenital Disease of People in DTDP Area in 2009

Source: Adapted from Mae Fah Luang Foundation, 2011.

The DTDP supported people to have sanitary toilets in their houses. Hence, the lavatory project was created to include in phase one for the good sanitation in Doi Tung so villagers do not share toilets or go to the forest anymore.

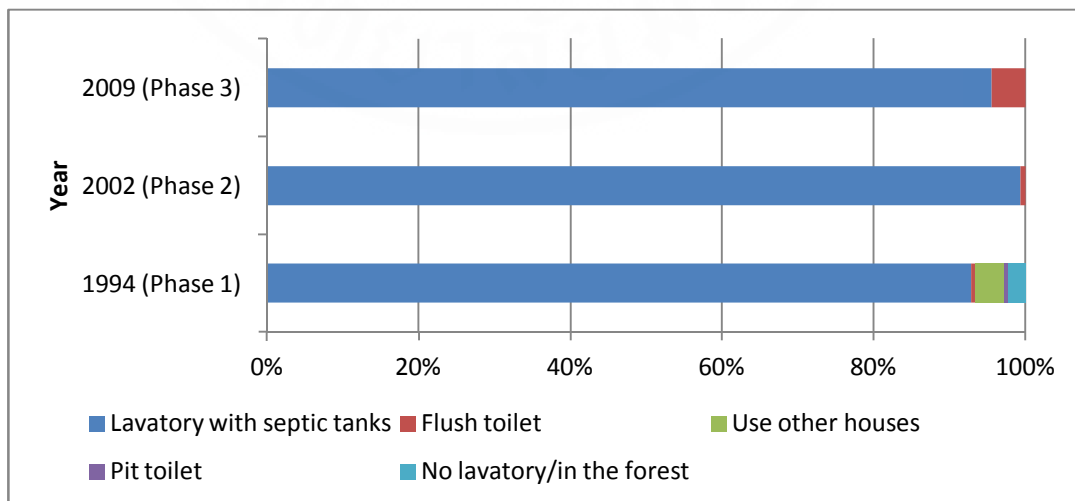


Figure 4.4 Lavatory Type in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

The health factor has been fundamental and was indicated as the step for people development. Health development expansions are so important to start the development project. The MFLF established the Greater Mekong Sub-Region (GMS) Medical Training Centre at Mae Sai Hospital, Mae Sai District, Chiang Rai Province, to train and improve the health personnel's medical service skills. The training center initially accepted nine trainee teams from Laos on 26th June, 2006. With three years project plan, the center prepared nurse, dentistry, radiology, and laboratory courses which took 3-months long period of training each. Up until September 2010, the center totally trained 107 medical staff members (MFLF, 2011).

In the international outreach, health problem is also identified as the first priority to solve. The MFLF tried to solve Malaria, which is the main cause of death in Shan state, Myanmar. The project hired local workers to build a 16-bed hospital and has trained dentists, Malaria and Tuberculosis (TB) technicians to treat the patients. After the public health infrastructure was developed, mortality rate became zero within one year, and the Malaria infection rate was decreased from 20% to less than 2% within three years (MFLF, 2009c).

Same as Aceh province, Indonesia, the MFLF started introducing a Malaria preparedness program in 2006 to practice the holistic program for Malaria elimination. The Malaria infection rate in Lamteuba Village area has been decreased from 2.17 to 0.07 percent with no mortality in the past four years. The trained doctors have expanded Malaria management to other areas and the model was applied in the provincial plan as well (MFLF, 2011).

4.4.2 Livelihood development

Livelihood is the next step after health support. Food providing and job creating are the main activities to support sustainable in livelihood. The local people have to generate income by themselves with the environment, culture, and local wisdom conservation. Without knowledge, the local people use shifting cultivation and opium cultivation for their living, which was the main problem in Nan province and Afghanistan respectively. So, legal jobs have to be provided for local people instead of illegal activities (MFLF, 2011).

“Whatever development that will be succeeded has to develop people’s well-being and living standard first. If the people still have insufficient income, other than deforestation, they will do illegal and immoral jobs.”
(The Princess Mother, 1988)

Nevertheless, the provided jobs should be suitable with the geographical context, culture, and local skills to generate higher income. For example, the design of Doi Tung handicraft product is the integration of the local wisdom and modern style. And, the sheep livestock that is the current activity of local people were supported in Balkh Province, Afghanistan. In the beginning, the fundamental infrastructures such as irrigation system and veterinary service are done with community participation. When the local people learn by doing, they are able to operate and develop by themselves without other support later on (MFLF, 2009b).

The MFLF cooperated with the Thai army and the Royal Forestry Department to change the local people lifestyle and jobs from mobile agriculture and opium plantation to agricultural employee. The people were hired to prepare the land for plantation and initially grew trees for 9,900 Rai of reforestation for The Princess Mother’s celebration project. The people grew trees for 3 years, after that the Royal Forestry Department took over the responsibility for another 10 years. In the same way, the 3,642 Rai of economic forest, Navuti Company, has been set to operate for coffee, macadamia, and chestnut plantation and hire local people for workers (Charin, 2001).

The MFLF provided suitable jobs considering by local people skills which constitute different races, such as Akha, Lahu, Chinese, and Shan. The job practice center was established to provide economic opportunities and jobs for local people. The practice center teaches people to weave cloth and carpet, produce coffee, potteries, and mulberry paper. The people were supported to plant flowers and decoration plants to sell to the tourists visiting the Doi Tung palace project. Hence, the majority people in Doi Tung work as employees of the DTDP. Other groups of local people on Doi Tung mountainous areas are agriculturists who supply raw materials to DTDP.

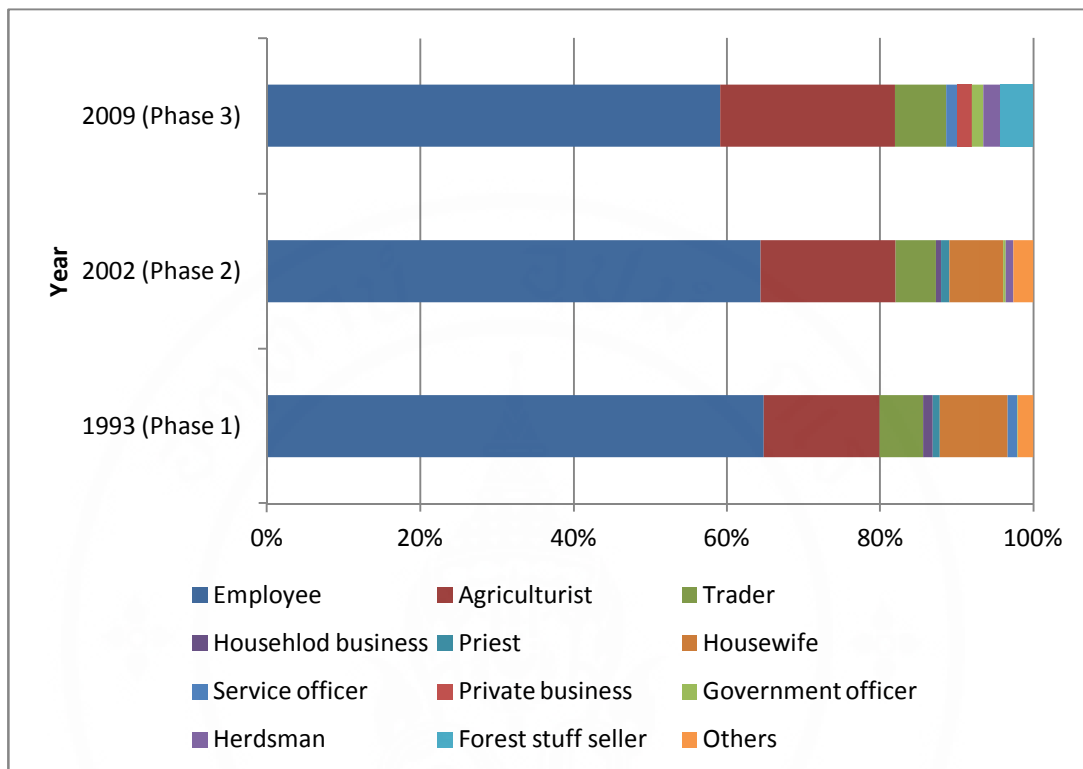


Figure 4.5 Occupations of People in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

The unemployment rate was around 10 percent from phase one. Although the rate was considered low at the time, but the cause of unemployment has changed from attending schools to “unemployed”. That means more of the new generation people do not find proper jobs after graduating from schools.

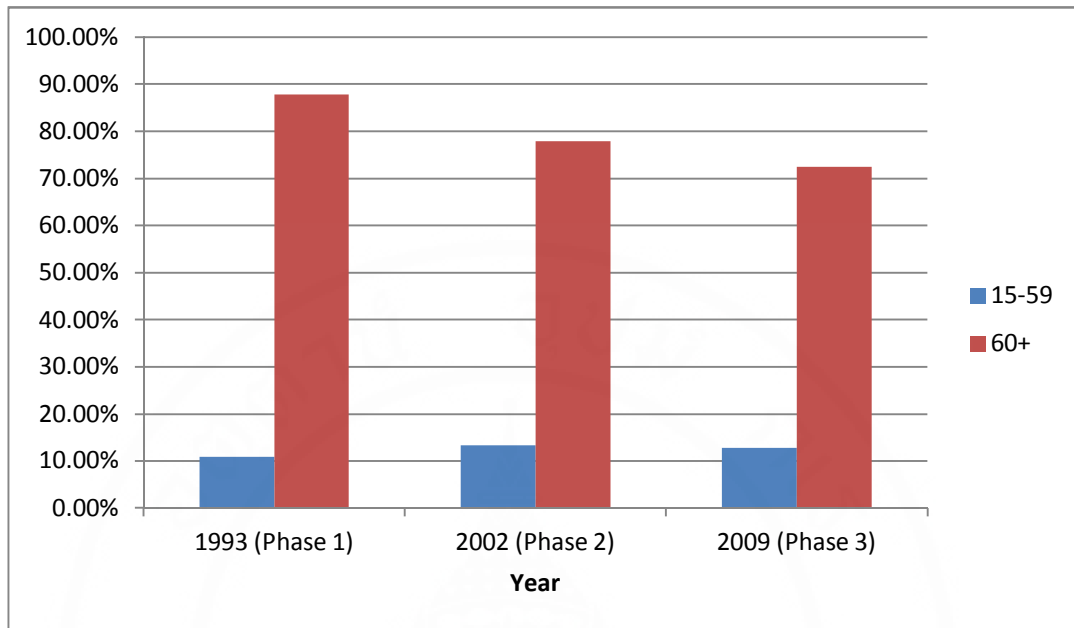


Figure 4.6 Unemployment Rates of People in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

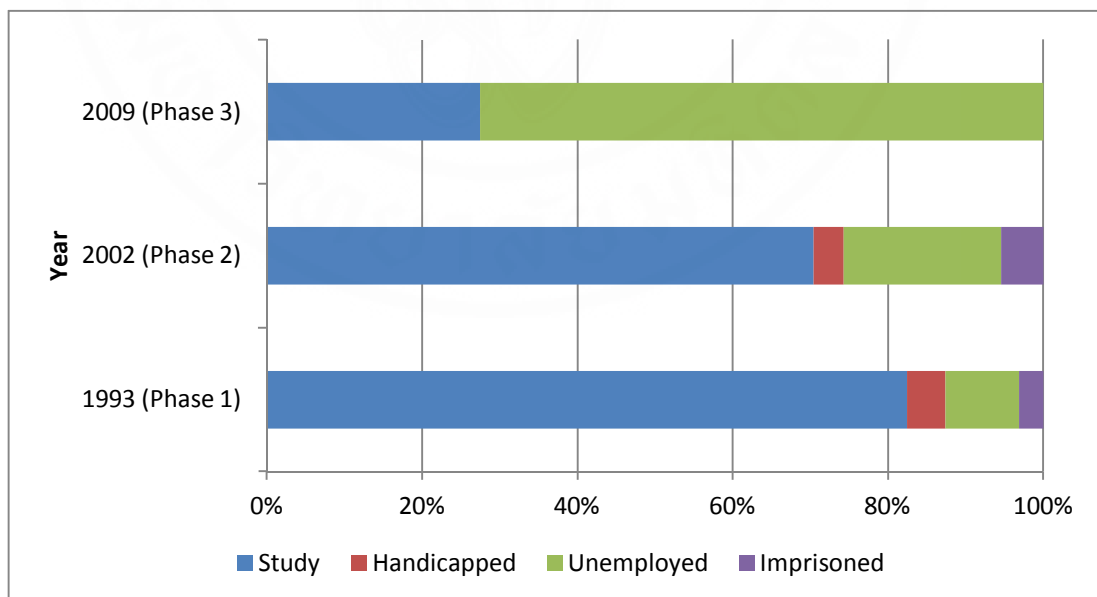


Figure 4.7 Cause of Unemployment of People in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

In 2009, more people move to work in other areas such as Bangkok and other provinces further away, or even in foreign countries like Taiwan. Some of them

have their own businesses in other areas because of the economic development. However the employees move to work in Bangkok more than other jobs.

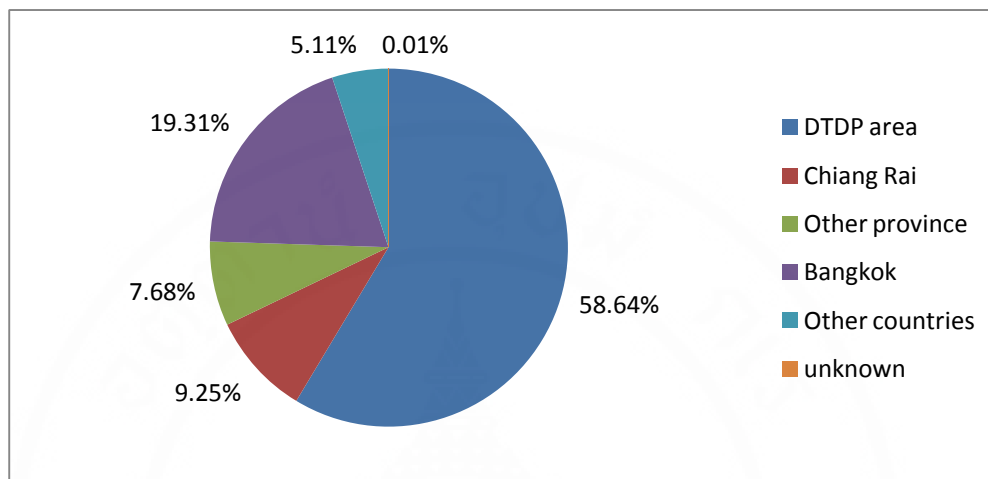


Figure 4.8 Working Areas of Local People in DTDP Area in 2009

Source: Adapted from Mae Fah Luang Foundation, 2011.

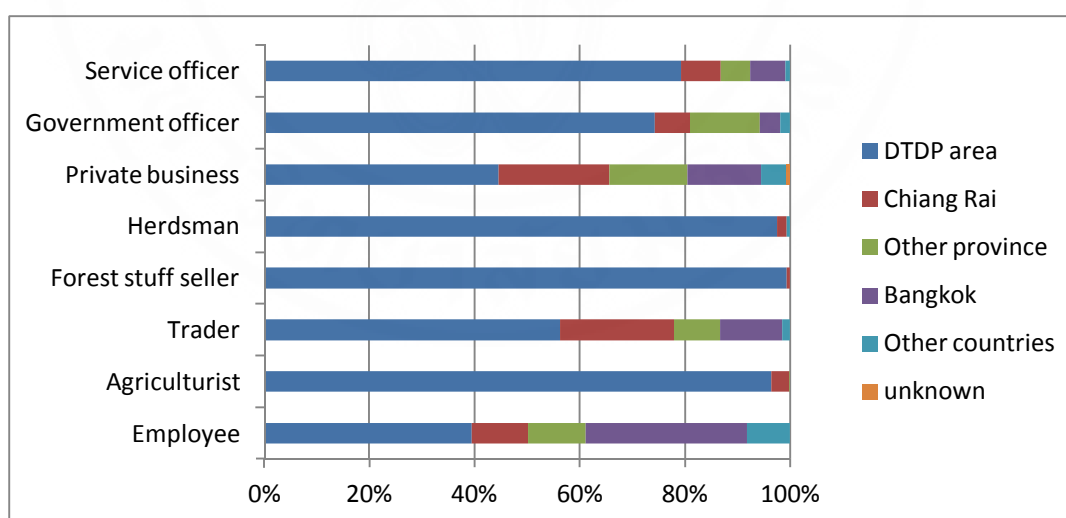


Figure 4.9 Working Areas of Local People in DTDP Area in 2009

(Categorized by Occupations)

Source: Adapted from Mae Fah Luang Foundation, 2011.

In some places in Thailand, health is not the main problem so the development will initially focus on livelihood. At Nan project, local people have a problem about natural resource management. So, the MFLF approach and help people to develop the irrigation, soil, and livestock system. The people were taught how to

manage the resource utilization and care about livestock treatment. In the same way as Nong Wua Sor District, Udon Thani Province, local people have water management problem. So the MFLF practiced the model farming for two plots of villagers' land and designed water distribution system for them. The plot owners, who used to buy vegetables from the market, became self-reliant farmers by consuming their own products and sell the rest to the market instead. With instant success, many villagers follow this model for 31 plots within two months (MFLF, 2011).

The model has proved to be successful with adjustment and application for different circumstances. In Balkh province, Afghanistan, the MFLF began with supporting the Mobile Veterinary Units (MVUs) for people to develop the livestock system. To get the service, the sheep owners have to register with the project and pay back to the bank by sending 10 percent of female ewe born annually. These ewes will lend to the vulnerable people and bring them to the project that created the opportunity in sustainable livelihood activities (MFLF, 2009c).

In 2007, the Prostheses Centre started operation at the Zainoel Abidin Hospital in Banda Aceh, Indonesia. More than 100 representatives were trained by the center to become prostheses technicians. Nowadays, the local people have started to take ownership of the center. And, the new project in Yenau Township, Myanmar, that has problem about water scarcity, also applies the Doi Tung model. So the MFLF helps people to build the irrigation system and adopt the seed bank system or revolving fund mechanism to increase the capital in the area (MFLF, 2011).

4.4.3 Education development

To break through the poverty cycle, education is focused on to create better career opportunity. When people have adequate income for spending in daily life, the new generation of the community has to get higher education in order to resume ownership from MFLF eventually. Both formal education in school and vocational trainings have been provided (MFLF, 2009b). The discipline and responsibility, creativity, innovation, and self-learning have to be instilled in the curriculum to prepare the new generation for the fast changing world and strengthen them to be self-reliance.

Furthermore, scholarships have been provided to local students for their education and to prepare for occupation opportunities in local areas. The key of SALD model is ownership, so local people have to realize the benefit of the development activities and participate with the project from the beginning (MFLF, 2011). Although most of hill tribes understand Thai language but only 50 percent can read and write Thai.

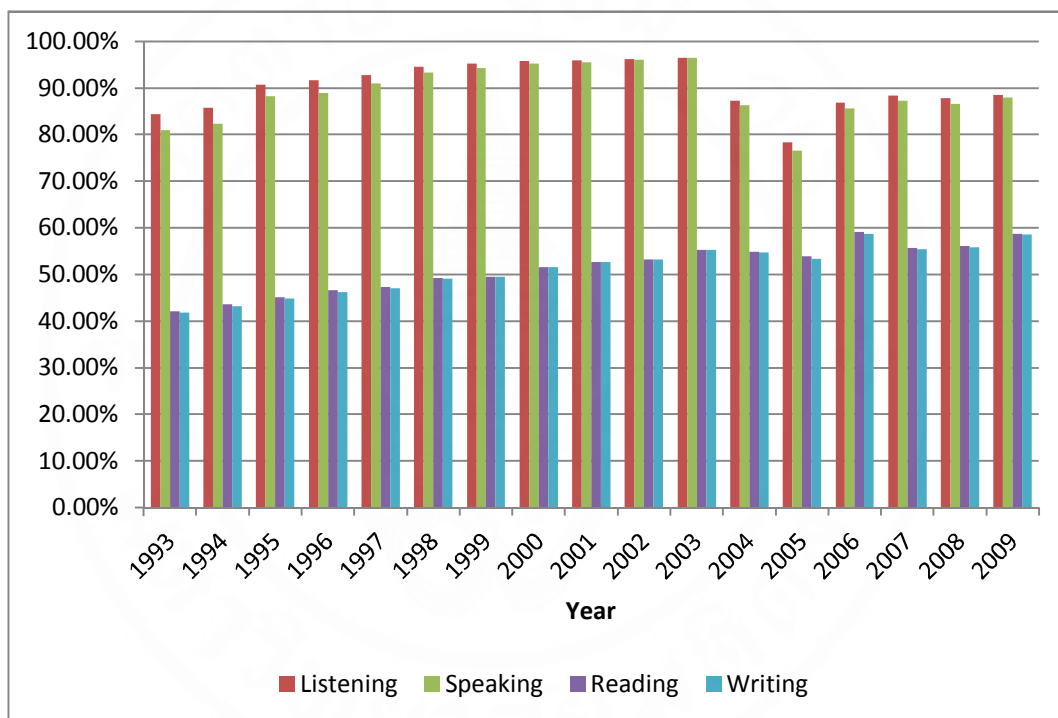


Figure 4.10 Understanding rate of Thai Language of People in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

To improve education for the new generation, the MFLF not only has provided both formal and non-formal education, but also created the Thai language study campaign for them. 17 small children development centers, 1 new-born baby development center, and 7 primary schools have been set up in Doi Tung. Education centers teach children in day time and adults in night time, so local people were equally provided education. Now, more than 90% of tribal people understand Thai language. The living university program was also started to share knowledge to visitors and those who wish to learn about the SALD model (Charin, 2001).

The DTDP collaborate with local schools to draft model scheme of education development. The budget, experts, and population data are supported for schools to plan for curriculum. The DTDP expect the new generation to study in formal education system because some schools in Doi Tung area have more modern education facilities than other schools in Thailand. For example, Baan Ka Yang School applied the “Montessori” study system which is Child-Centric education from Italy for the kindergarten and elementary education. This study system can improve the students’ confidence and self-thinking or learning ability.

The curriculum and activities in school have been adjusted to match with student and community requirements (MFLF, 2011). Information and Communication Technology (ICT) is applied in the school such as satellite study and computer laptop in the classroom. Consequently, education level of people in Doi Tung area has been improved from phase 1-3 which is a good sign for ownership transfer in the future (OBEC, 2008).

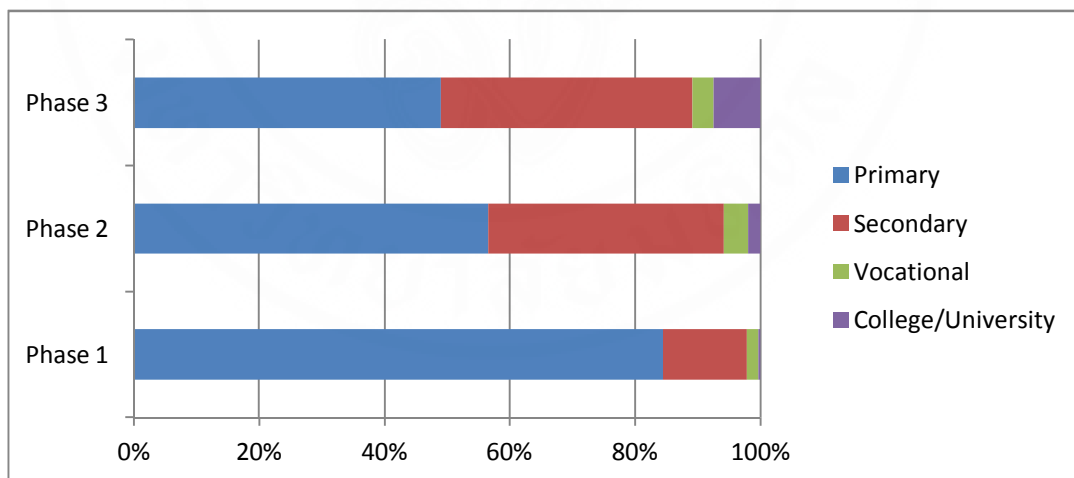


Figure 4.11 Education Levels of People in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

Nevertheless, the children were taught ethical behavior, manner, orderliness, and the “love Doi Tung mind”. The students are actually trained for vocational careers such as agriculture, animal husbandry, cooking, computer care, electrician, and craftsmanship. Once they gain vocational skills, they can generate more income for the family and their parents. The DTDP and District Administration Organization also train the children in the villages at the end of semester to strengthen

youth relations and responsibility in groups. The provided activities focus on forest conservation and the Doi Tung development. Because the Princess Mother's philosophy is people development, the development will succeed when the people can live by themselves (OBEC, 2008). Moreover, the MFLF also gives scholarships for people to study and come back to develop their own homeland. According to Bangkomnate:

“We spend the foundation budget for education scholarships to send people to study outside the area and come back to develop the community. We hire 18 teachers to solve the insufficiency of teachers. The project has a plan that people can return benefit to the country in the future by paying tax from land utilization same as the common Thai people” (Bangkomnate, 2011).

The most of outreach areas still have no education facilities. In Shan state, Myanmar, the MFLF hired people to build a school for 500 students for formal study and skills training for people (MFLF, 2011).

The SALD and sustainable development concept are combined to cover the development in both of small and large scale. To solve the fundamental problems, the development initiate with the SALD concept that was utilized for short-term plan in Doi Tung area. Nevertheless there are more factors that should be concerned in larger scale. So the sustainable development concept is applied to fulfill the development. So, it can be done simultaneously with the livelihood development such as the agriculture, livestock, and irrigation management.

4.5 The sustainable development

Along with poverty elimination, the DTDP applied the sustainable development concept to create the equilibrium between the costs and benefits of living. The key factors of this concept are economic, social, and environment (UN, 2005). Economic development ought not to exceedingly consume the natural resource (Munro, 1995). Simultaneously, the communities have to become self-reliance and be able to deal with the problems by themselves (Munasinghe, 2009).

4.5.1 Economic development

Without the capital, the development cannot be conveniently done. The DTDP used to be supported by donations in the past. But the project can now run its businesses and generate income for the development without other supports. To improve family economy, the Princess Mother said:.

“We have to create jobs for them. If the men go to do agricultural work, the women must have job to increase income (based on their skills). We will support them to produce nice handicrafts, such as hand-woven textile, carpet, mulberry paper, and art product.” (The Princess Mother, 1988)

To generate more income, the marketing activities are applied in the supply chain. The local people should be initially supported know-how, equipments, and trainings. For example, coffee beans and macadamia are roasted and value-added processed that can sell with higher price. The sheep components such as fur, skin, and meat are produced to be various valued products and supplied for domestic Afghan and international markets. These value adding processes can create more jobs for local people (MFLF, 2009c).

“We would like to improve the businesses. When the businesses are developed, the project participants get more income. However, we do not focus on the money as the significant issue; but we try to help people to rely on themselves. We have to consider their readiness that they are ready or not. The salary has to be paid in reasonable rate so people can live. We produce products to improve economy but these products should not harm environment and must not use toxic substances. For example, Doi Tung coffee is carefully examined to prevent the mold and bacteria because this is The Princess Mother Project. We have to provide the good quality products for consumers.” (Khunying Puangroi Diskul na Ayudhya, 2011)

The ownership mind has to be created in the business stakeholders to maximize production efficiency. The profit from businesses should be equally distributed to all stakeholders. The business will be diversified in production line to reduce the risk of relying on single product with different skills of local people. Moreover, the combination of local wisdom and business professionalism can create products differentiation. Nowadays, the “Mae Fah Luang Foundation” and “Doi Tung”

brand are clearly separated. The “Mae Fah Luang Foundation” brand and logo is used for the livelihood development activities but the “Doi Tung” brand is used for commercial product. Some consumers still misunderstand about the brand as quoted underneath.

“We use the Mae Fah Luang Foundation for development activities. We have the products under Doi Tung brand. When the consumers see Doi Tung brand, they think that MFLF sells hand-woven textile because we are not clear in marketing activities. It is very difficult to communicate with customers who we are. So it is another reason for brand creation activities.” (Diskul M. L., 2012)

The “Doi Tung” brand is set positioning as the global leader of social enterprise that support local people livelihood in Doi Tung area. The Doi Tung Development Project business units are categorized in 4 business units including food, handicraft, horticulture, and tourism.

4.5.5.1 Food: Coffee and macadamia are the core products of the Doi Tung Brand that is directly sold to consumers. Nowadays, all of the coffee trees are managed by the local people so they feel like their own asset. The local people have freedom to sell coffee beans to the project and other merchants. However, the price that the project offers is not much higher than the market price. The project supports local people to gain higher profit by setting up roasting factory and selling under the "Doi Tung" brand.

The roasting factory is controlling quality standard by trained roast masters. The “Café DoiTung” coffee shop is the other way to create more distribution channels by selling coffee as finished products. Furthermore, coffee trees planted at Doi Tung area at altitude of 800 meters above the sea level or higher were granted a Geographical Indication (GI) by Department of Intellectual Property, Ministry of Commerce of Thailand to use the "Doi Tung Coffee" brand name for single-origin coffee (Diskul M. L., 2012).

“We have started coffee business for a period. Now, we are in brand developing process. I believe that we have enough experiences to bring Doi Tung coffee to be the complete Café Doi Tung” (M.L. Dispanadda Diskul, 2012).

25 branches of Café Doi Tung are operated under the MFLF control. The project trains local people to manage and operate Café Doi Tung at the DTDP branch. The profits are returned to the MFLF and utilized for development. So, the core strategy is not rapid expansion because the main objective of the DTDP is the business for society and environment. Nevertheless, this objective becomes a strong point of Café Doi Tung to compete with other competitors in the market. Because of the limitation of budget and human resource, the marketing activities focus on public relations and internet communication instead of other advertisements.

For macadamia business, it takes longer time than coffee to harvest the crop (7-10 years). However, macadamia nuts can be sold at much higher price and the nut components can be utilized in the different ways with local innovation and development. For example, nut outer shells become fertilizers, the hard woody inner shell is converted into good charcoal, while macadamia ash can be used as ceramic paint to produce unique color. Doi Tung macadamia nuts are exported to Japan with the international quality standard (DTDP, 2008).

4.5.1.2 Handicrafts: The products, mulberry paper-related, ceramics, hand-woven textiles, and tufted carpets factories, are sold in the Doi Tung Lifestyle shops. The shops are located in Bangkok, Chiangmai, Chiangrai, Phuket, and Suratthani. The concept of the shop is selling the products made by local people with the combination of local wisdom and modern style (DTDP, 2008).

The paper mulberry tree is a local plant in Doi Tung area but the locals did not know how to generate income from it before. So, the project set up mulberry paper factory and supported more cultivation of paper mulberry tree to create more jobs and incomes by hiring local people to work and purchasing raw materials from them.

The project invited production expert of mulberry paper from Japan to train workers in the factory. The mulberry bark is boiled, pounded and dyed. Then, the workers sift the paper onto designed frames. When the paper dried, it is decorated with all natural materials for creative designs. The finished products are sold for home decoration, stationery, boxes, and gift-wrapping paper, among others (Bangkomnate, 2011).

The ceramic production was initiated because of the Vetiver grass and Doi Tung reforestation project. The biodegradable pots were required to place the grass into the soil. Young people who understand science and have creative and artistic skills are offered to train and work in the ceramics factory. The ash from macadamia shells are sometimes used in the glazing process. The ceramic products are sold as home decoration (DTDP, 2008).

The local knowledge of ethnic minority is hand-woven textile. However, local people could not find high-quality raw materials and tools so they could not produce quality products and had to sell at low prices. The project supports them by inviting experts to train local people for techniques and designs. Nevertheless, the project tries to conserve the hand-woven skills instead of using industrial production. Hence, more local people were hired and the cost of finished product has been kept low. Local women in various ages can work in the factory. Older women are placed to work on light tasks, such as bobbin spinning while younger women work in rug-weaving and sewing units (Bangkomnate, 2011).

New equipment is an improved loom that can weave wider textile products so the project is able to develop more variant products to respond to the market. The modern raw materials are introduced to create various colors when combined with the local materials. However, more than 90 percent of raw materials come from natural yarn. The wastes from coffee and macadamia production are also utilized for new product creation. Thick hand-woven cotton is interwoven with reed, elephant grass, hemp fibers and jute that are used in hand-woven fabrics and hand-woven rugs for interior decoration. The final products are more elaborate, unique, and special than machine-woven products (DTDP, 2008).

The hand-woven textile products are sold under the “Doi Tung by Mae Fah Laung” brand. As the worldwide brand, Converse, used the Doi Tung textile to add their products value. The Emporium and Thai Airways International are also the customers of Doi Tung brand by ordering exclusive design products. The strong point of Doi Tung textile is textures, colors, and design, which is a mixture of local and modern sources. Moreover, the Doi Tung textile products also offer made-to-order option to respond to customers’ demand (Sukchu, 2005).

4.5.1.3 Horticulture: The DTDP set up the plant tissue culture labs to improve the quality and quantity of the plant propagation in Doi Tung area because the plant culturing use less time than natural pollination with low cost. Furthermore, the cultured plants are stronger and more consistent in size. The plants which were developed in this program are decorative flowers, perennial plant species, because they are highly required in quality sprouts. So the project does not need to import the plants at higher costs. The Plant Tissue Culture Laboratory creates many indoor jobs for young women. So, the agility and concentration jobs are more suitable for them than the agricultural outdoor jobs. Nowadays, the major specie of plant culturing is Vetiver grass to support the Royal-initiated Vetiver Study and Development Project and some other plants were propagated for Mae Fah Luang Garden and the Doi Tung landscape decoration (DTDP, 2008).

Nowadays, the locals are supported to be business owners. The project allows them to lease land at reasonable price to plant the flowers and sell them back to the project. The project's plant nursery also supplies sprouts for the locals to tend and sell to the tourists. When the local businesses can generate regular profits, they can move away from project supports and are completely self-financed.

4.5.1.4 Tourism: Although Mae Fah Luang garden and the Doi Tung Royal Villa are the famous tourist destination in Doi Tung but the other tourist attractions are also interesting, such as Hall of Inspiration, the Commemorative Hall, Hall of Opium, Golden Triangle Park, and Mae Fah Luang Arboretum at Doi Chang Moob. The tourists can visit the Cottage Industries Centre and Outlet of the Doi Tung Development Project where located at the foot of Doi Tung and see the real production. Furthermore, the six different ethnic communities including the Akha, Lahu, Shan, Leu, Lawa, and Chinese who live in Doi Tung also open their villages for tourists to visit and learn about their diverse cultures, traditions, and lifestyles. When the villagers have festivals, they wear their traditional costumes and have activities together. So the cultural travel is the another way to support local culture conservation and generate more income for the local people (DTDP, 2008).

“The tourism in the project is a complete interrelation and link with the sufficiency economy, along with the Thai agricultural lifestyle that have value adding process. For example, Doi Tung coffee has obvious

production, package, branding, and clear target market.” (M.R. Disnadda Diskul, 2006)

The DTDP provide accommodation for tourists by using the name “Doi Tung Lodge”. The local people were trained to do hospitality business so they have additional skills and job opportunities. The Doi Tung Lodge hires local people in various positions such as receptionists, servicers, food preparators, and managers. Furthermore, the DTDP also operate the restaurant business on Doi Tung and other places in Chiangrai. The ingredients are supplied by local people and are all free from pesticides. The cooks are also recruited from local people so they can create special local food for tourists to taste (DTDP, 2008).

The people incomes increase every year since phase one. However, the income dropped down in 2006 because of political problems that affected the income from tourism and product sale.

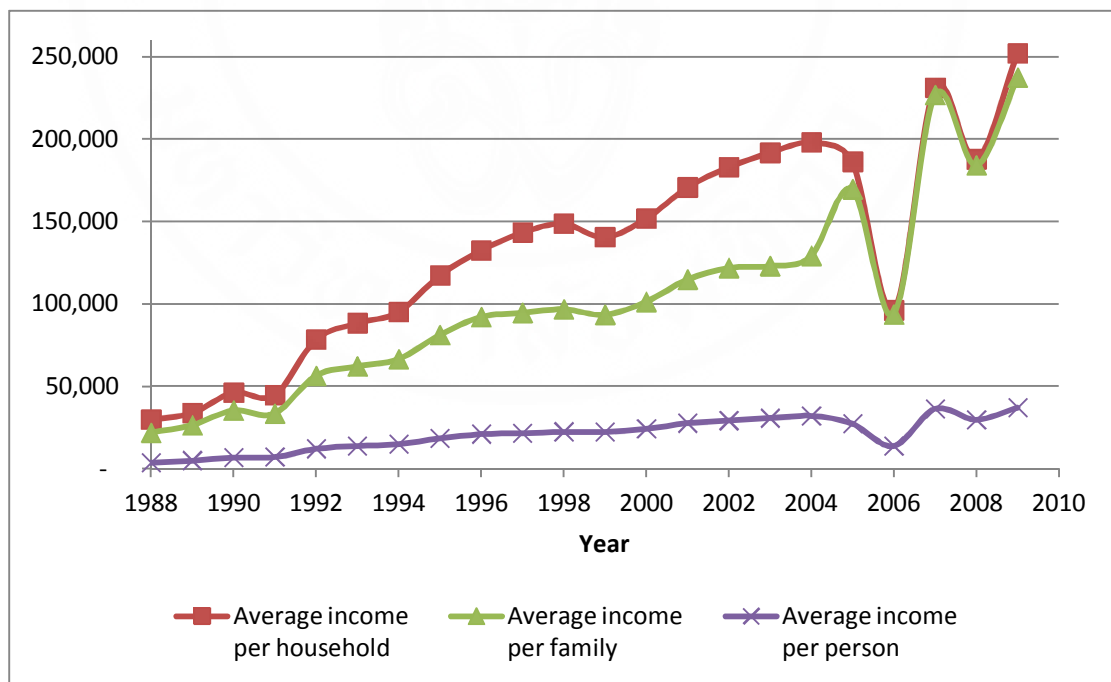


Figure 4.12 People's Income in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

When the people already had raw material, the value added processes have been supported by the project after that. The extension of the development project at Pang Mahan and Puna sub-districts, her Royal Highness Princess Mahachakri

Sirindhorn requested the MFLF and the Chaipattana Foundation to do the Tea Tree Oil Research and Development Project at Puna Village, covering 5,011 hectares area. The tea oil, or oleifera, can be extracted into high quality edible oil, equivalent to olive oil, which can be sold at high price.

Same as the Afghanistan project, the value adding knowledge will be supported for local people to increase off-farm income. The value-added processes, wool processing, tanning, and carpet weaving, were trained for local people. The MFLF advised the yarn spinning which was made from bicycle wheel and only USD 80 cost but it can improve the yarn-spinning efficiency by 150 percent (MFLF, 2011).

4.5.2 Social development

“The communities should have their own regulation to control the communities’ members, which is more effective than national law. So, the local people are punished by the community if they do any violation activities.” (M.R. Disnadda Diskul, 2011)

The main goal for SALD and DTDP is to have self-regulated community to sustain their livelihood. The motivation can be made to empower the community rules such as the “Drug-free village certification” and the “Forest fire protection” programs. The community leader and committees are chosen by using democracy principle to cooperate and develop with the government sector and other communities. The conflict among the communities will be reduced when the communities contact and recognize each other. The sport activities project was held to create communities’ unity such as village, youth, and woman sports competition (Charin, 2001).

The community meetings are regularly held to discuss about the problems and development. The community has to focus on each problem even through that problem occurs with only one member, to find the solution and protection in the future. The final decision comes from all members, not only one person. The DTDP created the understanding of the local people and the government sector. The main purpose is to strengthen the communities and make people living by themselves. The project officers went to give people initial knowledge and collect data to find the improving way in the future. People were supported to create community rules, given knowledge about government sector regulation that people can participate with

government developing system (Apichai, 2011). The people were supported to have family planning and infant welfare project was established to look after the children whose mothers go to work until 2 years of age.

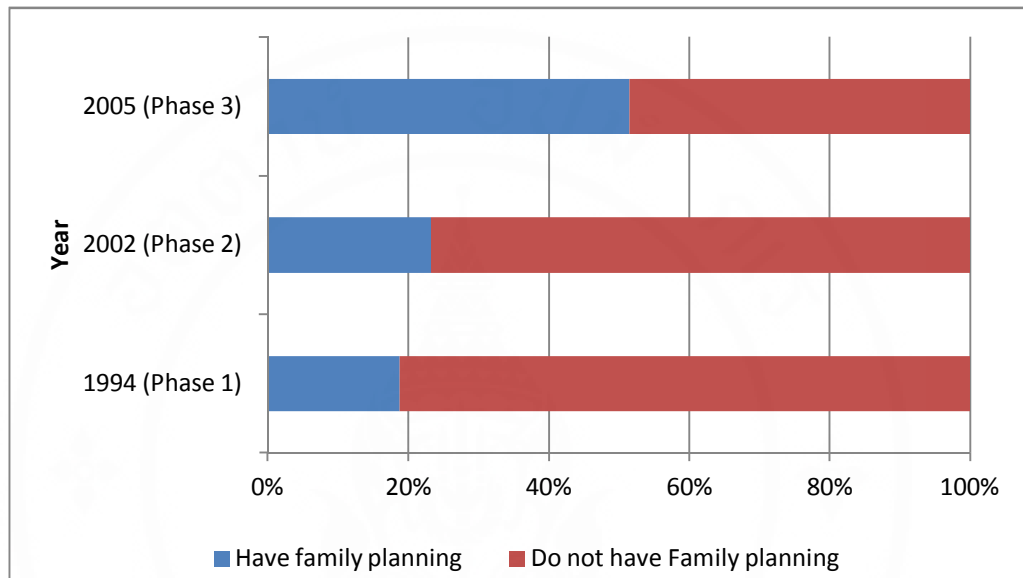


Figure 4.13 Family Planning of People in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

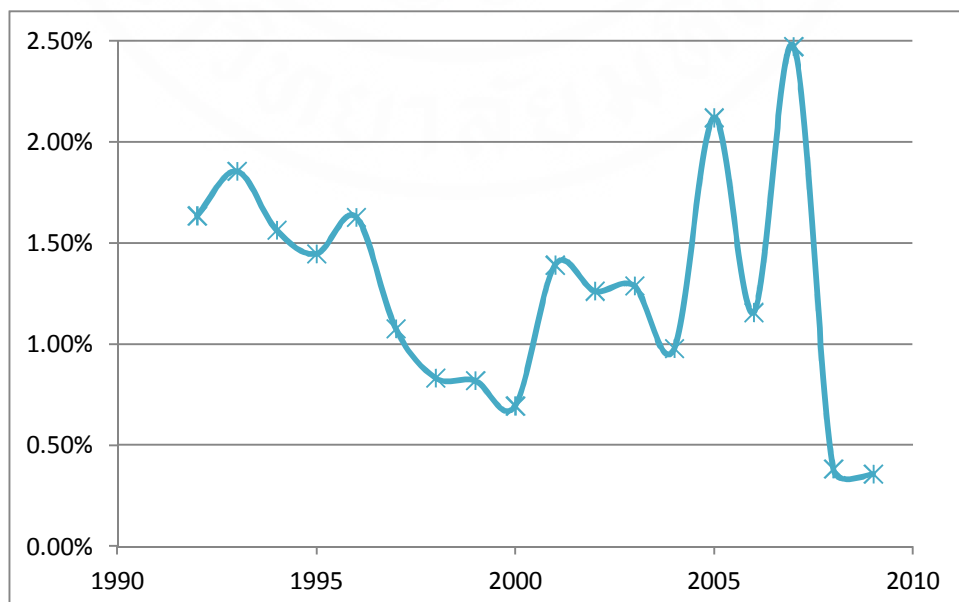


Figure 4.14 Birth rate of People in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

The DTDP supports the community to create village and community rules, survey the population in the project area from 5 races in 27 villages. The DTDP and administrative department created census for local people to protect illegal immigration. Established the new village and district by the locality administrative legislation and Mae Fah Luang sub-district was established (was improved to district later).

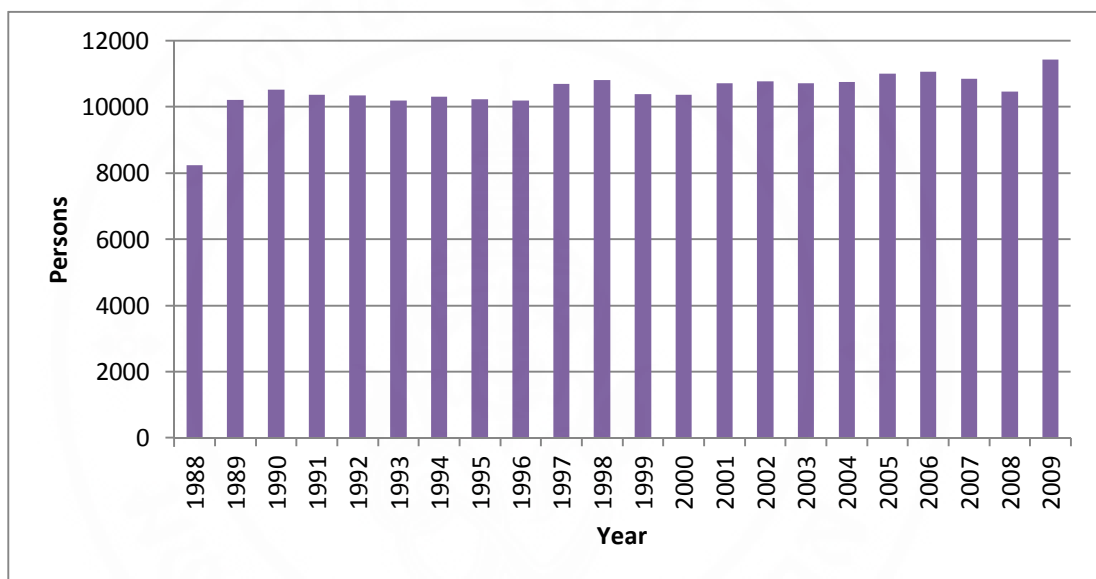


Figure 4.15 Total Populations in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

The permanent habitats were constructed for people. The local people have more rights to participate in the rule legislation for their own communities. The committee establishment project practices to improve skills and efficiency of local people until that they can attend and manage the administrative level. The communities also participate in self-defense village project to support communities to rely on themselves and self defend in appropriate level.

The numbers of people who get the Thai citizenship increase every year because the children who are born in Thailand will automatically get Thai citizenship. And some people who live in the area for a long time and work with the DTDP can be supported to get the Thai citizenship that is the way to attract local people to participate with the development project.

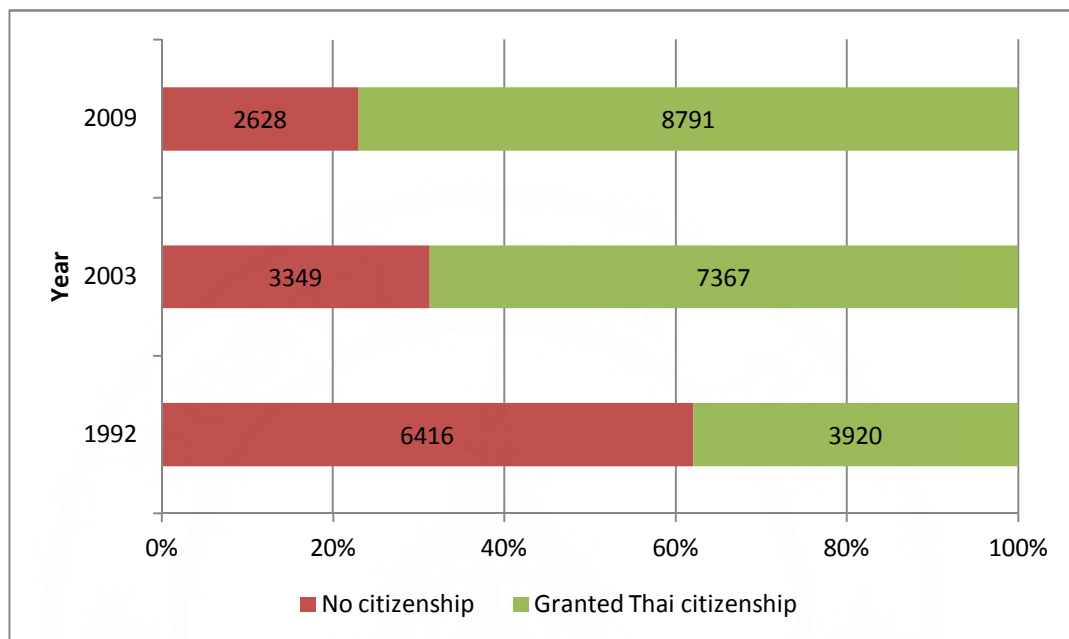


Figure 4.16 Citizenship Statuses of People in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

The most obvious social transformation is capacity building in both personal and community levels at Nan development project. 52 village representatives got knowledge, leadership, and teamwork skills training. When the livelihood has more alternatives, the villagers who moved to work in urban areas finally came back to hometown for better opportunity near their family members.

4.5.3 Environment development

“I will reforest Doi Tung.” (The Princess Mother, 1998)

The DTDP has started the environmental development project since the beginning, following the Princess Mother’s words. Because of limited resources, the natural resource utilization is inevitable so the conservation is not only the protection but it is also the resource management and recovery after utilization that The Princess Mother really concerned about.

“We have to solve problems and help people to improve quality of life. We will start from reforestation because people’s life directly relate with forest. Without water and soil, the agriculturists cannot live. After

reforestation, we have to make people living together with forest, it's useless if they deforest again.” (The Princess Mother, 1998)

The lands have to be properly allocated for each member in the community and obviously separated from the forest conservation area. The concept of economic forest can be applied for land allocation. The people can utilize natural resource in the forest under the community rule. When the forest generates income for local people and the community participates in the development process, they will realize the conservation mind and coexist without natural invasion. Furthermore, any production process should not be harmful the environment (MFLF, 2009d).

“The permanent reforestation concept for glorification of Mae Fah Luang Foundation does not think that reforestation is just to plant some trees but it can be the way to solve poverty and develop quality of life of local people. So, we have to exactly know why people deforest. Because if we deeply consider, the deforestation is risky to be arrested, causing lack of water, and affecting drought. The people have already known the effects so they don't really want to deforest. The actual causes of deforestation are poverty, lack of opportunity, and no other choice available” (M.R. Disnadda Diskul, 2009).

However, the nature recovery has to be carefully studied about ecological and geographical issues before starting operation. And, any action should be discussed with the community. For example, Petroleum Authority of Thailand (PTT) had supported the reforestation project for 3 years but the project did not continually be managed and monitored. So, the MFLF has to be representative to manage this instead (Apichai, 2011).

Reforestation project for The Princess Mother for the 90 years old celebration was initiated. The MFLF, 52 forest departments and Thai army cooperated to recover the 99 plots of forest within 3 years and protected this area from people. Then communicate with people to see the important of forest and environment conservation. The DTDP supports people to recover damaged forest, protects the existing forest, and allocates the land properly for utilization. Vetiver Grass study project was developed and expanded to protect landslide because of road construction (Charin, 2001).

“Reforestation is the means, but the actual objective is to combat poverty. We apply here what we learned from reforestation at Doi Tung, with the concept of “understand, reach out, and develop”. We don’t cut down trees and plant a completely new forest, but we look to see what the existing plants are, if we find saplings, we let them grow naturally and add new plants as needed to create diversity and assure that people can get income from reforestation” (M.R. Disnadda Diskul, 2008).

The water and forest resources were allocated by making agreement with the communities to maximize the benefits and create sustainable utilization. The wildfire protection station project was established to watch out and protect the reforestation in initial phase. It can reduce the rate of wildfire occurrence because the increasing of moisture from plant and more attention from the officer. However, local people care and value highly for their forest so there are trained volunteers to protect wildfire every year. Moreover, the wild animal conservation center started operation to increase the number of rare and beautiful wild animals. The future plan is developing to be the zoo for tourists (Charin, 2001).

The Doi Tung area is managed and utilized for local people. The forest area increases from 75 percent in phase one to 85 percent in phase three. The agricultural area changes from short term crop to economic forest (coffee and macadamia). So, local people can live together with the forest and generate income without forest invasion. However, the conservation forest is largest area in Doi Tung because it is the water source of people for agriculture and living.

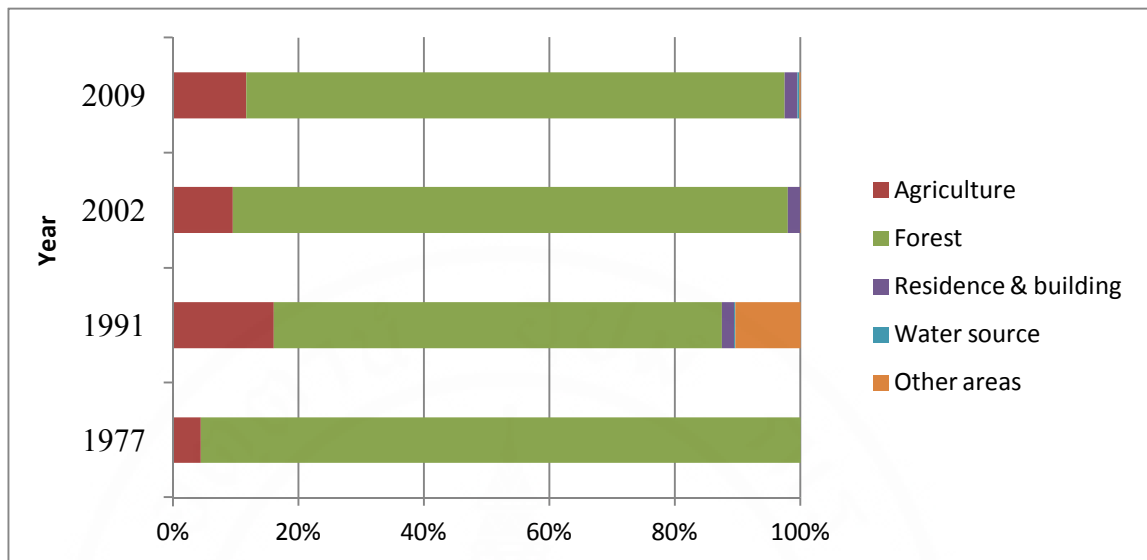


Figure 4.17 Area Utilization in DTDP

Source: Adapted from Mae Fah Luang Foundation, 2011.

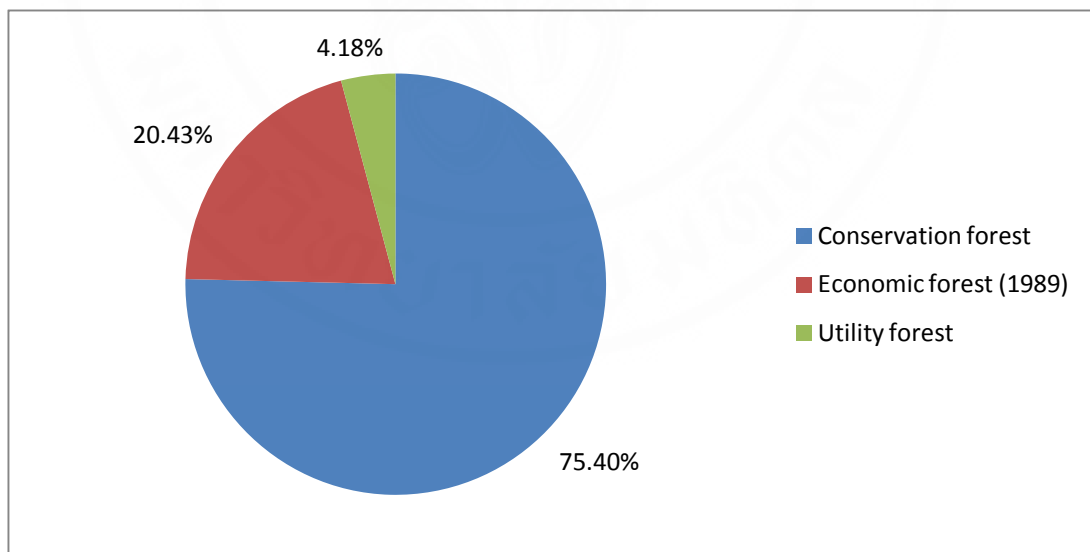


Figure 4.18 Forest Types in DTDP Area in 2009

Source: Adapted from Mae Fah Luang Foundation, 2011.

In the past, local people used the burning method to dispose of the waste in the area that is not good for environment. Now, people use provided trash bins. However, more people leave the wastes in the area without using the bins. This can be problems in the future about the environmental consciousness.

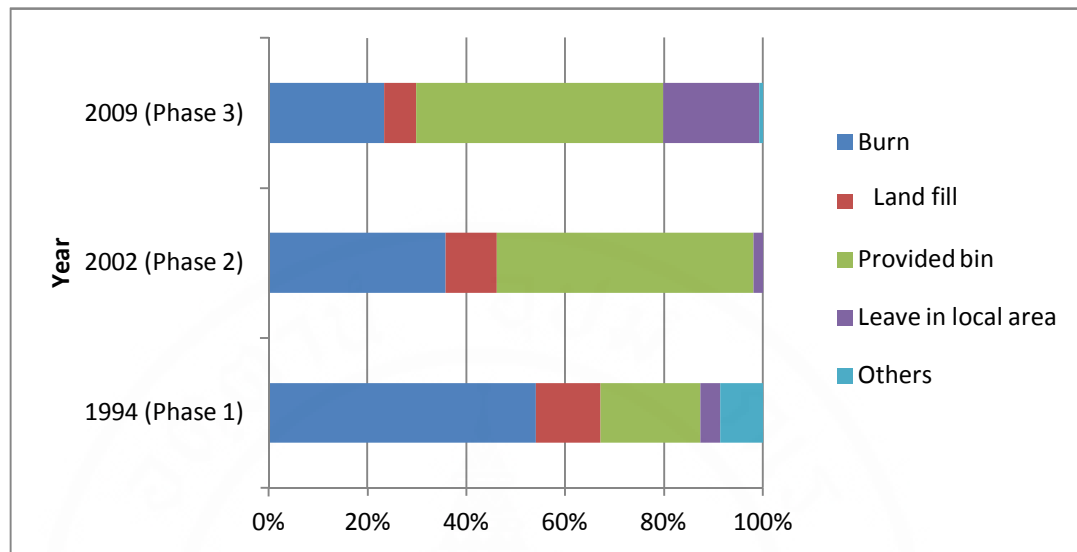


Figure 4.19 Waste Management of People in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

Some local people relied on ground water in the past but now the communities have better water management. So they can thoroughly supply the drinking and consuming water for all of the community's members. Some people are able to buy water for drinking because they gain higher income to afford it..

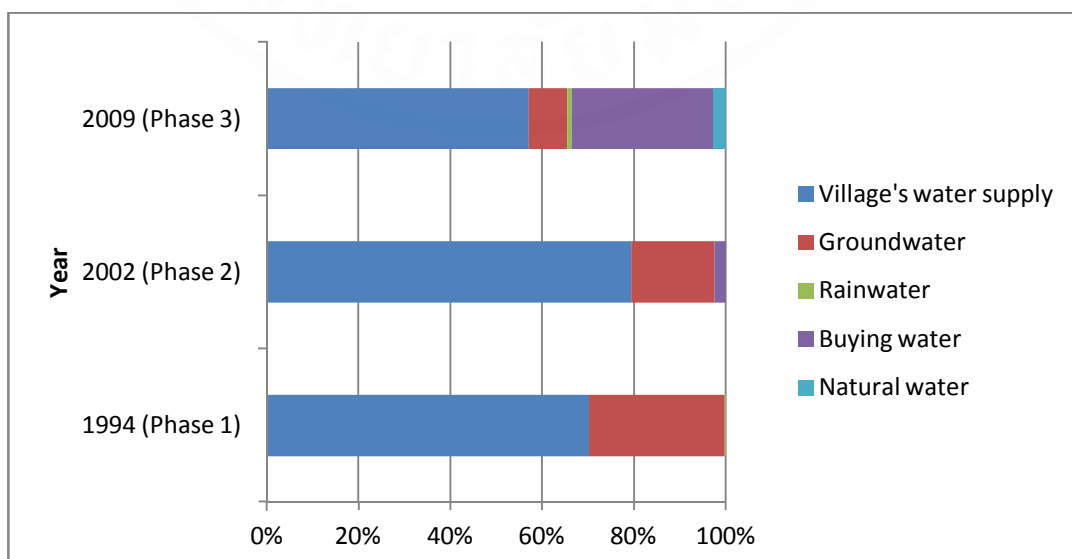


Figure 4.20 Source of Drinking Water in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

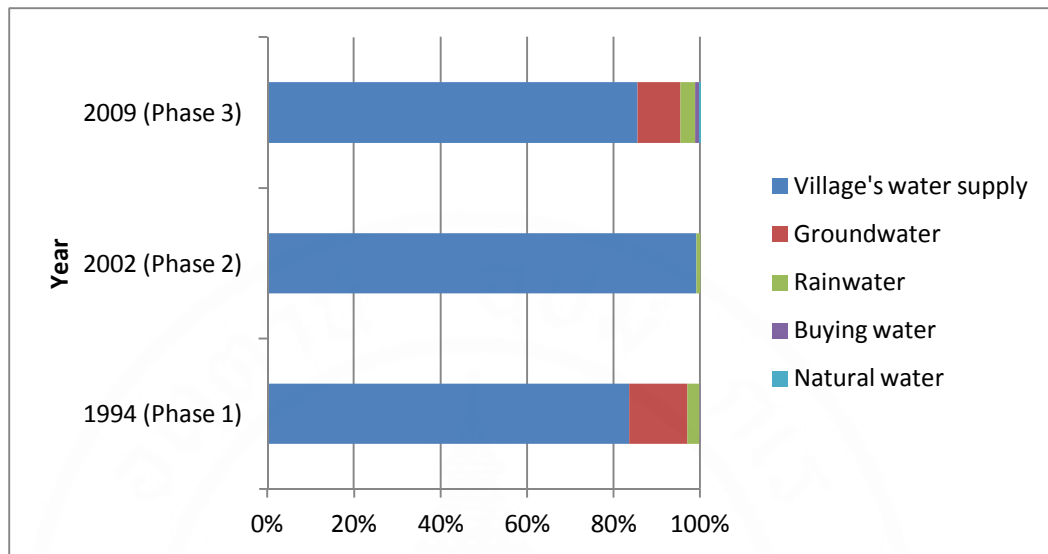


Figure 4.21 Source of Consuming Water in DTDP Area

Source: Adapted from Mae Fah Luang Foundation, 2011.

Now, Doi Tung products have received the “Carbon Footprint” label which show the number of greenhouse gas occurring along the product cycle. The DTDP is concerned about environment for raw materials which were used in production. The classic roast coffee, macadamia with salt, ceramic glass with hill tribe design, and Thai style mulberry paper are the products which got the carbon footprint label (Jantarang, 2012).

In Pang Mahan and Puna projects, the MFLF try to inspire people regarding the environmental conscience and preserve the forest. The MFLF has promoted the King’s concept of planting three types of forests: 1) conservation for environment forest, 2) sustenance forest for people utilization and 3) economic forest for sustainable economic along with the irrigation system development. Especially at Puna, the reforestation was done by the “reforestation without intentional planting” method, which was different from Pang Mahan. Without planting new trees, the community is automatically protecting the forest from wildfire and human invasion and let the forest grow by itself. This method is faster and lower cost than the applied methods at Doi tung and Pang Mahan area (Apichai, 2011).

The MFLF is the different organization from others that attempt to develop economic first. The MFLF started with environmental development, then

strengthening society and develop economic. So, the developmental activities are totally different from cooperate social responsibility or CSR initiatives. The natural resources can be utilized but the utilization has to be balanced with the recovery.

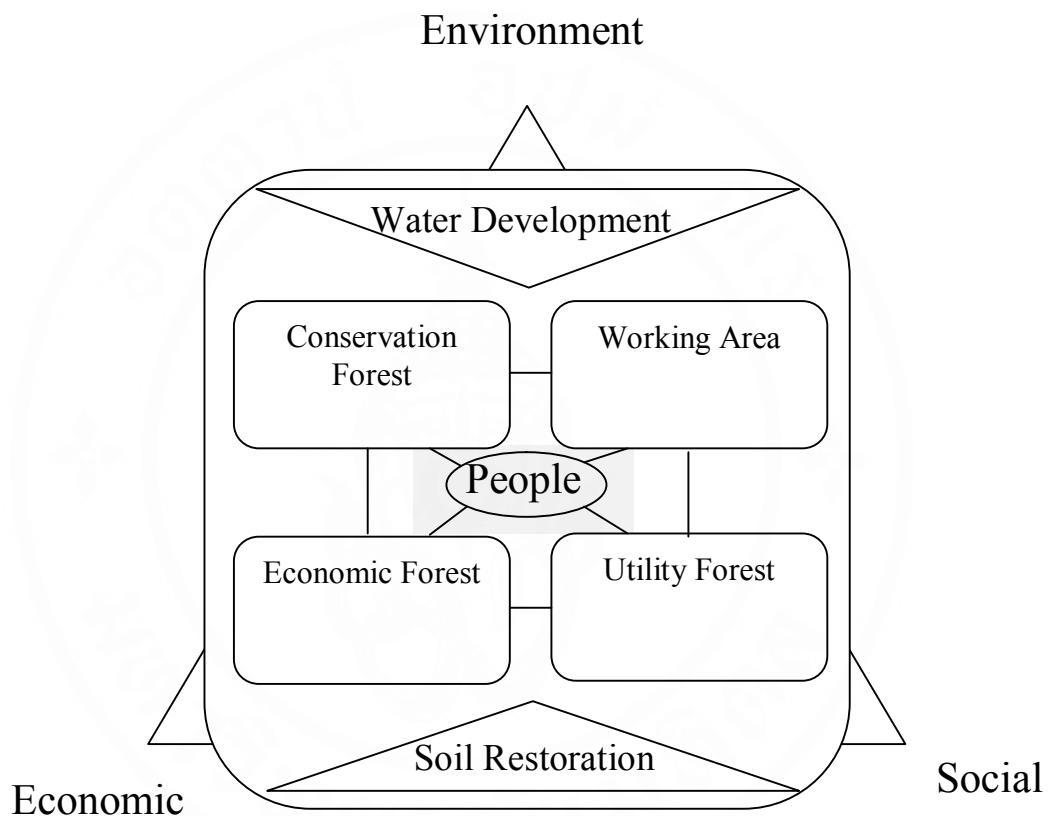


Figure 4.22 Sustainable Poverty Alleviation Principle

Source: Mae Fah Luang Foundation, 2011.

4.6 The support concepts and philosophies

4.6.1 The Living University (The knowledge management)

The real-life classrooms were provided to visitors who come from various domestic and international organizations. The visitors exchange knowledge with local people and study the SALD model to adjust and utilize in their own areas. This is the other way to expand the SALD concept. After the course is finished, the DTDP officers will visit and cooperate with alumni groups or organizations to develop the

plan together. Then, the alumni will be requested to come back to Doi Tung for further exercise and knowledge sharing. Finally, “the living university” network is expected to get worldwide contacts and relationships (MFLF, 2011).

The course detail: To study the SALD application, the introductory study visit program takes about 3-7 days to learn and observe MFLF activities. Visitors will discuss and practice with the local delegations and the DTDP officers. MFLF specialized training program is quite the same as the introductory visit program. The visitors learn the theory and implementation of SALD model in detail, which takes longer time (15-90 days). The special programs are provided such as data collection and project planning, irrigation, agriculture, livestock, handicrafts, infrastructure development, and fundamental healthcare. Moreover, visitors are able to learn by doing the actual work of the MFLF to adapt and apply for their own projects (MFLF, 2009a).

4.6.2 Navuti Company Limited (The social enterprise)

The Crown Property Bureau, Siam Commercial Bank Public Company Limited, Bank of Asia (now United Overseas Bank), Mitsui & Company (Thailand) Limited, Ua-Chookiat Company Limited and Sumitomo Mitsui Banking Corporation established Navuti Company Limited in 1989 (DTDP, 2008). The concept of Navuti Company is

“The company’s profit will not be distributed to shareholders but it will be donated to the MFLF to utilize in social development activities” (M.R. Disnadda Diskul, 2010).

Other than the economic forest cultivation jobs, Navuti also has to do people development jobs. Local people were hired to reforest with higher income rate than opium cultivation because they could not generate any income for 30 months from this area. So the former agriculturists changed to be the agricultural employee. The unskilled labors were developed to be semi-skilled labor to take care of economic forest. And in 1992, some people were trained to be skilled labors and worked as gardeners in the Mae Fah Luang garden. When the people realize the importance of forest, they will not invade it (Maysinsri, 2010).

In the beginning, the MFLF count and observe the number of coffee and macadamia trees when the coffee trees were ready to crop. There were 832,200 coffee trees and 83,000 macadamia trees in 5.76 square kilometer project area. The MFLF found that coffee yield was only half a kilogram per tree instead of 1 kilogram as the standard. The problems were project management and monitoring system. Although the local people have good skills to take care of the trees, but they still have not had much motivation to do so. And, it has not been easy to monitor almost 1 million trees.

Hence, Navuti allowed local people to rent the coffee trees at the cost of 1 Baht per tree per year. In return, Navuti bought coffee beans from the local people at guaranteed price instead. The fertilizers were initially supported for free and deducted from the selling amount of coffee beans. Like their own asset, the local people will get more income if they produce more yields. So they concern more to increase the production efficiency. The 1 baht rental fee seems like the ownership symbol of the trees but they have to realize that the lands are still the national forest.

After the concept modification, the coffee yield has increased from 0.5 kilogram per tree to 1.6 kilogram per tree and the quality of coffee beans was approved by Specialty Coffee Association of America (SCAA). The local people are self-reliant and have more confidence to decide their own lives. In 2011, Navuti completely paid back loan to JICA because the MFLF supported by purchasing macadamia nuts and coffee beans with higher market price rate. And now, the local people can decide by themselves to sell the coffee beans to the MFLF or other merchants (DTDP, 2008).

4.6.3 The sufficiency economy

The DTDP is regarded as the prototype of world sufficiency economy or the natural resource development center with sustainable business management. In the beginning stage, the DTDP received supporting budget from the government and private sector to operate the project. Because all of the profit from the “Doi Tung” branded products and services were spent for the area development and organizational management. Until 2002, the 4 core businesses of the DTDP which are food, handicraft, tourism, and agriculture have generated adequate income covering total operation cost of the project.

For the individual stage, the local people's perception has to be changed to support their own lives with legal jobs instead of opium cultivation. However, the sustainable way is not only job creation and donation but the local people have to know how to generate income from the existing resources. In another words, knowledge is more important than money. Hence, the development results should be measured from the people's income and total well-being, which are generated by local people themselves.

The local people become one of the shareholders when they work with the project. Because they are the coffee tree owners and earn dividends from the coffee bean sales. The tourist attractions are another means to support community income and create many jobs for the locals, due to large number of tourism visitors to Doi Tung yearly. In the past, the local people who worked at coffee cultivation area had to uphill walk around 10 kilometers to work in the forest everyday and receive only 40-50 baht per day. Nowadays, more than 1,000 workers drive cars and motorcycles to work and get few hundred baht per day.

When the local people are self-reliant, they have to collaborate together to strengthen the community and support other people. For example, the Mei San pig bank lends people the pigs for breeding with 1:3 rates. When the one of lent pig have offspring, the people have to return the 3 offspring to the bank as interest. Then, the bank will lend these pigs for other people, thus the project expands. Furthermore, the community cooperative allows local people to bargain the sales price of agricultural products with the middleman (Prachachat, 2006).

4.7 Project administration and business model of DTDP

When The Princess Mother was still alive, her Highness emphasized on the Doi Tung development project so the policy and operation extremely focused on the project objectives. Although, there are many committees and departments, but the result has been pleasant with the cooperation of M.R. Disnadda Diskul. The Thai army was committed to monitor the DTDP and find the way to solve any problems. Then, the model scheme was created by obvious work sharing with all other departments and government sectors.

After The Princess Mother passed away, the administrative structure was still the same as in first phase because The Princess Mother secretaries still used the same policy and strongly intend to continue the Princess Mother's philosophies. However, the project has to rely on itself to be the sample for other projects. And, the DTDP officers still follow the Princess Mother's intention that bring the nature richness back to Doi Tung and improve people's quality of life. Moreover, the DTDP still got budget support from other organizations. Office of the Royal Development Projects Boards annually gives support for 37 million Baht. Science and Technology Department annually supports 4 million Baht (Charin, 2001).

The MFLF controls DTDP business and development activities. The DTDP generates income from selling products and services via 4 business units. The DTDP hires and supports local people for works and production facilities. The products produced under Doi Tung brand are positioned in high end market. The revenues from Café Doi Tung, Doi Tung Lifestyle Shop, accommodation service, and tourist attraction are transferred to the MFLF. Same as common enterprise, profits are spent for salary in the organization and the excess will be utilized for development in Doi Tung area and other areas as the first priority. So, the budgets for business activities are not much and must be careful to invest and expand in new businesses. From this business model, the local people directly gain benefit from this business model in terms of development process and income. Moreover, the MFLF expanded the development to other rural communities by utilizing the profits from DTDP business units (Diskul M. L., 2012).

Although the business of DTDP is still good in running now but people may have problems to operate the business after withdrawal of MFLF. Local people have experiences only in production, but the management, sales, and marketing are still under the MFLF guidance.

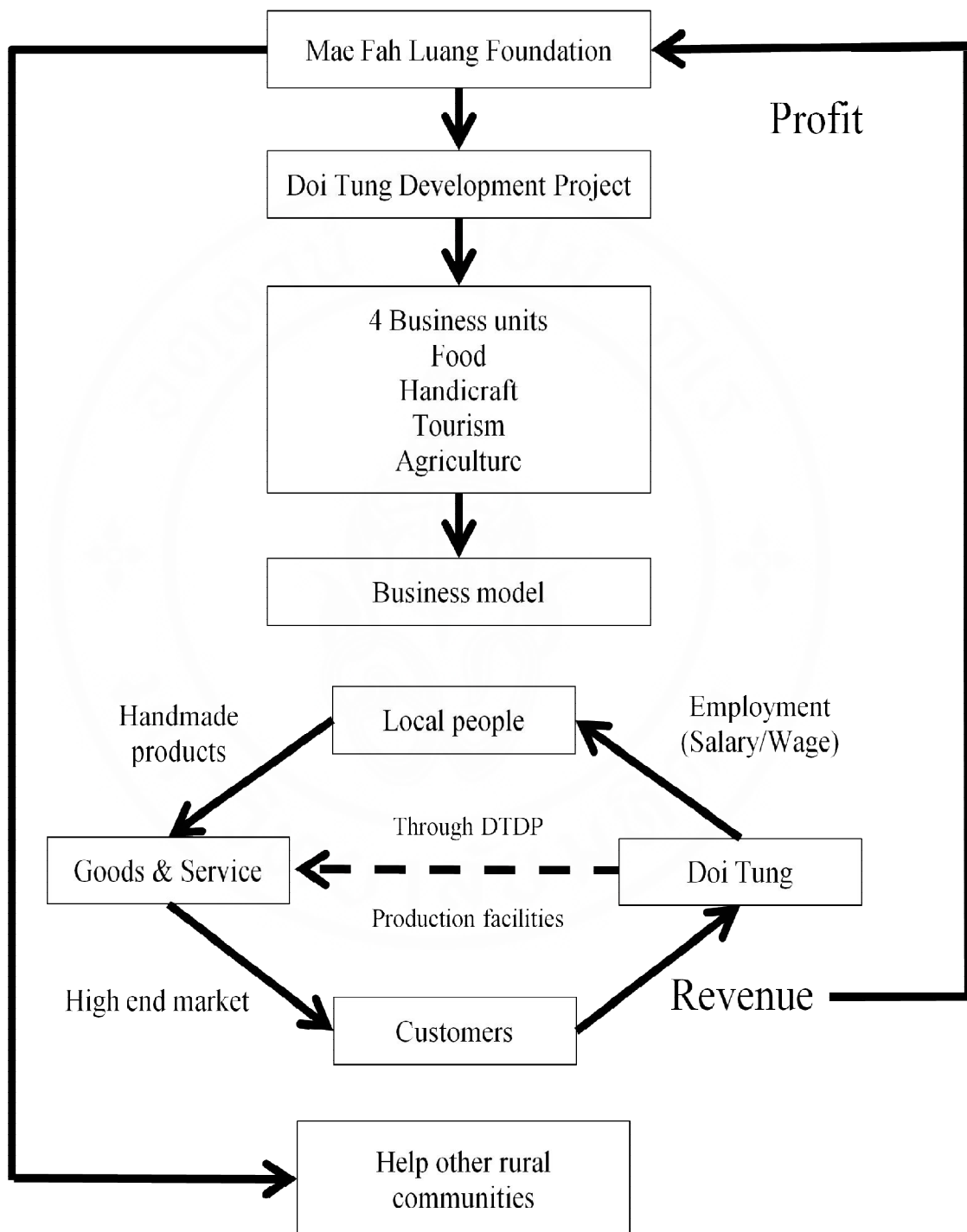


Figure 4.23 Business Model of Doi Tung Development Project

Source: Adapted from Diskul, 2012.

4.8 The ownership transfer

Now, the DTDP is in phase 3 and the project timeframe will end in 2017. Hence, the activities in this phase focus on ownership transfer preparation and transfer some activities to the new generation (Siwaravut, 2012).

“Everything under Doi Tung brand will be transferred to the community. The community is the shareholder of the businesses. The ownership transfer in 2017 will be the great challenge for MFLF that we have to prepare them for. Now, we are ready to transfer if the local people have readiness” (M.L. Dispanadda Diskul, 2012).

So the MFLF has to consider the activities transfer, which one should transfer, which one have to keep for the government sector (Siwaravut, 2012). The transfer has to consider everyone, the officers who have been working with the project for 20-30 years and the local people have rights to be the owners of Doi Tung brand. But, some activities that are complicated should be controlled by MFLF in this recent year (Thaipublica, 2012a).

“Some communities are ready but some are not. They have to understand the transfer process because the ownership transfer has many related factors. So, the local people have to understand what they have to do now and what will happen in the future” (M.L. Dispanadda Diskul, 2012).

The example of self administrative is District Administration Organization. The organization responds to the actual community requirements because the people who work for this organization came from the DTDP. So, they manage by using people as center of development. Another example is wildfire protection at Pang Mahan and Puna. It has community regulation to rule and manage by itself that is more effective than national laws. The area that let the wildfire to occur will be inflicted a penalty same as the drug activities (Thaipublica, 2012a).

The strength of DTDP that indicated the success is database clarity. The data was thoroughly collected in each field, so the DTDP can analyze and fully understand each development factors. The database is the most important tool for continual development with clear concept, objectives, and indicators. However, the

communities have to collect data by themselves after 2017 and cooperate with the District Administration Organization to help each other (Thaipublica, 2012b)

“The DTDP can be the global development model. The sustainability will occur if the local people can live without the DTDP” (M.R. Disnadda Diskul, 2012).

To achieve ownership transfer, the DTDP communicates with the local people about the transfer plan. The local people have to learn management knowledge to operate the business units by themselves. And, the business units have to be financially stabilized to create confidence for local people. The MFLF and communities plan together about transfer process. Some activities have to be transferred to local people in this phase but some activities may be kept by some institutions or retained by MFLF to do it. Although, the MFLF has not concluded about the transference detail, but MFLF has to carefully consider about transference. For example, how the primary officers who have worked together for 20-30 years should do. However, the MFLF may take care of some activities that local people have not been ready to operate such as marketing and shop operation (Diskul M. L., 2012).

The Important factors of transfer are law, regulation, people, officer, and budget. Without other organizations intervention, the local people and officers should have rights to make decision after the ownership transfer. The governmental sectors and MFLF can only support them. So, the next community leader will work easily when community understands the plan. People have to know their own role in the society so they can live by themselves. The executive team has to be responsible, respectful, and discipline. They should meet weekly to discuss problems. The community meeting is also important to know the people's problems and discuss for the solution.

Nowadays, the community leaders in the DTDP and the chief of District Administration Organization are the volunteers in the past that are the result of people development by the DTDP. The group of people that we select to be trained must be able to read and write Thai language. So the project calls them “the DTDP volunteers and the District Administration Organization volunteers”. The volunteers are trained about the development and management technique. However, the other villagers in the area can assist the development by being the village committee members. The DTDP

expects these people to continue their job and do it well when the project transfers completely in 2017 (Thaipublica, 2012b).



CHAPTER V

CONCLUSION

Central to the Doi Tung holistic management model, health, education, livelihood, society, economy, and environment factors have been simultaneously developed to create sustainability of livelihood of people in the area. When MFLF plans to withdraw from the project in 2017, local people have to be able to operate and manage the businesses and development by themselves. Currently, local people completely own only the coffee trees. Therefore, the ownership transfer of other social enterprises is an important task to achieve the final objective of the project.

5.1 Conclusion

The Doi Tung Holistic Management model is the combination of three development concepts: people-centric development, sustainable alternative livelihood development, and sustainable development. The development does not focus only one factor but it simultaneously develops for all factors in the model to create sustainability in the community. As the core of model, the people-centric development is applied to help people living by themselves and manage community organization in the future. The development is separated to three stages: survival, sufficiency, and sustainability stage, each of which has different timeframe and skill development.

The sustainable alternative livelihood development or SALD is the concept that the DTDP applied in the first time of development to solve the causes of social problems which are sickness, poverty, and ignorance. So, the SALD focuses on three factors: health, livelihood, and education. To develop in larger scale, the sustainable development concept is combined with the first two concepts to develop in social, economic, and environmental factors. So, the development is not only in the community, but it expands to other areas, and then national level.

Moreover, other concepts are utilized to support the Doi Tung Holistic Management model, such as knowledge management (KM), social enterprise, and sufficiency economy of our King. The knowledge management concept is adjusted and applied to living university program. It is the course that visitors can come and learn by involving with local people so they can adjust and apply the received knowledge in their areas or organizations. The social enterprise concept is applied via Navuti Company that hires local people to plant coffee and macadamia trees and then buying coffee beans back from them. The sufficiency economy concept is the King's philosophy to teach people to live in moderation, with reasonableness, thus creating self-immunity and balanced, sustainable lives.

However, the Doi Tung Holistic Management model is not a fixed formula that can easily apply for every situations and everywhere. The local area context, or geo-socio environment, is very important for development to choose the most suitable development way. Although the development takes time and has to be done continually, but the knowledge of developer also improves together with the local people's development.

The Doi Tung Development Project was planned for 30 years. It is separated into three phases, same as the people-centric development concept. The first phase activities try to stop illegal activities and create legal jobs for local people. The second phase's objective is to improve local people's quality of life and develop skills to add value to products. The third phase is to strength local people's ability to operate the development activities and develop the Doi Tung brand. The DTDP has initiated many projects to develop the quality of life, create jobs, recover environment, solve health problems, strengthen the communities, and develop Doi Tung to be the national tourist attraction. The success of DTDP can be evaluated from the outcome, such as average income, educational level, forest areas, birth-death rates, etc.

Nowadays, the DTDP can generate income from 4 business units, which are food, handicraft, horticulture, and tourism. The DTDP has supported the locals with production facilities and hiring them to work in the production line. The Doi Tung branded products are positioned to high end market. The profits are returned to the MFLF to spend for development in Doi Tung and other areas.

The Doi Tung Holistic Management model was applied in other domestic and international areas. The applied concepts are the same but some development details in each area are different, depending on the local geographical, culture, or people skills. For example, the Shan state, Myanmar, has to be supported for malaria problem. But, the Aceh province, Indonesia was supported for the prostheses center. The Pang Mahan and Puna projects have grown tea oil to generate income. While at the Balkh province in Afghanistan, the project has improved the sheep livestock system instead. However, the main activities in other areas are the same that people are always the center of development. The local people have to be supported development knowledge and they have to do by themselves after the developer left the areas.

The final objective of DTDP is transferring development activities to local people and the project will end in 2017. Now, only coffee trees are completely transferred to local people but the other assets and activities are still under the MFLF control. However, the MFLF has to make sure that local people are really ready to operate the businesses and developments on their own.

5.2 Recommendation for Doi Tung Development Project

The author categorizes the recommendation for the six factors of Doi Tung Holistic Management Model and the organization administration.

5.2.1 Organization Administration

The project has to communicate with communities, what the project plan to do, what the communities have to prepare, and how the people live without the project. The ownership should not be transferred for all of activities depending on the readiness of local people, business stability, and organizational system preparation. However, the project needs a central organization to connect all activities together and operate as holistic management model because the MFLF will finally withdraw from development and business activities.

The MFLF can establish the integrated social enterprise, which business and social development activities are linked together. The incomes are generated from

the current assets which are utilized for the development activities. However, the relationship of business and development is collaborated to create more social value (Nicholls, 2006). John Lewis Partnership is the good example for employee ownership. The employees can buyout stocks and become shareholders of the company. The employees feel that they are the part of company and their efforts will return to them in term of dividend (EOA, 2008). The majority of shares are owned by employees instead of by external investors. Stewartry Care is the biggest employee owned company in the south of Scotland. After the company started to sell stock to employees, turnover increased 16 percent in the first year and profitability increased 39 percent (CDS, 2010).

Same as the current model, the income that the DTDP generates from businesses will be allocated for community developments, business activities, and salary of officers in the organization. The current officers still work in the same job and department but the ownerships of DTDP are the communities and officers to create sense of ownership. The role of MFLF will change to be consultant of DTDP and the connectors with government and private sectors. Nevertheless, the DTDP have not only supported the development activities in Doi Tung, but also supported the MFLF to develop the other rural communities as the goal for social enterprise.

The development activities focus on community participation and cooperation with government sectors such as department of forestry, Thai military, Public Health Ministry, Education Ministry, and local administration organizations. The community's leaders who are elected by democratic system are the representative in the meetings among communities to consider and make decisions for DTDP activities. The meeting should be held regularly to discuss about the development and problems. When the enterprise is stronger, the development can be expanded to other areas.

5.2.2 Health development

The local people should be trained for initial medical treatments and supported with medical equipments for medical center. Although, the infection disease is not the main problem now, but the other congenital diseases, such as obesity, diabetes, hypertension, and etc, may occur because of improved quality of life. So,

health development activities should be focused on self treatment of local people by giving them knowledge, how to take care of their physical health.

To prepare medical staff in the future, the new generations have to be supported scholarships to study in medical faculty and come back to work at hometown because now medical staff members in the local area are still insufficient. The DTDP should cooperate with Chiang Rai's public health office to develop health section when the DTDP withdraw health development activities.

5.2.3 Livelihood development

The DTDP should create new jobs in the local area to support the new generation people because the people in working age increase day by day. The jobs have to be sustainable, generate sufficient income, and support local people's abilities. The sufficiency economy concept should be instilled for the new generation. They should not create debts from unnecessary stuffs or activities. As well as the saving habit has to be taught for them.

For the cultivated area, the local people have to understand that the land is still under the department of forestry or other governmental sectors, but they can manage and operate the allocated land to create income on a joint basis. Nevertheless, they are still the owners of plants and their yields. To prevent conflicts between people, official land allocation documents should be issued to indicate precisely working areas and periods.

5.2.4 Educational development

The new generations have to be educated in the lacking fields, such as medical, management, marketing, etc. However, the sustainable development will not occur if they do not come back to hometown when they already graduated in high level of education. Hence, the hometown affection should be instilled before they leave the local area for study. The project can initially cooperate with university in the northern part of Thailand to support scholarships and establish the education counseling center to advise the local students for higher education.

The new generation should be supported English language study to communicate with foreigners for development education in the future. For adults, each

of them should be supported to learn Thai language for writing, reading, listening, and speaking skills. The Thai language is necessary not only for communication, but it is also for better cooperation with the project administrators and government sector.

5.2.5 Social development

What we have learned from DTDP is that each community should be strengthened from inside to safeguard themselves from external negative stimuli, such as drug activities, etc. At Doi Tung, drug protection campaign has to be continued by transferring to government sectors which have to collaborate with the community to monitor regularly.

The local culture and tradition should be taught and fostered in education for young generation's pride. The ethnic minority's history and tradition should be recorded and kept as the library or museum that can attract tourists to visit and study the local culture. The project can support local people to generate income from their culture and lifestyles. Home-stay businesses can be set up as another tourist attraction at Doi Tung area. The ethnic minority festivals are also promoted to attract Thai and foreign tourists. However, the locals should be proactive in setting rules for tourists to behave while visiting home-stays, thus preserving the decent culture and environment.

To create trustworthiness in habitat, the government sector is able to consider and issue land possession documents for the local people. However, the local people cannot sell the land, but they are able to transfer ownership to family member as heritage. In the same way, the local people who participate with the project and the development in the future should be considered and given Thai citizenship to motivate people participation in development.

5.2.6 Environmental development

The current forest areas have to be monitored regularly and should be managed under the department of forestry, Thai military, communities and the DTDP to prevent wildfire in Doi Tung area. The utilization of forest has to be suitably allocated for all communities. However, the consumption of natural resources has to be lower than recovery rate. The enterprise can expand forest areas by showing the benefits of forests to the people, thus stopping shifting cultivation in all other areas. It

is not only for environment protection, but it can generate income for local people. The water utilization for agriculture should be co-managed by the enterprise and community. To protect the water source contamination, the chemical usage in agriculture has to be controlled.

Ecotourism should be supported to diversify tourism in Doi Tung. Nevertheless, the new projects or production factories have to concern more about pollution and carbon gas emission. The modern technology is able to apply for pollution reduction, recycling of wastes from factories, and communities have to be systemically managed.

5.2.7 Economic development

To increase bargaining power of local suppliers, the locals can establish a business group such as cooperatives to sell raw materials. The cooperatives are the owners of facilities and production yields. So, the profit is not for individual ownership, but it is for each cooperative members. The cooperative hires the members to work for activities that generate income. Hence, the members are both owners and employees of the cooperative simultaneously (Karnyuenyong, 2011).

The author had experiences from internship program in Pang Mahan and Puna that local people plant tea trees and sell tea leafs to huge companies in Thailand, such as Lipton and Oishi. Because fresh tea leafs cannot sell with high price and the leaf-drying factory can push down the price so the locals cooperate together and establish the tea leaf cooperative in each village. They invested to buy equipments, construct the warehouse, and hire local people to work in the cooperative. The cooperative buy tea leafs with reasonable price and the profit will return to local people.

In Doi Tung area, the cooperatives can support seeds and fertilizers for members, and then pay back the group for the yields. So, the agriculturists do not need much capital to operate business. However, the raw materials should be purchased with fair price from the production plants or other merchants to create positive perception of agriculture for the new generation. The agriculturists are able to generate more income by applying technology and knowledge to increase agricultural yields because agriculture products are the starting point of supply chain.

When the businesses improve and need more raw materials, the group can support people in other areas to produce agricultural products and supply to production plants. The production lines or factories can be established as community enterprises or production cooperatives which are direct buyers of raw material from the local people and generate income from selling finished products to the shops of DTDP. The social enterprise's objective is social benefit creation from business activities. Hence, the community participation is very significant to develop and create opportunities. The reinvestment is done for community developments when business has sustainability (St Laurence, 2007).

To create sense of ownership, the shareholders must be local people who are working in production lines hence the profits have to be reasonably distributed in salary and dividend to all of shareholders. So, the new generations have to be trained for not only the management skills, but also the production knowledge to improve production efficiency. The organization's target and future plan have to be shared with each of employees. Any good or bad information should not be concealed from the administrative level to create trusts in employees (Nelson, 2006).

Sales and marketing activities are the jobs that have to leave local areas. So, the DTDP has to attract new generations who would like to work with the enterprise in many needed areas, instead of working in modern offices in Bangkok only. Initially, the MFLF can support in marketing activities as outsource company. When the people are ready to do this job, the enterprise will set up the marketing department to operate and the "Doi Tung" brand will be transferred to the enterprise.

5.3 Research Implication

Although there are some researches about Doi Tung but most of them did not directly relate with DTDP and were not done in English. The research generates a pattern for other rural area development. Additionally, it can be adapted and applied for academics, business developers, and policy makers.

5.3.1 Implication for academics

This research can support for academic application to study the concept of Doi Tung that succeeded in Doi Tung area. The business model of DTDP is different from other common business models, which focus mainly on profit maximization. The social enterprise concept that talks about triple bottom line and sustainability can be studied from this research. The research also explains how the DTDP has transformed from social organization that operates the development from other supports to be social business organization that can generate income and spend budget for development. Moreover, this research is another way to publicize The Princess Mother's philosophy and how to apply in development.

5.3.2 Implication to Business Developers

Nowadays, the business mission is profit maximization that attempts to develop only economic factor and cannot create sustainability. To get mind-share from people or consumers, the model of DTDP that includes sustainable development, social enterprise, and other social supporting concepts is the good manner to encourage them to support the social and environmental development policy, along with the growth of enterprise. This research will show that businesses can be developed from the environmental and social factors before the economic factor, And, the human resource is the most important issue for business development.

5.3.3 Implication to Governmental Policy Makers

The act of DTDP has shown that social and environmental problems could not be solved from eradicating the actual cause. The defensive measure should be prevention instead of protection. The popularism cannot permanently help people because the sustainable development is not only giving peoples the money, but it is giving them long term skills and knowledge to develop by themselves. The research illustrates the development concepts and process that can be conveniently adjusted and applied in other areas in Thailand and other parts of the world.

5.4 Limitation and future suggestion

Due to the time and distance limitation, the researcher can visit and collect data at Doi Tung only one time. In the same way, the SALD projects in other countries are not convenient to approach, so the researcher has to use only secondary data for this part. Hence, the future research opportunity lies in exploring more details of SALD project in other areas of Thailand and other countries.

Additionally, some people who lived in Doi Tung area cannot speak Thai so the data were only collected from the community leaders. However, the MFLF office in Bangkok has been quite supportive in giving the researcher some more data as requested. Now in 2012, the DTDP is in phase 3 of operation and it will finish in the next five years. So, the outcome data for this phase cannot be completely concluded. Therefore, the future research can be done again after 2017 when the MFLF fully withdraws all activities from DTDP. The business units of DTDP are also interesting to study, especially on the value chain from local products to high end market because these businesses are the future of Doi Tung development.

BIBLIOGRAPHIES

- 2005 World Summit Outcome. (2005). United Nations: General Assembly, (p. 12). New York.
- Adams, W. (2006). The Future of Sustainability: Re-thinking Environment and Development in the Twenty-first Century. The World Conservation Union.
- Allan, B. (2005). Social Enterprise: Through the Eyes of the Consumer. *Social Enterprise Journal* , 1 (1), 57-77.
- Alter, K. (2004, September 20). Social Enterprise Typology. Retrieved September 30, 2011, from www.4lenses.org: www.4lenses.org
- Andrew, C., & Matten, D. (2004). *Business Ethics: An European Perspective*. Oxford : Oxford University Press.
- Antinori, C., & Bray, D. (2005). Community Forest Enterprises as Entrepreneurial Firms: Economic and Institutional Perspectives from Mexico. *World Development* , 1529–1543.
- Apichai, N. (2011, August). Doi Tung Development Model. (A. Vivattanakulchai, Interviewer)
- Apostolou, A. (2000). *Employee Involvement*. Crete: Technical University of Crete.
- Arthur, L., Keenoy, T., & Cato, M. S. (2006). Where is the ‘Social’ in Social Enterprise? the 3rd Annual Social Enterprise Research Conference, South Bank University. London.
- Austin, J., Stevenson, H., & Wei-Skillern, J. (2006). Social and Commercial Entrepreneurship: Same, Different, or Both? *Entrepreneurship Theory and Practice* , 30 (1), 1-22.
- B Brundtland, H. (1987). *Our Common Future*. Oxford:: Oxford University Press.
- Babos, P., Clarence, E., & Noya, A. (2007). Reviewing OECD Experience in the Social Enterprise Sector. An OECD LEED Centre for Local Development international seminar held in conjunction with the Third DECIM Roundtable. Trento, Italy.

- Baines, S., Bull, M., & Woolrych, R. (2010). A More Entrepreneurial Mindset? Engaging Third Sector Suppliers to the NHS. *Social Enterprise Journal* , 6 (1), 49-58.
- Bangkokbiznews. (2012, January 14). "M.R. Disnadda " Suggests Prime Minister: Forest Conservation has to understand thoroughly. Retrieved May 19, 2012, from Bangkokbiznews Web Site:
<http://www.bangkokbiznews.com/home/detail/politics/politics/20120114/429808/คิสนัดดาเนะนายกรักรษาป่าต้องรู้แจ้งรู้จริง.html>
- Bangkomnate, A. (2011, August). Doi Tung Development Project. (A. Vivattanakulchai, Interviewer)
- Baulch, J. R. (1996). Neglected Trade-Offs in Poverty Measurement. *IDS Bulletin* , 27, 36-43.
- Billis, D., & Gelennerster, H. (1998). Human Services and the Voluntary Sector: Towards a Theory of Comparative Advantage. *Journal of Social Policy* , 27 (1), 79-98.
- Binney, D. (2001). The Knowledge Management Spectrum – Understanding the KM Landscape. *Journal of Knowledge Management* , 5(1), 33–42.
- BIS. (2011). A Guide to Mutual Ownership. London: Department for Business, Innovation and Skills.
- Borzaga, C., & Defourny, J. (2001). The Emergence of Social Enterprise. London: Routledge.
- Branden, T., & Pestoff, V. (2006). Co-production, the Third Sector and the Delivery of Public Services: an Introduction. *Public Management Review* , 8 (4), 493-501.
- Buasai, L. (2006). เศรษฐกิจพอเพียง ร่วมเรียนรู้ สานข่าย ขยายผล. Bangkok: Thailand Research Fund.
- Bull, M., & Crompton, H. (2006). Business Practices in Social Enterprises. *Social Enterprise Journal* , 1 (1), 42-60.
- Carbonfootprint. (2012). Carbon Management Services. Retrieved June 2, 2012, from Carbon Footprint Web Site: <http://www.carbonfootprint.com/>

- Cavanagh, S. (1997). Content Analysis: Concepts, Methods and Applications. *Nurse Researcher* 4 , 5-16.
- CDA. (2003). *Worker Co-operatives, An Introduction*. Bristol: Avon CDA.
- CDS. (2010). *Employee to Owner: Collaborating for growth: Employee Ownership*. Glasgow , Scotland: Co-operative Development Scotland.
- Chambers, R. (1997). Responsible Well-Being – a Personal Agenda for Development. *World Development* , 25, 1743-1745.
- Chambers, R. (1985). *Rural Development: Putting the Last First*. London: Longman.
- Chambers, R. (1989). Vulnerability, Coping and Policy. *IDS Bulletin* , 20 (2, 1-8.
- Chambers, R., & Conway, G. R. (1991). *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century*. Brighton: University of Sussex.
- Chanpaiboon, P. (2010). *Entrepreneurship Format and Strategy in Fashion Design of Woven Fabric's Product Case Study of Doi Tung by Mae Fahh Laung*. Bangkok: Silapakorn University.
- Chanwitun, P. (2011). Doi Tung Model: The Expert from 30 countries of UN Praise to be the Prototype Model. Retrieved May 19, 2012, from Komchadluek Web Site:
<http://www.komchadluek.net/detail/20111108/114273/คอยตุงโมเดล.html>
- Charin, S. (2001). *Doi Tung Development Project and Sustainable Development Strategy*. Chiangmai: Chiangmai University.
- Charter, M., Peattie, K., Ottman, J., & Polonsky, M. J. (2002). *Marketing and Sustainability*. Cardiff: Centre for Business Relationships, Accountability, Sustainability and Society (BRASS).
- Chawayanun, S. (2011, October 5). United Nation Praise The Doi Tung Development Project as World Development Model. Retrieved May 16, 2012, from Oknation Web Site:
<http://www.oknation.net/blog/surasakc/2011/10/05/entry-1>
- Cole, F. (1988). Content Analysis: Process and Application. *Clinical Nurse Specialist* 2 (1).
- Communities. (2010). *Community Enterprise Strategic Framework*. London: Communities and Local Government Publications.

- Conway, G. (1985). Agroecosystems Analysis. *Agricultural Administration* , 20, 31-55.
- Cornell, S., & Kalt, J. (1998). Sovereignty and Nation-building: the Development Challenge in Indian Country Today. *American Indian Culture and Research Journal* , 187-214.
- Crossan, M., Bell, J., & Ibbotson, P. (2004). Towards a Classification Framework for Social Enterprises. *University of Ulster Working Paper* , 18.
- Crownproperty. (2008). Sufficiency Economy Taking Firm Roots. Retrieved June 12, 2012, from The Crown Property Bureau:
http://www.crownproperty.or.th/publicnews.php?n_id=326&c=1
- Dailynews. (2011). United Nations Praise the Doi Tung Project as the Global Development Model. Retrieved June 1, 2012, from Dailynews Web Site:
<http://www.dailynews.co.th>
- Dart, R. (2004). The Legitimacy of Social Enterprise. *Nonprofit Management and Leadership* , 14 (4), 411-424.
- Davies, S. (1996). *Adaptable Livelihoods. Coping with Food Insecurity in the Malian Sahel*. London: MacMillan.
- Dees, J. G. (1998). The Meaning of “Social Entrepreneurship” .
- Dees, J., Emerson, J., & Economy, P. (2001). *Enterprising Nonprofits: A Toolkit for Social Entrepreneurs*. New York: John Wiley & Sons.
- Defourny, J. (2001). Introduction: from Third Sector to Social Enterprise. In C. Borzaga, & J. Defourny, *The Emergence of Social Enterprise* (pp. 1-28). London: Routledge.
- Development Trusts Association. (2008). *Fit for Purpose: the Development Trusts Association Healthcheck for Community Enterprise Organisations*. London: Development Trusts Association.
- Diskul, M. L. (2012, June). Doi Tung Development Project. (A. Vivattanakulchai, Interviewer)
- Diskul, M. R. (2005). *Doi Tung Development Project*. Bangkok: P.A. Living.
- DTDP. (2008). Doi Tung Development Project. Retrieved April 3, 2012, from Doi Tung Development Project Web Site: <http://www.doitung.org>

- DTDP. (1994). Model Scheme. Chiangrai: The Collaboration Office of Doi Tung Development Project.
- Eikenberry, A. M., & Kluver, J. D. (2004). The Marketization of the Nonprofit Sector: Civil Society at Risk. *Public Administration Review* , 64 (2), 132-140.
- EOA. (2008). Case Study: John Lewis Partnership. United Kingdom: Employee Ownership Association.
- EOA, E. O. (2011). How to Become an Employee Owned Mutual. London.
- FAO. (2005). Community-Based Commercial Enterprise Development for the Conservation of Biodiversity in Bwindi World Heritage Site, Uganda. Forest Policy and Institutions Service.
- Farrington, J., Ramasut, T., & Walker, J. (2002). Sustainable Livelihoods Approaches in Urban Areas: General Lessons, with Illustrations from Indian Cases. London: Overseas Development Institute.
- Fuller, D. (1999). Sustainable Marketing: Managerial-Ecological Issues. Thousand Oaks: Sage Publications.
- García-Rosell, J. C. (2009). A Multi-Stakeholder Perspective on Sustainable Marketing. Oulu: Oulu University Press.
- Gilbert, A. ,, & Van Vlaenderen, H. (1995). The Need for Individual and Organisational Capacity Building Among Stakeholders in Rural Development. UNCRD Conference: University of Transkei. Umtata.
- Haugh, H., & Kitson, M. (2007). The Third Way and the Third Sector: New Labour's Economic Policy and the Social Economy. *Cambridge Journal of Economics* , 31 (6), 973-994.
- Hemmati, M., & Whitfield, R. (2003). Sustainable Development Partnerships, In the Follow-up to Johannesburg: Suggestions for Effective Mechanisms at the Regional and International Level. *Stakeholder Forum* , 2.
- Henion, K. E., & Kinnear, T. C. (1976). Ecological Marketing. Chicago: American Marketing Association.
- Hibbert, S. A., Hogg, G., & Quinn, T. (2005). Social Entrepreneurship: Understanding Consumer Motives for Buying the Big Issue. *Journal of Consumer Behaviour* , 4 (3), 159-172.

- Hines, F. (2005). Viable Social Enterprise - an Evaluation of Business Support to Social Enterprise. *Social Enterprise Journal* , 1 (1), 13-28.
- Holling, C. (1993). Investing in Research for Sustainability. *Ecological Applications* , 3, 552-555.
- ICA. (1995). Background Paper on the ICA Statement on the Co-operative Identity, Proceedings in Co-operative Principles for the 21st Century. Review of International Co-operation (Volume 88 No.3) .
- IIED. (2005). Perspectives on Corporate Responsibility for Environment and Development: Number 3.
- Indaratna, K. (2007). Sufficiency Economy: a Happiness Development Approach. Bangkok.
- Islam, Z. U. (2007). A New Model for Supporting Social Enterprise through Sustainable Investment. *Social Enterprise Journal* , 3 (1), 1-9.
- Josai-Hp. (2001, October 15). GMS Medical Training Center (Thailand). Retrieved May 21, 2012, from Josai Hospital Web Site: <http://www.josai-hp.com/jiff/eng/gms-top.html>
- Kadekodi, G. K. (1992). Paradigms of Sustainable Development. *Journal of SID* 3 , 72-76.
- Kantabutra. (2010a). Sufficiency Economy Leadership Practices in Business Sector for Sustainability. Bangkok: National Institute of Development Administration.
- Kantabutra, S. (2010). Development of the Sufficiency Economy Philosophy in the Thai Business Sector: Evidence, Future Research & Policy Implications.
- Karnyuenyong, N. (2011). Co-operative Principles and Practices. Bangkok: Kasetsart University.
- Korten, D. (1980). Community Organisation and Rural Development: A Learning Process Approach. *Public Administration Review*, Sep-Oct , 480-503.
- Korten, D. (1990). Getting to the 21st Century: Voluntary Action and the Global Agenda. Connecticut: Kumarian Press.
- Krauss, R. M. (2002). The Psychology of Verbal Communication. Columbia University.

- Krippendorff, K. (1980). *Content Analysis: An Introduction to its Methodology*. Newbury Park: Sage Publications.
- Kyngas, H., & Vanhanen, L. (1999). *Content Analysis (Finish)*. Hoitotiede , 3-12.
- Lachapelle, P. (2008). *A Sense of Ownership in Community Development: Community Development: Journal of the Community Development Society* , 52-59.
- Landsberg, D. C., & Mwaniki, D. (2008). *The Politics of Poverty and People-Centered development The Southern Africa case*.
- Leach, M., Mearns, R., & Scoones, I. (1997). *Environmental Entitlements: a Framework for Understanding the Institutional Dynamics of Environmental Change*. IDS Discussion Paper , 359.
- Manager. (2012, February 23). *The Doi Tung Way to Carbon Footprint: Continue the Princess Mother's Royal Wish*. Retrieved May 31, 2012, from Manager Online Web Site:
<http://www.manager.co.th/Qol/ViewNews.aspx?NewsID=9550000024338>
- Max-Neef, M. A., Elizalde, A., & Hopenhayn, M. (1989). *Human Scale Development: An Option for the Future*. *Development Dialogue* , 1, 5-80.
- Maysinsri, S. (2010). *Mae Fah Luang: The First CSR, The answer of Sustainable Development*. *Money and Banking* , 1-10.
- McCormick, J. (1992). *The Global Environmental Movement: Reclaiming Paradise*. London: Belhaven.
- McElroy, M. (2000). *Second-Generation KM. A White Paper' Knowledge Management* , 4(3).
- McGrath, D., Halbreich, B., Hu, A., Jensen, N., Nardone, S., Raposo, A., et al. (2010). *Changing Lives, Changing Communities*. Bangkok: The Mae Fah Luang Foundation Under Royal Patronage.
- McKeown, R. (2002). *Education for Sustainable Development Toolkit*.
- MFLF. (2009c). *International Outreach of Thailand's Sustainable Alternative Livelihood Development Approach*. Bangkok: Mah Fah Luang Foundation.
- MFLF. (2011). *Mae Fah Luang Foundation Under Royal Patronage Official Website*. Retrieved September 15, 2011, from

- <http://www.maefahluang.org/index.php>.
- MFLF. (2011a). Mae Fah Luang Foundation Under Royal Patronage Official Website. Retrieved September 15, 2011, from <http://www.maefahluang.org/index.php>.
- MFLF. (2009d). Reforestation For Poverty Alleviation and Sustainable Development.
- MFLF. (2009a). Study Visit & Training Programmes on Sustainable Alternative Livelihood Development.
- MFLF. (2011b). The Achievement Evaluation of Doi Tung Development Project. Bangkok: Mae Fah Luang Foundation.
- MFLF. (2010). The Mae Fah Luang: The Social Transformation Model for the 21st Century. In Sasin, Thailand Rebalance. Bangkok.
- MFLF. (2010b). The Mae Fah Luang: The Social Transformation Model for the 21st Century. In S. I. Affairs, Thailand Rebalance. Bangkok: Sasin Institute of Global Affairs.
- MFLF. (2009b). The Thai Approach to Sustainable Alternative Livelihood Development (SALD). Bangkok: Mae Fah Luang Foundation.
- Michie, J., Oughton, C., & Benn, Y. (2002). Employee Ownership, Motivation and Productivity. London: The Work Foundation.
- Mongsawad, P. (2007). The Philosophy of Sufficiency Economy and Economic Management. NIDA Development Journal , 1/2550, 159-180.
- Mongsawad, P. (2010). The Philosophy of the Sufficiency Economy: a Contribution to the Theory of Development. Asia-Pacific Development Journal , 17 (1), 123-143.
- Munasinghe, M. (2009). Sustainable Development in Practice. New York: Cambridge University Press.
- Munro, D. (1995). Sustainability: Rhetoric or Reality? (T. C. Trzyna, & J. K. Osborn, Eds.) Sustainable World .
- Nelson, N. C. (2006). Give Employees a Sense of Ownership. Americanventure Magazine .
- NESDB. (2008). The Sufficiency Economy Philosophy Practice. Bangkok: Phetrung.
- NESDB, N. E. (2004). Q&A about Sufficiency Economy. Bangkok, Thailand : NESDB.

- Neundorf, K. (2002). *The Content Analysis Guidebook*. Sage Publications.
- Nicholls, A. (2006). *Social Entrepreneurship: New Models of Sustainable Social Change*. Oxford: Oxford University Press.
- Nonaka, I., & Takeuchi, H. (1995). *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation*. New York: Oxford Univ Press.
- Nonaka, I., Toyama, R., & Konno, N. (2000). SECI, Ba and Leadership: A Unified Model of Dynamic Knowledge Creation. *Long Range Planning* , 33, 5-34.
- Nurse, K. (2006). Culture as the Fourth Pillar of Sustainable Development. 45-46.
- Oakley, R., & Perks, J. (2003). *The SIGMA Guidelines- Toolkit: SIGMA Sustainability Marketing Guide*.
- OBECE. (2008). *Education Development Project Evaluation in The Doi Tung Development Project Area*. Chiang Mai: Office of The Basic Education Commission.
- Patompattapun, S. (2004). *Economic Evaluation for the Environmental Effect of Tourism under Mae Fah Luang District Administration Organization Responsibility, Chiangrai Province*. Chiangmai: Chiangmai University.
- Payne, P., Lipton, M., Longhurst, R., North, J., & Treagust, S. (1994). How Third World Households Adapt to Dietary Energy Stress. *The Evidence and the Issues*. *Food Policy Review* 2 .
- Pearce, J. (2003). *Social Enterprise in Any Town*. London: Calouste Gulbenkian Foundation.
- Peattie, K., & Crane, A. (2005). Green Marketing: Legend, Myth, Farce or Prophecy? *Qualitative Market Research: An International Journal* , 8(4), 357-370.
- Pérotin, V., & Robinson, A. (2002). *Employee Participation in Profit and Ownership: A Review of the Issues and Evidence*. Leeds: Leeds University Business School .
- Piboolsravut, P. (2004). Sufficiency Economy. *ASEAN Economic Bulletin* , Volume 21, Number 1, 127-134.
- Positioningmag. (2012, April 23). *Cafe Doi Tung: Time to Change Hill Tribe to Be Barista*. Retrieved June 17, 2012, from Positioning Magazine Web Site:

http://www.positioningmag.com/magazine/details.aspx?id=94579&fb_source=message

- Postlethwaite, R., Michie, J., Burns, P., & Nuttall, G. (2005). *Shared Company: How employee ownership works*. London: Job Ownership Limited.
- Prachachat. (2006). *Doi Tung-Mae Fah Luang: The World's Sufficiency Economy Prototype*. Bangkok: Prachachat Business Newspaper.
- Prestby, J. E., Wandersman, A., Florin, P., Rich, R., & Chavis, D. (1990). ManBenefits, Costs, Incentive Management and Participation in Voluntary Organisations: A Means to Understanding and Promoting Empowerment. *American Journal of Community Psychology* , 18 (1), 117-149.
- Public Relation Department of Doi Tung. (1994). *Model Scheme*. Chiangrai: Doi Tung Development Project Coordination Office.
- Puntasen, A., Premchuen, S., & Keitdejpunya, P. (2003). *Application of the Royal Thought about the Sufficiency Economy in SMEs*. Bangkok: Thailand Research Fund.
- Ravallion, M. (1992). *Poverty Comparisons: a Guide to Concepts and Measures*. Living Standards Measurement Paper 88 .
- RDPB. (2008). *Sufficiency Economy Work Contest*. Bangkok: RDPB.
- RDPB. (2009). *The Royal Philosophy of Sufficiency Economy*. Retrieved JUNE 13, 2012, from Office of The Royal Development Projects Board Web Site: <http://www.rdpb.go.th/RDPB/front/SufficiencyEconomy.aspx?p=4>
- Royal Initiative Discovery Institute. (2010). *Royal Initiative Discovery Institute*. Retrieved November 10, 2011, from Royal Initiative Discovery Institute Web Site: <http://www.pidthong.org/index.php>
- Royal Speech. (1998). Bangkok: Amarin Printing and Publishing.
- Royal Speech: Office of His Majesty's Principal Private Secretary Web site. (2007, November 19). Retrieved October 4, 2011, from Office of His Majesty's Principal Private Secretary Web site: http://www.ohmpps.go.th/searchresult_document.php?di_key=T0112_0005&dc_key=BP2541014&di_sub=0
- Sangwalpri, S. (2008, February 26). *Wildfire Preventing and Controlling Practice at The Doi tung Development Project*. Retrieved July 6, 2012, from

Department of Disaster Prevention and Mitigation Web Site:
[http://www.disaster.go.th/dpm/index.php?option=com_content&task=view
 &id=7013&Itemid=2](http://www.disaster.go.th/dpm/index.php?option=com_content&task=view&id=7013&Itemid=2)

- Savage, C. (2000). *The Development of Knowledge Management and Why It is Important*. Canada: Bellanet International Secretariat.
- Schaeffer, S. (1994). *Participatory Development: What is it and What it can and cannot Do?* University of Cape Town.
- Scoones, I. (1997). *Sustainable Rural Livelihood a Framework for Analysis. A Review of the Literature*, IDS Working Paper 72 , 1-22.
- Sen, A. (1975). *Employment, Technology and Development*. Oxford: Clarendon Press.
- Sen, A. (1984). *Rights and Capabilities*. In A. Sen, *Resources, Values and Development* (pp. 307-324). Oxford: Basil Blackwell.
- Sepulveda, L. (2009). *Outsider, Missing Link or Panacea? Some Reflections about the Place of Social Enterprise (with)in and in Relation to the Third Sector*. Third Sector Research Centre Working Paper , 15, 2-6.
- Sheth, J., & Parvatiyar, A. (1995). *Ecological Imperatives and the Role of Marketing*. In M. Polonsky, & A. Mintu-Wimsat, *Environmental Marketing: Strategies, Practice, Theory, and Research* (pp. 3-19). New York: The Haworth Press.
- SHRDC. (2008). *People Centered Development: Experience of SAARC Countries. Training Programme*, (p. 1). Islamabad.
- SIFE. (2011). *About SIFE 2011*.
- Siwaravut, S. (2012, March 18). "Doi Tung" to the Community's Hand, Let the Child Grow. Retrieved May 17, 2012, from Khaosod Newspaper Web Site: http://www.khaosod.co.th/view_news.php?newsid=TUROb1lYQXdNakU0TURNMU5RPT0=%20ionid=TURNeE53PT0=&day=TWpBeE1pMHdNeTB4T0E9PQ==
- Spreckley, F. (2011). *Social Enterprise Planning Toolkit*. The British Council.
- St Laurence, B. o. (2007). *Introduction to Community Enterprise*. Victoria.
- Suchaya, W. (2002). *The Tourism Management Way by Eco-Tourism Principle: Case Study at Doi Tung Chiangrai Province*. Chiangmai: Chiangmai University.

- Sukchu, S. (2005, December 13). Jarupat Archawasamit: Behind the Textile Design of Mae Fah Luang. Retrieved May 4, 2012, from Positioning Magazine Web Site: <http://www.positioningmag.com/magazine/details.aspx?id=43650>
- Sumanojitraporn, S. (2005). Bamboo Forest Management with Community Participation at Doi Tung Development Project, Mae Fah Luang District, Chiangrai Province. Chiangmai: Chiangmai University.
- Sveiby, K.-E. (2001). Knowledge Management – Lessons from the Pioneers.
- Swift, C., & Levin, G. (1987). Empowerment: An Emerging Mental Health Technology. *Journal of Primary Prevention*, 8 (1&2), 71-94.
- Taweek, S. (2006). The Heart of King's Speech: Understand, Reach Out and Develop. Matichon .
- Thainews. (2009, April 18). The Doi Tung Development Project was Chosen to be Case Study by the Japanese Expert of Knowledge Management. Retrieved July 4, 2012, from National News Bureau of Thailand: http://thainews.prd.go.th/view.php?m_news=255204180047&tb=N255204
- Thaipublica. (2012a, March 17). The Doi Tung Development Project: The Living University (Part1). Retrieved June 12, 2012, from Thaipublica Web Site: <http://thaipublica.org/2012/03/doi-tung-development-project-university-life/>
- Thaipublica. (2012b, March 30). The Doi Tung Development Project: The Living University, Hill Tribe Mechanism, Just only Community Regulation (Part2). Retrieved June 14, 2012, from Thaipublica Web Site: <http://thaipublica.org/2012/03/doitung-university-of-life-2/>
- Thairath. (2012, March 25). From "Lanna" to "Bangna", The Compatibility of Two Different Cultures. Retrieved July 5, 2012, from Thairath Online News Web Site: http://www.ikea.com/ms/th_TH/activities/ALLVARLIG/index.html
- Thairath. (2011, August 19). IKEA Cooperate with Doi Tung Development Project to Design Furniture. Retrieved July 5, 2012, from Thairath Online News Web Site: <http://www.thairath.co.th/content/life/195006>

- The Chaipattana Foundation. (2011). The Chaipattana Foundation. Retrieved November 10, 2011, from The Chaipattana Foundation Web Site: <http://www.chaipat.or.th/chaipat/index.php/th/about-the-chai-pattana-foundation/about-us>
- Thompson, J., & Doherty, B. (2006). The Diverse World of Social Enterprise – A Collection of Social Enterprise Stories. *International Journal of Social Economics* , 33 (5/6), 361-375.
- UN. (2005). 2005 World Summit Outcome. General Assembly, (p. 12). New York.
- UN. (2011). Sustainable Livelihoods:a Broader Vision Social Support and Integration to Prevent Illicit Drug Use, HIV/AIDS and Crime. Vienna: Publishing and Library Section, United Nations Office.
- UNDP. (2011). People-Centred Development:Empowered lives. Resilient Nations. New York: The Office of Communications/Partnerships Bureau United Nations Development Programme.
- UNECA. (2008). Sustainable Development Report on Africa. Addis Ababa,: Economic Commission for Africa.
- UNIS. (2003, April 10). Thai Alternative to Drugs on Exhibit in Vienna. Retrieved May 18, 2012, from United Nation Information Service Web Site: <http://www.unis.unvienna.org/unis/pressrels/2003/nar782.html>
- UNODC. (2005). Alternative Development: A Global Thematic Evaluation. New York: United Nation Publication.
- UNODC. (2004). Emerging Gender Strategies for Alternative Development. Bangkok: UNODC Regional Centre for East Asia and the Pacific.
- UNODC. (2011). Sustainable livelihoods: A Broader Vision. New York: United Nations.
- Van Vlaenderen, H. (2001). Psychology in Developing Countries: People-Centred Development and Local Knowledge. *PINS (Psychology in Society)* , 27, 88-108.
- Vickers, I. (2010, February). Social Enterprise and the Environment: a Review of the Literature. Third Sector Research Centre Working Paper 22 , 6.

- Vogelsang, D. L., Bailey, J. M., Biser, L. C., Eversull, E. E., & Mather, J. W. (1988). Cooperative Information Report 1, Section 6. U.S. Department of Agriculture.
- Wachwithan, P., Solheim, C., & Popovich, P. (2009). Using Thailand's Sufficiency Economy Philosophy to Develop Global Citizens. 2-9.
- Wattanachai, K. (2008). The Sufficiency Economy Philosophy Practice. Bangkok: Phetrung.
- WBCSD. (2005). DRIVING SUCCESS: Marketing and sustainable development.
- Weber, R. (1990). Basic Content Analysis. Sage Publications.
- Williams, E. (2008). CSR Europe's Sustainable Marketing Guide. Sony Europe.
- Yeich, S., & Levine, R. (1992). Participatory Research's Contribution to a Conceptualisation of Empowerment. *Journal of Applied Social Psychology* , 22 (24), 1894-1908.
- Zimmerman, A. A. (1990). Taking Aim on Empowerment Research: On the Distinction between Individual and Psychological Conceptions. *American Journal of Community Psychology* , 18 (1), 169-177.

The seal of Mahidol University is a large, faint circular emblem in the background. It features a central five-tiered umbrella (parasol) with a flame-like finial. The Thai text "มหาวิทยาลัยมหิดล" (Mahavithayalai Mahidol) is written in a circle around the central symbol.

APPENDICES

APPENDIX A

The population data of Doi Tung Development Project area

Year	Male	Female	Total	Household	Family	Family per household	Male: Female ratio
1988	4119	4112	8231	1041	1419	1.36	1.00
1989	5042	5160	10202	1532	1968	1.28	1.02
1990	5123	5398	10521	1538	2013	1.31	1.05
1991	5104	5254	10358	1658	2208	1.33	1.03
1992	5046	5290	10336	1602	2227	1.39	1.05
1993	4956	5232	10188	1608	2290	1.42	1.06
1994	4997	5300	10297	1620	2318	1.43	1.06
1995	4940	5295	10235	1610	2328	1.45	1.07
1996	4900	5295	10195	1620	2331	1.44	1.08
1997	5119	5564	10683	1610	2441	1.52	1.09
1998	5158	5643	10801	1639	2520	1.54	1.09
1999	4942	5432	10374	1658	2495	1.50	1.10
2000	4935	5424	10359	1662	2493	1.50	1.10
2001	5105	5604	10709	1736	2582	1.49	1.10
2002	5110	5666	10776	1719	2584	1.50	1.11
2003	5067	5649	10716	1718	2678	1.56	1.11
2004	5073	5668	10741	1745	2675	1.53	1.12
2005	5175	5819	10994	1616	1775	1.10	1.12
2006	5236	5825	11061	1601	1645	1.03	1.11
2007	5143	5702	10845	1707	1741	1.02	1.11
2008	4927	5523	10450	1663	1696	1.02	1.12
2009	5437	5982	11419	1686	1790	1.06	1.10
2010	5529	6139	11668	1809	2929	1.62	1.11

Table A-1 A Number of Populations, Households, and Families in DTDP Area

Year	Death	Death rate	Birth	Birth rate
1992	39	0.38%	169	1.64%
1993	72	0.71%	189	1.86%
1994	61	0.59%	161	1.56%
1995	92	0.90%	148	1.45%
1996	104	1.02%	166	1.63%
1997	79	0.74%	115	1.08%
1998	75	0.69%	90	0.83%
1999	116	1.12%	85	0.82%
2000	65	0.63%	72	0.70%
2001	76	0.71%	149	1.39%
2002	67	0.62%	136	1.26%
2003	38	0.35%	138	1.29%
2004	70	0.65%	105	0.98%
2005	122	1.11%	233	2.12%
2006	52	0.47%	128	1.16%
2007	91	0.84%	268	2.47%
2008	17	0.16%	40	0.38%
2009	28	0.25%	41	0.36%

Table A-2 Birth and Death Rate in DTDP Area

Year	1992/1993 (Phase 1)			2001/2002 (Phase 2)		
Age	Male	Female	Total	Male	Female	Total
0-4	376	389	765	198	200	398
5-9	598	573	1171	461	483	944
10-14	619	618	1237	558	557	1115
15-19	622	610	1232	57	635	692
20-24	539	619	1158	620	645	1265
25-29	478	525	1003	516	578	1094
30-34	402	505	907	435	498	933
35-39	409	347	756	388	498	886
40-44	223	237	460	349	386	735
45-49	174	209	383	277	260	537
50-54	155	188	343	153	223	376
55-59	109	151	260	132	172	304
60+	293	329	622	361	469	830
Unidentified	-	-	-	-	-	-
Total	4997	5300	10297	4505	5604	10109

Table A-3 Span of Age in DTDP Area (Phase 1 & 2)

Year	2004/2005 (Phase 3)			2009 (Phase 3)		
Age	Male	Female	Total	Male	Female	Total
0-4	245	506	751	268	204	472
5-9	406	771	1177	429	416	845
10-14	462	907	1369	442	487	929
15-19	535	1089	1624	488	522	1010
20-24	594	1153	1747	561	600	1161
25-29	575	1101	1676	597	648	1245
30-34	490	939	1429	549	580	1129
35-39	414	762	1176	424	480	904
40-44	410	737	1147	366	422	788
45-49	333	647	980	329	424	753
50-54	215	418	633	304	307	611
55-59	185	314	499	183	200	383
60+	509	882	1391	427	618	1045
Unidentified	-	-	-	70	74	144
Total	5373	10226	15599	5437	5982	11419

Table A-4 Span of Age in DTDP Area (Phase 3)

Year	Gender	Age				Total
		Childhood (0-14)	Working age (15-59)	Old age (above 60)	Unidentified	
1993 (Phase 1)	Male	1593	3111	293	-	4997
	Female	1580	3391	329	-	5300
	Total	3173	6502	622	-	10297
2002 (Phase 2)	Male	1217	3527	361	-	5105
	Female	1240	3895	469	-	5604
	Total	2457	7422	830	-	10709
2005 (Phase 3)	Male	1071	3409	373	-	4853
	Female	1113	3751	509	-	5373
	Total	2184	7160	882	-	10226
2009 (Phase 3)	Male	1139	3801	427	70	5437
	Female	1107	4183	618	74	5982
	Total	2246	7984	1045	144	11419

Table A-5 Span of Age (Categorized by Working Capability) in DTDP Area

Race	Year			
	1988	1994	2003	2009
Akha	4453	4298	4331	4485
Lahu	1697	1672	1690	1795
Shan	0	121	545	729
Lua, Chinese, Lue	1298	1261	1198	1271
Others	783	2945	2952	3139
Total population	8231	10297	10716	11419

Table A-6 Race of People in DTDP Area

Year	No citizenship	Granted Thai citizenship	Total population
1992	6416	3920	10336
2003	3349	7367	10716
2009	2628	8791	11419

Table A-7 Citizenship Status of Population in DTDP Area

APPENDIX B

The Health and Livelihood data of people in Doi Tung Development Project area

Medical treatment (Household)	Year		
	1993 (Phase 1)	2002 (Phase 2)	2009 (Phase 3)
Tradition style (former belief)	1052	0	0
Go to medical center	519	1702	1686
Buy drug or self treatment	36	15	0
Wait for mobile medical unit	7	2	0
Total	1614	1719	1686

Table B-1 Medical Treatment of people in DTDP Area

Congenital disease	Person
Have congenital disease	10449
Do not have congenital disease	970
Total population	11419

Table B-2 Congenital Disease of People in DTDP Area in 2009

Congenital disease type	Person
Hypertension	404
Diabetes	150
Gastritis	81
Gout	45
Allergy/Asthma	37
Osteoarthritis	32
Heart disease	31
Others	190
Total	970

Table B-3 Type of Congenital Disease of People in DTDP Area in 2009

Treatment Place	Person
Government hospital in local area	740
Health station in DTDP area	123
Private hospital/clinic	90
Others	17
Total	970

Table B-4 Treatment Place of People in DTDP Area in 2009

Waste management (Household)	Year		
	1994 (Phase 1)	2002 (Phase 2)	2009 (Phase 3)
Burn	873	615	456
Bury	211	177	127
Provided bin	326	894	976
Leave in local area	64	33	380
Others	140	0	14
Total	1614	1719	1953

Table B-5 Waste Management of People in DTDP Area

Source of drinking water (Household)	Year		
	1994 (Phase 1)	2002 (Phase 2)	2009 (Phase 3)
Village's water supply	1011	1387	1082
Groundwater	425	317	159
Rainwater	3	0	20
Buying water	0	44	586
Natural water	0	0	50
Total	1439	1748	1897

Table B-6 Source of Drinking Water in DTDP Area

Source of Consuming water (Household)	Year		
	1994 (Phase 1)	2002 (Phase 2)	2009 (Phase 3)
Village's water supply	1350	1704	1654
Groundwater	216	0	191
Rainwater	46	15	65
Buying water	2	0	17
Natural water	0	0	6
Total	1614	1719	1933

Table B-7 Source of Consuming Water in DTDP Area

Lavatory type (Household)	Year		
	1994 (Phase 1)	2002 (Phase 2)	2009 (Phase 3)
Lavatory with septic tanks	1498	1716	1729
Flush toilet	9	11	80
Use other houses	61	0	0
Pit toilet	9	0	0
No lavatory/in the forest	37	0	0
Total	1614	1727	1809

Table B-8 Lavatory Type in DTDP Area

Age	Year							
	1993 (Phase 1)		2002 (Phase 2)		2005 (Phase 3)		2009 (Phase 3)	
	Total	Leave village	Total	Leave village	Total	Leave village	Total	Leave village
15-19	1232	553	1292	554	1089	629	1010	502
20-39	3824	1585	4178	2040	3955	2583	4439	2794
40-59	1446	188	1952	349	2116	1330	2535	687
Total	6502	2326	7422	2943	7160	4542	7984	3983

Table B-9 A Number of Working Age People Who Are Not in the DTDP Area More Than One Year

Age	Year								
	1993 (Phase 1)			2002 (Phase 2)			2009 (Phase 3)		
	Total	Em- ployed	Unem- ployed	Total	Em- ployed	Unem- ployed	Total	Em- ployed	Unem- ployed
15-59	6502	5795	707	7422	6430	992	7984	6965	1019
60+	622	76	546	830	184	646	1045	288	757
Total	7124	5871	1253	8252	6614	1638	9029	7253	1776

Table B-10 Employment Rate of People in DTDP Area

Cause of Unemployment	Year		
	1993 (Phase 1)	2002 (Phase 2)	2009 (Phase 3)
Study	583	698	280
Handicapped	35	39	0
Unemployed	67	201	739
Imprisoned	22	54	0
Total	707	992	1019

Table B-11 Cause of Unemployment in DTDP Area

Occupation	Year		
	1993 (Phase 1)	2002 (Phase 2)	2009 (Phase 3)
Employee	3736	4142	4117
Agriculturist	871	1134	1588
Trader	326	338	466
Household business	76	43	0
Priest	50	65	0
Housewife	514	453	0
Service officer	72	0	106
Private business	0	0	128
Government officer	3	20	105
Herdsman	0	65	159
Forest stuff seller	0	0	296
Others	117	170	0
Total	5765	6430	6965

Table B-12 Occupation of People in DTDP Area

Occupation	Working area						Total
	DTDP area	Outside DTDP area					
		Chiang Rai	Other provinces	Bangkok	Other countries	Unknown	
Employee	1622	443	452	1261	339	0	4117
Agriculturist	1532	53	3	0	0	0	1588
Trader	262	101	41	55	7	0	466
Forest stuff seller	294	2	0	0	0	0	296
Herdsman	155	3	0	0	1	0	159
Private business	57	27	19	18	6	1	128
Government officer	78	7	14	4	2	0	105
Service officer	84	8	6	7	1	0	106
Total	4084	644	535	1345	356	1	6965

Table B-13 Working Area of Local People in DTDP Area in 2009

APPENDIX C

The Education data of people in Doi Tung Development Project area

Education Level	Phase 1	Phase 2	Phase 3
Primary	84.43%	56.52%	48.93%
Secondary	13.38%	37.58%	40.21%
Vocational	1.86%	3.90%	3.31%
College/University	0.33%	2.00%	7.55%

Table C-1 Education Level of People in DTDP Area

Year	Understanding rate of Thai Language			
	Listening	Speaking	Reading	Writing
1993	84.32%	80.97%	42.03%	41.84%
1994	85.69%	82.31%	43.60%	43.22%
1995	90.67%	88.20%	45.08%	44.90%
1996	91.61%	88.91%	46.57%	46.23%
1997	92.72%	90.93%	47.27%	47.08%
1998	94.50%	93.32%	49.23%	49.13%
1999	95.23%	94.22%	49.51%	49.47%
2000	95.72%	95.19%	51.56%	51.55%
2001	95.89%	95.55%	52.60%	52.60%
2002	96.19%	96.05%	53.15%	53.15%
2003	96.48%	96.41%	55.29%	55.29%
2004	87.28%	86.25%	54.85%	54.74%
2005	78.28%	76.59%	53.93%	53.32%
2006	86.84%	85.57%	59.06%	58.68%
2007	88.31%	87.20%	55.66%	55.47%
2008	87.79%	86.62%	56.07%	55.87%
2009	88.50%	88.00%	58.70%	58.60%

Table C-2 Understanding rate of Thai Language of People in DTDP Area

APPENDIX D

The Social data of Doi Tung Development Project area

Family status	Year			
	1994 (Phase 1)	2002 (Phase 2)	2005 (Phase 3)	2009 (Phase 3)
Single	2452	2635	3666	2948
Married	4062	4812	4567	5148
Widow	496	555	516	610
Divorce	77	151	148	225
Separated	94	99	57	80
Unidentified	0	0	0	18
Total	7181	8252	8954	9029

Table D-1 Family Status of People in DTDP Area

Family planning	Year		
	1994 (Phase 1)	2002 (Phase 2)	2005 (Phase 3)
Have family planning	1264	1709	2763
Do not have Family planning	5485	5644	2607
Total	6749	7353	5370

Table D-2 Family Planning of People in DTDP Area

Family problems	Household
Separated family	69
Adopted child	38
Quarrel and fight	24
Alcoholism in family member	123
Other problems	8
Have no problem	1424
Total	1686

Table D-3 Cause of Family Problems in DTDP Area in 2009

Religion	Year			
	1994 (Phase 1)	2002 (Phase 2)	2005 (Phase 3)	2009 (Phase 3)
Buddhism	5051	5616	5297	7008
Christianity				
Protestant	1943	2298	2261	2694
Catholic	477	339	428	338
Ancestor	2796	2523	2240	1379
Total	10267	10776	10226	11419

Table D-4 Religion of People in DTDP Area

APPENDIX E

The environmental data of Doi Tung Development Project

Forest Type			Rai
Conservation forest	Glorification forest (1990)		11295
	Government forest	Doi Tung water source forest (1991)	11492
		Mae Ma forest (2005)	6916
		Water source forest (1990)	16162
	Self recovery forest		26373
Economic forest (1989)	Coffee (1989-2006)		18516
	Macadamia		1053
Utility forest			4000
Total			95807

Table E-1 Forest Area in DTDP

Type of utilization (square kilometer)	Year			
	1977	1991	2002	2009
Agriculture	6.7	24.58	14.55	17.84
Forest	146.42	109.3	135.33	131.26
Residence & building	0	2.99	2.96	3.15
Water source	0	0.29	0.13	0.4
Other areas	0	15.87	0.06	0.34
Total	153	153	153	153

Table E-2 Area Utilization in DTDP

APPENDIX F

The economic data of Doi Tung Development Project

Year	Total income	Average income per household	Average income per family	Average income per person
1988	31,047,332	29,825	21,880	3,772
1989	51,979,190	33,929	26,412	5,095
1990	71,100,918	46,229	35,321	6,758
1991	74,018,268	44,643	33,523	7,146
1992	125,634,080	78,423	56,414	12,155
1993	142,183,728	88,423	62,089	13,956
1994	154,053,417	95,095	66,460	14,961
1995	188,753,870	117,238	81,080	18,442
1996	214,482,410	132,397	92,013	21,038
1997	230,795,532	143,351	94,550	21,604
1998	243,713,764	148,697	96,712	22,564
1999	233,015,535	140,540	93,393	22,461
2000	252,314,163	151,814	101,209	24,357

Table F-1 People's Income in DTDP Area

Year	Total income	Average income per household	Average income per family	Average income per person
2001	296,264,485	170,659	114,742	27,665
2002	314,637,648	183,035	121,764	29,198
2003	329,324,112	191,690	122,974	30,732
2004	345,419,819	197,948	129,129	32,159
2005	300,960,750	186,238	169,555	27,375
2006	153,946,998	96,157	93,585	13,918
2007	394,638,705	231,188	226,674	36,389
2008	312,201,200	187,734	184,081	29,876
2009	424,727,421	251,914	237,278	37,195

Table F-2 People's Income in DTDP Area (Continued)

Source of income	Year			
	1993 (Phase 1)	2002 (Phase 2)	2005 (Phase 3)	2009 (Phase 3)
Employment	111,085,484	232,212,569	117,335,798	294,272,045
Local area	74,968,037	180,963,380	79,628,516	211,635,990
Outside area	36,117,447	51,249,189	37,707,282	82,636,055
Agriculture	17,643,775	49,544,782	44,060,651	56,303,585
Forest stuff sale	11,311,260	22,895,100	12,070,990	36,688,115
Household business	3,422,135	1,973,150	1,603,830	1,339,708
Rent and interest	1,305,435	1,508,520	226,900	770,400
Service	6,796,550	-	-	1,439,000
Others	2,038,238	6,501,250	38,781,550	33,914,530
Total	153,602,877	314,635,371	214,079,719	424,727,383

Table F-3 Income Source of People in DTDP Area

Year	Total expense	Average expense per household	Average expense per family	Average expense per person
1993	125,375,303	77,969.72	54,749.04	12,306.17
1994	137,210,400	84,697.78	59,193.44	13,325.28
1995	163,577,527	101,600.95	70,265.26	15,982.17
1996	197,281,475	121,778.69	84,633.84	19,350.81
1997	198,620,933	123,367.04	81,368.67	18,592.24
1998	206,122,869	125,761.36	81,794.79	19,083.68
1999	190,751,712	115,049.28	76,453.59	18,387.48
2000	187,405,624	112,759.10	75,172.73	18,091.09
2001	225,927,559	130,142.60	87,500.99	21,096.98
2002	229,979,846	133,787.00	89,001.49	21,341.86
2003	244,834,775	142,511.51	91,424.49	22,847.59
2004	259,137,976	148,503.14	96,874.01	24,126.06
2005	162,739,142	100,704.91	91,684.02	14,802.54
2006	149,085,804	93,120.43	90,629.67	13,478.51
2007	233,523,936	136,803.71	134,132.07	21,532.87
2008	220,264,155	132,449.88	129,872.73	21,077.91
2009	201,846,124	119,718.93	112,763.20	17,676.34

Table F-4 People's Expenses in DTDP Area

Source of expense	Year			
	1993 (Phase 1)	2002 (Phase 2)	2005 (Phase 3)	2009 (Phase 3)
Food	62,349,508	105,477,647	43,342,404	62,099,083
Residence	11,325,720	14,095,900	19,165,760	20,689,920
Facilities	9,343,720	6,884,080		-
Entertainment	7,818,759	21,404,045	13,202,927	1,013,960
Production/work	7,306,242	10,658,186	11,505,850	12,591,913
Transportation & gasoline	6,829,435	19,424,900	33,299,948	23,723,773
Clothes	4,741,095	6,547,490	5,121,574	3,992,240
Education	4,407,162	7,795,227	8,800,527	24,957,167
Ceremony	4,211,748	5,587,330	4,024,854	5,405,080
Medication	3,766,841	4,228,610	3,326,500	3,687,590
Electricity bill & equipment	2,163,304	3,530,513	5,587,577	3,184,533

Table F-5 Expense Source of People in DTDP Area

Source of expense	Year			
	1993 (Phase 1)	2002 (Phase 2)	2005 (Phase 3)	2009 (Phase 3)
Accessories	2,006,828	-	-	-
Tool & Equipment	-	9,786,810	-	-
Communication tool & internet	-	-	7,882,502	8,266,646
Insurance & interest	-	-	1,614,866	3,584,645
Vehicle & maintenance	-	-	-	13,894,710
Beverage & Narcotic	-	-	-	6,356,782
Alcohol	-	-	-	2,375,968
Non-alcohol	-	-	-	1,961,932
Cigarette & others	-	-	-	2,018,882
Home decoration	-	-	-	5,617,440
Donation & gift	-	-	-	1,396,970
Gambling	-	-	-	933,020
Others	8,940,654	3,666,882	6,863,850	450,652
Total	135,211,016	219,087,620	163,739,139	201,846,124

Table F-6 Expense Source of People in DTDP Area (Continued)

Year	Saving	Saving per Family	Loan	Loan per Family
1994	19,606,549	8,458.39	16,602,569	7,162.45
1995	20,513,322	8,811.56	19,542,946	8,394.74
1996	28,111,978	12,060.05	17,278,941	7,412.67
1997	36,560,158	14,977.53	5,416,541	2,218.98
1998	58,476,387	23,204.92	11,236,935	4,459.10
1999	77,909,912	31,226.42	19,731,222	7,908.31
2000	97,014,465	38,914.75	21,215,100	8,509.87
2001	100,133,602	38,781.41	14,223,920	5,508.88
2002	91,911,549	35,569.48	20,018,110	7,746.95
2003	93,305,639	34,841.54	33,911,125	12,662.85
2004	82,642,755	30,894.49	44,415,239	16,603.83
2005	50,386,510	28,386.77	46,332,775	26,102.97
2006	43,137,630	26,223.48	37,835,396	23,000.24
2007	74,350,857	42,705.83	33,311,900	19,133.77
2008	68,946,133	40,652.20	34,244,700	20,191.45
2009	51,574,750	28,812.71	43,122,090	24,090.55

Table F-7 People's Loan and Saving in DTDP Area

	Year		
	1993 (Phase 1)	2002 (Phase 2)	2009 (Phase 3)
Household	1614	1719	1686
Loaned household	243	608	987
Loan objective			
Investment	29	431	327
Consumption	50	75	276
Education	14	27	101
Medication	17	3	5
Residence	99	54	77
Others	34	18	77

Table F-8 Loan Objective of People in DTDP Area

Loan source	Amount
Community fund	19,482,500
Education fund	4,535,190
Local administration	1,151,100
Cooperative	2,091,000
Bank/Financial institution	7,910,000
Non-formal	5,100,500
Credit card	1,982,800
Poverty solving project	869,000
Total	43,122,090

Table F-9 Loan Source of People in DTDP Area

Saving type	Year			
	1993 (Phase 1)	2002 (Phase 2)	2005 (Phase 3)	2009 (Phase 3)
Bank and financial institution	Unable to appraise	95,030,198	41,154,756	51,574,750
Cash	Unable to appraise	6,549,200	6,348,520	8,693,010
Insurance	-	-	1,304,874	5,041,082
Asset (land/accessories)	41,251,715	53,754,780	Unable to appraise	92,974,725
Others	Unable to appraise	2,978,000	1,578,960	394,900
Total	-	158,312,178	-	158,678,467

Table F-10 Saving Type of People in DTDP Area

Asset	Year		
	1994	2002	2009
Total asset	207,514,422.0	410,358,391.0	305,591,781.0
Average asset per household	128,571.5	238,719.3	181,252.5
Average asset per person	20,211.8	38,080.8	26,761.7

Table F-11 People's Asset in DTDP Area

BIOGRAPHY

NAME	Mr. Alongkorn Vivattanakulchai
DATE OF BIRTH	3 September 1985
PLACE OF BIRTH	Bangkok, Thailand
INSTITUTIONS ATTENDED	Kasetsart University, 1994-2007 Bachelor of Science (Food Science)
HOME ADDRESS	62/7 village no.4 Chaiyapruk road Talingchan Bangkok Thailand 10170 Tel. 02 882 2002 - 4 E-mail: palmaobaob@hotmail.com
EMPLOYMENT ADDRESS	Amco Chem International Co., Ltd. 2009/2 Jareonkrung road Wat Phyakrai Bangkokaem Bangkok Thailand 10120 Tel. 02 675 3722 - 4 E-mail: amco_chem@hotmail.com