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Hanlin Xu

# AN INNOVATIVE AND INCLUSIVE LENDING MODEL FOR WOMEN ENTREPRENEURS TO ACHIEVE SUSTAINABLE DEVELOPMENT GOAL

# Naiyer Fatema Khanom

#### Mutual Trust Bank Ltd., Bangladesh

Abstract: Women enterprises are persistently increasing around the world and contributing to household income and overall national economies. They are playing an important role to promote sustainable practices in economics, social system and ecology, to perform sustainable development. Mutual Trust Bank Ltd. (MTB), a private commercial bank in Bangladesh is the line of activities for promoting women entrepreneurs' development, providing credit facility and in addition given all types of support to promote women economic empowerment, as well as sustainable development of countries' economic growth. MTB introduced a comprehensive credit product 'MTB Gunabati' jointly with SME Foundation (SMEF), a national organization works for SME development. The project aims to provide collateral free low-interest rate easy bank finance and other financial intermediaries to test inclusive lending models for women-owned micro, small and medium enterprises. MTB and SMEF jointly took the initiative to develop women entrepreneurship through financial inclusion at the micro and small enterprise level, what particular combination of different services such as, bank account opening, credit, savings and transactions. MTB implemented the credit project 'MTB Gunabati' especially designed for women entrepreneurs comprising others women entrepreneurship development initiatives and got the positive outcome proved towards sustainable development.

Keywords: women, entrepreneurship, credit, empowerment

#### Introduction

In Bangladesh, a large number of women work in the informal sector, but the real value of their participation and contribution is not recognized in the society. Differences and inequalities between women and men exist in terms of opportunities, rights, and benefits. There are various constraints in the way to the up-gradation of their skills and enhancement of their productivity. These include poor access to market, information, technology and finance, poor linkages and networks with support services and an unfavorable policy and regulatory environment. However, it is heartening to note that despite many barriers, a new women's entrepreneur class in the Small and Medium sector has developed in the country taking on the challenge to work in a male-dominated, competitive and complex economic and business environment. It has been found that at present women entrepreneurs constitute less than 10% of the total business entrepreneurs in Bangladesh whereas women in advanced market economies own more than 25% of all businesses. In spite of these, in Bangladesh, not only have the women's entrepreneurship improved their living conditions and earned more respect in the family and the society, but they have also contributed to business and export growth, supplies, employment generation, productivity and skill development.

SME Foundation, with the assistance of Mutual Trust Bank Ltd. (MTB) initiated a single digit (9%) interest rate collateral free pre-finance (BDT. 50K - 1million) credit wholesaling program of its own policy and launched a tailor-made new loan product named "MTB Gunabati", for women entrepreneurs involved in manufacturing business, in different districts of Bangladesh.

In view of the above situation, SME Foundation, as its part of regular monitoring & evaluation program of CWS program, decided to visit the all beneficiary of MTB Gunabati to ascertain their present conditions in compare to their earlier positions including work environment, quality of production, identify the potential side of their business activities, find out the impediments to the development of their business, report their achievements and problems in business.

In the first part, this research paper describes the overall statues of women entrepreneurs in Bangladesh, government policy towards women entrepreneurship development, issues of women entrepreneurship development and what they required to grow their entrepreneurial skill for sustainable enterprise development. In the second part, it has shown the good practices and positive initiatives taken by a commercial bank to design a specialized loan product only for women entrepreneurs with very comprehensive features. Compare with other loan products of other banks found that this product has useful impact on financial inclusion, upgrading living standard, self-employment and empowerment of women. Finally draws some finding from the specialized loan product and recommendations on coping mechanism and adaptation options to reduce the problems to access to bank credit facilities.

#### Women Entrepreneurship in Bangladesh

Women entrepreneurs constitute less than 10% of the total business entrepreneurs in Bangladesh whereas women in advanced market economies own more than 25% of all businesses. It is heartening to note that despite many barriers, a new women's entrepreneur class has risen in the country taking on the challenge to work in a male-dominated, competitive and complex economic and business environment. Not only have their entrepreneurship improved their living conditions and earned more respect in the family and the society, but they are also contributing to business and export growth, supplies, employment generation, productivity and skills development of Bangladesh. The United Nations

report concluded that economic development is closely related to the advancement of women. (Hua Du, Asian Development Bank, 2006).

Although the Constitution of Bangladesh guarantees all citizens equal rights, in reality, the society is highly stratified and services are rendered on the basis of class, gender location, etc., which often results in disparities. Seventy percent (70%) of the women entrepreneurs are micro and rural based. They are not given proper opportunity for expansion. On the other hand, urban educated women already engaged in micro and small businesses, as well as export-oriented enterprises are receiving comparatively less attention. As a result, they are unable to expand their operations due to lack of technological support and expertise, fund constraints, marketing techniques, and detachment from the international business arena, especially in the context of today's globalization and rapidly growing business world.

#### Women Entrepreneurship Status in Bangladesh

The entrepreneurship status of the population shows that out of 46.8% self-employed citizen, women make only 8.3%. The situation is, however, in urban Bangladesh a little better. In urban area nearly 15.4% of the 36.7% self-employed people are women. In rural area, it is only 7.4% of 47.6%, data shows in Table 1.

Most of the women are unpaid family helper, 83.2% in rural area and 42.9% in urban area. A part of the poor women works also as day laborer. On national level it is 5.7%, in urban area 6.2% and in rural area 5.6% (Table -2 & Graphic -1). This shows that industrial development in Bangladesh is unable to absorb even the cheapest part of the labor force - the women labor. Previously, women's enterprises were confined in sectors that were dominated by traditional gender role, such as food and beverage, beauty parlor, health, education, webbing, tailoring and wholesale and retail apparel trade. But the situation is improving slowly; today women are also in occupations, which were solely controlled by the male before. Women are now seen also as owners and managers of cold storage, shipping lines, advertising firms, travel agencies, interior decoration, engineering workshops and even garment industries, etc.

Туре	Both Sex	Male	Female	Both Sex	Male	Female
Self Employed	32.2	46.8	8.3	36.7	42.2	15.4
Employer	0.3	0.4	0.1	0.8	1.0	0.1
Employee	11.9	14.6	7.6	34.6	34.3	35.4
Unpaid Family Helper	37.7	12.7	78.3	15.4	5.8	42.9
Day laborer	17.9	25.5	5.7	12.5	14.7	6.2

Table 1: Women Entrepreneurship Status in Bangladesh (Source: Labour Force Survey 1995-1996, P-48)

#### **BACKGROUND OF THE STUDY**

All these scenarios discussed on the previous sections shows access to finance is not only the way to develop women entrepreneurship development, need other support like entrepreneurial skill development, product development knowledge, market opportunities, networking and other legal supports. Now a day most of the PCBs and NFIs are offering women entrepreneurship loan under Bangladesh Bank refinance scheme. But maximum women entrepreneurs are not eligible to apply for this loan, on other hand financial organizations can't find out eligible entrepreneurs to approve this loan. Especially in rural and semi urban areas women entrepreneurs cannot get the access to bank finance lack of skills, lack of proper documentation and finally lack of information. In that situation loan product should offer comprehensive feature to develop women entrepreneurs through access to finance and other supports.

Very recent in Bangladesh a commercial Bank MTB introduced a specialized product jointly with SMEF for women entrepreneurship development. This product name is "MTB Gunabati" under pre-finance scheme of SMEF. This product not only offer access to bank finance, also provide other supports like skill development training, networking, market opportunity, advocacy etc. The research shows financial organizations should offer special products for promoting women entrepreneurship development in Bangladesh.

#### **OBJECTIVE OF THE STUDY**

The overall objective of the study is to monitor and evaluate the MTB Gunabati program, issues involved in women entrepreneur financing in the SME manufacturing sector with a view to addressing the present scenario of the beneficiary of women entrepreneur, problems in utilizing fund and finance and make recommendations for the SME Foundation for further intervention in respective areas, and includes the following specifically:

- To identify the present status of women entrepreneurs funded through the program in different manufacturing sectors in different districts of Bangladesh.
- To determine the women entrepreneurs profile, their success indicators with reference to a particular criteria including their sale figure growth, production growth, technology up gradation, working environment etc. after funding.
- To examine and assess the sociocultural and legal barriers to women's entry into enterprise, as well as performance and growth in entrepreneurship.
- To recommend how women's business associations can strengthen women's position in business.
- To examine how the collateral free single digit rate (maximum 9%) of interest fund helps the women entrepreneurs.

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• To assess the present habitual attitude of women entrepreneur about formal banking transaction.

#### SCOPE OF THE STUDY

The scope of the present study covers 76 women entrepreneurs of 15 districts of Bangladesh, beneficiary of MTB Gunabati program of Phase-I & II. The study makes an attempt to trace out the present status of these women entrepreneurs in Bangladesh. Some important factors such as personal, social, psychological and economic-factors have been examined in order to understand whether the MTB Gunabati program helps these women entrepreneurs to emerge as successful entrepreneurs.

This report is the result of a long survey (several days in different period) conducted by the SME Foundation for monitoring and evaluation of its Credit Wholesaling Program. The program provides funding and placement support to women entrepreneurs of Dhaka, Chittagong, Rajshahi, Jessore, Mymensingh, Natore, Naogaon, Thakurgaon, Narayanganj, Narsinghdi, Moulavibazar, Gazipur, Sirajganj, Rangpur and Comilla. The evaluation required a multi-phase approach that involved an individual surveys targeted. For SME Foundation, the scope of the evaluation included pre and postassessment surveys of 76 women entrepreneurs of 15 districts who participated in the program. In order to gauge longer-term impacts of CWS Program, a separate baseline survey was also administered among the 76 entrepreneurs (borrower) of the program.

#### Limitations of the study

Since the study is an empirical one based on field-work through the interviews of 76 women entrepreneurs engaged in SME manufacturing sectors in 15 districts including capital city of Bangladesh, it has some obvious limitations. These are as follows:

- Data collection through primary source or through interview was a time consuming matter.
- Further, it was also found that women entrepreneurs have a tendency to disclose lower income and higher expenses. They

think that this would help them to get more credit.

• Collecting correct information from women entrepreneurs is a very difficult task.

### METHODOLOGY

- Visiting the entrepreneurs.
- Interviewing the funded entrepreneurs to collect the data.
- Drawing from the root level entrepreneur's' experience with clusters and firm level information.
- Discussions with various associations & Partner Financial Institutions' (officials of Mutual Trust Bank Limited) representatives.
- Submission of draft Monitoring & Evaluation report with main findings and recommendations for both selected sectors and funded entrepreneurs to help the preparation of Concept Notes of 3rd phase of funding from SMEF for retaining continuity of Women entrepreneurship development.

## Pre-testing of questionnaire

The draft questionnaires, named Credit Wholesaling Program Monitoring form, covering the objectives of the study were made ready for field testing and examination of its validity in order to ascertain the time of the length interview, suitability of questions and their sequence or flow in real time situation of the study. After analysis of pre-test results, the questionnaires were modified. Basically in questionnaire, we would like to identify the changes through the following indicators after financing.

- 1. How entrepreneurs utilize their borrowed fund?
- 2. Is there any skill development in business after funding?
- 3. Technological any changes or up gradation?

- 4. Are there any positive changes in working environment?
- 5. Production and sale growth (compare to earlier)
- 6. Quality of production, design, labor quality etc.
- 7. Is entrepreneur now able to get loan from formal source?
- 8. Is she influences others positively by her business prosperity?

#### Sampling Plan

Randomly, we analyze 10 different entrepreneurs' data from 09 different districts out of 76 entrepreneurs from 15 different districts for ease of comparison among them.

# Districts under Intervention

Table 2: List of funded	districts with total	number of bene	eficiary women	entrepreneurs
				1

Sl. No.	Name of Districts	No. of Entrepreneurs	Sector
01	Dhaka	33	Tailoring, fashion design, boutique, food, leather goods, parlor, handicrafts & plastic
02	Chittagong	05	Tailoring, fashion design, boutique & crafts
03	Rajshahi	01	Handicraft
04	Rangpur	02	Boutique & crafts
05	Jessore	07	Handloom & fashion design
06	Comilla	02	Tailoring
07	Mymensingh	03	Handloom & beauty parlor
08	Narayanganj	01	Sewing producer
09	Narsinghdi	01	Fashion
10	Gazipur	02	Handloom & beauty parlor
11	Natore	01	Beauty parlor
12	Naogaon	03	Fashion & beauty parlor
13	Thakurgaon	01	Fashion
14	Sirajganj	13	Handloom
15	Moulavibazar	01	Fast Food & bakery items
	Total	76	

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Graph 1: Funded districts with total number of beneficiary women entrepreneurs

#### Data analysis from Random Sampling

We analyzed the data by averaging the response of the sample. Most of the analysis and discussions of this study have been made on the basis of the information obtained from the interview with the questionnaires. Besides, observation of the interviewers has also been an important component of analysis and discussion.

Table 3: Comparison of sales figure of an entrepreneur in between initiation of program and now

S1.	Enterprise Name	District	Sector	Month	ly Sale	
No				While program	Now	Growth
				initiation (31.01.13)	(31.12.14)	
01	Roza Boutique	Rangpur	Boutique	2,50,000	3,00,000	20%
02	Mayeda Enterprise	Sirajganj	Handloom	4,50,000	6,00,000	33.33%
03	Dream Touch Beauty Parlor	Dhaka	Beauty Parlor	2,20,000	2,85,000	29.54%
04	Auporupa Fashion & Tailors	Chittagong	Boutique &	1,20,000	2,00,000	66.66%
			tailoring			
05	New Khan Fashion	Narsinghdi	Embroidery	2,50,000	3,00,000	20%
06	Karigar	Dhaka	Leather	6,00,000	10,00,000	66.66%
07	Rita Cottage Industry	Sirajganj	Handloom	6,00,000	8,00,000	33.33%
08	Nokshi Ladies Tailors &	Gazipur	Fabrics	30,000	45,000	50%
	Fabrics					
09	Bimurto	Dhaka	Handicrafts	2,20,000	3,00,000	36.36%
10	Al-amin Leather Crafts	Dhaka	Leather &	2,00,000	3,50,000	75%
			handicrafts			

Graph 2: Comparison of sales figure and sketching the sales growth



#### **Employment** generation

Table 4: Comparison of employment generation of an entrepreneur in between initiation of program and now

Sl.	Enterprise Name	District	Sector	Employment generation		
No				While program	Now	Growth
				initiation	(31.12.14)	
				(31.01.13)		
01	Roza Boutique	Rangpur	Boutique	05	12	140%
02	Mayeda Enterprise	Sirajganj	Handloom	07	17	143%
03	Dream Touch Beauty	Dhaka	Beauty Parlor	07	16	129%
	Parlor					
04	Auporupa Fashion &	Chittagong	Boutique &	07	12	71%
	Tailors		tailoring			
05	New Khan Fashion	Narsinghdi	Embroidery	05	15	200%
06	Karigar	Dhaka	Leather	20	25	25%
07	Rita Cottage Industry	Sirajganj	Handloom	25	25	0%
08	Nokshi Ladies Tailors &	Gazipur	Fabrics	03	16	433%
	Fabrics					
09	Bimurto	Dhaka	Handicrafts	23	42	83%
10	Al-amin Leather Crafts	Dhaka	Leather &	07	12	71%
			handicrafts			

Graph 3: Showing the employment generation growth of different entrepreneurs

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#### **Development Impact and Outcomes**

- Utilization of Fund Women entrepreneurs of MTB Gunabati program mostly use their fund in working capital management. Besides this purpose, entrepreneurs of handloom sector of Sirajganj district use their fund in purchasing of auto machine, business expansion etc. The program loan augments the entrepreneurs' fund so that entrepreneurs can increase their incomes faster.
- Skill Development SME Foundation provided basic training regarding fashion design, beautification, and business management etc. to its entrepreneurs. Under the SMEF's cluster development strategy. Most of the amateur workers were trained as skilled workers through some parochial training session. Trained employees are paid starting wages three times higher than those of unskilled novices. Besides this, SMEF, with joint collaboration of BWCCI, CWCCI, and WEAB and with other some women entrepreneur association provides basic training to the employees of Dhaka,

Chittagong, Rangpur, Jessore and other districts.

- Technology Development After funding of MTB Gunabati program to the women entrepreneurs of different districts of Bangladesh, there is huge technological changes took place in almost in every business concern of MTB Gunabati beneficiary found out while visiting.
- Production Growth Women entrepreneurship of Bangladesh created a huge labor force, with competitive wage and higher regimentation. We talked about 74 women entrepreneurs of different districts of Bangladesh, on the basis of 2013's production; most of the entrepreneurs enhance their production growth 100 to 180% in last year.
- Quality of Production Specific standards that can be expected in quality production of handicrafts items. Minimum required standards applied to almost all entrepreneurs' factory. Besides this, quality design, smart packaging has been tightly followed in every enterprise.
- Working Environment –We have made conversation more than 30 workers in

visited factories of MTB Gunabati beneficiary to hear their input on working environment and we planned to share their working environment improvement plans in front of their employer. They told us that factory owners maintains following criteria to improve working environment mostly cleanliness, Ventilation and temperature, Lighting, Drinking water, Latrines and urinals etc.

# FINDINGS

- 1. Women entrepreneurs utilize their fund mainly for working capital management and business expansion.
- 2. SME Foundation's initiative through providing skill development training acted properly in their skill development approach.
- 3. Through the proper monitoring of SME Foundation after disbursing loan, production growth increases almost in all of the factories.
- 4. Good design & quality of production remarkably brought positive changes in creating a strong market in home.
- 5. Besides these, working environment, technology development, labor quality is in sound position than earlier.
- 6. Sometimes external factors influence very tightly to negative side.
- 7. Lack of consciousness belongs to the entrepreneurs about the loan documentation to get the formal source of fund.

#### RECOMMENDATIONS

- 1. SME Foundation should offer courses on women entrepreneurship in order to train women on the subject.
- 2. SME Foundation should organize workshops and seminars for women, both at national level and at district level to popularize SME and disseminate information relating thereto.
- SME Foundation should offer Annual Awards for Best Women Entrepreneurs, Best Women's Enterprises and Innovative Women's Products. Rural Women's

Achievements should also be accorded due recognition.

- 4. SME Foundation can set up a Central Display Centre for women's products.
- SME Foundation should develop a Design Centre for SME products. This would enable women entrepreneurs to manufacture quality goods capable of competing in the international market.
- SME Foundation should protect and develop the typical products of various regions/districts in order to preserve the heritage of the country.
- SME Foundation may carry their financial intervention for another phase to develop & strengthen the whole sector.

#### Case Study 01: TANIA Wahab, Karigar

- Location: Sher-E-Bangla Road, Hazaribagh, Dhaka-1209
- Loan Amount: BDT. 1 million
- Purpose: Machine purchase, working capital
- Key features: Leather goods manufacturing concern
- Employment: Currently 25 workers employed in KARIGOR, while the program initiation, this number was 20
- Export: Earlier export through other channel, now start to direct export
- Local Market: Locally, supplier of Kay craft, Arong
- Training: From USA, Germany, ISO certification
- Recognition: Winner of National SME award
- Present status: Now she expands her business, hired a showroom for direct sale of her product.

# Case Study 02: SAJEDA Akhter Jahan, Roza Boutique

- Location: New Cross Road, Guptapara, Katwali, Rangpur
- Initial Investment: Only 5000 taka
- Loan Amount: BDT. .5 million
- Purpose: Working capital
- Key features: Boutique business (Satronji, Nokshi kantha, Cushion cover)
- Employment: Now 12 workers permanently working in Roza Boutique, besides them about 50 plus rural women working for her in contract basis
- Export: Export in Japan, USA, France
- Local Market: Supply in Dhaka, Chittagong, Rajshahi
- Present status: Now she expands her business, currently a fully bankable entrepreneur

## Case Study 03: WAFI Islam, Bimurto

- Location: Nandalal Datta Lane, Sutrapur, Dhaka
- Initial Investment: Only 1200 taka
- Loan Amount: BDT. .6 million
- Purpose: Working capital
- Key features: Photo album, photo frame, note book, etc.
- Employment: Currently 42 workers employed in BIMURTO
- Employment: Currently 42 workers employed in BIMURTO
- Local Market: 100% local, supply in Chittagong, Sylhet & marketed in Dhaka
- Showroom: 2 showrooms in Dhaka city
- Training: From SME Foundation
- Present status: Bankable entrepreneur, got loan NRB Bank

# Case Study 04: DILRUBA Hoshna, Auporupa Fashion & Tailors

- Location: Taltala, Faridir Para, Chandgaon, Chittagong
- Initial Investment: Only 5000 taka
- Loan Amount: BDT. .3 million
- Purpose: Business expansion & establishment of tailoring training center
- Key features: Salwar kamiz, three piece etc.
- Employment: Currently 10 permanent workers, 12 workers through outsourcing.
- Trainer: Trainer of her own tailoring training center.
- Showroom: 2 showrooms in Chittagong city.
- Engagement: Member of CWCCI.

## CONCLUSION

Women in the rural informal sector are either selfemployed or employed in family based enterprises that includes both agricultural and non-agricultural sector. These activities which include boutique, handloom, beauty parlor, fashion design, handicrafts, Katha sewing, food processing, tailoring, rice processing etc. have been regular and invisible sources to family income supplementation. A sectorwise distribution of employed persons in rural areas shows that agriculture is the pre-dominant source of female employment, followed by the manufacturing sector. Women entrepreneurship is now playing a greater role in changing the socioeconomic scenario of this area and contributing to the national economy. In order to applaud their efforts and foster Small Medium enthusiasm. and Enterprise Foundation (SMEF) extended cooperation by providing fund with related training packages throughout the country. Besides this, various women association like BWCCI, CWCCI, and WEAB along with SME Foundation came to the aid of the small but flourishing women entrepreneur here because the cheap and trained labor may open up a new window for the country in the highly competitive in the Bangladesh.

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# ENTREPRENEURSHIP ANALYSIS TO THE SUCCESS OF MSME AT DESA COT BATEE, BIREUEN IN LIVELIHOOD PROJECT OF UMCOR-NGO INDONESIA

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Abstract: This paper present finding that capital was not primary factor for entrepreneurial success of 43 MSME's beneficiaries receiving Livelihood Project' fund from UMCOR-NGO Indonesia, aftermath 2004 Indian Ocean tsunami disaster. Capital that was not supported at the same time with proper business management and entrepreneurial spirit of respective MSME's beneficiaries resulted in extremely difficult to develop. The method of research is descriptive-quantitative. The research found that UMCOR has not properly scrutinized individual beneficiaries' ability prior conducting entrepreneurial activities, in accordance to initial data processing of entrepreneurial success indicator. Poor intensive assistance from reliable parties towards beneficiaries' problems solving also contributed to the burdensome. The study concludes that it is necessary to develop an assessment indicator system of entrepreneurial success within the project assessment. It allows UMCOR-NGO to alleviate obstacles and contributes substantial supports for the beneficiaries' entrepreneurial success: to be capable of producing its contributions to economy and to society.

Key words: Entrepreneurial Spirit, Entrepreneurship, MSME, Livelihood.

#### 1. Introduction

The similarity between the Indian Ocean tsunami disasters in NAD in 2004 with the Global Economic Crisis in 2008 were both destroyed the economy of the affected residents.

Learning from the economic crisis in 1998, a group that was not affected by the economic crisis is a small, micro, medium enterprises (MSMEs). MSMEs had been hailed as savior of the nation's economy. They can survive as they did not require imported materials and most of them oriented to the local market.

The advantages of MSMEs are able to absorb the labors if the type of business is production or provide self-sufficiency in obtaining income if its business is individual. In other word, the MSME has important role in economic resilience of the country, especially in developing country such as Indonesia.

Unfortunately, the MSME sector has a weakness. Poor entrepreneurial spirit in doing business make it difficult to keep exist and survive for a long period. This indication is in line with Peter F. Drucker (1986) opinion "At the same time, inherent in the managerial task is

entrepreneurship". Whereas indicators developed countries cited from David McClelland's thoughts contained in the book Ciputra (2008), a local businessman, if the entrepreneur in the country at least 2% of the population.

UMCOR (*United Methodist Committee on Relief*) - NGO Indonesia, with experience in construction and livelihood project, seeks to enable tsunami survivor in village of Bireuen district to operate successful, sustainable business to support themselves and their family.

The program to this aim is SIGA I (*Sustainable Income Generation in Aceh*). This project will benefit entrepreneur and providing inputs to lunch successful business to MSME, farmer and fisherman.

Throughout the project, UMCOR cooperated with already established voluntary CDCs (Community Development Committees) that are a community which has 6 capable persons whom chosen from the village to assist project beneficiaries and manage social repayment. CDC was established to be a leader and give advocacy for the community as well as supervising and controlling the repayment from beneficiaries. This Dian Inda Sari, Darwin Sitompul / Entrepreneurship Analysis to the Success of MSME at Desa Cot Batee, Bireuen in Livelihood Project of UMCOR-NGO Indonesia

repayment was further used for the development of the village infrastructure and also passed to other society member whom need fund to support their business.

The process of this project is: conducting assessment, management training and technical training to assist the beneficiaries operate the business. As lack of capital is a major constraint for residents of the village, during year 2007, UMCOR delivered income generation (IG) package to 97 beneficiaries in Desa Cot Batee, Bireuen that include all the necessary equipment and material to start a business. A number of 43 among others are MSME. This IG packages are not solely free of charge. Each beneficiary has obligated to return 50% (fifty percent) of accepted aids amount to the CDC.

The IG package to MSME in Rupiahs can be seen at the Tables 1.1.

In the implementation of the Project, not all beneficiaries can return the fund of the aid of UMCOR as the target mention to CDC. Though, the target of the repayment was socialite to the beneficiaries before and they agreed to this condition. In April 2008 the target of the refund was changed from Rp. 200.000 per month into Rp. 100.000 per month.

In May 2008, SIGA I Project was accomplished. Pursuant to the report of CDC in May 2008 the result of the refund to CDC can be seen at The Tables 1.2.

As mentioned in the MDG report, to break the chain of poverty effectively, we need a full and productive employment are eligible for the poor. While on the other hand M. Yunus, founder of the Grameen Bank has declared from his observation that People were not poor because they were stupid or lazy. They worked all day long, doing complex physical tasks. They were poor because the financial structures which could help them widen their economic base simply did not exist in their country. It was a structural problem, not a personal problem (1998).

		Beneficiar	IG Package
No.	Description	ies	in Rupiah
1	Sewing	1	5,702,500
2	Bakery	1	5,367,000
3	Retail Trading	3	5,175,000
4	Coffee Shop	2	6,300,000
5	Motorbike	3	8,321,700
6	Groceries	13	5,675,000
7	Becak	2	7,400,000
8	Public	5	5,500,000
9	Fruits Seller	1	5,550,000
10	Fish Seller	12	6,050,000
	Total	43	

Table 1.1 List of Beneficiaries of SIGA I Year 2007

Source: UMCOR Beneficiaries Handover Documents

No.	Description	Total Amount of IG Package (Rp.)	Refund Target upto May 08(* (Rp.)	Total Refund per May 08 (Rp.)
1	Sewing	5,702,500	800,000	220,000
2	Bakery	5,367,000	800,000	70,000
3	Trading Retail	15,525,000	2,400,000	395,000
4	Coffee Shop	12,600,000	1,600,000	1,120,000
5	Motorbike Service Station	24 965 100	2 400 000	195 000
6	Groceries	73,775,000	10,400,000	6.520.000
7	Becak	14,800,000	1,600,000	870,000
8	Public Trans./Ojek	27,500,000	4,000,000	1,495,000
9	Fruits Seller	5,550,000	800,000	110,000
10	Fish Seller	72,600,000	9,600,000	3,540,000
	Total	258,384,600	34,400,000	14,535,000

Table 1.2. IG Package Refund to CDC

\*) Instalment of Refund in Jan-Mar Rp. 200.000/Month, Apr - May Rp. 100.000/Month

When UMCOR through it SIGA project seeks solution to provide a full and decent employment for the poor aftermath tsunami disaster by providing capital to start a new business to the beneficiaries, obviously they was unable to do repayment to the CDC, although the amount of the repayment is only 50% from IG package.

Based on the explanation above, it is necessary to do a research to reveal why the beneficiaries are unable to return the repayment, although the install payment has been reduced by using indicator of entrepreneurial success to indentify the beneficiaries' problem.

#### 2. The Theory Framework

#### 2.1. MSMEs Definition

MSMEs are defined as follows: MSME are economically productive activities that stand alone, performed by individual person or business entity that is not a subsidiary or branch' company, controlled or a part, either directly or indirectly from business medium or large business eligible for small business (UU No. 20/2008).

#### 2.2. Project Definition

Christianto and Made Wiryana (2002) revealed the characteristics of the project as follows:

- 1. The task is unique and not repetitive.
- 2. Designed to achieve specific results.
- 3. Requires a variety of sources that require coordination.
- 4. Constrained by time, therefore has the age of life (lifetime).
- 5. Have a start and end date.
- 6. Have a plan / cost estimates.
- 7. Role and relationship between the team and changes need to be developed, defined, and established.

#### 2.3. Livelihood Project Framework

The United Nations Development Program (UNDP) differentiates between a job and a livelihood, which are often used interchangeably.

> Jobs

"A job connotes one particular activity or trade that is performed in exchange for payment. It is also a formal agreement, as manifested by a contract, between an employer and employee... A job can, however, comprise part of an overall livelihood, but does so only to complement other aspects of a livelihood portfolio.

> Livelihoods

"A livelihood, on the other hand, is

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engagement in a number of activities which, at times, neither require a formal agreement nor are limited to a particular trade. Livelihoods may or may not involve money. Jobs invariably do. Livelihoods are selfdirecting.....

Livelihoods are based on income derived from "jobs", but also on incomes derived from assets and entitlements. "A means of living or of supporting life and meeting individual and community needs"

- 1. People-centered
- 2. Responsive and participatory
- 3. Multi-level
- 4. Conducted in partnership
- 5. Sustainable
- 6. Dynamic
- 7. Holistic
- 8. Building on strengths

There are five assets within livelihood project that can be seen in Figure 2.1.





Source: S. Rengasamy Madurai, Institute Social Sciences, India.

Figure 2.1. Livelihoods Assets



Source: S. Rengasamy Madurai, Institute Social Sciences, India, cited Traidcraft.

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#### Figure 2.2. Sustainable Livelihood Project Framework

#### 2.4. Entrepreneurship and Small Business

Management Guru Peter F Drucker, states that:

*"Innovation is a discipline, with its own, fairly simple, rules. And so is entrepreneurship"* 

"Innovation is organized systematic, rational work" (1985).

People use the terms "entrepreneur" and "small business owner" synonymously. While they may have much in common, there are significant differences between the entrepreneurial venture and the small business. Entrepreneurial ventures differ from small businesses in these ways (www.quickmba.com):

- 1. *Amount of wealth creation* rather than simply generating an income stream that replaces traditional employment, a successful entrepreneurial venture creates substantial wealth, typically in excess of several million dollars of profit.
- Speed of wealth creation while a successful small business can generate several million dollars of profit over a lifetime, entrepreneurial wealth creation often is rapid; for example, within 5 years.
- *Risk* the risk of an entrepreneurial venture must be high; otherwise, with the incentive of sure profits many entrepreneurs would be pursuing the idea and the opportunity no longer would exist.
- 4. *Innovation* entrepreneurship often involves substantial innovation beyond what a small business might exhibit. This innovation gives the venture the competitive advantage that results in wealth creation. The innovation may be in the product or service itself, or in the business processes used to deliver it.

Although there are distinction between entrepreneur with small business owner, does not mean that small business owner can not develop their business to become more larger, but small business owner should be able to sharpen and implement the spirit of entrepreneurship in running the business, so the risk of mortality can be eliminated and the achievement of the small business become more significant.

As Drucker defined that entrepreneurship begin from fairly simple thing, so does small

business begin (Megginson, Bryd and Megginson, 2003), it come from simple idea as follow:

- 1. Achieve independence;
- 2. Obtain additonal income;
- 3. Help their families;
- 4. Provide product not available elsewhere.

Why do new businesses fail? These problems were caused by limited profitability and growth, the decision to voluntarily close the business, or financial failure.

Based on Minota Corp. survey of 703 businesses with fewer than 500 employees found that the main reasons of businesses fail were:

- 1. Lack of Capital (48%)
- 2. No business knowledge (23%)
- 3. Poor management (19%)
- 4. Inadequate planning (15%)
- 5. Inexperience (15%)

From the fifth element, we can divide it into two big problem categories: (1) Capital and (2) Business Management (Megginson, Bryd and Megginson, 2003).

Peter F Drucker (1986) described how business management has relationship with entrepreneurship:

At the same time, inherent in the managerial task is entrepreneurship: making the business of tomorrow. Inherent in the task is innovation. Making the business of tomorrow starts out with the conviction that the business of tomorrow will be and must be different. But it also starts out of necessity—with the business of today. Making the business of tomorrow cannot be a flash of genius. It requires systematic analysis and hard, rigorous work *today*—and that means by people in today's business and operating within it.

The specific job of entrepreneurship in business enterprise is to make today's business capable of making the future, of making itself into a different business. It is the specific job of entrepreneurship in the going business to enable today's already existing—and especially today's already successful—business to remain existing and to remain successful in the future.

Success cannot, one might say, be continued forever. Businesses are, after all, creations of man which have no true permanence. Even the oldest businesses are creations of recent centuries. But a business enterprise must continue beyond the lifetime of the individual or of the generation to be capable of producing its contributions to economy

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and to society. The perpetuation of a business is a central entrepreneurial task—and ability to do so may well be the most trenchant and definitive test of a management.

#### 2.5. Social Entrepreneur

Joharinisson (1989) cited in Trilok Kumar Jain (1999), defines social entrepreneurs as: "someone who through the extensive use of personal networking facilitation and resources amassing skills revitalizes a local community in both social and economic arenas."

#### 2.6. Successful Entrepreneur Indicator

Barringer and Ireland (2006) print out that there are four characteristics of successful entrepreneurs:

1. Passion for the Business

This passion typically stems from the entrepreneur's belief that the business will positively influence people's lives

- 2. Product/Customer Focus An entrepreneur's keen focus on products and customers typically stems from the fact that most entrepreneurs are, at heart, craftspeople.
- 3. Tenacity Despite Failure
  - Because entrepreneurs are typically trying something new, the failure rate is naturally

high. A defining characteristic for successful entrepreneurs is their ability to persevere through setbacks and failures.

Execution Intelligence The ability to translate thought, creativity, and imagination into action and measurable results is the essence of execution intelligence.

Blanchard (2008) states that there are 20 characteristics of successful entrepreneurs: (1) resourcefulness, (2) determination, (3) focus, (4) risk management, (5) problem solving, (6) salesmanship, (7) visionary, (8) optimistic, (9) leadership, (10) ambitious, (11) innovation, (12) integrity, (13) adaptability, (14) communication, (15) self motivation, (16) strategist, (17) team player, (18) purposefulness, (19) curiosity, (20) balance.

Further Blancard (<u>www.estrengths.com</u>) provided assessment that has been designed with the sole purpose of helping entrepreneurs to **learn** and **leverage** <u>their strengths</u>, accordance to the twenty characteristics of successful entrepreneurs.

From both characteristics of successful entrepreneurs above, formulation of indicator of successful entrepreneur is obtained as can be seen in Figure 2.3.



Figure 2.3. Indicators of Successful Entrepreneur

#### 2.7. Benchmarking

However, there are obstacles in the implementation of this benchmark. Mistakes are

often made by the management is that they always adopt something without seeing or assessing existing conditions exist in their environment (ie: culture, behavior, etc.). So what is their adoption never achieve maximum results, even failure.

Tom Peter said "Kaizen (Continuous Improvement) is... Very Dangerous Stuff." We can not deny that Kaizen idea is "Excellent!" Many companies quickly copied their essential competitive idea, implemented, and caught in this theory. Unfortunately the company does not realize that: excellence has become transient...the pursuit of perfection (at today's "sport") gets in the way of ferreting out the next big thing.

In line with Tom Peter, Drucker (1986) said that management is work, and as such it has its own skills, its own tools, its own techniques. A good many skills, tools, and techniques are discussed in this book, a few in some detail. But the stress is not on skills, tools, and techniques. It is not even on the work of management. It is on the tasks.

These following projects can be contributed to this research to become benchmarking.

- 1. Grameen Bank in Bangladesh Grouping of Members for the smoothness of Credit Returns.
- 2. The Fortune at The Bottom of the Pyramid Case - Rural Networking Project – e-Choupal ITC
- 3. PT. HM Sampoerna CSR Village Community Empowerment.

#### 3. Research Method

The research is descriptive-quantitative, which is a type of research that combines quantitative research with qualitative research. The purpose of using this method is to clarify the meaning of research (Bungin, 2008). Quantitative analysis is used to measure the level of entrepreneurial spirit of the beneficiaries. While the results of measurements entrepreneurial spirit and process of the implementation of livelihood project will use qualitative methods.

#### **3.1. Data Collection Techniques**

Data collect in this study are through:

- 1. Questionnaire. The questionnaire was formulated from the adaptation and modification of questions derived from www.estrengths.com
- 2. Observation
- 3. Interview

#### **3.2.** Population

Population is the subject of research. In this study, the subjects were all SIGA I project beneficiaries during the year 2007 in the village of Cot Batee, Bireuen, NAD which in groups of MSMEs.

#### 3.3. Data Analysis

This study uses Likert Scale in the questionnaire. The value of 1 for "never", the value of 2 for "seldom", the value of 3 for "sometimes", the value of 4 for "frequently" and the value of 5 for "always", Blancard <u>www.estrengths.com</u>. Questionnaire data collected will be analyzed based on the norm score as can be seen in Table 3.1. The process of final entrepreneurial spirit of beneficiaries can be seen in Figure 3.1.

#### Table 3.1. Norm Score of Characteristics of Successful Entrepreneurs

No.	Attribute	Norm Score
1	Resourcesfulness	3,94
2	Determination	2,44
3	Focus	4,05
4	Risk Management	3,79
5	Problem Solving	4,12
6	Salesmanship	3,55
7	Visionary	3,51
8	Optimistic	4,04
9	Leadership	4,11
10	Ambitious	4,22
11	Innovation	4,41
12	Integrity	4,31
13	Adaptability	4,08
14	Communication	4,30
15	Self Motivation	4,39
16	Strategist	3,73
17	Team Player	2,66
18	Purposefulness	4,36
19	Curriosity	4,07
20	Balance	3,69

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Source: Ken Blancard, Entrepreneurial Strengths Assessment, www.estrengths.com.



Figure 3.1 Flowcharts' Entrepreneurial Spirit of Beneficiaries.

The process of implementation of the Livelihood Project - SIGA I will be qualitatively analyzed by comparing the process of working with existing theory and benchmarking to obtain the conclusions and recommendations which are compatible with the existing problems.

#### 4. Implication and Result

In this analysis, we emphasize on thinking outside the box and find a way to get out of the perception of the moral hazard inherent in the formulation the problem. Because in principle, UMCOR who invites the recipient to start a business, as a solution to make them independent and able to empower their families.

As well as money in the accounting procedures have inherent risks that cause people to be attracted to cheating at every moment close to it, so did the habits of the people who have the burden of risk to do the moral hazard in every action that they do.

To reduce this risk is how UMCOR-NGO can be a social entrepreneurship: providing innovation, solutions and make them successful, independent, and responsible and how to lock all the possibilities for them to be in default to what they had agreed earlier that the purpose of this Livelihood project could be achieved. SIGA I Project is an extension of previous UMCOR Livelihood project. In the project, the village of Cot Batee CDC is had been formed. The villagers had conducted business training. UMCOR does not provide an IG package to the villagers that moment. When SIGA I project run, UMCOR continues to foster the CDC to conduct capacity building training, so that CDC can give public assistance and help beneficiaries in developing business and also give idea to develop his village from the collection of repayment from beneficiaries.

SIGA I project Implementation are composed of five quarter, from introduction of the project and business proposal socialization to the beneficiaries to the implementation. In the training data of "Start Your Business" in the year 2006, only 2 of 43 people that engaged in training.

Of the 43 respondents, only 37 respondents that can be used as research objects. Two respondents had past away, one respondent did not fill in the data, one respondent did not return the questionnaire and two respondents did not fully answer the question for entrepreneurial characteristics, so the data can not be processed further.

The analysis showed that UMCOR clearly seen the "What" and the "Who" in implementing of the IG Project. However UMCOR seems no fitting in the "How". It is inevitable that in order to change a community is not an easy task. But the author sure as sure M. Yunus when he said that the only place our progeny should be able to 'see' poverty would be in museums. There must be a way that might not UMCOR find, so hard to UMCOR to meet the target of the project. Community have been spoiled by the abundance of assistance from NGOs after the tsunami, so they are not moved to maximize ability to establish themselves in order to compete and contribute to economic and social in their place.

Based on the data analysis conclusion, the respondent does not have sufficient entrepreneurial spirit to be able to support them to develop successful businesses, with the following circumstances exist:



Figure 4.1. Beneficiaries's Existing Conditions

This situation should already be detected at the time of the assessment or when evaluating the beneficiaries' prospective proposal, then made a follow up to what weaknesses of beneficiaries that can be fixed so that the beneficiaries can managed to run, develop and improve their business. Undetected weakness brought to domino effect to the next process. Training should be given to increase knowledge and business skills, just touch the two beneficiaries with training materials that are too heavy for the villagers.

People often use the terms "innovation" to the big thing or high technology, but basically

innovation start from a simple thing with discipline and systematic. UMCOR should be able to motivate and stimulate innovation recipient to find out their strength in accordance with their respective capacities in doing business. Because making the business of tomorrow cannot be a flash of genius. It requires systematic analysis and hard, rigorous work today.

The IG package' method was identified:

- 1. Higher than market price because of the tender process.
- 2. Not oriented to customers and products.
- 3. There was excessive cost for loan repayment because of unnecessary inventory.
- 4. On drop IG package distribution.
- 5. Providing IG package to some beneficiaries in narrow area make the beneficiaries compete among each other and with the existing business.

Project' implementation was identified:

- 1. CDC is less capable of being a group that can support and provide solutions in the model installment returns to the beneficiaries.
- 2. CDC is also less capable to become a group that could be a figure who can provide solutions when beneficiaries faced difficulties in their business.
- 3. Monthly repayment installments in which burdensome, because most of the beneficiaries are daily income rather than monthly.
- 4. Return on repayment, focused on infrastructure development which have no direct impact to the prosperity of citizens, made the beneficiaries were not motivated to do the install payment.

This circumstance makes intensive assistance for beneficiaries and CDC Cot Batee is important in building success business that can gave contribute to the economic and social to the individual as well as their village.

#### 4.1. Recommendation

A problem often constructed from a variety of circumstances and the complex inter-related. Overcoming an effective problem is to find the root of all problems, and find out what the impact is given from the problem and the impact of other effects that also contribute later in the problem.

In this study, the root of the problem is UMCOR less able to identify the capabilities of beneficiaries in conducting business in the beginning of the project. CDC is expected to be a group that can provide solution to the beneficiaries during implementation and after SIGA I project accomplished did not provide the maximum results. CDC also could not maximize repayment from beneficiaries.

Both parties the beneficiaries and CDC are input to the SIGA I Project. These inputs should be processed by UMCOR to obtain the desired output. It is important to recognize the characteristics of these inputs, to be prepared an ideal process. The flow of input into the project output as can be seen at Figure 4.5.

Based on research exposure, here are some recommendations that will be the implications of the research results:

#### A. Assesment

We recommend using measured test to assess the entrepreneurial spirit of beneficiaries. This test is to know the level of willingness, ability and endurance

of the beneficiaries in running the business.

Doing a tight selection for qualified members of the CDC, they should be a people who:

- 1. Progressive and willing to try something new.
- 2. Ambitious and eager to build the village and the village community.
- 3. Have strong spirit of leadership. Their leadership have been recognized and respected by villagers, particularly the beneficiaries.
- 4. Can build a team and can cooperate with another CDC members.
- 5. Have families who can support him as the CDC.

#### **B.** Training

According to the analysis of data, the beneficiaries sees only a business opportunity. They did not see or did not predict the existence of obstacles that require an expertise managing in business, even though they have obtained capital from UMCOR IG package. This trend can be seen from their choice not to conduct business training, when UMCOR bidding the beneficiaries to UMCOR business training.

The main thing that UMCOR should be done is to identify the weak indicator of prospective beneficiaries, whether the passion for the business, products/customer focus, tenacity despite failure or execution intelligence in doing business.

Next thing that UMCOR should do is conduct the business training. This training should focuses on entrepreneurial training and on job training practices by using simulation techniques. This type of training in addition to not get bored, the participants also can freely discover the problems that can arise in conducting their business that they find during the training.

Entrepreneurship training aims to train the beneficiaries so that the beneficiaries could develop and could become a successful entrepreneur, so that they can generate the amount and speed of prosperity, risk reduction and sharpening of innovation. To meet this aims, UMCOR should be able to choose a consultant that has proven capability in this simulation technique.

If the result of the assessment reveal there are technical issues that need to be improved, UMCOR can provide skills training in accordance with the businesses that beneficiaries choose, for example: training for pastry cooking.

However, for the CDC, the training should emphasize to the motivation and leadership training.

#### C. IG Package.

Standardization of IG package and tender process in providing IG package should be eliminated. Let prospective beneficiaries become people who decide what they want to sell.

Giving aid package should not be in a single drop, but a gradual or partial. Ask the prospective beneficiaries to plan the realization of this IG package. If the beneficiary can not do the repayment, he was not entitled to receive IG package in the next stage. This method is almost similar to the methods used by the Grameen Bank.

To prevent the narrowing of the market, UMCOR should give a limit to the beneficiaries who get IG package. The best prospective beneficiaries will get the IG package as when he success in doing business, then he will give effect to their communities by hiring labor to doing their business.

#### **D.** Implementation

The IG packages should in partial technique. IG packages deliver should in a group, every group consisting of 3-5 people such as the Grameen Bank group. Each group provides planning who became the first person to receive IG Package, the second and so on.

If the first person fails to do repayment, the second person can not get the IG package, unless they can repayment 50% of the granting of partial relief package from the first person. It teaches them

to take responsibility for the welfare of the group and their village.

The repayment should not in monthly basis, but daily or weekly, to prevent the beneficiaries' reluctance to pay. Based on BPS data year 2008, the minimum wages in Aceh Province in 2006 was Rp. 820 000, where the minimum necessities of life in the same year for the NAD was Rp. 775 000 with an average amount of dependent are 4.5 people per household. Usually every year the minimum wages and the need will increase according to inflation rates that occurred in Indonesia. Compare with beneficiaries' income whose are still below Rp. 1.000.000 with an average amount of dependent is greater than 4 people per household. The amount of the monthly income will be very significant to their income. The advantage of daily or weekly installment is not burdened with large numbers, but the principle is the same as the number installment if they paid monthly.

As mentioned in the previous explanation, the CDC is a major key to success in this implementation after UMCOR. They should be actively collecting repayments from the members. The repayment collection can be used as bank collateral, in case in the future there are some members can restore a targeted package of IG Package needed funds for training or additional capital to the business.

To add CDC interest and motivation to collect member' repayment is not wrong if UMCOR provides an incentive for CDC such as commissions on the e-Choupal Sanchalak. The incentive funds obtained from the collection of repayment.

#### E. Partnership and Assistance

A project is unique, not repeated and also have time limits. While both the recipient and CDC is still not able to be independent and still requires a figure or institution that could provide them a solution in dealing with the implementation of this project.

There are two possibilities that UMCOR can do as a project exit strategy:

- 1. Offered cooperation to other NGOs (in the form of continued assistance to the project and implementation further) or submit a proposal to private companies (in the form of CSR).
- 2. If alternative A is not possible, then UMCOR should empower the CDC and build an information center which is connected to the internet. Internet connections will be directly connected to sites that can provide added value

and information to help beneficiaries develop their business, as is done in e-Choupal ICT.

With the above strategies, UMCOR is expected to be able to lock possible thing and avoid moral hazard from both beneficiaries and CDC so that the project will be sustainable and contribute to the economic and society and UMCOR-NGO can be eventually as social entrepreneur as seen in appendix.

#### 5. Conclusion

From the analysis and discussion in the previous explanation, this study' conclusions are as follow:

- 1. SIGA I Project root problem was on the assessment process where UMCOR is less able to identify the ability of beneficiaries in conducting business in the beginning of the project. Unidentifying beneficiaries' ability to do business put up a domino effect to the next process. The situation is more complex when the process of training, IG package deliver and implementation could not fix this weakness, instead giving its share of problems why the beneficiaries can not develop their business and can not return the funds that they had been agreed previously.
- 2. Partnership and assistance from experienced parties is necessary and important for beneficiaries, so they can acquire and increase the knowledge. They also can get guidance that can support their success in doing business, as CDC not maximal in its role of being the driving force in this UMCOR-NGO Livelihood Project.

Further Research:

This study still has limited data. For that reason, we need to conduct further research concerning:

- 1. Method of Indicator of successful entrepreneur development in relation to the success of MSME in the future.
- 2. Sustainable livelihood projects method development and Entrepreneurship in relation to MSME success in the future.

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# IMPACTS ON CLIMATE CHANGE ON TRIBAL ECONOMY: A STUDY OF JHARKHAND STATE OF INDIA

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#### Abstract

Climate change has become a major issue of concern during recent years. It has affected the life, livelihood and economy of the tribal people and threatened their survival. There are about 700 different tribes in India as per the Article 342 of the Constitution of India. According to the census 2011, tribal population consisted 8.6 per cent in India. In Jharkhand tribal population represented 24.80 per cent as per census 2011. The huge emission of Green House Gases and decline in forest coverage has resulted into the climate change. The excess emission of the Green House Gases increases the earth's surface temperature and causes global warming. It has caused discomfort for the tribal people, increased their cost of living and threat for survival, decline in crop production, increase in the incidence of crop diseases, livestock, human beings, social stress and conflict on sharing resources. It is believed that present state of climate change is human induced. In recent years the evidence of climate change is visible in Jharkhand State also. The incidence of drought has increased in entire state. The tribals are mainly dependent on natural resources and rain-fed agriculture. Therefore, they have been adversely affected due to changes in the climatic condition. In this study and attempt is made to find out the changes in climatic condition, assess its negative effects on the tribal economy and livelihood insecurity, evaluate the existing coping mechanism and practices including indigenous methods adopted by the tribals for dealing with the adverse consequences of the changing climate and find out the deficiencies in their traditional coping mechanism and practices in contrast to contemporary scientific approaches and recommend policy to set action plans for the adaptation by tribals of Jharkhand for their sustainable development.

Keywords: climate; tribal; Jharkhand; sustainable; development

## INTRODUCTION

Jharkhand is a land of forest, hills, rivers, natural resources, mining, and industries in India. State of Jharkand has come into being on November 2000. Each region of Jharkhand State faces erratic rainfall, wide variations in temperatures, humid to tropical and sub-tropical climate. Normal rainfall varies from a minimum of800 mm in Saraikela, Palamu, Garhwa and Koderma to a maximum of over 1,320 mm in Pakur district of the state with huge year to year variability.

There are 32 tribal groups in Jharkhand, which include eight minor tribes, known as Primitive Tribal Groups (PTGs). This area was the home land of aboriginal races, such as the Santhals, Mundas, Oraons, Hos, Kharia, Bhumij, Birhors, known as adivasis literally meaning 'original settlers' or the earliest settlers.

Climate change has become a major issue of concern during recent years. It has affected the life, livelihood and economy of the tribal people and threatened their survival. The tribal population consisted 8.6 per cent in India and Jharkhand State represented 24.80 percent as per census 2011. The huge emission of Green House Gases and decline in forest coverage has resulted into the climate change. It has caused discomfort for the tribal people, increased their cost of living and threat for survival, decline in crop production, increase in the incidence of crop diseases, livestock, human beings, and conflict on sharing resources.

In recent years, the evidence of climate change is visible in Jharkhand State also. The tribals are mainly dependent on a natural resources and rainfed agriculture. They have been adversely affected due to changes in the climatic condition.

#### **OBJECTIVES OF THE STUDY**

In this study an attempt is made:-

To find out the causes of changes in climatic condition

To assess its negative effects on the tribal economy and livelihood

To evaluate the existing coping mechanism and practices adopted by them and

To recommend policy to set action plans for the adoption by tribals of Jharkhand for their sustainable development.

#### METHODOLOGY

The issues are being assessed by review of literatures, analysis of secondary data and annual reports of various years. The relevant data and information have been examined in support of Key Informants' Interview (KII), Focus Group Discussion (FGD) methods and case studies. The study is also based on the data and information available in Jharkhand State and various web sites.

#### CONCEPTS

Climate is the general cumulative pattern of regional or global weather patterns. The most apparent aspects of climate are trends in air, temperature and humidity, wind and precipitation. Although the climate remains fairly stable on the human time scale of decades or centuries, it fluctuates continuously over thousands or millions of years. A great number of variables simultaneously act and react to create stability or fluctuation in this very complex system. Some of these variables are atmospheric composition, rates of solar energy input and terrestrial geography.

#### **RELEVANCE OF THE STUDY**

Climate Change has become a major issue of concern in recent years. It has affected the

existence of the living beings of the world and threatened their survival in future. During the recent years the excessive emissions of Green House Gases and massive deforestation have caused the rapid climate change and its adverse impacts on the ecosystem and the economy. The impacts of climate change have detrimental effect on the economic and social life of the human being. It has caused the discomfort for the people, increased their cost of living and production. It has also caused the uncertainty in the productivity and production, incidence of crop diseases, livestock and human beings. It has increased the social stress and conflict on sharing of resources especially among the tribals and other weaker sections of the society. The recent climate change has increased the frequency of natural disaster, loss of life, assets and resources.

The climate change has most adversely affected the tribals, deprived and weaker sections of the society. Tribal people and the deprived communities depend largely on natural ecosystem and environment for their existence. These communities have long been exposed to many kinds of environmental changes and magnitude of such changes and consequent hazards exceed their adaptive capacity. Therefore it has a major cause of concern and urgent needs of serious efforts for mitigating as well as adaptation.

#### LITERATURE SURVEY

The fourth assessment report of Inter-governmental Panel on Climate Change (IPCC, 2007) recognized that the tribals and deprived communities have been pushed to the most fragile lands due to the social, political and economic exclusion and hence their livelihoods are highly dependent on natural resources. The recent climate change has increased their vulnerability to work load, diseases and disaster. Since climate is going to aggravate in future, the incidence and severity of such changes are going to rise and it will surely cause adverse effect on the condition of human being, especially tribals and marginalized communities.

Most of the observed increase in the globally averaged temperature since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations. Human activities have resulted in excess emission of greenhouse gases like carbon dioxide ( $CO_2$ ), Methane, nitrous oxide and fluorinated gases.

 $CO_2$  is the greenhouse gas most commonly produced by human activities and according to an estimate of European Union it is responsible for 64 percent of man-made global warming. Its concentration in the atmosphere is currently 40 percent higher than it was when industrialization began. Other greenhouse gases are emitted in smaller quantities, but they trap heat far more effectively than  $CO_2$ , and in some cases are thousands of times stronger. Methane is responsible for 17 percent of man-made global warming, nitrous oxide for 6 percent. Fluorinated gases produce a very strong warming effect up to 23000 times greater than  $CO_2$ , but its emission is very low.

Carbon dioxide and nitrous oxide has been released through burning of fossil fuel like coal, oil and gas. Trees help to regulate the climate by absorbing  $CO_2$ from the atmosphere. But because they have been cut down in large number and forest coverage has shrunk its beneficial effect is being eroded and the carbon stored in the trees is released into the atmosphere adding further to the greenhouse effect.

Agriculture also generates greenhouse gases. Paddy cultivation causes emission of methane. In 2000 it was responsible for 65 percent of total greenhouse gas emissions mainly as a result of methane emitted in rice fields. Evidence of increase in temperature and erratic changes in rainfall pattern is experienced all over the world. It is reported that during the past 100 years, global mean surface air temperature have risen by 0.740C (Wadood and Kumari, P., 2008). Annual rainfall is also expected to increase in several parts of Asia while arid and semi-arid areas would become drier. Rising sea level will affect a significant number of countries in the region.

#### JUSTIFICATION OF THE STUDY

The evidence of climate change is visible in Jharkhand State also. The incidence of drought, which has been experienced by all the 24 districts of the State, has increased in the last two and half decades. Frequent flash floods have been experienced by three of its districts viz., Ranchi, Jamshedpur and Saraikela. Nine districts are having a regular incidence of forest fire and lighting. Severe heat wave conditions were noticed in the year 2004, 2005 and 2010. The maximum and minimum temperatures have increased in the State.

Irregular Rainfall and increased incidence of drought has been observed in recent years. Increase in average rainfall, increase in variability of rainfall, high intensity rainfall, uncertainty of monsoon onset and withdrawal, increase in incidence of drought and rise in temperature has become the regular feature of the State.

Geographical Area (Sa km)	79 714
Ocographical Area (Sq.Kill)	/9./14
Population (Nos2011)	3,29,66,238
Males Population (Nos2011)	1,69,31,688
Females Population (Nos2011)	1,60,34,550
Density of Population (per sq.km)	414
Sex Ratio (per 1000 males)	947
Average Annual Growth Rate of Pop. (2001-11 (%)	2.23
Urban Population (%), 2011	22.4
Rural Population (%), 2011	77.6
S.T. Population (%), 2011	24.80
S.C. Population (%), 2011	15.00
Average Annual Rainfall	1100-1400 mm
Water Resource	28,081 mcm
Surface water	23,789 mcm (84.72%)
Ground water	04,292 mcm (15.28%)

Table 1 Important facts and figures of Jharkhand State of India

Source: Census, 2011

Divisions	05
Districts	24
Sub-divisions	41
Towns	152
Blocks	260
Gram Panchayats	4,423
Villages	32,620
Assembly Seats	81
Lok Sabha Seats	14
Rajya Sabha Seats	06

Table 2 Administrative Units of Jharkhand

Source: Census, 2011
Parameters	Central & North Eastern Plateau No. IV	Western Plateau No.V	South Eastern Plateau No.VI	Jharkhand State
Districts	Hazaribagh,Chatra, Griridih, Dhanbad, Godda, Pakur, Deoghar, Sahebganj, Jamtara, Dumka, Bokaro, Koderma &Ramgarh	Palamau, Garhwa, Latehar,Gumla,Simd ega Ranchi, Khunti & Lohardaga	East Singhbhum, West Singhbhum, Saraikela	
Rainfall (mm) South-West	1093 (85%)	1101 (86%)	1053(81%)	1093 (85%)
Total rainfall(mm)	1273	1293	1249	1272
Maximum temperature (0C)	44.2	43.6	44.0	44.0
Minimum temperature (0C)	4.8	5.3	6.6	5.6
Average temperature (0C)	25.2	25.8	27.2	26.0
Relative humidity (%) maximum (7.00 A.M).	62.5	56.5	63.0	60.7
Relative humidity (%) minimum (2.00 P.M.)	47.5	42.0	45.0	44.8
Cropping intensity (%)	110	110	118	116
Major crops	rice, wheat, maize	rice, maize, arhar	rice, maize, niger	

Table 3 A brief analytical descriptions of agro-climatic conditions of three zones in Jharkhand



Figure1 Main tribal groups in Jharkhand (in percentage)

Source: Census, 1991



Figure 2 Primitive tribal groups (in percentage of total tribal population)

Source: Census, 1991

#### Impact of climate change on agriculture

Agriculture which is the main occupation of the tribals of Jharkhand has been adversely affected because of irregular rainfall and increase in temperature. Increase in maximum temperature which has been observed in Jharkhand has been found to have adverse effect on rice yield when it coincides with the flowering stages. A yield reduction of about 10 quintal per hectare has been observed on a 10C increase in maximum temperature at such stage. Similarly a decrease in minimum temperature at grain filling stages has a negative effect on rice yield.

Both the increasing trend of maximum temperature and decreasing trend of minimum temperature have caused reduction in the rice yield in particular and yield of most of the other kharif (main) crops in general. Above normal high maximum temperature coinciding with the flowering stage has been found to have detrimental effect on its yield. High rainfall at flowering stage also causes chaffy grain of rice causing a further loss of livelihood of the farmers, especially the resource poor tribal farmers. Similarly irregular rainfall affects the rain-fed paddy crop which is the main source of livelihood for most of the tribal farmers.

Because of irregular time of onset of monsoon the farmers fail to select right crops and varieties and finally end up getting less than the optimal output. Late arrival of rains many a times causes destruction of seedlings. The amount of precipitation, the duration of rainfall and the deviation in the time of withdrawal also results in the reduction of agricultural output. Failure of rainfall also causes a very heavy reduction in agricultural output. Drought which has become a recurrent phenomenon in Jharkhand affects the livelihood of the tribals severely. The worst affected are primitive tribal groups which historically are late entrants to settle cultivate and own land on hilly slopes with very low fertility and low water retention capacity.

High intensity rainfall which has also been evidenced in the state causes soil erosion. The state has an undulated terrain and the soil is light textured. The light textured soils of this region having shallow depths are prone to erosion in case of high intensity rainfall. It is apprehended that such increase in number of erosive events may worsen the situation by leaving the top fertile soil barren and unproductive.

Bristle Beetle in Arhar, Sheeth Blight and Rust in Kharif maize, powdery mildew in lentil, Alternaria Blight in Rapeseed-Mustard, Swarming caterpillar in Rice, root Knot Nematode in Rice 19 have been observed in Jharkhand. Climate change has also resulted in appearance of new strains of disease and pests.

#### Impact on livestock

Climate change-driven alterations in rainfall have direct impacts on livestock productivity through water and pasture availability and significant indirect impacts.

#### Impact on milk production

The decline in minimum temperature during winter and increase (>40C) in summers have negatively impact on milk production by up to 30 percent (Upadhaya et al., 2012).

### Impact on poultry output

A temperature of greater than 340C causes increase in mortality among chickens due to heat stress. The egg production also decreases both in broiler and layer breeders because of increase in atmospheric temperature. Heat stress also causes livestock loss affecting the livelihood of those tribals who wholly or partially are dependent on livestock.

#### Honey collection and climate change

The untimely rain reduces honey output also jeopardizing the livelihood of those tribal people who supplement their living by collecting honey. Climate change has brought down the number of honey hives. The flowering and frutescent stage of trees is important in the production of honey. Climatic change has adversely affected frutescent stage and lead to decline in honey production.

#### Impact of climate change on forest products

Climate change has adversely affected production of minor forest products on which the livelihood of a large proportion of tribals depend. Climate change has also caused fall in output of other types of minor forest products. The production of lac has decreased either because of problem in host trees.

# The challenge of climate change on the livelihood of tribals

The effect of climate change is going to become more severe and the resultant situation is going to become worse in coming years. By the end of this century the precipitation is expected to increase and duration of rainfall is going to change in Jharkhand. It has been projected that by the end of this century the number of rainy days will go up by at least 10 days and the average rainfall in the state will rise by about 20 percent. The summer temperature will go up by a maximum of 2-30C during 2020-2025 whereas average winter temperature will go up by 4.78-5.20C by 2080.

The change in precipitation and temperature will worsen the livelihood condition of the tribals of this State and will cause deterioration in their economic condition. The productivity of their agriculture will decrease with the increase in temperature. Also the incidence of pests and other crop diseases will be on rise. Climate change will constrain the availability of clean air, drinking water, sufficient and safe quality food and also cause increase in natural disaster. They will affect the productivity of the poor tribal workers increase absenteeism because of disease and thus affect their livelihood adversely.

### Climate Change in Jharkhand and tribal livelihood

Tribal population dominates the state of Jharkhand and is heavily dependent on rain-fed agriculture and to some extent on forest as means of subsistence. However climate variability and its unpredictability have had telling impact over the last few decades. Inability to withstand the extremes of climate, food insecurity, unstable and deteriorating income, rising health problems and such associated spillover effects have led most of these tribes to despair.

#### Climate change impact on livelihood vulnerability

The field crops are the main source of food for the tribal farmers. Bad crop impacts household food provision apart from source of income. Local people resort to deforestation activities to make both ends meet in drought and famine like situations.

# Coping Mechanisms and adaptive risk

There is urgent need to intervene and reduce the climate change stress faced by the tribal communities in the region.

As a starting point they need to be made aware of alternative farming techniques and ways to conserve water and optimize its usage. Their primary source of sustenance is agriculture. However there are ways to circumvent the climatic adversities surrounding this means of livelihood and they need to be educated and trained in this respect.

Finding alternative edible products to satisfy hunger for example tubers, roots and wild fruits and plants. Finding alternate means of livelihood sustenance like selling minor forest produce and migration to nearby places to earn money.

Adaptive risk mitigation strategies can be introduced as:-

1. New farming techniques should be introduced to the tribal farmers.

2. Capacity building to sustain productivity should be promoted and

3. Water conservation mechanisms should be developed in every tribal village.

Some tribal farmers of the region have now adopted the system of rice/root intensification (SRI) for paddy cultivation. They are also using many different varieties of hybrid seeds like pioneer and advanta. Now apart from paddy, pulses and coarse crops tribal farmers are growing different types of vegetables and engaging their up lands for horticulture for marketing and self-consumption.

# Inferences for policy focus through the risk mitigation:-

The first factor emerging from the study is to galvanize the Meteorological Department to timely communicate weather advisory information to the tribal farmers. Secondly to educate the tribal farmers on optimum soil, water and nutrient management. Thirdly, to concentrate on capacity building for water conservation, organic waste usage and composting, and finding alternate ways to make the agricultural tribes less vulnerable to climate change and more prepared to combat the climate induced livelihood stress. Fourthly, incentives should be rendered for research on alternate gainful means of employment in the regions to stop migration. Fifthly, there should be promotion of technology on innovative ways for watershed management and irrigations systems.

### SUMMARY AND CONCLUSION

Thus, climate change has become a major issue of concern during recent years. It has affected the life, livelihood and economy of the tribal people and threatened their survival. In recent years the evidence of climate change is visible in Jharkhand State also. The incidence of drought has increased in entire state and tribal regions. The tribals are mainly dependent on natural resources and rain-fed agriculture. They have been adversely affected due to changes in the climatic condition. It is a major cause of concern and urgent need of serious efforts for mitigating as well as adaptation.

Therefore, there is an urgent need to intervene and reduce the climate change stress faced by the tribal communities in the region. The important factor emerging from the study is to galvanize the Meteorological Department to timely communicate weather advisory information to the tribal farmers. As mitigation strategy steps should be taken to reduce generation of Greenhouse Gases. This can be done through promotion of clean energy and adoption of climate-smart cultivation methods. As a starting point they need to be made aware of alternative farming techniques and ways to conserve water and optimize its usage. Tribal cultivators should be induced to switch over to rice varieties that require relatively lesser amount of water. Research on innovative ways for watershed management and irrigations systems should be encouraged. System of rice/root intensification method of cultivation, reduction in fertilizer and pesticides use and adoption of climate friendly post-harvest measures can reduce GHG emission.

Tribal communities possess some traditional knowledge which helps them in not only reducing the impact of climate change but adapting themselves in case of climate change. There is a need of research on alternate gainful means of employment in the region migration and promote sustainable stop to development. Plantation of trees on the bunds and on other piece of land can also result into controlling climate change. Tree products provide farmers with a number of income options and increase their resilience to climate stress. The state government can develop a network of institutions within state that can provide necessary research and development support to all the sectors in the state in the context of climate change. Micro and mini water harvesting programs can be developed for the rural areas which are less costly yet result in effective water conservation.

Hence, there is an urgent need to develop a mechanism for effective dissemination and implementation of research findings in the tribal regions of the State. There should be ways to attract public-private partnership to address the tribal vulnerability in Jharkhand. Finally, larger tribal participation should be encouraged in policy framing and decision making.

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# IMPACT OF LEAN AND AGILE SUPPLY CHAIN INDONESIA COFFEE TO SUSTAINABILITY STRATEGY MEDIATES BUSINESS STRATEGY

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#### Abstract

This paper aims to investigate sustainability strategy coffee processing industry companies in Indonesia and methods and goals associated with a different concept with the concept of developing management. This research to analyze the use of strategy lean and agile supply chain of Indonesian coffee's product's impact to business strategy and sustainability strategy and to maintain the Indonesian coffee plant to survive in the long term sustainable development. Indonesian coffee has a special uniqueness that is only available in Indonesia. The paper is based on a review of literature, both journal articles and books, and the result of observation on the coffee processing companies and farmers, and proposed a conceptual model. The cooperation between the manufacturer and buyer with the involvement of a partner stakeholder in the supply chain become a consideration as the focus of the company in managing their core competence and all other activities of outsourcing. Companies have made tough decisions about what and how operations, they must execute well and then applied. The data obtained from interviews and observed the 6 SME's and 38 farmers in West Java. From these observations, furthermore, a positive relation is found between the use of lean and agile supply chain to the business strategy and then affect Indonesian coffee industry sustainability strategy.

Keywords: Lean Supply Chain, Agile Supply Chain, Business Strategy, Sustainability Strategy

### INTRODUCTION

Indonesian coffee producers in the face turbulence competition, some issues are: the availability of raw materials, natural conditions and weather, continuous change, price, rapid response, quality improvement, and social responsibility Is the prime mover in the industry coffee Indonesia experienced farmers, coffee processing producer and distributor and retailer.

A supply chain is a network consisting of suppliers, manufacturers, distributors, retailers, and customers (Herer, et al, 2002)

The amount of the area of the gardens, coffee Indonesia total 1.241.712 ha (DirJen Perkebunan, Kementerian Pertanian, 2015) is placing the coffee industry in Indonesia is in the sequence of the four after Brazil, Colombia, and Vietnam. The coffee plantation area of Indonesia has geographic advantages that spread around the equator. Indonesia with the comparative advantages and competitive advantages that owned must be able to maintain the sustainability of the coffee industry.

Indonesia has the competitive advantages and benefits of comparative advantages is the area of the coffee farms is in almost all the regions of the country that stretches at the equator. Another advantage is of labor in the coffee industry is available in a large number of the number of farmers who cultivate the vineyard coffee totaled 1.341.053 head of the family. The competitiveness of Indonesian coffee products in the world and in the ASEAN, is still low compared to competitors such as Brazil and Vietnam. The competitiveness and boost the expansion of high enough to go into the market outside of the land is still hindered by the quality of the product that is not stable is not consistent and has not been certified international and national. The coffee industry competitors currently known to have a very high level of efficiencies and a high level of productivity. In domestic market Indonesia becomes loss the competitiveness, especially from the side of the price when compared with the coffee product imports from Vietnam. Import coffee from Vietnam has spillover effects to the coffee processing industry in Indonesia. The competitiveness of not only correlates with economic and social aspects only. But also, depends on the ability of the company to increase the performance of the leading strategic dimension such as cost, quality, shipping, speed, innovation, and versatility (Platts & Gregory:1991)

The sustainability of the production of coffee from the coffee plantation to threatened processing slowed. There are benefits of nature that belongs to Indonesia for the structure of the ground coffee farms consists of various types of follow planting areas. Indonesia still has the opportunity to increase the production of coffee through intensification and the expansion of the coffee farm area. In Indonesia is still a lot of forest land is managed by Perhutani. The land can be made with coffee land cropping system. Such as in West Java, Perhutani gives an opportunity to the coffee farmers to use state forest land to become coffee farms.

The coffee trade chain the simplest is from farmers as producer of coffee beans are sold to the tradesmen were brought in a small amount of collector, then traders sell collector to a huge seller and from the huge seller sold to small coffee or coffee exporter. The level of the smooth transportation influenced generally coffee trading pattern mainly in remote areas. Areas with enough transportation smoothly the existence of merchant's small collector decreases and prolonged periods farmers directly to the huge seller. The coffee is exported commodities because around 60 percent of the total national coffee production is exported and the rest consumed and stored by the merchants and exporters as a backup when there was a crop failure. The consequence of the vast number of coffee exported is the dependence on the situation and the condition of the world coffee market.

Effective supply chain strategies combine a range of from operational flexibility (e.g., approaches postponement, assemble-to-order (ATO), make-toorder (MTO), and lead time (LT) reduction), channel alignment (e.g., contracts, Vendor-Managed Inventories (VMI), and Efficient Consumer Response initiatives (ECR)), and joint decision making through information deployment (e.g., Point of Sale (POS) data, Collaborative Planning Forecasting and Replenishment (CPFR), and schedule sharing). (Herer, et al, 2002)

Supply chain performance entails a trade-off between cost and service. (Herer, et al, 2002). In the concept of agility manufacturing there a basic ability that is sensing, perceiving and anticipating changes in the business environment of the company. (H. Sharix & Z. Zhang, 1999)

In the International Coffee Agreement 2001 agreed on the name and form of internationally traded coffee is as follows: 1. Green Coffee is the coffee that peeled and unroasted. 2. Dried coffee cherries are the fruit of the coffee from the tree that has been dried. 3. Parchment coffee (coffee with skin horns) is green coffee bean that still have skin horns. 4. Roasted coffee is green coffee beans that have been roasting with a certain heat level. 5. Decaffeinated coffee is green coffee or coffee that is nut or coffee that can be diluted with the contents of the coffee is extracted. 6. Liquid coffee is the form of coffee already nut that changed shape to liquid form with water. 7. Soluble coffee is coffee that comes from the roasted coffee was formed as a solid can be disbursed with water (a kind of instant coffee). During the coffee fruit processing is known as the two ways are dry process and wet process, the difference between the two ways the coffee fruit processing lies in the existence of the use of water that is required for stripping the skin of the fruit of the coffee and washing the coffee beans.

#### LITERATURE REVIEW

#### Lean Supply Chain

The growth of the issue of increasing the number of chain strategy, prioritize meeting modern is the new opportunities for the improvement of the supply chain. The use of the approach of Lean supply chain is one of the strategies that can be competitive advantages of the company. Lean supply chain focus on optimization of the process of all the supply chain seek simplification, reduce waste and reduce the activities that do not add value. (Machado&Duarte,2010; Maia et al, 2013)

Naylor et al. (1999) Leanness is developing a value stream to eliminate all waste, including time, and to ensure a level schedule.

### Agile Supply Chain

The main key of agile supply chain is flexibility. According to Naylor et al. (1999) as follows: Agile means using market knowledge and virtual corporations to take advantage of the lucrative opportunities in the market that is not stable. Agility means using market knowledge and a virtual corporation to exploit profitable opportunities in a volatile market place.

A market-responsive or agile supply chain is required for innovative products since the uncertain market demand increases the risk of shortages and excess supplies. While high profit margins and the importance of early sales in establishing market share for new product increase the cost of shortages, short life cycles increase the risk of obsolescence, hence the cost of excess supplies. Market mediation costs, therefore dominate physical costs for such products. (Herer, et al, 2002).

Agility in concept comprises two main factors.: (1) Responding to change (anticipated or unexpected) in proper ways and due time. (2) Exploiting changes and taking advantage of them as opportunities. (H. Sharix, Z. Zhang, 1999)

The driver of agility is change. Agility drivers consist of customer requirement competition criteria market technological innovation. (C.T. Lin et al, 2006).

#### **Business Strategy**

Business Strategy can be described as companies face the business environment (Grant Robert, 2002). The choice of the strategy adopted by the company is the company ability to adapt to the business environment.

#### Sustainability Strategy

The superiority of Indonesia coffee does not follow with the coffee processing industry development to encourage the sustainability of the coffee industry in Indonesia. The development of sustainable coffee plantation must be able reserves to receiving complain welfare of the farmers'. Welfare improvement can be achieved by meeting the needs of food, clothing, housing, transportation, health and education through the use of efficient resources.

Optimal utilization of natural resources owned will help the sustainability of an industry that deal directly with nature. The use of the minimum resources to obtain maximum results will support the sustainability of the coffee industry.

Based on the observation in coffee farms managed by the farmer groups in the Mountain Puntang, West Java. Sustainability industry coffee Indonesia is determined by the ability of the first farmers' coffee processing the results of the coffee farms to meet the needs of farmers and their families, if not, coffee farms, land will be reduced because farmers who failed to meet the needs of life will sell his coffee farms and the impact on the amount of coffee farms land decreases. Second, the support of the government by allowing the government land to become coffee farms, so that the land increased coffee farms. Third, the ability to process the coffee products become a product that has competed in the market will support the sustainability of the industry. Fourth, the use of technology in the market products. Fifth, farmers and coffee producers following the exhibition in the land and in the international market. Sixth, in cooperation with the perpetrators of the coffee industry to shorten the supply chain coffee to end users.

In the West Java provincial government provides an opportunity for farmers to plant trees coffee in Perhutani land. The cooperation program of the government and the farmers using the system for the results of the 15% to 20% to Perhutani as owner of land that made the area of coffee farms and 85% or 80% from the harvest will become the property of the farmer management of the vineyard. Land on the slopes of Mount Puntang originally started to damaged and then planted tree coffee with the intent to reforest the area. With natural factor, tree seeds, coffee, organic, plant, harvest coffee cherries right mature and processing right to roasted coffee ready to drink to increase the welfare of the mountain Puntang farmers and family.

The concept of sustainable development represents an attempt to reconcile or establish a balance among economic, social, and environmental factors.

## RESULTS





### Impact of Lean Supply Chain and Agile Supply Chain to business strategy

Lean supply chain will work optimally when the quantity of coffee request known with certainty and routine orders from the customer is already scheduled. Agile supply chain Responding to the market demand or the subscriber that the amount of coffee product request is not fixed or fluctuate. Both the strategic supply chain requires a different business strategy.

Supply chain agility is a crucial factor at the strategic level. The company needs to realize that agility is

important for operational continuity and competitiveness. To achieve the competitive edge in the market especially the global market, company with suppliers (are expected to farmers not gatherers or broker) and the customer running the operation of the lean and work together to achieve the level of agility outside the reach of the normal capabilities.

## Impact of business strategy to Sustainability Strategy

The ecological challenges faced by all the organization require the company to formulate a strategy that can preserve and maintain natural resources and pollution control. (Fred R. David, 2004). Manage while regard the environment requires understanding how the international trade, competition, and global resources relate to one another. Product Design, manufacturing and waste management that supports the sustainability of an industry which is related to the nature will increase the good relationship with customers and executive in the industry.

Companies identify aspects of business activities that have a significant impact on sustainability issues (as labor practices, energy consumption and the diversity of labor), then formulate a strategy of sustainability that includes the company, values and purposes of commitment. Determine a strategy of sustainability is complex, especially for companies that operate globally. Functional business strategy oriented toward the functions of the selected management activities and assigned by the company to support the sustainability of the company.

#### Points of Observation

In observation researcher in the area of the coffee farms, Ciwidey, Pengalengan and Lembang in West Java found some issue are:

1. Processing capability from coffee farms, care frequented coffee trees to harvest the fruit of the coffee, not all coffee farmers know and do according to the standard coffee processing for export. This situation is triggered by some factor that is limited knowledge smallholders, limited funding maintenance, awareness will avoid non-value added if not learned red, because there will be the sort activities to separate the coffee fruit mature and red with the fruit of the coffee is still not mature.

2. Almost all the farmers directly sell in the form of cheery coffee to broker. Coffee farmers in three areas observation more sold in the form of coffee cherry at the price of Rp6.000 up to Rp8.000 per kg to gatherers.

3. From 38 farmers that has plantation over 10 ha, there are 6 farmers who do the processing from the

coffee from cherry coffee until crumbly parchment skin of coffee to green bean.



simple and less sufficient to have an impact on the result of the product that has many defects. The example on a farmer in Lembang, from the harvest 1000 kg after sort the beginning of the fruit of the cheery coffee can be processed information only about 75 kg. The current situation this will have an impact on the outbreak cost workers' seasonal and thus will suffer loss. The impact on the environment directly is the use of the source of excessive force and not to increase the benefits of farmers and thus financial ability will drop and if forwarded the ability to take care of the coffee trees will be reduced and then resulted in the harvest will be low.

5. Farmers who became the source of this research generally do not have the roasting coffee machine, that can add value added and the selling price of coffee.

6. Not yet empowered coffee farms and coffee processing become tourist activities that will increase the production of the coffee farmers.

The peasant farmers still focus as tenants' coffee farms. Around 85% smallholders make this profession as a marginal work.

## **CONCEPTUAL MODEL**

Based on a study of the previous research, researchers asking research paradigm as follows:

# SUGGESTION FOR THE FUTURE RESEARCH

For further researchers suggested doing research by collecting data and analyzed statistically, because this research is still in the form of research literature to obtain the results of research through data processing to test the hypothesis that proposed in the research model.

#### CONCLUTION

This study aimed

To achieve the competitive edge in the market, especially the global market, the company with the supplier and the customer running the operation of the slim and work together to achieve the level of agility outside the reach of the normal capabilities.

Cooperation between the association of the government, farmers and coffee processing industry will achieve the sustainability of the coffee industry in Indonesia by applying lean supply chain and agile supply chain will achieve a short time supply chain, crops of high-value and the environment will be preserved for a long period of time.

Researchers suggested through this research to maintain the sustainability of the coffee industry in Indonesia is expected to apply the concept of "from crop to cup" to cut off the supply chain for shortening the supply chain coffee industry.

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# SOCIAL RESILIENCE FOR SUSTAINABLE DEVELOPMENT: A CASE STUDY OF BATAM, INDONESIA

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#### Abstract

Sustainable economic development has to be guaranteed by good governance for its strive towards prosperity. However, economic development is not a guarantee for prosperity, since limits of physical environment do affect carrying capacity and supporting capacity. Even though technological advancement has been instrumental to reinforce sustainability, social resilience should be taken into account in development planning. Promotion of social inclusion is the shift of development paradigm to ensure social resilience. This condition leads to the ability of social environment managing environmental constraints both natural and man-made conditions. Positive peace can only be achieved by ensuring holistic development to maintain social stability and society welfare within the framework of transformative development in which sustainable development planning has to be stressed more on building up cohesive local culture, balanced eco-politic, and spread of social resilience.

Keywords: social resilience, sustainable development

# INTRODUCTION

This paper was based on research that tries to portray relationship between social resilience and sustainable development that might be best represent Indonesian environment both as a developing country and an archipelagic region. environment and development Issues on themselves usually have their stresses on sustainability. Nevertheless, environmental sustainability and sustainable development often perceived as two sides of a coin - as two separate entities with different interests. In a developing country such as Indonesia, the efforts to connect those two entities for the sake of welfare and sustainable development face a lot of hindrance in the recent years. With many development interests, those combined efforts lead to a need of strong political will to make an interconnection between those two entities. The studies have shown that the likability of interconnection between environmental sustainability and sustainable development lays on its human ecology. Hence, eco-politics in the form of development of human ecology study started to make its root (Soerjani, 1987).

Bousquet, et al. (2016) has stated that resilience is built on dynamic perspective: Development resilience started with a static view looking at through attributes (endowment, resilience capital, capacity) but is moving toward a dynamic approach. In this paper, social resilience is a concept built upon dynamic social condition. In an open society, resilience is a condition of how society can face and strive during dynamic environmental changes - both natural environment and social environment. Hence, referring to that, social resilience is a condition in which society is able to maintain its

stable conditions strategically against local, regional, global dynamics that full of volatility, uncertainty, complexity, and ambiguity. On the other hand, sustainable development commonly based on the classic definition from *Our Common Future* (Brundtland Commission, 1987) - in which sustainable development is perceived as development that meets the needs of the presents without compromising the ability of future generations to meet their own needs. This definition has been developed into 17 Sustainable Development Goals (SDGs) of United Nations (2015) to make the world as a better living place, with people, planet peace, partnership, and prosperity action plans.

Therefore, on those arguments, an area can be assumed in sustainable state, when and only if it can provide means of livelihood, welfare and wellbeing for the population within it. This paper tries to argue how social resilience is a very important aspect that affecting the level of development, as well as sustainable development.

### **Background of Research**

This paper is based on findings of social resilience for sustainable development research in Batam – an area that has been chosen in order to represent Indonesia in a miniature way. This choice has been made based on similarity and degree of scale that makes Batam can represent Indonesian condition as an entity. It refers to geographical condition as archipelago with various unique physical environment as well as its socio-graphical conditions that shows diversity and multiculturalism in its society. Since, this paper is rooted on environmental study point of view, in which the study is focus holistically on the living things - including humans - in both their biological and physical environment, hence any environment research should give coverage on physical and social environment conditions.

Prior to understand Batam, one should have some background knowledge of Indonesia. Physical environment of Indonesia generally speaking relates to its unique geographical aspect. This geographical condition covers 13,466 islands (Pushidrosal, 2016), in which only about 6,000 islands are habited islands, within which the population is centred on only 5 islands. Those islands make up to total land covers of less than 1,9 million km<sup>2</sup> lands from 3.273.810km<sup>2</sup> total area of Indonesia (Pushidrosal, 2016). This condition relates to limits of land to be cultivated yet opportunities to move towards off shore development. Nevertheless, this physical condition affects carrying capacity and supporting capacity of the environment, hence the social environment side that covers socio-graphical aspects of Indonesia specifically in facing the 12% increasing of population annually (BPS, 2013). Furthermore, with a population of 255 million people, population management in Indonesia becomes crucial, especially in increasing sufficient skills and education to overcome environmental problems and to create better supporting capacity for the environment to increase welfare.

In short, limits on physical and social environmental have been acknowledged as seeds to create potential problems, both security problems as well as development problem in general. Many argues that those potential problems can be arisen mainly due to previous development that are not paying attention to characteristics of archipelagic condition and the existence of climate changes, and at the same time did not pay attention on dynamics change of society excluding efforts to cater the needs of increasing population. Based on this condition, clean water, as well as waste and sanitation management is continuously in demand along with other basic needs such as food. On the other hand, there is also problem in social environment. Population management is in constant need in order to give Indonesian

population necessary skills and education to overcome environmental problems and creating better supporting capacity of the environment. In Indonesia, its huge population is still not enough supported by high skills and education, since only 27% of the population has tertiary education and nearly 6% unemployment rate, even though literacy rate has reached 97% (BPS, 2013).

The huge population with generally low level of skills and education has increased limits of physical and social environment. Especially, like many other Asian countries (Dressel and Wesley, 2014), Indonesia has also attempted to reconcile state strength and internal diversity by constructing a triangular balance between identity construction, hegemonic governance, economic development. Sustainable and development targeted to People, Planet. Prosperity, Peace, and Partnership as in accordance to Sustainable Development Goals (UN, 2015) recently triggered the needs of National Development Plan System (Bappenas, 2016) in order to overcome the limits of physical and social environment, then transforming those sustainability limitations to with proper adaptation and mitigation steps, with technology advancement and economic development (Ghorai and Sen, 2015) as well as social development (Carvalho, Alves, Azeiteiro and Strategically, Meira-Cartea, 2012). as environment is broadly defined as a unity of all things, space, power, state, and living creatures, including human beings and their behaviours, that affecting continuity of lives and welfare of human beings and other living creatures (Indonesia's Environmental Law 2014); as well as environment has its scope of coverage upon all room and place of Indonesia (due to Wawasan Nusantara-Archipelago insight as a result of United Nations Convention on the Law of the Sea) of which the state can implements its sovereignty, sovereign rights and jurisdiction, any study of eco-politics in Indonesia cannot be

separated from its Archipelago insight. In this ideal, all elements of Indonesian's natural and social environment have come into a whole complete unit, and have continuously interplayed to create and maintain balance, stability, and productivity of the environment.

# Background of Batam as Locus of Research

Specifically the physical Environment of Batam, based on its geographical aspects, limits of land that affect carrying capacity have been definite. As a part of Riau Islands Province, Batam area (Batam Municipality) consists of 308 small islands and islets. The total land covers less than 715 km<sup>2</sup> lands out of from 1,595km<sup>2</sup> total area. Bridges to give easy access connect the three biggest islands -Batam, Rempang and Galang In reference to these geographical islands. aspects, the ideal development should pay attention to characteristics of its archipelagic condition, as well as the existence of climate changes, besides catering the needs of increasing population. The basic needs such as food, clean water, sanitation, as well as waste management have become the biggest problem yet to tackle.

Social Environment of Batam currently should deal with population of 1.5 million people or 1,441 people/km2. When it first developed in 1970s, Batam was intended for 750.000 people who will manage and operate industrial infrastructures. Nowadays, the population can be seen as 82.8% urban population and 65% internal migration. The local population increases by 35% birth rate as well as incoming tourist of 121.176 person/month with 8.81% increasing rate (BPS Kota Batam, 2014).

Batam area that has known as industrial area (including Free Trade Zone and Special Economic Zone) attracted a lot of internal migration. In this case social development should be targeted into education and skills needed in population to overcome limits of physical and social environment as well as to transform those limitations to sustainability. Even though Batam's economic development of 5.8% - a high rate in the current Indonesian economic condition, it is not enough to ensure sustainability, especially with heavy cost in border management - specifically as show case of Indonesia – referring to Batam's location in the border of Singapore and Indonesia.

## Originality and Value

Social resilience acts as important determinant in sustainable development. There is still a gap in development planning that not paying more attention towards social aspects that might give way for transformation in development planning to ensure sustainability.

### Design, Methodology and Approach

This paper is generated from multi-stage researches that gather quantitative data in the form of social environment variables in sociocultural and political area, as well as qualitative data is the paradigm of sustainable development for small islands region in the border area. The stratified sampling is used to get sociodemographic pictures, beside focus group discussion and depth-interviews with various stakeholders to get development paradigm pictures. The limitation of this research is the limited comparison available to other border area. This limitation invites the need of further research on other area with similar subject matter to test the model of social resilience for sustainable development.

### Social Resilience for Sustainable Development

All countries have their own strategic development goals as well as strategic development area in term of location or specific field. These specific strategic developments should be reviewed to comply with existing environmental dynamics. In developing countries in which population and urban development have become crucial issues, ecopolitics insight has been introduced to provide new insights into urban problems as well as giving up new solutions to refocus urban with all problems as centre-based its eco-politics activities (Swyngedow, 2009). However, having new insights and solutions might still not overcome unsustainable matters and limits of the environment (Blühdorn and Welsh, 2007) and it gives the call to mapping the reality in both physical and social environments. The needs of national development plan system then arise in order to overcome the limits of physical and social environment. to transform those limitations into sustainability, and to ensure social justice, public welfare, and public well being. Integrated social system to overcome complexity faced in capital and social relationship in certain area or region can help to make the development become a successful one (Wirutomo, 2012).

### Social Resilience

Social resilience as a part of social system becomes a very important component in the development. Communities in border area play important part in development as well as in strategic and security issues. On the other hand, people's resilience in the border is crucial both in economic development and national security development. In the case of Batam, since the island is located next to Singapore - a more developed country – then in certain degree, it has to be adapted to the development of the neighbouring area. The research findings show that sustainable economic development has to be guaranteed by good governance for its strive towards prosperity. Yet, economic development is not a guarantee for prosperity, since limits of physical environment affect carrying capacity capacity. and supporting Even though technological advancement has been

instrumental to reinforce sustainability, social resilience should be taken into account in development planning.

# Sustainable Development

Sustainable development is generally focused on economic environment supported by natural environment and social environment. In this case, eco-efficiency in sustainable development of the relationship between economic output (products, services and activities) as well as impact of environmental production, consumption, and disposal becomes important (Van de Wewterlo, 2011). The failure of economic development often becomes the main root causes of conflict (Collier, Elliott, Hegre, Hoeffler, Reynal-Querol, and Sambanis, 2003). On the other hand, inability to manage change in the environment, both because of natural environmental factors such as global warming or social environmental factors such as poor governance is often the starting point of the conflict (Fröhlich and Gioli, 2015). Therefore, although Indonesia has economic advantages thanks to the diversity of natural resources and a large number of young population, but the limitations vulnerabilities and existing environment makes national security cannot be limited to mere economic development.

Many environment limitations in Batam have been overcome by advanced in technology. Development in economic and infrastructure sectors has made up exploitation of natural resources towards people's welfare and wellbeing. Social environment limits have been overcome using population management of immigration as well as internal migration in order to get the skills needed in Batam islands. However, the waves of migration do need geographical sensitivity and geographical wisdom. This sensitivity and wisdom that usually being passed between generation in the population now have to be transferred within the

waves of internal migration, in which crossexperiences cultural do the magic in strengthening social resilience. In this case, the geographical sensitivity and geographical wisdom also being forced within panarchy or adaptive cycle in social ecology of Batam to people's inclusiveness maintain in area development.

Only by inclusiveness, economic development can perform in sustainable development as it is also guaranteed by good governance for its strive towards prosperity. Public inclusiveness then becomes an important determinant in social environment in order to guarantee environmental security. In this case, environmental security is the condition of which the environment – including social environment- is resilient as discussed in Brauch, et al. (2008).

Even though, building environmental sustainability is the intention of sustainable development efforts, the existence of political dynamics that typical to developing countries is undeniable - it is full of contestation between environmental sustainability and sustainable development. Development is still generally perceived as the ways to change environment in order to build economic factors within the scope of social welfare improvement. Thus, not surprisingly, environmental issues have underlined many conflicts - between men and nature or between society groups, especially in competing for economic advantages.

# Social Resilience for Sustainable Development

Social environment in Indonesia is still dominated by "demographic bonus" issue (it is due to increase birth rate in end of 1990s that will create demographic bonus in 2020-2030). In that case, Salim (2015) stressed the importance of human resources – especially the youths – development. Otherwise, bonus demography will get backwards and jeopardize development efforts so far. In addition to that, increasing total productivity factor is also considered as pivot point to avoid middle-income trap in 2040. Batam is not only facing the demographic bonus as mentioned but also the condition resulted from internal migration and tourism industry. In this case, control over population management becomes crucial.

It has been argued that increasing demographic competitiveness will boost social resilience. It will compliment the infrastructure development as well. Hence, technological advancements should been able to reinforce sustainability and overcome environmental limitations, but social resilience should be taken into account in development planning to give a stronger boost.

As an archipelagic area, border management tends to be different from the land border management, and there is a need of technological advancements in managing border. In this case, communities in border area play important part in development as well as in strategic and security issues. People's resilience in the border is crucial both in economic development and national security development. However, public inclusion in development is still very low. It is not far different from Social Progress Index (Social Progress Imperative, 2016) that showed that the rate of community safety net, tolerance for immigrants, and religious tolerance are very low in Indonesia, beside other issues such as mortality rate, school enrolments (including women's access to higher education), access to information, water and sanitation (piped clean water and household waste management), environmental quality (air pollution and waste management). The main problems are due to current development disregarding planning that archipelagic conditions, as well as variety geographical and demographical condition. In addition to that, border location should also be taken into consideration. In this case, different localities create the significant local needs of social resilience. The condition is somehow different for most frontline small islands where distance from health and education infrastructure are still a problem in addition to limited availability of sea transport facilities, even though various facilities and infrastructure development.

# Model Social Resilience for Sustainable Development

In the context of environment, disturbance towards the environment in Indonesia - with its highly diverse geo-ecological and social environment - can be broadly described. Critics on Indonesian development policy are mainly due to intensification of uniformity of the situation. Specificities in natural environment and social environment are often being ignored, and have caused problems that spread everywhere. The debate on this issue is going to continue based on dynamics of Indonesian selection in shaping its future as country and nation. In this case, modernization in all fields as well as industrialization of many aspects of development, as well as managing a very large number of people are dynamics that have to be faced and cannot be ignored - as those issues can be threats as well as chances if they can be well-managed. In this case, promotion of social inclusion is the shift of development paradigm to ensure social resilience. This condition leads to the ability of social environment managing environmental constraints both natural and manmade conditions.

Limitations and vulnerabilities either as a result of natural conditions due to the influence of climate change, urbanization in coastal areas, pollutions or other issues in environmental management, social conditions related to uneven development, and dynamic strategic environment both locally and globally is a necessity that must be faced and require any form of separate resilience (Pelling and Blackburn, 2012). In addition to that, in Batam, the vulnerability of the social environment as a result of a large number of young people who are less skilled and/or education or inadequate training can have an impact on the development of related global competition. This sort of thing will increasingly feel the impact especially since the entry into force of the ASEAN Economic Community by the end of 2015 (The ASEAN Secretariat and the United Nations Conference on Trade and Development, 2015). The dynamics of this kind triggers the need for the availability of a sustainable development model that combines aspects of environmental, social, and economic into a development strategy to ensure the environmental integrity and safety, capability, welfare, and quality of life of the present generation and future generations.

A number of previous studies been done related to sustainability in urban zones in coastal areas, but little research has been done regarding the urban zone of the islands. From the limited amount of research that, in general, the existing research revolves around the increasing urbanization associated with efforts to increase public welfare with indicators of the Human Development Index (HDI) or better known as the Human Development Index (HDI). Human Development Index (United Nations Development Programme, 2015) is а comparative measure of life expectancy that average achievement of a country on a healthy life and longevity as well as measured by life expectancy at birth; the level of literacy and education in adults in combination with primary education, secondary education and higher education; as well as a decent standard of living as measured by the natural logarithm of gross domestic product per capita in purchasing power parity. So far, the index is also used to classify the level of progress of a country as well as measure the impact of economic policies on quality of life.

In the model of social resilience for sustainable development, sustainable development is physical strategic result of or natural environment, social environment and constructed environment based on economic development. By ensuring sustainable development then carrying capacity and supporting capacity can be maintained well. In constructed environment, technological advancement plays instrumental role in reinforcing sustainability. However, technological advancements and economic development in constructed environment should be manageable by social environment and its elements. It is where social resilience plays its important part, to boost and ensure sustainable development. However, in order to get to this ideal, transformation in development is needed toward more into social aspects. The most important thing to note by this model is the interdependencies of social, economic and environment aspects in sustainable development. One part cannot stand alone, and any transformation can affect the others delicately.



Figure 1. Model of Social Resilience for Sustainable Development

The current debate on sustainable development planning is on national development strategy planning, and then the local strategy planning. The increasing development challenges needs evaluation on achieved results and deviations. The politics of sustainable development planning in Indonesia is based on the Preamble of 1945 Constitution and Pancasila as state ideology. Salim (2015) argued on the needs of democracy and critical local minimum threshold that stressed on good governance and local representatives in nation-building development. In this case, job-creating development policy, increasing productivity to raise household income, increasing value added development to raise standard of living, as well as human resource development can be measured on target. This kind of sustainable development planning should be focused on priority development in rural area and area with poor infrastructure especially in border area, while it is also targeted to informal sector as well as women. Sustainable development planning is

also believed as the key of sustainable peace since it consistently tries to minimize negative peace condition.

# Transformative Development within Social Development Paradigm

Transformative development within social development paradigm is effort to seek harmony within the scope of environmental sustainability, economic development by including carrying and supporting capacities of the environment. Particularly in Indonesia, or in any other places, in which decentralization plays important role in development, local autonomy policies should be used in coordinated way in development system to avoid crisis, whether in the form of conflict with nature - disasters that resulted by damage in environment, or social conflicts that have occurred because of struggle for influence and power in social environment. It is the way to say no towards uniformity in development and the only way various specific local conditions can be included in the development, either physical

condition or social condition, or any particular climate, topography, land characteristics, even languages and culture conditions that might be occurred.

Transformative development has in a way led to movements towards environmental sustainability development that covers natural environment and social environment. The environmental movements also nurture close ties not only between human beings in societies, but also between human beings and their environment the place where they live. In this case, sustainable development is should follow interlinked environment principles such as harmony, sustainability, diversity, interaction, and interdependence. It furthermore requires proper development management, in which environmental management becomes more important. If environmental principles are marred, conflicts due to environmental imbalance cannot be avoided. The notion of transformative development is more towards diversity, creativity and freedom in managing environment in accordance with existing local contents, either it is local wisdoms or local experiences.

Development that was usually only focused on economic aspect has begun to spread its wings towards social areas. Instead of merely put its stress on economic, infrastructure, and exploitation of natural resources for welfare, the shift of development to cover social side has become prominent. Within the scope of development, issues such as defence and security, sustainable development, welfare, and wellbeing have become the cores of discussion.

Transformative development paradigm led to social ecological resilience should also cover internal migration. Based on high rate of internal migration within the country, especially along border area, there transformation in education and knowledge in order to increase social

resilience can be expected. Simandan (2016) stressed on the needs of geographical sensitivity geographical wisdom. In this case, and geographical dislocations will transform the knowledge of cross-cultural experiences and strengthening social resilience. In addition to that, adaptive cycle of social resilience seems to increase potential and connectedness of social ecological resilience (Gunderson and Holling, 2002). In many cases, exploitation has been led to conservation, while conserved environment than released and reorganization to provide environmental sustainability of services (Bousquet, et al., 2016).

# Transformative Development towards Positive Peace

The research findings show that transformative development shows a journey towards "positive peace" condition. This kind of development offers holistic development to maintain social stability and society welfare, and positive peace can only be achieved by ensuring holistic Particularly development. in Batam. transformative development can be used to maintain social stability and society welfare within the framework of development. In this case, transformative development blend in the planning that is being stressed more on cohesive local culture to create balanced economic-social development, and being guarded by goodwill of the government.

Soerjani (1987) mentioned that while economic power is considered important to boost sustainable development, and has become the main indicator of development, sometime at the cost of environment degradation due to unwise anthropocentric behaviours, the social environment development should counter this notion. As this ecology behaviour has been spread up, it will at the end building up social resilience. This is when strategic transformative development should use strategies that can be configured within vision, understanding, clarity, and agility framework. This framework will give ways to measurement and evaluation in the development plan. In transformative development, the interdependencies between physical environment, social environment and constructed environment are the key to make sustainable development, in order to provide adaptable and panarchy condition. This condition cannot be separated from environmental impacts both directly and indirectly. According to Salim (2015), it is to give a human face in policy making and to development. Hence, development needs to comprise economic, social, and environment all together in simultaneous and collaborative manners. This is related to the fact that there is no real peace without good association with ecology, in which the core is respect towards nature and human being.

In the context of state, sustainable peace is the aim of environmental security. Without peace, development that leads to improvement in welfare cannot be achieved. In this case, environmental security is the condition of which the environment - including social environmentis resilient, i.e. free of environmental damage, degradation or conflicts. Since human being is the core of discussion, environment security is not only limited to traditional notions of security that related to political or related activities that involved military defence, but also to economic, social, and environment issues. If we link this discussion with issue of sovereignty, then problems of identity, ability to survive, and sustainability will become important as a result of dynamics resulted by globalization, global environmental change, international financial crisis, climate change or man-made disasters that can be connected to various activities undertaken in the context of local, regional, or global.

In practice, activities in knitting sustainable peace for sustainable future have problems in synergy to build culture of peace - in which human beings can overcome social discrimination and social justice. In Indonesia, crucial issues in building culture of peace is the of peace education in educational lack institutions or in local communities as a part of national, regional and global context. Hence, we can say that there is still no positive peace yet in Indonesia specifically in border area, with the existences of uneven social, economic and political justice as well as insufficient respect for culture and norms prevailing in society, including lacking citizen participation as the core of development itself.

The importance of sustainable development for sustainable peace has been acknowledged in Indonesia in general, and Batam in particular. There is increasing consideration towards environmental security discourse and association of peace condition and living environment in general that mainly to maintain harmonious relationship. With high cultural diversity yet interlinked cultures of ethnic groups, the relationship between men and nature, and between men and society become more important as the way of living as well as the roots of ecological peace.

# CONCLUSION

Good governance in development has to be guaranteed for efforts to prosperity. Economic development should go hand-in-hand with social development to ensure that technology applied can overcome nature's limits of physical environment that affect environment's carrying capacity and supporting capacity. It can be assumed that social resilience should be taken into account in development planning. It is to ensure that social environment should be able to manage environmental constraints both natural and man-made conditions by inducing social inclusion and transformative development paradigm to ensure social resilience. It can be concluded that social resilience is a very important aspect that affecting the level of development, as well as sustainable development.

Positive peace can only be achieved by ensuring holistic development to maintain social stability and society welfare. In this case, cohesive local culture, stable eco-politic, and build-up spread of social resilience are the components of transformative development goals.

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# ROLE OF CASSAVA FOR RURAL HOUSEHOLD'S ECONOMY IN SOUTH KALIMANTAN

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**Abstract:** Cassava has a prospect to be developed in marginal land of South Kalimantan. Farmers still use local variety with simple production technique. They cultivate cassava as an intercropping crop of oil palm or rubber plants. With 'surjan' system, cassava production was 4-5 tonnes/ha. It has a prospect to be increased with the use of superior variety and improved production technique. Study aims to determine the role of cassava for rural household's economy. Data obtained from study literatures (desk study) and survey then be analyzed descriptively quantitative and qualitative. The use of local variety with simple production technique resulted profit IDR 13 million/ha with B/C ratio 1.8. Cassava farming was contributed 18.18% to household's total income. In small amount, businness on cassava cuttings and cassava-based traditional food products processing has added income for some households. There are some homescale cassava-based agroindustries in South Kalimantan for instance crackers, chips, and modified cassava flour. Eventhough cassava farming's contribution to household total income is categorized as low contribution value, its role for household's economy is still important particularly when it is developed into cassava processing agroindustries in centers of cassava production due to the agroindustries provide high added value, high profit, efficient, and feasibility to be done.

Keywords: Cassava, Rural Community, Economy, Agroindustry, South Kalimantan

#### Introduction

Along with the increase of population, livestock population, and the development of primary and secondary agroindustries in the future, demand of various tuber crops particularly cassava and sweet potato as raw materials of bioindustries increase up to 30 - 35% a year (Indonesia Directorate General of Food Crops, 2012). In 2025, domestic demand of cassava is predicted will increase up to 30 million tonnes fresh cassava, therefore it needs production increase around 27% per year, but on the other hand cassava planting areas decrease 0,5% per year (Suryana, 2006). Indonesia can export fresh cassava and some products of cassava (flour, shredded, and pellets), but at the same time still import the same and other products of cassava, and even since 2010 Indonesia became a net importer country of cassava (Simatupang, 2012). This condition should be responsed with cassava production improvement through intentification as well as extentification.

A lack of adequate arable land induced the extending cassava planting areas to marginal land such as tidal land and acid dry land. Tidal land is potential for cassava development yet it still faces several inhibiting factors in form of physico-chemical properties namely soil waterlogging, soil physical condition, high soil acidity, toxic substances (Al, Fe, and H<sub>2</sub>S) present, salt water intrution, and low soil fertility as well as biological property such as weeds (Sarwani, et al., 1994; Adimihardja et al.1998; Mubekti, 2010). The lack condition of tidal land however cassava productivity has a prospect to be increased (Notohadiprawiro and Maas, 2006) with improvement on production techniques physically as well as chemically due to cassava has an acidity resistent characteristic (Howeler, 2002).

In South Kalimantan, cassava planting areas in tidal land are mainly in C and D type. Mostly farmers use 'surjan' system where they make 'balur' as the upper side of land and planting cassava there, while the lower side is planted with local paddy. 'Surjan' system as can be seen in Figure 1. Period of cassava planting in South Kalimantan is October to August. Farmers use local varieties for instance Kristal, Papah Merah, Mentik, Tahunan, Bali, and Merado. All varieties have low HCN content (14-18%) with high total sugar content (30-37%) therefore they are suitable for consumption. With 'surjan' system, cassava production was 4-5 tonnes per hectare (Saleh, et al., 2011). The production was very low compared to the average national

casssava production was 20.2 tonnes per hectare (Prasetiaswati and Elisabeth, 2016). Beside 'surjan' system (intercropping with local paddy), farmers also cultivate cassava as an intercropping crop of young oil palm and rubber plants (1-3 years old).



Figure 1 'Surjan' system of cassava planting (Source: Yanti, 2015)

The largest area of tidal land in South Kalimantan is in Barito Koala Regency (Saleh, et al., 2011). The regency is the biggest paddy producer in South Kalimantan and contributes around 16.23 percents of South Kalimantan's paddy demand. Almost all subregency in Barito Koala are centrals of paddy. In 2009, data of other food crops production in Barito Koala were maize 89 tonnes, groundnut 38 tonnes, and cassava 4,555 tonnes.

Analysis on land suitability resulted that mostly land in Barito Koala categorized as marginal suitable for food crops cultivation i.e. 198,012 hectares for paddy and 156,344 ha for cassava (Mubekti, 2010); while for horticultures, citrus, rambutan tree and pineapple as well as plantation crops of palm oil, coconut, and rubber were categorized as rather suitable in Barito Koala. Some areas in Barito Koala produced cassava are Wanaraya (21.19%), Barambai (21.19%), Mekarsari (14.34%), Rantau Badauh (14.03%), Anjir Pasar (7.79%), Belawang (7.16%), Mandastana (6.54%), Marabahan (4.04%), Alalak (3.12%), Tamban (0.31%) and Tabunganen (0,31%) [http://bappeda.baritokualakab.go.id/index.php/data/s da/pertanian]. The use of superior varieties with high yield potency, combined with good cropping technique as well as effective and efficient pest and disease controlling technique can improve cassava production. For instance, in 2015, Iletri has introduced CMM 2048-6 strain and Ketan Jabung variety with high yield potency. Based on sensory characteristics, farmers like Ketan Jabung variety, but due to a custom factor where they used to use local variety for a long time, farmers still most prefer to the local one. Farmers mentioned that Ketan Jabung could be a second choice after the local variety in consideration to its high productivity and the shorter age in harvesting compared to local variety (Sudaryono et al., 2015). In their traditional cropping technique, farmers did not use inorganic fertilizer for cassava, eventhough some of them still use 200 kgs Phonska and 200 kgs SP36 per hectare. The combination of the use of recommendation fertilizer application (200 kgs Urea, 100 kgs SP36, and 100 kgs KCl per hectare) and superior strain of CMM 2048-6 resulted higher production up to 30-35 tonnes/ha. With total profit was IDR 32-40 millions per hectar and B/C ratio was 2.6-3.3, cassava farming was feasible to be done.

The study aims to determine the role of cassava for rural household's economy in South, particularly in Barito Koala Regency.

#### Methodology

Location of study was in Barito Koala Regency in South Kalimantan. Study was conducted in 2016.. Data used were secondary data from previous research and related literatures as well as from primary data (interviews result). Research method used were desk study and survey. Survey used semi-structured interviews method using interviews guidance and involving 28 cassava farmers were selected by simple random method. The survey was used for analysis of total income distribution.

Some data obtained were: (1) characteristics of cassava farmers and cassava farming in Barito Koala; (2) LQ analysis for cassava commodity; (3) economic feasibility of cassava farming (4) contribution of cassava farming to households' total income; (5) Lorenz curve and Gini coefficient for distribution of household total income; and (6) homescale cassavabased agroindustries in Barito Koala. Data obtained then will be analyzed descriptively quantitative and qualitative.

Analysis of superior agricultural commodities using Location Quotient (LQ) Analysis (Miller and Wright, 1991 in Darmawansyah, 2003)

 $LQ = \frac{pi/pt}{pi/Pt}$ , where:

pi = GDRP of commodity i in regency level
pt = GDRP pf food crops commodities in regency level
Pi = GDRP of commodity i in province level
Pt = GDRP of food crops commodities in province level

Indicator:

- LQ < 1 = bases sector (commodity has comparative advantage in region)
- LQ = 1 atau LQ < 1 = non-bases sector

Analysis of total income distribution (using Lorenz curve and Gini coefficient)

Model of Gini coefficient analysis: (Widodo, 1990 in Suharyanto et al., 2004)

$$GC = 1 - \sum_{1}^{n} f1(Yi-1+Y1)$$
, where:

GC=Gini coefficient (0 < GC < 1)Yi = cumulative proportion of farmer's income in class i

Yi-1 = cumulative proportion of farmer's income before class i

f1 = Proportion of number of farmers in class i n = number of class

Criteria of Gini coefficient (World Bank in Hananto, 1980):

• 0.50 - 0.70 = high inequality

• 0.36 - 0.49 = medium inequality

• 0.20 - 0.35 =low inequality

# **Result and Discussion**

# Characterictics of cassava farmers and cassava farming in Barito Koala Regency

Table 1 and 2 present characteristics of cassava farmers and cassava farming in Barito Koala Regency. In average, only one fifth land owned by farmers was used for cassava farming (Table 2). Farmers implement intercropping system for their cassava farming. For fresh cassava marketing, farmers used to sell cassava to middlemen than directly to consumers due to mostly cassava from Barito Koala was distributed to supply cassava-based home industry demand for instance crackers and chips homeindustries.

Table 1 General characteristics of cassava farmers in Barito Koala Regency (Prasetiaswati and Elisabeth, 2016; Elisabeth and Prasetiaswati, 2016)

Description	
Age (average)	45.6 years old
Education level (average)	7.7 vears
Side job	Animal breeders, labours, enterpreneurs, small traders
Number of family member (average)	3,6 people
Cassava farming experience (average)	13,2 years

Description	
Average of land ownership	2.05 ha
Type of land	plantation (45.0%), paddy field (38.33%), moor (1.67%), yard (15.00%)
Status of land tenure	Own by themselves
Average of cassava harvested area	0.37 ha
Average of cassava planting area	0.41 ha
<ul> <li>Average of intercropping area for <ul> <li>a. Palm oil plants</li> <li>b. Rubber plants</li> <li>c. Others (involving 'surjan' system)</li> </ul> </li> <li>Average of cassava production</li> <li>Average of cassava productivity</li> <li>Fresh cassava selling price</li> </ul>	0.55 ha 0.40 ha 0.69 ha 4.61 tonnes 12.37 tonnes/ha 1,000-2,000 IDR/kg (7-15 cents/kg)
Fresh cassava marketing	
a. Middleman ('tengkulak')	92.59%
b. Consumer	7.41%
Location of selling	
a. Buyer come to the planting area	92.59%
b. Traditional market	7.41%

Table 2 General characteristics of cassava farming in Barito Koala Regency (Prasetiaswati and Elisabeth, 2016; Elisabeth and Prasetiaswati, 2016)

For cassava farming, farmers prefer to use local varieties of Kristal (96.43%) and Papa Merah (3.57%). The need of cassava cuttings was 20,000-24,000 cuttings/ha with 90-95% growth viability. Farmers obtained the cuttings from their previous own production or bought from other farmers with price of IDR 25 per cutting. Farmers prefer to use local varieties in consideration that the local cuttings were easily to get, it should be a custom for them to cultivate the local, and the yield of local was easily to be marketed. Characteristics of local cassava are whitefleshed cassava with brown outer skin and easy to peel. However, the local cassava has some weaknesses in term of low productivity, small-size tubers, and lengthy time for harvesting (11 months) (Prasetiaswati and Elisabeth, 2016).

Moreover, based on study of Prasetiaswati and Elisabeth (2016), some purposes of cassava farming in Barito Koala Regency were for (1) food supply only (9.4%); (2) food and income (33.8%); (3) income only (31.2%); (4) cropping pattern annualy (6.7%); and (5) utilizing vacant land (18.9%). It implies that farmers still depend on cassava farming particularly as an income source.

# L/Q analysis for cassava commodity

Table 3 showed GDRP of cassava commodity and GDRP of food crops in Barito Koala Regency and South Kalimantan from the period of 2009 up to 2012 (4 years). Data in Table 4 then be used to identify superior agricultural commodity with L/Q analysis. Based on LQ analysis for cassava commodity, the value which is less then 1 (Table 4) implied that cassava is categorized as non-bases commodity. Cassava does not have a comparative advantage in Barito Koala Regency.

However, cassava still has a prospect to be developed. Barito Koala which the area mostly is tidal land with acid soil in some considerations that (1) mostly land in Barito Koala are categorized as marginal suitable for food crops cultivation (paddy and cassava) (Mubekti, 2010); (2) in tidal land, cassava productivity can be increased with improvement on production techniques physically and chemically (Notohadiprawiro and Maas, 2006); and cassava has a characteristic resistent to high acidity (Howeler, 2002). Those conditions indicated there is still a chance for cassava productivity improvement as well as cassava farmers' income improvement.

Commodity/ Year	2009	2010	2011	2012
Barito Koala Regency				
Production of cassava (tonnes)	4,551	4,855	4,084	4,187
GDRP of cassava (x IDR 1,000,000)	4,224.83	4,507.04	3,791.30	3,886.92
GDRP of food crops (x IDR 1,000,000)	885,245.51	869,153.80	903,994.95	964,074.87
South Kalimantan				
Productiom of cassava (tonnes)	121,656	76,202	86,504	90,043
GDRP of cassava (x IDR 1,000,000)	112,936.91	70,740.60	80,301.26	83,589.62
GDRP of food crops (x IDR 1,000,000)	5,509,088.21	5,158,338.06	5,652,764.85	5,789,018.98

Table 3 Cassava production and GDRP in South Kalimantan and Barito Koala Regency (Wulan et al., 2014)

Table 4 Identification of superior agricultural commodity with LQ analysis in Barito Koala Regency

Commodity	Period of 2009 up to 2012	
Barito Koala Regency		
Average GDRP of cassava (x IDR 1,000,000)	4,102.523	
Average GDRP of food crops (x IDR 1,000,000)	905,617.283	
South Kalimantan		
Average GDRP of cassava (x IDR 1,000,000)	86,892.098	
Average GDRP of food crops (x IDR 1,000,000)	5,527,302.525	
LQ value	0.29	
Indication	Non-bases commodity	

#### Economic feasibility of cassava farming

Almost 85% component of cassava farming production cost was released for labor cost (Table 5) due to for existing cassava farming in Barito Koala, farmers usually just paid input cost for local cassava cuttings buying purpose and only some farmers also paid for inorganic fertilizers or it can be said that the use of inorganic fertilizers for cassava farming was not a common for farmers in Barito Koala. By this very simple or traditional cassava farming implementation, it was no doubt that the production of cassava is very low. With the production of 13.50 tonnes/ha, the profit IDR 13,078,750, and B/C ratio 1.8 meant that existing cassava farming is feasible to be done, however, compared to improvement technique in cassava farming of Sudaryono et al. (2015) which was combined the use of superior strain and recommendation fertilizer application, the production as well as the profit of existing one was very low. By Sudaryono et al. (2015) research, cassava production could be increased up to 30-35 tonnes/ha, with total profit was IDR 32-40 millions per hectar and B/C ratio was 2.6-3.3.

Table 5 Economic feasibility of cassava farming (per ha) (Prasetiaswati and Elisabeth, 2016 - data processed)

Description	
Input (cuttings, fertilizer)	IDR 1,081,250
Labor (land preparation up to harvesting)	IDR 6,090,000
Production cost	IDR 7,171,250

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Production	13.50 tonnes/ha
Price	1,500 IDR/kg
Revenue	IDR 20,250,000
Profit	IDR 13,078,750
R/C ratio	2.8
B/C ratio	1.8

# Contribution of cassava farming to households' total income in Barito Koala Regency

Based on Milasari et al. (2015), contribution value of cassava farming income was calculated by comparing income from cassava farming with household's total income. There are five categories of contribution value, i.e. (1) very low (< 20%); (2) low (20-40%); (3) medium (41-60%); (4) high (61-80%); and (5) very high (> 80%). With total income from cassava farming, both from on-farm and off-farm sectors was IDR 7,335,900 (Table 6), the contribution of cassava farming to household total income was categorized as

very low (Table 7) implied that farmers can rely their income not only on cassava farming, but also on other farming activities in on-farm sector, as well as on offfarm and non-farm sectors.

Data of poverty line for South Kalimantan Province issued by Indonesia Central Bureau of Statistics (2015) was IDR 352,972/capita/month for rural and IDR 371,793 per capita per month for urban. With total income IDR 11,016,420 per capita per year (Table 7) or IDR 918,035 per month, it was indicated that farmers in Barito Koala Regency actually live in a very good level of welfare.

Table 6 Average household's income from cassava farming (Elisabeth and Prasetiaswati, 2016)

Description	IDR
On-farm sector	7,210,100
(average harvested area = $0.37$ ha per farmer)	
Off-farm sector	
a. Cassava cuttings	74,290
b. Home-industry cassava-based traditional	71,430
food products	
Total	7,335,900

Table 7 Contribution of cassava farming to households' total income (Elisabeth and Prasetiaswati, 2016)

Description	IDR	Percent of contribution
On-farm sector		
a. Cassava farming	7,210,180	18.18
b. Non-cassava farming	6,030,710	15.21
1. Palm oil	1,285,710	
2. Rubber	2,695,000	
3. Others	2,050,000	
c. Livestock	2,292,860	5.78
Off-farm sector	12,568,220	31.69
Non-farm sector	11,557,140	29.14
Total income per farmer's household	39,659,110	per year
Total income per capita	11,016,420	per year

# Lorenz curve and Gini coefficient for distribution of household total income

inequality criteria with coefficient range 0.20 up to 0.35 (World Bank in Hananto, 1980; Todaro 1981 in Mantau, 2011).

Based on Lorenz curve (Fig 2), Gini coefficient obtained was 0.32. The coefficient was involved in low



Figure 2 Lorenz curve of distribution of household total income (Source: Primary data analysis)

Inequility on cassava farmer households income could be happened due to low income from on-farm sector. Mostly farmers in Barito Koala cultivate cassava as an intercropping crop with young plantation tree of palm oil and rubber. Farmers prefer to plant cassava as intercropping crop because it does not need intensive care. Besides, nowadays, the price of palm oil and rubber commodities are falling therefore farmers prefer to find out additional income from outside on-farm sector as labors, traders, entrepeneurs or employees instead of manage their land. For farmers who still focus on on-fam sector, they will shift their preference to horticultures considering that horticultures are more profitable and fast money maker. However, there was an exceptional for farmers with large cassava-planted area. They usually will conduct more intensive cassava cropping pattern so they can obtain higher income from cassava farming.

# Homescale cassava-based agroindustries in Barito Koala Regency

Rukmana (2007) stated that the minimum use of superior varieties and simple cropping techniques in farmers level resulted the low cassava production and productivity. Therefore, the growth of agribusiness in form of cassava processing in centers of cassava production can be taken to increase added value and encourage product diversification as well as price stability. Homescale industries are necessary to provide employment and income distribution (Todaro, 1994).

There are three cassava-based agroindustries are being developed in Barito Koala Regency, namely: (1) cassava crackers in Rantau Badauh; (2) cassava chips in Barambai; and (3) modified cassava flour in Alalak.

#### (1) Cassava crackers home-industry in Rantau Badauh

In Sungai Gampak village of Rantau Badauh, cassava crackers home-industry involved 50 households with the need of cassava was 120 tonnes/month. Fresh cassava was obtained not only from village own production, but also from outside such as from Barambai Regency. Yield of cassava crackers was 30% meant that 1 ton fresh cassava equal to 300 kgs raw crackers.

As a home-industry, cassava crackers producers in sungai Gampak had simple marketing chain, that is raw materials came from cassava farmers in Barambai through cassava traders in village, then the cassava bought by crackers producers and after processed into raw crackers, the product was bought by marketeer from Banjar that furthermore sold the product to retailers from Sampit, Samarinda, Palangkaraya, Batulicin, and Kapuas (outside South Kalimantan).

Based on Elisabeth and Prasetiaswati (2016<sup>b</sup>) study, cassava crackers home-industry in Sungai Gampak provide rather high added value with added value ratio 35.75%, efficient, profitable with rate of profit 75.91%, and has good prospect for development with R/C ratio 1.38. Hubeis in Hermawatie (1998) categorized added value ratio into three criterias i.e. (1) low (< 15%), (2) medium (15-40%), and (3) high (> 40%) therefore cassava crackers home-industry in Sungai Gampak was categorized as medium added value industry.

# (2) Cassava chips home-industry in Barambai

Chips home-industry in Barambai was located in Barambai Kolam Kiri village. Yield of cassava chips was 25-30% and the home-industry produced ready-toeat cassava chips. Fresh cassava was supplied by farmers around village. As small industry, there are some constraints faced by producers such as limitation in marketing reach and a lot of competitors for the product

Cassava chips home-industry provide high added value, efficient, profitable, and has good prospect for development with added value ratio 63.13% (high category), rate of profit 90.79%, and R/C ratio 2.67 (Elisabeth and Prasetiaswati, 2016<sup>b</sup>).

# (3) Modified cassava flour home-industry in Alalak

Modified cassava flour is a modification of traditional cassava flour using microorganisms (lactic acid bacteria). By doing the modification, characteristics of cassava flour will look like characteristics of wheat flour therefore the modified cassava flour can substitute the use of wheat flour in food products processing. Yield of modified cassava flour was 22-33%.

Modified cassava flour home-industry in Alalak was located in Berangas Tengah village. This kind of home-

industry was relatively new in South Kalimantan and there was still a fe competitors. The home-industry was built since 2014 and managed by women farmers group. Fresh cassava was supplied by farmers among Barito Koala Regency. The home-industry not only produced flour, but also food products based on modified cassava flour such as brownies, bakery, snacks and cookies. The production of both flour and food products still depends on order from food producers, catering, and local government office. However, in small capacity, flour, brownies, and snacks have been sold continuously at minimarkets in capital of regency and capital of province.

As two previous cassava-based home-industries, modified cassava flour home-industry provide high added value, efficient, profitable, and has good prospect for development with added value ratio 42.78% (high category), rate of profit 67.53%, and R/C ratio 1.36 (Elisabeth and Prasetiaswati, 2016<sup>b</sup>). However, based on R/C ratio, it can be seen that cassava chips home-industry is more prospective and profitable than crackers and modified cassava flour industries.

# Conclusion

- 1. When marketed in form of fresh tuber, cassava has very low conribution to farmer household's total income (18.18%) and involved in non-bases sector (LQ = 0.2), meant that cassava does not have a comparative advantage in Barito Koala Regency, South Kalimantan although cassava farming is feasible to be done (B/C ratio = 1.8).
- However, cassava still has a prospect to be developed in tidal land with acid soil due to (1) cassava has an acidity resistent characteristic;
   (2) mostly land in Barito Koala are categorized as marginal suitable for food crops (paddy and cassava);
   (3) its productivity can be increased with the improvement of production techniques (use superior varieties and improvement on fertilizer application which is resulted B/C ratio 2.6-3.3); and (4) farmers still depend on cassava farming for income (31.2%) and both for food supply and income (33.8%).
- 3. Due to farmers still prefer cultivate local variety of cassava (custom factor), cassava production in

farmers level is still low. And due to low cassava production and productivity, agribusiness in form of cassava processing in centers of cassava production can be taken to increase cassava added value and encourage product diversification and price stability. Cassava-based food agroindustries developed in Barito Koala are crackers, chips, and modified cassava flour. These agroindustries have prospect to be developed due to they provide high added value, profitable, efficient, and feasible to be done.

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# A PANEL QUANTILE REGRESSION ANALYSIS OF TOURISM EFFECTS ON POVERTY ALLEVIATION

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**Abstract:** Tourism increasingly become a tool to achieve sustainable development, especially in the perspective of poverty alleviation. Indeed, increasing international tourism receipt is probably recognized as the most readily way to reduce poverty. Despite the significant amount of strategy research eager to lessen poverty by adopting tourism, there is little understanding of what effects tourism has on poverty alleviation on a macro level, especially at different poverty levels. This study considered the effect of tourism growth on poverty alleviation in 66 developing countries from 1995 to 2012. The analysis focused on the GDP growth rate, international tourism receipts, international tourism arrivals, absolute poverty headcount ratio, and the application of linear and panel quantile regression techniques to the poverty gap. Unlike the mean effect, the results suggest that 1) tourism has the heterogeneous effect on poverty alleviation in terms of different poverty levels: in the case of very low quantiles of poverty, tourism does not seem to reduce poverty effectively; 2) compared with international tourism receipts, international tourism arrivals show a higher effect on poverty reduction; 3) tourism development contributes more than GDP growth on poverty alleviation; 4) higher tourism growth effects are found on headcount ratio rather than the poverty gap.

Keywords: Tourism; Poverty; Economic Growth; Panel

#### Introduction

As a potential significant source of economic growth in developing countries, tourism has an irreplaceable role in poverty reduction activity (e.g. Croes & Vanegas, 2008; Croes, 2014). All walks of life give strong backing to utilize tourism development to alleviate poverty, especially in countries where abundant nature resources exist to support tourism development in view of a lack of alternative development. According to the recent statistics (UNWTO, 2015), the tourism sector is sustaining the increase and is relatively more important in developing countries, such as Gambia. There, tourism contributes to 33.1% of its total export with its share of global tourism market much larger than its average share of world trade. Many LDCs value tourism as an economic sector (Hawkins and Mann, 2007).

Tourism, as a key driver to eliminate poverty, has been of universality in many LDCs (Croes and

Vanegas, 2008). Mitchell and Ashley (2009) indicated that about 80 per cent of African Poverty Reduction Strategy Papers include a reference to encourage using tourism as a tool or strategy to improve national economic conditions and reduce the level of poverty. However, despite the significant amount of strategy research eager to reduce the poverty ratio by adopting tourism, there is little understanding of what effect tourism has on poverty alleviation on the macro level. Some advocates of tourism deem it is a panacea for overcoming poverty and inequality (e.g. Croes &Vanegas, 2008; Khatiwada and Silva, 2015), while some researchers assert tourism has no effect in alleviating extreme poverty (e.g. Plüss and Backes, 2002, cited in Scheyvens, 2007: 232). However, the question of whether tourism is directly applicable to eliminating poverty itself has been neglected (e.g. Zhao & Ritchie, 2007; Vanegas, Gartner and Senauer, 2015).

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The mixed conclusions of case studies in estimating the impacts of tourism on poverty imply that tourism failed to provide the same effect on poverty alleviation in different developing regions. Ashley (2009) stressed that the Millennium Development Goals (MDGs) were not successful overall in developing countries, having been partly realized in Asia with buoyant growth by alleviating poverty but also having partly failed in numerous social welfareorientated development programs. For instance, in the case of Nicaragua and Costa Rica (Croes, 2014), the poverty ratio could be cut by increasing tourism receipts yet the opposite was found in Thailand (Wattanakuljarus and Coxhead, 2008). Wattanakuljarus and Coxhead (2008) argued that the growing income inequality has become a big issue during the development of tourism. Therefore, in order to clarify the effect of tourism on poverty, answering research questions such as why there should be focus on tourism development, and when tourism has the greatest effect on poverty alleviation is critically important in anti-poverty research.

The purpose of this study is to estimate the effect of tourism on poverty alleviation in 66 developing countries from 1995 to 2012 by adopting the panel quantile regression model. Specifically, the study attempts to verify two research questions. The first asks whether tourism has a higher effect on eliminating absolute poverty than GDP growth, and the second asks whether tourism has a consistent effect on poverty alleviation in terms of different poverty levels.

# Tourism-poverty link: conceptual framework and current poverty

In the past decade, poverty alleviation has been established as a major priority in tourism development for the United Nations World Tourism Organization (UNWTO). The in-depth development of anti-poverty tourism is a consequence of an international tourism trend converged on LDCs and a shift of global development policy from economic diversification to poverty alleviation (Holden, 2013). According to historical timelines, Scheyvens (2011, 2007) proposed four conceptual approaches for clarifying the debate between tourism development and poverty in the view of history: the liberal, the critical, the alternative, and the post development

approach. At the very beginning, the liberal approach links tourism to economic benefit and eliminates poverty naturally. Many empirical studies in LDCs suggested that tourism-led growth (TLG) is indeed an effective strategy; a strong positive correlation between tourism and poverty reduction having been found in Greece (Dritsakis, 2004), Mauritius (Durbarry, 2004), Indonesia (Sugiyarto, Blake and Sinclair, 2003), South Africa (Akinboade and Braimoh, 2010), and other developing counties (Eugenio-Martin, Martin-Morales and Sinclair, 2008). After the "honeymoon period", a number of critics highlighted the costs of tourism development in LDCs in terms of cultural change and damage to traditions (e.g. Aramberri, 2001; Mansperger, 1995), natural environment damage (e.g. Gohar and Kondolf, 2016; Sroypetch, Carr and Duncan, 2016); and price increase in the local market (e.g. Alegre and Sard, 2015; Vanhove, 1997). Furthermore, the TLG hypothesis can be questioned in some countries such as South Korea (e.g. Kim and Lee, 2012; Oh, 2005) and Turkey (Katircioglu, 2009). In order to prevent negative effects, alternative approaches attempt to create more direct benefit to the poor such as the development of "community-based tourism", which is eager to set a direct link between tourists and the poor people. However, community-based tourism also faces the criticism that it mainly fits the interests of NGO rather than local communities (Ruiz-Ballesteros and Hernández-Ramírez, 2010). Under the strong criticism of mass tourism and traditional tourism development, pro-poor tourism (PPT) has been established for advocating all forms of tourism that provide more benefits to the poorest, not only including monetary gains but also education and sanitation. Poverty reduction has become an important issue on the tourism agenda and the nexus of tourism and poverty has bought great interesting to governments, non-governmental organizations, and international organizations (Vanegas, Gartner and Senauer, 2015). Their aim is to enhance positive impacts of tourism growth on poverty alleviation, and emphasize the voice and needs of the poor in tourism development (Ashley and Maxwell, 2001). In the comprehensive historical review of the link between tourism and poverty, Ashley and Mitchell (2009) pointed out three key pathways for the poor to benefit from tourism activity: 1) direct effects, which refer to labor income and other forms of earnings from both tourism sectors and non-tourism sectors directly; 2)

secondary effects, which refer to indirect earnings from non-tourism sectors such as tourism workers who spend their earnings within the local economy. Specifically, according to the multiplier effect of tourism, tourism development not only creates jobs in the tertiary sector, but also encourages growth in the primary and secondary sectors of industry (Leontief and Wassily, 1987); 3) dynamic effects, which cover the long-term changes in macro economy and the local economy at the destination. As William (1998) explained when the growth of any tourism sector reaches a sufficient size, it can make markets thicker and then create additional advantages for the destination markets. However, the issue of leakages and corruption may offset potential tourism benefits (Sinclair, 1998).

Arvin and Barillas (2002) stated that about 1.5 billion people do not have access to clean water and about 2 billion do not have access to electricity. Mover, about 25,000 people die every day of hunger. In more areas, poverty not only means inadequate essential necessities and income, but also refers to human development, vulnerability, and lack of freedom, voice, and capability. Due to the multidimensional features of poverty, alleviating poverty is wide ranging challenge for the global society. In recent years, not only non-government organizations have established several programs (e.g. STEP and PPT) to face this global challenge, but also the governments of Nepal, China, and Vietnam have launched largescale tourism-based development projects. However, unlike the effects of those governments and NGOs, the implication of tourism for poverty reduction has been neglected by the academic community (Zhao and Ritchie, 2007). The tourism-poverty nexus has attracted few researchers until recently. The mismatch between academia and practice implies an urgent need for researching in this field. Thus, the challenge is how to ensure the poor obtain the maximum benefits during the tourism development.

## Literature review on recent tourism-poverty studies

The significance of investigating the tourism-poverty nexus has been highlighted by Zhao and Ritchie (2007). In recent macro-level literature, the

relationship between tourism and poverty has been conducted by two types: qualitative research and case studies. From the macroeconomic perspective, country-specific studies dominate empirical research. The most frequently used methods are the simple simulation models, input-output models, and computable general equilibrium models (Winters, Corral and Mora, 2013), while the main criticism faced by the literature on tourism-poverty link studies is lack of global understanding. As Winters, Corral and Mora (2013) argued, despite recent few empirical studies, it is difficult to confirm the effect of tourism development on poverty alleviation since there are only several case studies on the macro-level. Moreover, whereas most empirical studies focused on the TLG (tourism lead growth) hypothesis assume that growth will trickle down to the poor automatically, only a few studies have made efforts on the tourism-poverty link directly (Croes, 2014). According to the recent macro-level empirical researches, the results suggest that 1) that tourism has a positive impact on poverty alleviation; 2) tourism does not have systematic effect on all income groups. Vanegas, Gartner, and Senauer (2015) considered the impact of agricultural, manufacturing and tourism development on extreme poverty reduction in Costa Rica and Nicaragua. And the result showed that for both countries, tourism development is negatively related to indigence, and a higher poverty reduction effect is found on tourism rather than agriculture. The positive correlation between tourism development and poverty alleviation also has been found in Central America countries such as Nicaragua and Costa Rica (e.g. Croes and Vanegas, 2008; Croes, 2014; Vanegas, Gartner, and Senauer, 2015). On the other side, according to TLG studies, the effect of tourism is not constant with different income groups. By adopting a panel data approach and the Arellano-Bond estimator for dynamic panels, Eugenio-Martin, Martín Morales, and Scarpa (2004) found that tourism only lead to economic growth in medium or low-income countries of Latin American. Blake, Arbache, Sinclair, and Teles, (2008) considered the impacts of tourism on different households in Brazil by using a computable general equilibrium model (CGE). The result showed that tourism has a positive effect on all income groups while the lowest income

group benefit less than some higher income groups. Incera and Fernández (2015) confirmed the distributive effects of tourism through a social accounting matrix (SAM) model of Galicia. The analysis has been focused on the changes in household earnings and government revenues, and they concluded that tourism contributing to a slight increase in income inequality and relative wealthy households benefit more than low income group. Thus, tourism is not equally growth-conducive in all areas. However, this problem has been neglected in anti-poverty tourism research.

The literature review indicates that tourism does have the potential to reduce poverty levels, but a number of limitations are also identified. First, no research considers the heterogeneous effect of tourism on poverty alleviation in terms of different quantiles of poverty. Although few researchers have researched the distinct effects of tourism on poverty alleviation among different income groups, national level high income countries do not guarantee low poverty rates in the context of extreme inequality. Thus, using poverty index itself to estimate the heterogeneous effect of tourism on poverty alleviation is better than using national income level. Second, even though many studies stress that tourism could reduce regional poverty level, most of them focus only on case studies, while the global understanding have been neglected, which makes it difficult to understand the overall tourism-poverty link. Third, no empirical study compares international tourism and GDP growth in terms of their effects on poverty alleviation. Therefore, by adopting the quantile regression approach, this paper not only addresses the mean effect of tourism on poverty reduction, but also illustrates how international tourism impact on different quantile levels of poverty. The estimate results contribute to the anti-poverty tourism literature by showing a new and interesting finding regarding the correlation between poverty alleviation and tourism development.

### **Estimation Method**

Quantile regression is a regression method first proposed by Koenker and Bassett (Koenker and Bassett, 1978) that used the distribution conditions of dependent variable to fit independent variables. Koenker and Hallock (2001) explained that the

classical linear regression results are obtained by fitting the conditional mean of dependent variable with independent variables. While quantile regression aims at estimating either the conditional median or other quantiles of the response variable, which is a more refined estimation. In tourism research, the traditional Ordinary Least Square (OLS) regression methods have been widely used in tourist expenditure literature. However, OLS presents the risk of undesirable estimated results as tourist receipt features by a long tail (Huan, Beaman, Chang, and Hsu, 2008). Comparing with OLS, the quantile regression method reduces the weight placed on extreme observations, thus it is a more suitable method for estimating asymmetric variables and longtail distributions (Koenker and Bassett, 1978). Nevertheless, the application of quantile regression is limited to only a few studies, and has been neglected in the tourism context until recent years (Brida and Scuderi, 2013). Therefore, this paper selects the quantile regression method to analyze the heterogeneous effect of tourism development on different poverty levels, and explores the information that is omitted in OLS regression.

#### Tourism and poverty data

At present the borderline of tourism activities has already become ambiguous. Its unclear industry concept makes it difficult to divide tourism as an industry from the supply. Thus, this paper selects the international tourism receipts and international tourism arrivals as tourism variables as variables based on the demand. The data is obtained from the World Bank, which spans the time period from 1995 to 2012. Poverty, in this study is defined in both headcount ration (H) and poverty gap (PG), which are usually conducted in most poverty researches. H refers to the percentage of the population living on less than \$1.90 a day at 2011 international prices. PG is the mean shortfall in income or consumption from the poverty line of \$1.90 a day (counting the nonpoor as having zero shortfall) expressed as a percentage. The poverty data is available from World Development Indicators (WDI) of World Bank and UNWTO. Since GDP growth (GDPG) usually be regarded as one of the most important factors of poverty alleviation, thus this research also adds GDPG in the eatimation model. In addition, the overall understanding of tourism-poverty links is

difficult to appreciate in the case studies. Thus, this study investigates global panel data in the 66 least developed countries, but does not includes sub-Saharan Africa countries. As Bloom and Saches (1998) illustrated, the reasons of poverty in sub-Saharan Africa are complex, including legacy of colonial rules, slave trading, heaving dependence on a small number of primary exports, and corruption.

#### Unit root tests

In order to avoid spurious regression, the work begins from the group unit root test, which includes LLC (Levin, Lin and Chu t\*) test, IPS (Im, Pesaran and Shin W-stat) test, ADF test and PP test. According to Table 1, H, PG, and GDP growth (GDPG) is stationary series at 1% level, while Tourism receipts (TR) and Tourism Arrivals (TA) are not. After changing the two stationary series into log form then all series are stationary at 1% level. Therefore, this paper uses H, PG, (log) TR, (log)TA, GDPG to assess the empirical model.

Table 1Group unit root tests:Summary(Exogenous variables: Individual effects)

	Testing methodology: individual intercept and trend							
		Statistical value (P value)						
	Levin, Lin &	Im, Pesaran and	ADF - Fisher	PP - Fisher				
	Chu t*	Shin W-stat	Chi-square	Chi-square				
Headcount ration	-20.4 (0.00)	-10.4 (0.00)	207.2 (0.00)	300.9(0.00)				
Poverty gap	300.9 (0.00)	-4.6 (0.00)	220.0 (0.00)	322.0(0.00)				
Tourism receipts*	1.2 (0.89)	1.8 (0.97)	131.8 (0.44)	74.9 (1.00)				
Tourism Arrivals*	-1.8 (0.03)	1.0 (0.84)	147.1 (0.15)	127.0 (0.56)				
GDP growth	-13.1 (0.00)	-10.2 (0.00)	325.3 (0.00)	437.5(0.00)				
(Log) Tourism	-4.5 (0.00)	-3.0 (0.00)	178.0(0.00)	132.0 (0.43)				
(Log) Tourism Arrivals	-4.9 (0.00)	-2.5 (0.00)	187.4 (0.00)	165.9 (0.01)				

H are positively skewed and have fat tails. And kurtosis of PG, GDPG, and H are excess of three, which imply that they are more flatness than normal distribution. And also, the Sharpiro-Wilk test rejected the normality hypothesis, suggesting that TA and TR do not follow the normal distribution.

Furthermore, Table 3 reported the correlation between each variable. Two poverty ratios show high correlation, 0.912. And as we expect, poverty ratio and tourism variables show a negative correlation, which implies that tourism has the potential on alleviating poverty, while GDPG does not show significant negative correlation with poverty ratio.

Table 2 Descriptive statistics1995-2012.

	(log)TA	(log) TR	Н	PG	GDPG (annual %)
Mean	13.883	20.366	11.496	4.179	4.309
Maximum	17.871	24.637	76.020	31.070	20.654
Minimum	8.006	14.557	0	0	-16.700
Std. Dev.	1.872	1.932	13.569	5.543	4.286
Skewness	425	475	1.778	2.303	884
Kurtosis	3.039	2.994	6.105	9.400	6.116
Observations	1170	1143	830	825	1172

*Table 3 Correlation among variables.* 

	Н	PG	(log) TA	(log) TR	GDPG
Н	1				
PG	.913	1			
(log)TA	446	476	1		
(log)TR	503	531	.886	1	
GDPG	.060	005	.002	.005	1

## Descriptive statistics

Tables 2 and 3 report the summary statistics and the correlation among variables respectively. Table 2 presents the summary statistics of GDPG, H, PG, (log) TA, and (log) TR. In particularly, skewness measures the asymmetry of the probability distribution about the mean, while kurtosis is a descriptor of the shape of a probability distribution. When kurtosis in excess of three, it implies that the data is fat tailed. According to Table 2, the skewness of PG and H showed that the distributions of PG and

#### **Regression Models**

This paper performs a panel regression estimate to examine the tourism-poverty link with incorporating the potential influences of GDPG into the estimating equation. During the period from 1995 to 2012, the correlation between the poverty and tourism receipts among the 66th low income countries is established as following.

Eq. (1):

$$Poverty_{it} = \alpha + \beta_1 Tourism_{it} + \beta_2 GDPG_{it} + \varepsilon_{it}$$

Where *i* is the cross section of each country; *t* denotes the time period, year; Povertyit and Tourismit present the poverty level and tourism development level of country i in the year t perceptively; GDPG denotes the GDP growth rate;  $\alpha$  is the intercept term, which represents the contribution of other important factors on poverty reduction; sit is the random error term;  $\beta_1$ and  $\beta_2$  represent the output elasticity of tourism and GDPG respectively, which reflect the contribution of each input element to the reduction of poverty. Specifically, TR and TA express the tourism development level (Tourismit), H and PG express the poverty level (Poverty<sub>it</sub>). Eq. (1) is the basic panel data model, according to F-test and Hausman statistic value the null hypothesis is rejected, which suggest establishing the fixed effects model. By considering the influence of global event such as financial crisis, finally, the fixed effect model is selected as the empirical model to investigate the tourism effect on poverty reduction.

#### Model PG:

$$PG_{it} = \alpha + \beta_{11}Tourism_{it} + \beta_{12}GDPG_{it} + k_i + f_t + \varepsilon_{it}$$

Where  $k_i$  is the country fixed effects, which captures a country's unobserved and time invariant characteristics;  $f_t$  is the year fixed effects (year dummy) that absorb the common effects of external and global factors that are common to all countries; PG<sub>it</sub> is the poverty gap at \$1.90 a day (constant 2011 PPP) of country *i* in year *t*. However, PG could only reflect the depth of poverty while H could only show the breadth of poverty, but not reflect income change until exceed the poverty line. Thus, this paper selects both to express the poverty level (Poverty<sub>it</sub>). In order to facilitate the expression, the corresponding two estimation models are named as Model H and Model PG respectively. Similarly, Model PG is used to test the relationship between H and two types of tourism variables.

## Model H:

$$H_{it} = \alpha + \beta_{21} Tourism_{it} + \beta_{22} GDPG_{it} + k_i + f_t + \varepsilon_{it}$$

The coefficient is expected to be significantly negative and different with zero if tourism can significantly affect poverty, since high TA or TR would reduce poverty level. Model H and Model PG assume that the impact of tourism on poverty is the same for all sample countries over time, which can be estimated based on OLS. However, whether the effects of tourism on poverty reduction vary over the level of poverty is still unknown. Thus, the study also uses a quantile regression method to analyze whether the tourism–poverty link is sensitive to different quantiles of poverty.

#### Results

In order to compare the contribution of tourism and other input factors on poverty alleviation, Table 4 and 5 present the regression coefficients of TR, TA, and GDPG based on Model H and Model PG respectively. In addition, Table 4 and 5 also report the estimation result of the fixed effect mean regression model to capture the difference in regression models. Furthermore, in order to directly reflect and compare the contribution of input factors at different poverty levels, the coefficient of each input element is described by a graph as shown in Figure 1.

Table 4 presents the estimation results for determinants of H of 66 developing countries during the period from 1995 to 2012. Two tourism variables, TA and TR are estimated under different quantiles  $\tau$ from 0.1 to 0.9. The results of quantile regression show that both tourism variables and GDPG are statistically significant and have expected signs: all of them have negative effect on poverty. However, the results of fixed effects regression show that GDPG are negative but statistically insignificant. The quantile regression is preferred because it not merely about conditional mean of a covariate and more robust against outliers in the response measurements. The absolute value of estimated tourism coefficients are diverse from 0.060 to 3.125, in particular, TA show higher effect than TR. Although GDPG also show positive effect on poverty reduction, the maximum absolute value is only 0.086. Similarly, Table 5 reports the estimation results based on poverty ration (PG). The minimum absolute value of tourism coefficient is 0.071 while the maximum absolute value of GDPG coefficient is 0.062, which indicate that tourism has higher effects than GDPG on poverty alleviation at all quantile levels. In sum, Table 4 and 5 indicate that first tourism has the positive effect on reducing poverty. TR and TA have significant negative effects on both poverty variables (H and PG). The statistically significant negative sign

of tourism coefficients of under all quantiles  $\tau$  from 0.1 to 0.9 suggest that the positive effect of tourism on poverty alleviation is consistent. Second, tourism development contributes more than GDPG on poverty alleviation. No matter in Model H or Model PG, the

effects of tourism development are higher than GDPG in all poverty quantiles, which indicates that tourism development is a more important force to reduce poverty rather than GDP growth.

	Dependent variable: Poverty headcount ratio at \$1.9 a day							
Regression	Quantile	e (Log)Tourism Receipts Model (Log) Tourism					m Arrivals Model	
Model		Tourism	GDPG	Pseudo R <sup>2</sup>	Tourism	GDPG	Pseudo R <sup>2</sup>	
	Low quantile	060***	031***	.586	-1.270***	043***	.575	
	L <sub>=0.10</sub>	(.00)	(.00)		(.00)	(.00)		
	Low quantile	799***	045***	.612	-1.522***	044***	.605	
	L = .20	(.00)	(.00)		(.00)	(.00)		
	Low quantile	-1.602***	083***	.635	-2.323***	086***	.629	
	L = .30	(.00)	(.00)		(.00)	(.00)		
	Median	-1.849***	114***	.657	-3.125***	080***	.656	
Quantile	quantile	(.00)	(.00)		(.00)	(.00)		
Regression	L = .40							
	Median	-1.652***	095***	.681	-2.801***	066***	.684	
	quantile	(.00)	(.00)		(.00)	(.00)		
	L = .50							
	Median	-1.754***	085***	.706	-2.825***	064***	.713	
	quantile	(.00)	(.00)		(.00)	(.00)		
	L = .60							
	High quantile	-2.084***	061***	.733	-2.180***	051***	.741	
	t <sub>= .70</sub>	(.00)	(.00)		(.00)	(.00)		
	High quantile	-1.698***	034***	.770	-2.255***	039***	.779	
	L = .80	(.00)	(.00)		(.00)	(.00)		
	High quantile	-1.606***	055***	.829	-2.621***	049***	.834	
	τ = .90	(.00)	(.00)		(.00)	(.00)		
Fixed Effect	None	-3.063***	079	.405 (R <sup>2</sup> )	-2.162***	084	.391(R <sup>2</sup> )	
Regression		(.00)	(.153)		(.00)	(.146)		

 Table 4 Regression results: tourism development on poverty alleviation (Model H).

Note: Figures in parentheses are p-values. \*Significant at the 10% level. \*\*Significant at the 5% level. \*\*\*Significant at the 1% level.

Table 5 Regression results: tourism development on poverty alleviation (Model PG).

Dependent variable: Poverty Gap							
	Quantile	(Log)To	ourism Receij	pts Model	(Log) Tourism Arrivals Model		
		Tourism	GDPG	Pseudo R2	Tourism	GDPG	Pseudo R2
	Low	071***	011***	.532	265***	014***	.515
	$\begin{bmatrix} \text{quantile} \\ =0.10 \end{bmatrix}$	(.00)	(.00)		(.00)	(.00)	
	Low	200***	014***	.559	400***	009***	.547
	$t_{=.20}^{\text{quantile}}$	(.00)	(.00)		(.00)	(.00)	
	Low	402***	023***	.581	670***	031***	.572
Quantile Regression	$t_{=.30}^{\text{quantile}}$	(.00)	(.00)		(.00)	(.00)	
Ū.	Median	498***	045***	.605	910***	035***	.602
	$t_{=.40}^{\text{quantile}}$	(.00)	(.00)		(.00)	(.00)	
	Median	585***	062***	.633	961***	037***	.634
	$t_{=.50}^{\text{quantile}}$	(.00)	(.00)		(.00)	(.00)	
	Median	398***	038***	.668	789***	030***	.672
	$t_{=.60}^{\text{quantile}}$	(.00)	(.00)		(.00)	(.00)	
	High	489***	029***	.705	920***	024***	.709
	$t_{=.70}^{\text{quantile}}$	(.00)	(.00)		(.00)	(.00)	
	High	515***	016***	.749	935***	021***	.752
	$t_{=.80}^{\text{quantile}}$	(.00)	(.00)		(.00)	(.00)	
	High	675***	026***	.802	995***	020***	.802
	$t_{=.90}^{\text{quantile}}$	(.00)	(.00)		(.00)	(.00)	
Fixed Effect	None	910***	061*	.326(R2)	793***	063*	.320(R2)
Regression		(.00)	(.014)		(.00)	(.016)	
Note: Figures in parentheses are p-values. *Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level.							

Figure 1 describes the contribution of each determinants of poverty by a scatter diagram, which makes easier to compare the poverty reduction effects of each input factor. According to Figure 1, two tourism variables present the heterogeneous effect in terms of different quantiles of poverty. The contribution of tourism to reduce poverty is basically decreasing with the decrease of poverty level, but it shows different performances at different poverty quantiles as shown in Figure 1. In the case of Model H, the contribution of TR to eliminate poverty is the greatest (-2.084) when poverty quantile is at medium levels ( $\tau = 0.4 \sim 0.6$ ), and it slightly reduces when poverty is at high levels ( $\tau = 0.7 \sim 0.9$ ), but is basically stable. However, when poverty is in the low quantiles ( $\tau = 0.1 \sim 0.3$ ), the effect of tourism sharply decreases and reaches the lowest point -0.06 at  $\tau$  is equal to 0.1. Similarly, the heterogeneous effect of tourism also is consistent in Model PG. Thus, tourism shows different effects on different quantiles of

poverty. In addition, higher tourism effects are found in Model H rather than Model PG. The coefficients of TA are diverse from -0.265 to -0.995, and -1.270 to -3.125 in the Model PG and Model H respectively. And also, the coefficients of TR have greater absolute values in Model H at all quantile levels, suggesting tourism has stronger positive effect on eliminating H rather PG. Furthermore, TA shows higher effect on poverty reduction than TR at all quantile levels in both Model H and Model PG. This indicates that the relative strong dependence of poverty alleviation on TA. In sum, Figure 1 confirms that first, tourism has heterogeneous effect on poverty in terms of different poverty quantiles, especially, the highest poverty reduction effect is found on the middle level quantiles while at low level quantiles poverty seems not benefit a lot from tourism development; second, tourism has higher effect on reducing poverty headcount ratio rather than poverty gap; third TA contributes more on poverty reduction rather than TR in both estimation models.



Figure 1 The estimated value of beta at different quantiles.

#### **Conclusion and implications**

The study first examined whether tourism can contribute to eliminating poverty rate of developing countries. And then, the research question that whether distinct poverty levels matter for the impact of tourism on poverty reduction has been tested. Because of only few researches have reported the effect of tourism on poverty on global panel data and no researches have considered the different impact of tourism development on distinct poverty quantiles, this study adds another important piece of evidence to tourism-poverty nexus debate and national poverty reduction policy in the perspective of tourism development.

The first research question we addressed is whether tourism has positive impact on poverty alleviation in developing countries. We used tourism arrivals and tourism receipts as tourism variables, and poverty headcount ration and poverty gap as poverty variables, the estimated results of global panel data suggest that tourism has a significant effect on poverty alleviation. And tourism matters for poverty reduction more than GDP growth. The second question is whether this positive effect consistent with national poverty levels. The results based on quantile regression suggest that the level of poverty matters for determining the effect of tourism on poverty alleviation. Both estimated models (Model H and Model PG) indicate that positive effect of tourism on poverty reduction shrinks with the decreasing level of poverty. The higher poverty eliminating effects are found at the middle and high quantiles of poverty, which in middle quantiles the impact of tourism on poverty reduction is the greatest. However, at the very low quantiles of poverty, although the poverty reduction impact is positive, the absolute values of coefficients are almost close to zero, which imply that tourism development does not influence poverty ratio so much.

According to the findings, tourism development does not guarantee to reduce extreme poverty with the same effect in all developing countries. The effect of tourism on poverty reduction varies cross countries regard to their poverty level. This implies that the countries with high or middle poverty level could gain benefit from tourism development while for those low poverty level developing countries tourism seems not such matters for reducing poverty. Croes (2014) also stated that tourism development is an important factor of poverty reduction under a certain condition that is lower level of economic development. (Croes, 2014; Croes and Vanegas, 2008). Thus, this study suggests that developing countries has a relative lower poverty level ( H and PG) should better to seek an alternative way to solve the issue of poverty. This is also confirmed with several previous studies, such as Mbaiwa (2005), Wattanakuljarus and Coxhead (2008), and Croes (2014). Suggesting that for those countries enjoying a relative high income, tourism has no impact on the poor in some countries such as Botswana (Mbaiwa, 2005), Thailand (Wattanakuljarus and Coxhead, 2008) and Costa Rica (Croes, 2014). On the other

hand, in countries with relatively high or middle level of poverty, development tourism, especially increase the number of tourists could lead to a higher impact on poverty alleviation. Although tourism receipts also have positive effect on poverty alleviation, the number of tourists is a stronger force on eliminating poverty. Thus this study suggests that developing courtiers with high or middle poverty level can enjoy the impact of tourism on poverty alleviation, and a higher poverty reduction effects can be obtained from increasing the number of tourists.

In sum, this paper suggests that tourism is an important factor in reducing poverty ratio. Especially, the important role of tourism arrivals has been neglected in both academic research and strategy paper. And the role of poverty level also should be concerned in anti-poverty policy decision.

The possible reason why tourism has a higher effect on reducing poverty might be the participation of NGOs and Government, which are seeking and creating the direct link between tourism development and poverty reduction. National economic growth, such as GDP does not guarantee equal distribution to all income classes. As Oxfam Report 2016 illustrated that the richest 62 individuals had the same wealth as 3.6 billion people in 2015 and the gap between wealthy and bottom poor has been rapidly widening. Moreover, one of the conclusions of book 《Capital in the Twenty-First Century》 written by Piketty and Ganser (2014) also suggested that the wealth accumulation of the rich class is showing an accelerated growth trend, indicating that the global inequality crisis will reach new extremes. Although inequality and corruption may also prevent tourism from contributing to poverty alleviation in a national level, the participation of NGOs and Government helped to build the direct link between tourism development and poverty reduction. For instance, UNWTO, World Bank are assisting low income countries to reduce poverty through tourism development. The projects like community base tourism, ecotourism, and green tourism certainty contribute to overcoming extreme poverty, which are aiming at benefit the poor directly and reducing the amount leakages of tourism earnings go to tour operators or investor. The study by Li, Chen, Li, and

Goh (2016) also suggested that tourism can reduce regional income inequality in low income countries based on empirical results.

From the macroeconomic perspective, this study focuses on the moderating effect of poverty level on tourism-poverty link. Especially, this research highlighted the positive effect of tourism on tourism alleviation. The limitations of this study may be that lack of case studies experiences to explian how tourism contribute to poverty alleviation. Futhermore, as Chakravarty (2003) suggested that poverty is not dimensional issue, it also includes the one perspectives like education, sanitation, and human rights etc. Thus, in the future research needs to examine the impacts of tourism on micro-level. And in order to reach the goal of pro-poor tourism, how to minimize the damage of mass tourism to a minimum is also need to be analyzed.

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