INSTITUTE FOR STUDIES OF SOCIETY, ECONOMY AND ENVIRONMENT

COCOA TREE IN DAK LAK

Main barriers to development in local ethnic minority groups

(CASE STUDY OF THE M'NONG ETHNIC GROUP IN LAK DISTRICT)

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Abbreviatives

AusAID	Australia Agency for International Development
CEC	Central Executive Committee
PP	Plant Protection
Govt	Goverment
CSHT	Infrastructure
NTP	National Target Programme
DANIDA	Danish International Development Agency
DFID	Department for International Development of the United Kingdom
EG	Ethnic Group
ED	Extremely Difficult
GDP	Gross Domestic Product
GTZ	German Technical Cooperation (Deutsche Gesellschaft für Technische Zusammenarbeit)
PCo	People's Council
IK	Indigenous Knowledge
IMH	Institute for Meteorology and Hydrology
IUCN	International Union for Conservation of Nature
JICA	Japan International Cooperation Agency
LHQ	United Nations
NGOs	Non-Government Organisations
NLU	Ho Chi Minh University of Agriculture and Forestry (Nong Lam University)
MARD	Ministry of Agriculture and Rural Development
NC	New Countryside
PH	Publishing House
SA	Project on Transfer of Cocoa Growing Technique implemented by Success Alliance
NRE	Natural Resource and Environment
PC	People's Committee
UNDP	United Nations Development Programme
VASS	Vietnam Academy for Social Science
WASI	Western Highlands Agriculture and Forestry Science Institute

Foreword

This research is carried out by Institute for Studies of Society, Economy and Environment (iSEE). The research's final report is prepared by a team of independent consultants from Institute of Cultural Studies (Dr. Hoang Cam and Dr. Pham Quynh Phuong), Vietnam Association of Historical Sciences (Dr. Dao The Duc), Centre for Analysis and Forecasting, VASS (Dr. Le Kim Sa), Institute for Sustainable Development of the Central Region (Dr. Mai Thanh Son), Insitute for Studies of Society, Economy and Environment (MSc Le Quang Binh, MSc Nguyen Quang Thuong) and Division of Agriculture and Rural Development of Lak District (Eng. Nie Y Hoang). The findings in this report are mainly based on information collected by the team of consultants in Lak district and analysis of available reference materials.

In the process of the research, the team of consultants has received the cooperation and support from the PC of Dak Lak province, Provincial Department of Agriculture and Rural Development, Committee for Ethnic Group, Agricultural Promotion Centre; authorities of Lak district; authorities and people of Yang Tao and Dak Phoi communes; and businesses based in the province. After consultation with concerned parties in the locality, the team of consultants has shared the main findings with officials of Division of Agriculture and Rural Development of Lak district and Division of Husbandry (Provincial Department of Agriculture and Rural Development), and received valuable comments and inputs. The team of consultants hereby express their sincere thanks to this fruitful cooperation and support.

Despite great efforts at achieving the defined research goals, there are still shortcomings and oversights in this report. The authors therefore appreciate inputs from relevant agencies and the audience of this report.

Sincerely,

The authors

A. INTRODUCTION

1. Background of the research

Cocoa is not a brandnew tree in Vietnam, yet it has never gained a vital position in the farm produce structure. In recent years, cocoa growing has been on the increase and started to enter the global market. From 2005, MARD set up Vietnam Committee for Cocoa Coordination in order to support the formulation of policies relating to cocoa production. The system of standards for cocoa tree and products was also set up in 2006. On September 14th 2007, in order to promote the development of cocoa production, MARD promulgated Decision No. 2678/2007/QD-BNN-KH which sets the target of achieving 60,000ha and 80,000ha of cocoa growing by 2015 and 2020 respectively.

On the practicality side, the cocoa tree is assessed as growing quite well in Eastern provinces, and, most notably, in the South Western region. However, in the Central Highlands provinces, the reality is not as positive as initially expected. Dak Lak is a bright example. On February 2002, the People's Committee of the former Dak Lak province promulgated Decision No.: 821/QD-UB on approval of the project on planning the area for development of cocoa trees in the province until 2010 as 10,000ha (after separation of the province, the planned cocoa area in Dak Lak was 6,000ha). At first, the districts planned for cocoa development in Dak Lak were Ea Kar, Ma D'rak, Krong Bong and Lak. On December 6th 2006, the provincial PC issued Document No. 3706/UBND-NL adding two provinces of Krong Nang and Ea H'leao to the planned cocoa tree area. These localities were assessed as not having suitable ecological conditions for coffee, rubber and cashew plants. Despite different efforts as well as support from international organisations and national scientific research agencies, the cocoa coverage in the whole province only reached 1,935ha by 2010, or 1/3 of the targets set forth in Decision No.: 821/QD-UB.

On the theory side, different researches into various areas have been conducted in Vietnam in preparation of cocoa tree development. In the 90s, groups of scientists from Ho Chi Minh University of Agriculture and Forestry and Can Tho University conducted different assessments on prospects for cocoa tree development in the South Western and Central Highlands provinces. After implementation of pilot models in the provinces of Dak Lak and Dak Nong, the group of scientists from Ho Chi Minh University of Agriculture and Forestry made a report providing recommendations on solutions for expansion of cocoa area in these localities.

The most popular documents on cocoa trees are mainly research results produced after 2005 when Vietnam Committee for Cocoa Coordination (VCCC) was established. Some documents on cocoa growing and processing techniques have been disseminated or published, e.g Luong Duyen Binh (2008) "*Lectures on cocoa tree growing and nurturing techniques*", which was issued and used by Agricultural Promotion Centre of Dak Lak province; Pham Hong Duc Phuoc (2009) "*Cocoa growing techniques in Vietnam*", Agriculture PH; Trinh Xuan Ngo (2009) "*Cocoa trees and processing techniques*" Ho Chi Minh city PH. Under the framework of the Programme on Agricultural Cooperation and Rural Development between MARD and AusAID, Can Tho University led the implementation of the project entitled "*fermentation, drying and assessment of cocoa quality in Vietnam"* from 2006 to 2008. The project was also jointly implemented by Ho Chi Minh University of Agriculture and Forestry (NLU) and Western Highlands Agriculture and Forestry Science Institute (WASI). The project aims at subjects who are farmer households growing cocoa in the provinces of Can Tho, Ben Tre, Dak Nong and Dak Lak. Among the project activities, there are those which focus on analysis of the economic, social and environmental benefits of the cocoa tree.

In March 2008, Helvetas, using a market-based approach, released the *Feasibility Study Organic and Fairtrade Cocoa in Vietnam*. This study drew the attention to two areas which are considered most suitable for cocoa tree development: the Central Highlands and Mekong River Delta. The study results gave an overview of organic cocoa production, fair trade and marketing system. It also introduced the system of standards and procedures for certification (of standards), certification fees, experience in organic cocoa production and trade fairness in Vietnam. The study affirmed that cocoa had been introduced in Vietnam many years ago, and there were areas which could successfully grown this trees; however, cocoa production and marketing experience was still in its pilot stage. In relation to the localities in these two areas, the study described the background and status of cocoa development and environmental awareness at the time, as well as assessed trade fairness and analyzed concerned parties in the cocoa value chain.

Among the studies on cocoa trees, the work conducted by Agrifood Consulting International in all cocoa-growing localities, for which the results were released in November 2008, is the most notable one. Entitled "*Study on the Suitability, Feasibility and Socio-economic Benefits of Cocoa Production in Vietnam"*, this study provided a comprehensive analysis over cocoa-related issues. Basing on the cocoa product value chain, the study pointed out strengths, weaknesses, opportunities as well as threats/risks encountered by all participating agents. The main factors for reference in this study were natural conditions (soil, climate, water supply etc...), human resource (capacity of the workforce and essential skills), financial support (capital demand), international market, competitor plants, environmental bio-diversity and sustainability, and socio-economic policies of the central government as well as local authorities. Authors of the report, based on their analyses, affirmed the suitability, feasibility as well as socio-economic benefits which cocoa trees bring to Vietnam, but at the same time pointed out factors which may affect optimists.

In 2010, a group of researchers from iSEE conducted a research in order to assess the opportunities as well as threats in cooperation work and possibility for participation into Vietnam Committee for Cocoa Coordination by Oxfam Novib and iSEE. In the report entitled "*Assessment of opportunity and challenge to join Vietnam Cocoa Committee and Public Private Partnership for Oxfam Novib and iSEE*", the researchers analysed some issues relating to planning, strategy and actual situation of development in cocoa production in Vietnam.

Contributions by the preceding scientists can not be denied. The results of their researches have been used as the scientific basis for formulation of the strategy for cocoa production development in the coming time. However, each locality and area has its own characteristics and therefore requires not only in-depth researches into general natural conditions or social background but also the socio-cultural context of specific ethnic minority groups. In the Central Highlands area, there have been no studies into the possibility of participation into the cocoa value chain by local ethnic minority groups. That is the main reason for the implementation of this research.

2. Research question

This is a case study in the M'nong ethnic group community in Lak district of Dak Lak province. For the M'nong in particular and ethnic minority groups in the Central Highlands in general, development of cocoa trees faces different challenges and unanswered questions. Which difficulties or advantages will encourage the local ethnic minority groups to participate and benefit from cocoa production? What are the chances for the local ethnic minority groups to benefit from this? What are the roles of concerned parties etc… In other words, this research will give the answer to two main questions: i) What are the current obstacles/barriers to the

M'nong's participation into cocoa production and benefit from this industry? ii) What are the roles of the parties in creating or removing those barriers?

The report is divided into four main parts: the first part include overviews of the research locality and the M'nong ethnic minority group; the second part talks about the barriers to participation by the M'nong in Lak district into cocoa tree development in the locality; the third part analyzes the roles of related parties in the efforts to develop cocoa tree in the M'nong community; lastly, the research provides recommendations for development of cocoa trees in the M'nong community in Lak district.

3. Analysis framework

According to cultural anthropologist, from a theoretical viewpoint, the acceptance of cultural practices and factors (e.g plants, ideas, knowledge, tools, behaviour etc…) from another culture is a popular phenomenon in almost all human societies so far. Linton (1936) stated that 90% of the practices in cultural traditions have external origins. However, many studies have pointed out that the process of "offering – accepting" culture is highly selective in nature, namely not all new cultural factors or practices are quickly and easily accepted by owners of other cultures. Ngo Duc Thinh (1995) pointed out that the cultural acceptance process in ethnic minority groups is the approach, selection, re-creation and localisation/tribalisation of knowledge from external sources.

In his work *Diffusion of Innovations* (1962), Rogers indicated that there are four factors which affect the propagation of a new idea or practice, namely innovation, information/communication channel, time and social system. In other words, a new innovation or practice is conveyed/communicated through certain channels and in certain periods in order to influence members of a social system. The process for an individual to accept an innovation usually comprises of 5 stages: knowledge, persuasion, decision, implementation, and confirmation. According to Roger (1962), one or more new cultural practices and factors can only persuade and influence the decision of an individual in terms of accepting or declining such practices when they converge 5 conditions: 1) Be assessed by people as having significant values over former and on-going practices; 2) Be compatible with the indigenous cultural system; 3) Be simple enough for understanding and implementation; 4) Can be proven via implementation; and 5) Bring clear benefits.

Earlier studies on cocoa mainly focused on analysing the *value chain* of cocoa industry: input supply service (land, labour, nursery garden and seedlings, investment sources, fertilizers, pesticides, technical assistance from local scientists and financial support from international organisations); cocoa production (grow, nurture and harvest); output service (purchase of fresh fruits, fermentation, sun-drying, drying) and consumption market. This approach helps visualize the links in the product chain as well as participation of the people in those links. However, this value chain-based approach might have oversighted the indigenous cultural factors and cultural barriers to acceptance of cocoa trees into the life of the ethnic minority groups. As an exotic plant from external sources, cocoa trees' position in the life of the ethnic minority groups depends not only on economic and environmental factors but also largely on the cultural background.

In order to have a more comprehensive viewpoint over development of cocoa trees in Lak district as well as barriers to the M'nong's active participation in this industry, we used Roger's criteria for comparison to see if, for the M'nong, cocoa trees have comparative advantages against other plants and are compatible with their cultural practices, and checked if cocoa growing techniques are simple and of clear benefits to them. Through field visits in the

area and research of archive in the locality, this theory was also utilised to study the acceptance of other exotic crops such as coffee, cashew, rubber etc… for comparison.

4. Research method

This study was conducted using a qualitative approach, mainly utilizing anthropologist research methods (participatory observation, group discussion, in-dept interview) combined with reference to written media (archives at the central and local levels). In the preparation of this report, the field study materials were prioritised.

The written media which the group of researchers use as reference include: i) Reports on the implementation of socio-economic development and national defence plans of authorities in the communal, district and provincial levels; ii) The report entitled *Implementation of the 6,000ha cocoa project in 2011* and document entitled *Project on development of cocoa in Dak Lak until 2015* by Department of Agriculture and Rural Development of Dak Lak province; iii) Wrap-up report on implementation of the project entitled *Development of sustainable cocoa production in farmer households* by Agricuture Promotion Centre of Dak Lak province; iv) Studies on cocoa trees in Vietnam, conducted by domestic and international organisations; and v) Articles on issues concerning the cocoa trees in Dak Lak province and other localities.

The field study materials were collected via in-depth interviews and group discussions in the site visit in November 2011. Two main groups of subjects were selected for in-depth interviews and group discussions, namely:

- The first group of subjects were officials of agencies, organisations and businesses from the communal to provincial levels who directly participated in the implementation of activities on the introduction and development of cocoa trees at the locality such as the Provincial Department of Argiculture and Rural Development, Ethnic Minority Committee, Women Union, PC (of the province, district and commune), Cargill company, Green Highland company, Adivoca company etc…
- The second group of subjects selected for interviews were residents of Yang Tao and Dak Phoi communes. In this group, the researchers conducted in-depth interviews and group discussions (2 discussions in Dak Phoi commune and 2 in Yang Tao commune) with chairmen and members of cocoa clubs (established since 2007) as well as residents who were former cocoa growers or yet to join cocoa growing. The topics of interviews and discussions focused on issues such as livelihood practices and traditional cultural life of the ethnic minority group, personal and community experience in the acceptance and development of non-local industrial plants such as coffee, cashew and cocoa, especially experience in techniques, economic benefits, market (input and output), indigenous knowledge on natural condition and crops in the locality etc…

The in-depth interviews and group discussions were mainly conducted in mainstream Vietnamese with the assistance of interpreters who were local residents. Only two group discussions with chairmen and members of cocoa clubs in Yang Tao commune were conducted in the M'nong dialect because some members could not speak mainstream Vietnamese. After that, the major findings from these two group discussions were briefed by the group leaders to the researchers in mainstream Vietnamese. Due to relevant research etiquettes, we have not included the exact names of interviewees in this report.

5. Shortcomings of the research

Under planning, six districts in Dak Lak province, namely Ea Kar, Ma D'rak, Krong Bong, Krong Nang, Ea H'leo and Lak, were nominated as cocoa tree development areas. In all of

these districts, there are different local ethnic minority groups such as E-de, M'nong, Gia-rai, Xo-dang, Laotian etc…[1] However, due to the limited timeframe, this research was only conducted in the area where the M'nong were living in Yang Tao and Dak Phoi communes of Lak district. As a result, the outcome of this report may not fully reflect the actual situation of cocoa development in Dak Lak in particular and Vietnam in general.

In order to have a more realistic and objective view of the challenges and threats towards development of cocoa trees in the area of the local ethnic minority groups in Dak Lak in particular and the Central Highlands in general, these shortcomings need to be fixed soonest. Study among all ethnic minority groups in the planned cocoa area is essential in the future.

B. MAJOR FINDINGS

I. OVERVIEW OF THE RESEARCH AREA

1.1. Local area and ethnic group

1.1.1 Lak district and research locations

Lak district lies in the south-east of Dak Lak district and covers an area of 1,249.65km^2. This area has a sunken plain terrain at an altitude of 400-500m, and is subject to floods in September and October each year. The population of Lak district until December 2010 is 60,997, which includes 22,593 Kinh people, 30,478 M'nong and those of the E-de, Tay, Thai ethnic minority groups…[2] The district has 11 administrative areas under it, including 1 town (Lien Son) and 10 communes (Bong Krang, Tria village, Triet village, Dak Lieng, Dak Phoi, Đak Nue, Ea R'Bin, Krong No, Nam Ka and Yang Tao).

Box 1: Overview of Dak Lak province

Dak Lak is one of 5 Central Highlands provinces, and comprises of 15 administrative areas namely Buon Ma Thuot city, Buon Ho township and 13 districts namely Ea H'leo, Ea Sup, Krong Nang, Krong Buk, Don village, Cu M'Gar, Ea Kar, M'Đrak, Krong Pak, Krong Bong, Krong Ana, Cu Kuin and Lak. There are 44 groups of people in Dak Lak, of which the Kinh accounts for about 67%, local ethnic minority groups such as E-de, M'nong more than 20%, migrated ethnic minority groups such as Tay, Nung, Thai, Muong, H'mong, Dao etc.. more than 15% of the province's population.3

The terrain and climate of Dak Lak province is suitable for diversified agricultural and forestry production. Red soil accounts for 24.81% of the province's natural area, and mostly lie in relatively flat terrain which makes it suitable for development of long-term industrial plants such as coffee, rubber etc…In addition, there are other types of soil such as grey, brown, dark brown which are suitable for short-term industrial plants, fruit trees and some other long-term trees etc… According to the province, in 2010, total farming area of the whole province was 531,087ha but 314,884ha was for long-term industrial plants and fruit trees, most notably coffee (190,765ha), cashew (33,406ha), rubber (30,289ha) and pepper (5,533ha).

[1] According to the housing survey and census on April 1st 2009, the largest local ethnic minority groups were E-de (298,534 people, or 17.2% of the province's population); M'nong (40,344 people, or 2.3% of the province's population) and Gia-rai (16,129 people, or 0.93% of the province's population). (General Department of Statistics 2010 "*Housing survey and census 2009*", Statistics Publishing House, Hanoi)

[2] Department of Statistics of Lak district (2011) "*Statistics Directory 2010*", p.3.

[3] PC of Dak Lak province – Provincial Department of Agriculture and Rural Development (2011), *Summary report on planning of main industrial plants and fruit trees in Dak Lak province until 2020.*

The other farming area was mainly used for rice paddies, crops (maize, cassava) and short-term industrial plants such as sugarcane, beans and peanuts.

Lak district is basically an agricultural locality with the majority of natural area being agro-forestry land. The district's soil and climate is suitable for development of rice paddies, crops (maize, cassava) and short-term industrial plants (sugarcane, peanuts, beans). As a result, Lak district's agriculture is mainly based on the farming system of nut food crops,[4] and the area for long-term industrial plants (coffee, pepper, cashew etc…) only accounts for 2,515ha.[5] The district's forest area is quite large, with coverage of 61.77% in total. Until the end of 2010, agro-forestry accounts for 61.90% of the economic structure; per capita income is about VND 9 million based on the current pricing. Under the poverty standard from 2006 to 2010, the district's poor households is 18.26%[6], or twice as much as the average poverty rate of the province.[7] This rate is no less than 40% if the poverty standard from 2011 to 2015 is used.

In the structure of industrial plants, the cocoa growing area in Lak district only takes up a very small portion, and there are no statistics on cocoa trees in the district PC's *Report on the implementation outcome of the tasks of socio-economic development and assurance of security-national defence in 2010 and socio-economic development plan in 2011.* According to the Department of Statistics of Lak district, the cocoa area in the whole district only reached 61.3ha by the end of 2010[8]. In the first three quarters of 2011, the district's cocoa growing area increased to about 205ha[9].

Being an area selected for the research, Yang Tao commune is in the north of the district's centre. Among a total farming area of 5,747ha[10], the communes has 2,556ha of forestry land, 807ha for rice paddies, 888ha for annual crops and only 19ha for long-term plants. In the commune's crop structure, rice paddies and other farm produce (maize, cassava) play the key role, whereas long-term industrial plants and perennial ones only accounts for a small portion. The commune's unused land area is 724ha, of which 700ha is mountainous and only 24ha is flat. By June 2011, Yang Tao commune has 1,707 households with 7,779 people; more than 92.5% of the population is the M'nong, and the remainder is the Kinh, E-de and small groups of Thai migrants.[11]

The majority of Yang Tao farmers still follow the tradition of polyculture/alternate farming/scattered crops/overlaying crops, and diversity farm produce in order to minimise risks and ensure food safety. Apart from farming, animal husbandry also plays an important role.[12] While some cross-bred varieties of rice paddies and maize have been accepted by the

[4] The district has about 7,618ha of 2-crop wet fields; 5,796ha of land for farm produce, annual industrial plants and beans/vegetables..

[5] Department of Statistics of Lak district (2011) "*Statistics Directory 2010*", p.15.

[6] PC of Lak district (2010): *Report on the implementation outcome of the tasks of socio-economic development and assurance of security-national defence in 2010 and socio-economic development plan in 2011.*

[7] Under the poverty standard for the period from 2006 to 2010, there are 28,992 poor out of a total of 389,322 households in the province, or 7.45%; however, under the poverty standard for the period from 2011 to 2015, the number of poor household in the province is 81,953, or 20.82%.[7]

[8] PC of Lak district (2010): *Report on the implementation outcome of the tasks of socio-economic development and assurance of security-national defence in 2010 and socio-economic development plan in 2011.*

[9] Division of Agriculture and Rural Development: "*Report on work in the first three quarters and directions/tasks for the last quarter of 2011*".

[10] Yang Tao commune has a total natural area of 6,870ha.

[11] PC of Yang Tao commune (2011): *Report on the implementation outcome of the tasks of socio-economic development and assurance of security-national defence in the first half, and the tasks for the second half of 2011.*

[12] By the end of 2010, Yang Tao's total buffalo herd is 102; cows 2,605; goats 108; pigs 1,550; cattle and poultry estimated at 16,800 (according to PC of Yang Tao commune, 2010- *Report on the implementation outcome of the tasks of socio-economic development and assurance of security-national defence in 2010 and socio-economic*

farmers, local plants still play a very important role due to their resilience and match with the taste of the locals. Yang Tao has a high povery rate. Under the new poverty standard (2011-2015), by June 2011, the commune has 858 poor out of a total of 1,707 households, or 50,26%.[13]

Dak Phoi commune lies in south of the centre of Lak district with a farming area of 9,692ha.[14] Among this, land for industrial and long-term ones plants accounts for 1,029ha. In the total land area of 1,106ha for annual plants, only 338ha is used for rice paddies and the rest is for other farm produce, beans/vegetable and miscellanous plants. There is 4,090ha of unused land in Dak Phoi, or 29,21% of the commune's total natural area.[15] By September 2011, there are 3,093 households with 5,500 people in the commune. About 61.7% of the population is the M'nong, and the remainder is the Kinh, ethnic minority groups of Tay, Nung, Muong and Thai who migrated to the locality from northern mountainous provinces in the 1980s.[16]

Unlike Yang Tao, Dak Phoi has advantages in long-term industrial plants (coffee and cashew). However, based on the outcome of the in-depth interviews, most of the coffee area in the commune belongs to the Kinh and ethnic migrants; some coffee farms or gardens are not owned by residents of Dak Phoi but actually belong to the Kinh from other localities who bought the land and employed local people. The majority of farmers in local ethnic minority groups still rely on cultivation of rice paddies, maize, beans and traditional food crops. Under the former poverty standard (2006-2010), there are still 464 poor households in Dak Phoi by the end of 2009, or 15% of the total number of households in the commune.[17]

1.1.2. Overview of the M'nong ethnic minority group in Lak district

The M'nong people are originally distributed in a large area of the Central Highlands, which is usually referred to as the M'nong highland. This area goes from the middle stream of the Dong Nai river in the east and the centre of the Xre Pok river in the north to the banks of the Mekong river in the west and the Stung Cheng plains (Cambodia). At present, the M'nong highland in Vietnam lies in the south of the Central Highlands, and is mostly in the area of Dak Nong province and some neighbouring areas of three provinces in the south of Dak Lak, sout-east of Lam Dong, north of Binh Phuoc and east of Cambodia.

Box 2: Overview of the M'nong ethnic group

The M'nong ethnic minority group belongs to the Mon-Khmer language branch. According to the Housing survey and census on April 1st 2009, there are 102,741 people in the M'nong ethnic minority group living in 51 out of 63 cities/provinces in Vietnam; the largest concentration of the M'nong is in Dak Lak province (40,344 people, or 39.3% of the total M'nong population in Vietnam), Dak Nong (39,964 people, or 38.9% of the total M'nong population in Vietnam), Lam Dong (9,099 people), Binh Phuoc (8,599 people) and Quang Nam (4,026 people).

There are different branches/sub-groups in the M'nong ethnic minority group, namely M'nong Preh, M'nong Noong, M'nong Prang, M'nong Bu No, M'nong Kuenh, M'nong R'Lam, M'nong Gar, M'nong

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development plan in 2011)

[13] PC of Yang Tao commune (2011): *Report on the implementation outcome of the tasks of socio-economic development and assurance of security-national defence in the first half, and the tasks for the second half of 2011.*

[14] Ministry of Natural Resource and Environment (2011): *Statistics and stocktake of land area in Dak Phoi commune, Lak district, Dak Lak province – Table no. 08-TKDD:* Dak Phoi commune has a total natural area of 14,058ha; more than 2,135ha of farming area; more than 7,542ha of forestry land.

[15] Ministry of Natural Resource and Environment (2011) – quoted above.

[16] Bureau of Statistics of Lak district (2011): *Statistics Directory of Lak district 2010.*

[17] PC of Dak Phoi commune (2010): *Report on implementation outcome of the tasks of socio-economic development and security-national defence in 2010 and directions for 2011.*

Chil, M'nong Biat and Bu Prang. The M'nong have diversified economic activities which match the specific conditions of the eco-environment.

The sub-group of M'nong in the highland mainly cultivates on mountain fields with main crops being rice paddies, maize, beans, cucumbers, gourds etc... Another sub-group lives in the low lands and relies on rice-growing combined with other farm produce (maize, cassava, sweet potatoes etc...).

'*Bon*' is the smallest base social unit of the M'nong. In the M'nong's traditional autonomous system, verbal law (*nau vay*) plays an important role and covers the whole community life of the *Bon*. The concept *holy things* (*ndrap ndo geh hueng*) – everything is sacred – of the M'nong is transformed into a highly-diversified system of gods and amulets (*gun rdang*) as well as worship practices. Every year, the M'nong performs rituals on agriculture (tribute to the Rice god, spirits of production materials etc...), fortune telling and medical treatment as well as life cycle. Since the admission of Catholicism and Protestantism, M'nong religious beliefs and cultural practices have undergone significant changes.

The M'nong maintains a small type of matriarchy family (*rnoi deh mpeh ma me*). Under the local traditions/practices, the husband lives with the wife's family after marriage; upon having children, they can move out and take their part of assets with them, and form another matriarchy family. In the M'nong family, theoretically, the mother, who wields the most power, operates and decides all family matters as well as external social behaviour. Sisters and brothers in the mother's family, instead of those in the father's family, have direct say in marriage for children of the family. Division of assets is also decided by the mother's family. The youngest daughter always get a larger share of important assets.

The M'nong in Lak district are mainly from the M'nong R'Lam sub-group. They live in the low lands and therefore have a rich traditional knowledge in cultivating systems on plots of wet land as well as farming (alternate farming, overlapping farming, scattered farming, alternate plots etc…). Apart from farming, the M'nong also raises different types of cattle and poultry. Some households have now digged ponds for raising fish. The M'nong used to have some manual trades which are capable of meeting the essential needs of daily life such as fabric weaving, rattan weaving, carpentry, ironwork etc… In addition, they are also very good at evaluating and utilising products from the forests, rivers and lakes. Different wild animals, vegetables, bambooshoots, mushrooms, honey, rattan tops etc… from the forests, and varieties of shrimps, crabs and snails etc… taken from streams, rivers and lakes were once the main source of foods for them. Many M'nong families in Lak district still keep hunting tools or materials for catching aquatic animals (spike trap, collapse trap, bows and arrows, spears, fishing nets etc…). In particular, the M'nong in Lak district used to hunt and tame wild elephants.[18] The district's herd of elephants is still maintained, though not as large as before.

The M'nong's division of labour still mainly relies on age and gender. Men assume heavier tasks, while women participate in all agricultural production activities (farming and aminal husbandry). For manual trades, women are mainly in weaving, and men in carpentry, ironwork and rattan weaving. In the exploitation of natural resources, men do the hunting and fishing, while women mainly do picking. The forms of alternate and substitute labour in production work are particularly popular in the M'nong.

In general, the M'nong residents in research locations are under profound transformation processes. Many traditional cultural characteristics (in relation to livelihood, material and

[18] Before 1945, King Bao Dai assigned a fleet of elephants to the locals in Lak district to take care of. This elephant fleet is specifically used in the King's huntings.

spiritual culture) are no longer intact. Protestantism have significant influence on the people's cultural practices. However, this does not mean that the traditional factors have been completely eliminated. Basically, the M'nong farmers still maintain a diversified/alternate cultivation system, with rice paddies as a focus in order to ensure food safety, as well as traditional methods of labour organisation based on community foundation (alternate and substitute labour).

1.2. Admission of the cocoa trees and cocoa development policies of Dak Lak province

Cocoa trees were first introduced in Vietnam by the French in the middle of the 20th century, but have never been considered a commodity tree. In the 1960s, the Americans again took cocoa to the South of Vietnam. The ongoing war and unrest in the countryside at the time did not give the cocoa tree any opportunities for development. In the 1980s, the State tried to take the cocoa tree back with the assistance of some state-owned enterprises. Thousands of farmers participated in growing cocoa Theobroma in some central provinces and the Mekong River Delta. About 3,000ha of cocoa was grown in Quang Ngai province alone in this period. A cocoa grinding factory which was equipped with high and modern technologies was also built in the middle of the 1990s; however, given the lack of local cocoa nut collectors and access to international market, the majority of farmers, except those who mainly used cocoa for family consumption in the form of cocoa wine, gave up cocoa production. Consequently, the cocoa grinding factory was also closed. In early 2000, researchers from Ho Chi Minh University of Agriculture and Forestry (NLU) tried to bring back cocoa trees but were not quite successful. Thanks to new policies of the government and MARD, cocoa trees have now been warmly welcomed in localities in the South West and Central Highlands region.[19]

In former Dak Lak, the first cocoa trees were pilotted in Ho village; however, due to different reasons, cocoa could not flourish. In the middle of the 1980s, two provincial technicians were sent to Cuba to learn cocoa-growing techniques. In 1987, the province's cocoa-growing campaign was launched and cocoa-growing area sometimes reached about 1,000ha. However, due to difficulties in access to the global market, cocoa trees were gradually felled down. In 1999, under the framework of the cocoa development program by the World Cocoa Foundation and DANIDA (in cooperation with NLU), cocoa models were formed in Duc Lap, Dak Min, Krong Bong, Cu M'nga, Ma Drak, Krong No, Ea Kar and Lak district. The cocoa variety grown in this period was mainly a cross-bred one which was imported from Malaysia. Cocoa was in monoculture with short-term shade trees such as Cassia sp and Banana.

Apart from some combined cocoa and cashew models, most farms were not successful because farmers did not exercise proper care and maintained sufficient crops as well as wind-break trees. In 2001, GTZ provided funding for a project by Ho Chi Minh University of Agriculture and Forestry (NLU) to evaluate the effectiveness of the cross-bred cocoa model which was developed in DANIDA's programs, and then develop new models.

On April 2nd 2002, the PC of former Dak Lak promulgated Decision No. 821/QD-UB on approval of the project on planning cocoa development area in the province until 2010 as 10,000ha (after separation of the province, the planned cocoa area in Dak Lak was 6,000ha). At first, the districts planned for cocoa development in Dak Lak were Ea Kar, Ma D'rak, Krong Bong, Krong Nang, Ea H'leo and Lak. In 2002, ED&F Man company, being encouraged by provincial policies, carried out a cocoa development program in Dak Min district (which still belonged to Dak Lak province at the time) on fertile land area which are suitable but not convenient for development of coffee plants (cocoa requires less water than

[19] Helvetas (2008): *Feasibility Study Organic Cocoa and Fair Trade in Vietnam.*

coffee). In this program, ED&F Man and NLU provided clonal plants for farmers and signed deals for collection of cocoa nuts. High-efficiency cocoa varieties were introduced in a large scale. Many farmer households began growing cocoa to replace the old coffee plants. Some coffee companies also changed old coffee growing areas into cocoa ones[20]. In 2003, a Program Cooperation Emerging Markets (PSOM) was implemented with joint support from the Netherlands government, NLU and Cargill group. In this program, NLU experts trained farmers on techniques in growing, harvest and fermentation in order to ensure the quality of cocoa nuts. Cargill company set up a collection system with networks in different districts. Cargill also signed agreements on fertiliser supply for cocoa-growing farmer households.

In 2007, the Success Alliance project, funded by the US government, commenced in the districts of Lak, Ea Hleo and Ea Kar. In the two phases of the project, 84 clubs for cocoa-growing farmers were established with participation by 3,440 households. Each participating farmer household was provided with 150 grafted cocoa seedlings and received trainings on the techniques for cocoa growing and processing. The trainings were held every month throughout the project duration. By the completion of the project (September 2011), the province still maintained 79 cocoa clubs with participation of 2,577 farmer households.[21]

Despite numerous efforts, the province's total cocoa area only reached 1,935ha by 2010, or nearly 1/3 of the target set forth in Decision No. 821/QD-UB of April 2nd 2002 on approval of the project on "*Planning cocoa development area in the province until 2010"* as 6,000ha (minus the area divided to the newly-separated Dak Nong province). The main barriers to cocoa development were identified as: i) Cocoa was a new tree which failed to show outstanding efficiency over other plants; ii) The source of good-quality variety was missing; iii) The project was only implemented in poor districts where farmers lacked capital for investment; and v) There was no focus on combining cocoa development plans with State programs/projects such as project 134, project 135 or the poverty elimination program.[22]

In Lak district alone, there are five participating communes in the project entitled "*Development of sustainable cocoa production in farmer household"*, namely Dak Phoi, Yang Tao, Bong Krang, Dak Nue and Dak Lieng. From 2007 until now, the provincial agriculture promotion centre have developed three demonstration models in Lak district, and established as well as maintained 39 cocoa production clubs with the participation of 1,332 farmer households. A group of trainers who are ethnic minority people was formed with more than 20 key officers. The trainers received standard and continuous trainings based on the development cycle of the trees and cases of pests. Particularly, under the framework of this project, market cooperation and information work was considered as one of the top priorities. NLU organised different trainings on fermentation for farmers, and formed a network for collection of fresh cocoa on the spot. With 8 collection and fermentation facilities, the outlet for cocoa-growing farmers in Lak district has basically been resolved. By 2011, Lak district has grown 205ha of pure cocoa. The cocoa gardens grown in 2007-2008 started to become ready for harvest, and cocoa nut output of Lak district in 2010 reached over 5,000kg.[23]

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[20] Krong Ana company 240ha; Ho Village Coffee Company 144ha; Thang Muoi Coffee Company 150ha.

[21] Agriculture Promotion Centre of Dak Lak province – Project on Development of Sustainable Cocoa Production in Farmer Households (2011): *Wrap-up report on implementation of the Project on Development of Sustainable Cocoa Production in Farmer Households for the period 2010-2011"*.

[22] Department of Agriculture and Rural Development of Dak Lak province (2011): "*Report on implementation of the 6,000ha cocoa project"*.

[23] These figures have been collected from the *Report on work progress for the first three quarters and tasks/directions for the last quarter of the year* by Department of Agriculture and Rural Development of Lak district and *Wrap-up report on implementation of the Project on Development of Sustainable Cocoa Production in*

Despite being assessed by the Project Management Unit as successful, the cocoa saga in Lak district is still a complicated one. At the beginning, the Project Management Unit set up 40 cocoa production clubs with 2,106 farmer households who were mostly local ethnic minority people in the district; however, upon completion of the project, only 39 clubs remained active with participation of 1,332 farmer households (63.24%). The pervasion of cocoa trees is not significant, and, without the support of the project, no local ethnic minority farmer households would be keen on growing cocoa.

II. BARRIERS TO COCOA DEVELOPMENT IN LAK DISTRICT

1. Lack of significant economic benefits

Yang Tao is one of the communes without favourable conditions for development of long-term industrial plants. For generations after generations, the M'nong in Yang Tao have only been relying on growing rice paddies and crops. The miscellanous gardens for which some families have switched to cocoa have always been of low economic benefits. In fact, most cocoa gardens have only yielded the first batch of fruits and people therefore have been unable to finalise the account of expenses. In a group discussion, the group of male participants in the Success Alliance clubs, when asked, gave cocoa a 2nd priority after rice paddies. According to them, cocoa, despite the lack of profits, still provided some cash income which served a purpose for their families.

However, the people who did not join the clubs or did not grow cocoa trees or did so but only on a small scale ***were sceptical of the economic benefits of cocoa*** against other types of plants. A 28-year-old farmer of the E-de ethnic minority group who had been living with his wife's family in Yooc Duon village for 5 years commented that the M'nong in Yang Tao preferred rice paddies to industrial plants. After moving in with his wife's family, he became the first cassava grower and had a very high productivity. According to him, cassava (and wheat as well) cultivation is much easier than cocoa, and yet the products are clearly visible. "*No fertiliser is required in cassava cultivation.It is only necessary to remove the grass, and is even easier than growing corn. I sometimes earn VND 30 to 40 million from my few sào (Vietnamese measurement unit, equivalent to 360m2) of cassava*". He also expressed his wish to grow pepper, if possible, because it was easy to sell the product, whether fresh or dry. "*People only grow cocoa because the seedlings were given for free*" – he said.

Cocoa trees seem to have no comparative advantages over some industrial plants, especially coffee. In Dak Phoi, a group of M'nong and Tay farmers helped the researchers to analyse the benefits of cocoa production by reviewing the chronological flow of revenue and expenses from the initial investment in forming the cocoa garden to spendings on infrastructure, facilities and production expenses, including material and labour costs. The analysis was conducted using the fixed price at the time of the survey and based on coffee growing experience as well as cocoa growing techniques to work out an estimate of the average expenses and revenue on an area of 1,000m2. Cocoa output, flow of expenses and revenues are assumed to stabilise at the 6th year. Analysis results as follows:

Table 1: Comparison of economic values between cocoa and coffee trees

Year	**Work** *(unit: 110 trees/1 sào – 1,000 m2)*	**Expenses for cocoa trees** *(unit: thousand dong)*	**Expenses for coffee trees** *(unit: thousand dong)*
1	Hole digging	200,000	200,000

Farmer Households by the provincial agriculture promotion centre.

	Hole treatment, bed rinsing	300,000	200,000
	Seedlings	660,000	330,000
	Fixing and planting	300,000	100,000
	Fertilisers	132,000	324,000
	Watering	200,000	200,000
	Grass removal	800,000	800,000
	Termite, bug removal agent	550,000	175,000
	Making 'shields'	200,000	
	Total spending	**3,342,000**	**2,329,000**
2	Garden grass removal	400,000	400,000
	Enrichment planting	190,000	80,000
	Bug removal agent	500,000	250,000
	Fertilisers	265,000	650,000
	Bed grass removal	400,000	500,000
	Watering	600,000	800,000
	Bud trimming	100,000	300,000
	Total spending	**2,455,000**	**2,980,000**
3	Grass removal	400,000	400,000
	Pesticide	650,000	600,000
	Bud trimming	100,000	400,000
	Watering	800,000	1,200,000
	Fertilisers	850,000	1,400,000
	Total spending	**2,800,000**	**4,000,000**
	First harvest	**350,000**	**840,000**
4	Grass removal	200,000	300,000
	Pesticide	130,000	130,000
	Bud trimming	100,000	400,000
	Watering	800,000	1,200,000
	Fertilisers	800,000	1,200,000
	Harvest	100,000	400
	Drying		200
	Total spending	**2,130,000**	**2,631,200**
	Sale	**2,310,000**	**6,000,000**
5	Grass removal	200,000	300,000
	Pesticide	130,000	130,000
	Bud trimming	100,000	400,000
	Watering	800,000	1,200,000
	Fertilisers	800,000	1,200,000
	Harvest	100,000	400,000
	Drying		200,000
	Total spending	**2,130,000**	**2,631,200**
	Total revenue	**3,850,000**	**9,000,000**
	5-YEAR TOTAL SPENDING	**13,037,000**	**14,571,400**
	5-YEAR TOTAL REVENUE	**6,510,000**	**15,480,000**

(Source: group discussion with representatives of cocoa-growing households in Dak Phoi commune, Lak district on November 3rd 2011).

Table 1 shows that, if basing on the expense-revenue analysis between cocoa and coffee, the cocoa farmers in Dak Phoi will choose coffee instead of cocoa. On an area of 1,000m2, total expenses for coffee growing is higher than for cocoa, i.e VND 14,571,000 compared to VND 13,037,000. Meanwhile, revenue is a totally different story, with 5-year revenue from coffee

being VND 15,480,000 compared to VND 6,510,000 from cocoa. It is obvious that, despite the relatively larger expenses, coffee brings much higher economic benefits than cocoa.

The officers at Cargill company's collection centre in Buon Ma Thuot frankly admitted that, *on the same area, cocoa cannot compete with coffee in terms of productivity and economic benefits.* The group discussion in Dak Phoi commune shows that at present, *cocoa is not the commodity tree but coffee and cashew.* A land officer said that by all calculations, cashews are more profitable and less risky than cocoa. Cashews are more weather-resilient and only require a moderate amount of fertiliser but not any forms of shielding. One hectare is capable of yielding VND 60 million. However, cashews need to be planted 10m apart, and therefore cocoa can be combined. Coffee, on the other hand, have been grown in plantation since the French colony and have become an indigenous plant since. According to an officer from the provincial Department of Agriculture, the locals here understand coffee just as residents of the plain know about rice paddies. Coffee, at the same time, is the plant with highest economic benefit in the locality. Accordingly, coffee is always chosen first among industrial plants. According to an assessment by *Agrifood Consulting International (2008)*, the barriers for people to move from coffee to cocoa are obvious:

> While cocoa price is high and still on the increase, the same applies to coffee. Particularly, for large production areas such as the Central Highlands, the motivation for farmers to move from coffee to cocoa or simply combine the two is low. With the current prices, coffee brings better income and has a more focused harvest period whereas cocoa harvest time goes for a few months. In addition, most farmers are familiar with coffee plants while cocoa is quite a new one. Rubber can be an alternative for cocoa. There are some advantages which allow cocoa to draw supporters such as lower risks, lower use of chemical fertilisers and water, less care, lower initial investment capital whilst bringing more benefits in terms of bio-diversity and better flexibility in adaptation into large-scale eco-agricultural conditions than coffee and rubber. The government has a preferential loan scheme for rubber growers, however there is no such program for the cocoa tree. Apart from coffee and rubber, there are other alternatives to cocoa. Evidence of cocoa's advantages over competitor plants needs to be demonstrated, introduced and popularized to the farmers. The development of cocoa production may be delayed unless continuous efforts in this direction are implemented.

According to comments from concerned parties, due to the lack of 'outstanding' advantages over coffee plants, cocoa can only be grown in areas which are unsuitable or too narrow for coffee growing. In terms of this, a leader of the Agriculture Promotion Centre of Dak Lak province analysed: the cocoa tree can not compete on areas which are favourable to coffee, rubber or pepper. However, in other areas, cocoa can be a better choice for the people. The reason is that earlier researches and comparisons have taken into consideration all input and output factors of the cocoa product line.

Cocoa is not a tree of the poor because it not only requires cultivating land but also large funding in the garden formation period (3 to 4 years). The farmers can learn and absorb new techniques, however funding is always a huge obstacle to the poor and people of local ethnic minority groups. In this regard, cocoa can not compete with rice paddies and crops, which are ready for harvest after just a short period.

Cocoa production requires large capital, especially in the first years. In the field visit assessment, the trainers advised that for cocoa, expenses for materials includes fertilisers (both organic and chemical), soil treatment (such as limestone), fungicide, pesticide, electricity for irrigation, investment for wind-break tree as well as short-term and long-term shade trees. In the first, second and third year, each cocoa tree requires an NPK 16-16-8 fertiliser volume of 200, 400 and 600gr respectively. From the 4^{th} year, the fertiliser is changed to NPK 16-16-26

with a volume of 0.9kg, and then 1.5kg/tree from the 5th and 6th year onward. The required amount of limestone for the first year is 0.5kg/tree and 0.3kg/tree from the 2nd year onward. Besides, cattle manure, with a volume of 10kg/tree in the first year and 5kg/tree from the second year onward, is always required so as to maintain the organic ingredient in the soil. This requires a huge spending for large-scale cocoa agriculture. According to the chairwoman of a club who is one of the biggest cocoa investor in Yang Tao with 1,000 trees, the price of NPK 16-16-8 at present is VND 600,000 per 50kg bag. Cattle manure can only be used in dry season, where as it is mandatory to use chemical fertilisers in wet season. Her cocoa garden would not give the first harvest until the year after, and she was desperately looking for loans to meet fertiliser needs.

The costs of fungicides and pesticides are also significant. According to an agriculture promotion officer in Lak district, local cocoa trees are subject to different types of pests and diseases. In terms of pests, termites are the most dangerous threat; in the trees' production period, Helopeltis antoniis are the main concern. This has also been confirmed by all cocoa growers. Farmers usually use Chlorpyrifos to prevent termites, and Cypermethrin and Dimethoate to fight Helopeltis antoniis. The diseases that cocoa in Lak district often contracts are fruit rot and agal rust. Technicians usually recommend farmers to use fungicides such as Metalaxyl, Cuprous oxide, Phosphonate potassium, and Fosetyl-Al can be used when there is a strong pressure from the diseases. For agal rust in particular, it is necessary to use cuproxide and broad spectrum fungicides to control the disease. A farmer in Lieng Keh village, Dak Phoi commune who is growing 50-ha of cocoa with seedlings from the project says that there are many affected trees but he can not afford pesticides and therefore just "*leave it as it is*".

Labour costs for cocoa production includes digging and planting charges (at the time of garden formation), fertiliser usage and tree care, watering, trimming and grass removal, harvest, fermentation as well as drying (in the nurturing and production period). Compared to other plants such as coffees or rubber, labour cost for cocoa is assessed as being lower. Nevertheless, due to the lengthened garden formation period (3-4 years), the accrued labour cost becomes quite significant. In addition, the cocoa production facilities need fundings for procurement of pesticide vessels and pumps. Fermentation facilities also need fermenting boxes.

Expenses in the collection stage and for risks relating to cocoa quality also need to be considered. An interview with a Cargill officer reveals that the company does not collect on the spot but only buy via agents. The agents will have to deliver cocoa to collection stations. Meanwhile, the collection network is not well-established. In addition, risks in processing and storage mean that if cocoa is returned due to decomposition or smell, farmers' cost in cocoa growing, fermentation and sale also increases.

It is more difficult to obtain a loan for cocoa than for coffee or other short-term plants. Cocoa productivity and quality depend on many factors: the variety, nurturing techniques (shade, wind-break), pest and disease control as well as soil nutrition. Among these factors, pest and disease control and the level of improvement to soil nutrition have significant impact on productivity. Both of these factors request large investments. However, the in-depth interviews at the research locations show that loans for cocoa are difficult to obtain, and people are also hesistant in borrowing. This is attributed to the fact that lenders are concerned about the economic benefits of cocoa, as well as the possible risks involved in the complicated growing techniques:

> *"Banks do not offer loans to cocoa growers in the same way they do to the Duon people for coffee growing, while we can't obtain external loans for long periods. It is possible to pay back the loan within a year if we grow maize; however, for cocoa, we can't even make profits by the loan*

maturity, let alone paying it back. The cash holders do not dare to lend while we are also afraid to borrow as we as not sure if we could pay back." (resident of Tlong bon, Dac Phoi commune).

Unlike coffee or small-scale rubber in the past, at present, there is no program in place to help with access to sources of medium-term credit for cocoa. According to the local authorities of Dak Phoi commune, it is easier to obtain loans, whether from the state or private sources, for maize growing because the season is short and therefore loan settlement is feasible; and in the case of loans from private sources, the harvested products can be sold directly to the debtors. Cocoa, however, are still not ready for harvest after a few years, which makes it difficult to borrow loans. According to *Agrifood Consulting International* (2008), the cocoa farmer households can only reach the break-even point in the 4th year, and start to make profits from the 5th year onward. This means that for the first four years, cocoa production is an expense-only game. For poor farmer households and local ethnic minority families who have weak or very limited access to farming land and credit flows, this is a difficult obstacle to overcome. With the current medium-term credit source (2-4 years), it is difficult for cocoa trees to develop. The financial barriers could even hamper the better-off farmers if they apply large-scale monoculture.

2. "Cocoa is selective on growers" - difficult nurturing and processing techniques, yet the risks are high

A common thought that cocoa can be grown on meagre or barren land has been proven to be completely incorrect. Agronomists say that cocoa adapts well to different types of soil in Vietnam, and is particularly suitable for sandy soil, heavy soil, basalt lateritic soil; accordingly, Dak Lak is considered one of the provinces with great potentials for cocoa growing. Provincial and local officers also assume that cocoa trees are not selective on soil and can therefore be grown in meagre land or areas which are not suitable for coffee. However, in the group discussions, local residents affirmed that cocoa can not be grown on sandy soil. In sandy soil and windy area where coffee cannot grow such as Yang Tao, cocoa trees are usually dead, felled off or exfoliated, especially in rainy seasons or strong winds. According to a member of the Dak Phoi farmer association, his three *sào* of cocoa only lived for 4 to 5 months despite application of the right techniques as indicated in trainings. The reason is that his cocoa trees were planted on 'hot soil' (*teh doh*), or sandy soil. In order to bring about good harvest, cocoa trees still require certain soil and water conditions like coffee. A land officer of Dak Phoi commune asserted that it was difficult to popularize cocoa trees because people used all the good soil for coffee, whereas cocoa could not survive poor soil. Additionally, the areas with good or basalt soil are mostly owned by the "land people", i.e the Kinh from other localities who buy the land for cultivation, while the local ethnic minority people tend to occupy areas with lower soil nutrition.

Even when planted on good soil, cocoa continuously requires supplementary mineral and nutrition. Nevertheless, up till now, a fertiliser formula suitable for each area and each stage of development of the cocoa tree has not yet been developed. Presently, the recommendations on fertiliser are not specific, and people have to use these general advice and adapt to their cocoa garden based on signs of the tree's growth and development.[24]

[24] The fertiliser recommendations are based on two stages of development of the cocoa trees, namely fundamental formulation and business. In the first stage, synthetic fertilisers with high composition of protein such as 16-16-8 or 20-20-10 are recommended with a volume of 200g/tree/year and 400g/tree/year respectively for the first and second year of growing. In the business stage, synthetic fertilisers with high composition of potassium such as 12-12-17 or 18-40-30 are recommended with a volume of 600 to 1,000g/tree/year. A high volume of 1800g/tree/year used in the pure cultivation model in the Central Highlands brought about a very high productivity (over 3kg/tree)

Water has a great impact on cocoa productivity and cocoa bean quality. According to calculations by specialists, cocoa does not need as much water as coffee; however, water is still an important factor in the tree's growth. Water shortage leads to undersized seeds, thereby affecting productivity and quality. At present, the cocoa watering method is usually adapted from that for coffee, or based on feelings of the growers. For local ethnic minority people in Lak district, this is a huge obstable because most of the farmers in this group have never had any experience with coffee. In the cocoa region of Lak district, there are currently two main forms of watering: digging wells to exploit underground water or utilise water from streams, rivers and lakes. Water is pumped and sprinkled through plastic pipes. This is the most popular method of watering for most plants, and people usually water more than the plants' actual needs. The cost for watering is also considered too high for most small farmer households. A woman in Yang Tao commune expressed: *"cocoa is difficult to care for and requires lots of watering. I attended trainings and then trained my husband and nephew on the techniques, however we all still struggled for good"*.

Notwithstanding, high rainfall also causes cocoa pods rot disease but there is yet any effective cure. According to an agricultural engineer in Lak district, heavy rains and strong winds are two natural conditions which are most detrimental to cocoa in the district; however, no proposals on techniques to minimize the damage have been raised yet. As a result, regardless of the decision to grow cocoa on a large scale, the 'heart-breaking' feeling and nervousness on the first harvest in the coming year as cited by the M'nong women – chairwoman of the cocoa club – is totally understandable.

"Cocoa is very selective on growers" because the techniques are difficult and regular care is required right from the beginning and throughout the process. This is a comment commonly raised by chairmen of cocoa clubs as well as concerned agencies. Unlike other indigenous and exotic plants (coffee, cashew), the process and techniques for cocoa growing and care are very complicated. It is required to combine at least 4 out of 8 varieties; to provide shade and wind-break trees; to regularly control pests/diseases; and to take good care and ferment. Cocoa cannot multiply themselves. Newly-planted cocoa will die if there are no shade trees. According to an officer of the agriculture promotion centre, it is a success if 80% of the newly-planted cocoa trees survive. Some households in Dak Phoi have planted cocoa trees but they all died; some families planted 5 *sào* of cocoa but they all died due to lack of care. In gardens with no existing shade trees, people have to grow Cassia sp for shade before planting cocoa. After planting, people have to make "shields" (one per root) to break the wind and provide shading. If there are existing shade trees and fences in the garden, people have to water 4 times per month. In order to ensure growth and productivity, it is necessary to trim off all redundant branches on the trunk. Cocoa is vulnerable to different types of pests and diseases: bugs, fruit-rot fungi (pesticides are only available in some shops in Buon Ma Thuot town) etc... Bugs attack every two months, especially in rainy season. Fruit rot disease usually emerge in rainy season, while agal rust occurs due to unsuitable shade and the impact of strong wind. In cocoa growing, it is necessary to spray pesticide every 20 days. Some types of fruit rot diseases caused by a kind of fungus currently have no cure but prevention. Consequently, many people who have not joined cocoa growing say that they are not ready because cocoa growers need to be whole-hearted and dedicated to caring for the trees. In Yang Tao, a chairman of the cocoa club was sent to trainings so as to return and train other members in the club; however, not a single cocoa tree in his own cocoa garden survived due to improper care.

(*Agrifood Consulting International 2008*, extract)

Cocoa growing is not open to everyone, though. The trainees set up a club by way of announcement and selection, with a maximum of 40 members per club. According to a club chairman, the member selection criteria are families with well (for water supply), cows (for manure), land, watering pipes, available workforce, and diligence.

Control of output product quality is another technical challenge. Fermentation quality proves to be the hardest to control. At present, some private facilities do the fermentation themselves; however, it is assessed that the quality can not be controlled if the work is not centralized. No agencies are currently capable of controlling fermentation quality; however, cocoa can only be consumed if, after fermentation, UTZ quality standards are met. This is a quality assessment scheme proposed by UTZ Certificate, a Dutch non-government organisation specialised in cocoa quality assessment. In Dak Lak, UTZ Certificate has promulgated a set of standards for cocoa bean quality which consists of 175 criteria. VinaContro is accredited by UTZ Certificate to be the focal point for preparation of guidelines and enforcement of the standards. The standard assembly for cocoa bean quality for Vietnam was also approved by Vietnam Standards Centre (STAMEQ) in February 2006.

Table 2: Indicators for classification of cocoa beans

Classification indicators 1A, 1B, and 1C for cocoa beans

Indicators	**1A**	**1B**	**1C**
Bean count	100	< 110	< 120
Humidity	Max 7.5 %	Max 7.5 %	Max 7.5 %
Indurated beans	Max 3.0 %	M x 3.0 %	Max 3.0 %
Mouldy beans	Max 3.0 %	M x 3.0 %	Max 3.0 %
Broken/pest-stricken/sprouting beans	Max 0.5 %	Max 2.5 %	Max 2.5 %
Contaminant	Max 1.0 %	Max 1.0 %	Max 1.0 %

Source: Notice at the Cocoa Collection Centre in Dak Lak

According to the collection officer, cocoa having two types of smells, i.e meat stench (cocoa beans need to be sun-dried after 5 days of fermentation, and risk being rotten if affected by rain) and smoke (due to incorrect drying technique, smoke from the oven penetrates the beans), will not be purchased. Fermentation is a new and difficult technique, therefore the fermenting person is exposed to risks. Additionally, due to impact from the climate, quality of beans collected in rainy season is significantly lower than those in dry season.

3. Lack of compatibility with the ethnic culture

3.1. Cocoa cultivation system lacks compatibility with the traditional production customs

A new and alien plant, cocoa has not by now found the real position in the daily life and production practices of M'nong people in Lak district. Series of failures in growing cocoa in Dak Phoi Commune has been explained by a Kinh communal officer as being resulted from *"the limited knowledge and vision of minority ethnic people, they do not see the economic benefits of industrial trees"*, and their laziness that causes the death of a large number of cocoa trees. However, this officer and his family have not participated in growing cocoa and have no intention to replace the current industrial trees with cocoa. It can be seen that the prejudice against the minority ethnic people (being lazy and low educated) has obsessed Kinh state officers in local area without any effort to figure out why cocoa are not successfully planted in M'nong community in Lak District as expected.

A district officer commented that Dak Lak farmers have emotional attachment to coffee like the attachment of farmers in the Northern Delta area to rice. *Cocoa has not yet earned such attachment.* In particular, the farming procedures of taking care of the tree and harvesting have not been really compatible with the production custom of M'nong people.

The M'nong farmer has 'mutual aid' customs or the so-called '*van cong' and 'doi cong'* in the harvest season. 'Van cong' (in harvest season, a few households gather to harvest the crop of one household til finishing, then move to the next household) and 'doi cong' (I work for you today, you work for me tomorrow) are kinds of cooperation based on kinship as well as neighbour relations, which represents the tradition of peer support and community connection. Nevertheless, *cocoa tree with difficult planting and care process requires patience, meticulousness, and daily hardworking, which cannot rely on mutual aid or hired labour, while in coffee or cashew production farmers can easily hire labourers.* The current farming schedule of local residents has been full, in which rice and maize are two irreplaceable food crops. Cocoa requires regular care i.e. watering, weeding, pruning, and applying fertilizers. Prolonged and intermittent work makes it difficult for farmers to perform the 'mutual aid' custom like in growing rice or maize. As a result, households that lack labour force or spouse consensus will not be able to grow cocoa. A M'nong woman said that she once registered to receive cocoa seedlings, but had to return them because her husband did not want to participate; she could not water cocoa trees without her husband and daughter's joint efforts. Furthermore, the shift from the traditional practice of harvesting once per crop to the all-year-round, intermittent harvest would bind farmers into their farms. They cannot actively involve in other types of production or even hire labour. Although hiring labour in agricultural production is a common practice in the Central Highlands, it is often applied in coffee farms of Kinh people. In ethnic minority villages, the mutual aid pratice is still common, considered to be "joyful" while "hiring might hurt the villagers' relationship", a 86-year-old village patriarch stated. He said, even coffee harvesting was also based on "mutual assistance" practice, not labour hiring, because hiring people from the same village could be considered an offence.

Consequently, the local people *cannot take advantage of the traditional social network* in the process of planting and taking care of cocoa. The 'van cong', 'doi cong' customs not only represent the peer support in production, they are also social tools that help strengthen the community connection, an important element of local livelihood and cultural life. Furthermore, cocoa gorwing is sometimes not compatible with the M'nong lifestyle and village structure, so its efficiency is low. In many villages of Dak Phoi Commune, pigs are let wandering freely, as cocoa pods appear at a low position they will be eaten or destroyed by pigs (in opposite, pigs cannot reach coffee fruits which grow on a high position).

In the matriarchial culture of M'nong, women play quite an active role in the daily life. They are usually participants of cultivation training courses in villages[25]. However, group discussions and in-depth interviews revealed that women preferred growing coffee, rice and maize to growing cocoa, showing little interest in acquiring further knowledge on cocoa production techniques and processes. Statistics of Success Alliance Project Management Unit show that in 3,024 training classes delivered to farmers, the female participation rate was only 20.9%.[26] While more males attend training courses on cocoa production, it is females who take a large part in looking after the trees. Thus, it seems that both males and females feel confused and uncertain about complicated technical steps and processes. A farmer living in Dak Phoi Commune said he grew cocoa because it was given by the project. Although he was "fed up" with the crop, he felt an obligation to take care of it, for fear that the project will stop giving assistance if he abandoned the trees: *"I am fed up with growing cocoa trees, but still have to take care of them because I would feel embarassed if the project finds the trees not growing well*".

3.2. Intermittent income from cocoa cultivation is not compatible with the consumption custom of M'nông people

Cocoa tree has specific characteristic that cause difficulties in harvest. Cocoa pods do not mellow evenly, but once ripe, they must be picked immediately to avoid getting rotten. Once picked, they must be sold immediately, rather than being accumulated for later sale. Due to intermittent harvest, the income from cocoa is also *intermittent* rather than a lump sum like incomes from rice, maize or coffee (the highest daily income generated from 3 *sào* of cocoa is approximately 100.000 Vietnam dong). This type of income generation can only help with daily spendings, not savings, especially to the poor in unprivileged areas like Lak district. A resident of Lieng Keh village of Dak Phoi commune complained that each day he would earn some thousand dong from a couple of ripe cocoa pods, which is too little to do anything. He said *"I'd rather not grow it"* and:

"Coffee crop is harvested all at once, taking less time and effort. For cocoa, I grow them only because seedlings were given for free. Harvesting cocoa pods is so tiring. Pods ripe scatteredly, ripe and green, big and small are mixed up all the time. Picking one or two pods, selling for 3,000 dong, what could I do with it…"

Observing the way income is generated for cocoa growing households, farmers who have not involved in this crop found hard to be convinced. The Chairman of Farmers' Union of Dak Phoi Commune said:

"When Farmers' Union officers communicated that cocoa was easier to grow and gave higher benefits than coffee, local residents said they disliked intermittent income, which caused them loss of capital. Farmers here are not interested for they have not seen its actual economic value. If the crop can generate a lump sum of money, they can invest in many things else."

One-time harvest means people will be able to get a larger amount of money to buy something big, invest in children's education, or to pay their debts. As a result, it is hard for local residents to borrow capital to plant cocoa, while they themselves do not want to borrow because of limited posibility to save and pay debts. Vice Chairman of Dak Phoi Commune People's Committee also explained: *"local people like crops that can be harvested at one time*

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[25] Group discussion in Dak Phoi on 3rd of November, 2011. Some women in Dak Phoi reported that men did not attend training courses because after the class they often drink togther and foget all of what they have learned.

[26] Dak Lak Agricultural Extension Center (2011): Report on the Project Implementation *"Sustainable Cocoa Enterprise Solutions for Smallholders"*

and in short period of time.Cocoa harvest is intermittent and extended over the year, difficult to make savings so people don't like". Consequently, an opinion shared by many staff and local residents is cocoa can only be a supplementary plant giving additional income to the family, not a mainstay crop like rice, maize or coffee. In other words, cocoa harvest method is not compatible with the consumption style of local residents.

3.3. With limited area of cultivation land, farmers prioritise crops that can ensure food security

According to Chairman of Dak Lak Provincial Committee for Ethnic Minorities, reality of the last decades demonstrates that ethnic minority people in the Central Highlands have had no limitations in acquiring technical knowledge and adopting new plants. In fact they have quickly adapted, especially when the new crops bring about practical benefits. The development of coffee tree in the Central Highlands has proven that cultural customs or technical issues are not barriers to new practices of local residents. Thus he reckon the shortage of land for cultivation the biggest obstacle to expanding cocoa production.

Unlike Mekong Delta River and Binh Phuoc province where cocoa is intercropped with coconut or cashew, in Dak Lak (and Dak Nong) monoculture of cocoa is practiced in the coffee land where coffee trees have exceeded their term of production, or intercropped in the household gardens. For intercropping model, small area of cultivation is one of the biggest disadvantages to ethnic minority people in surveyed areas. In Dak Phoi Commune, each farmer household owns 0.63ha of cultivation land on average. In Yang Tao Commune, the average area for agricultural production owned by a household is 0.77ha, of which the area for rice production accounts for 30%. These data are only "in theory" however, in reality land distribution among households is much more complicated. In recent years, land accumulation has been a common phenomenon in Lak District, especially in communes having potentials to develop long term industrial crops, and Dak Phoi is one typical example: the majority of land areas for coffee is owned by those coming from elsewhere, while the areas of land owned by local people are always smaller than the commune's average. According to a 86-year-old village partriarch, land for coffee production in Dak Phoi used to be administered by a state farm, director of which was his son in law. Dak Phoi was one of three cooperatives that received farm's land to reclaim the virgin soil and grow coffee with the farm's support in seedlings, fertilizers, and water pump. However Dak Phoi Cooperative returned this land to the farm after all coffee trees were burnt in a fire in 1989 dry season. After the farm was dissolved, only non-indigenous people can afford to buy land here.

On the other hand, ensuring food security is always the top priority of M'nong people in Dak Phoi and Yang Tao. The majority of households here reserve their limited cultivation areas for rice, maize, cassava and vegetables. All members of the clubs within SA project in surveyed communes spare only a small part of their land – normally the garden, where less profitable trees are planted – to grow cocoa. A state officer of M'nong ethnic said: *"cocoa trees takes about 2-3 years to give the first harvest. If only cocoa were planted on the field, what would people eat during that 2 – 3 years?*" Investing in cocoa does not allow people to feel secured.

One Yang Tao Commune's agriculture officer held that despite the current limited area for cocoa, the land for cocoa development can potentially reach 200-300ha, where maize was planted at the moment. If farmers replace maize with cocoa, then this area of 200-300ha will be cocoa's. Nevertheless, this is unlikely to be the case, because M'nong people tend to appreciate the diversity of crops in order to ensure their sources of food.

4. Lack of trust due to unproven benefits

4.1. Failures in the past and anxieties about the future

Cocoa was first grown in Lak District in 1987. Many Lak people still recall memories about Mr. Nguyen Luong Binh, an agricultural expert and a key district's leader, who introduced cocoa into the district. Returning from a study tour in Cuba, Nguyen Luong Binh and the District People's Committee launched a movement of growing cocoa. By the end of the 1980s, the cocoa plantation area of Lak district had reached 1,000 ha. However, efforts of local authorities and people could not bring about the expected results as no markets were found for their products. Most cocoa trees were then cut down, some survive and still give pods, but pods are of low value because the variety is obsolescent, giving few and small beans. A farmer recalled:

> "*In the 1990s, cocoa was just planted for shade, not for economic benefits. Children found the pods beautiful, they just ate the pulp and threw the beans away*"

In 2002, when (former) Dak Lak province had the policy to grow cocoa, Lak District was included in the plan. Although researchers from Ho Chi Minh City University of Agriculture and Forestry gave careful technical instructions and ensured the procurement of products, cocoa was unable to be developed. Many reasons were given to explain, including three major ones: i) the failure of cocoa in the 1980s makes local people suspect; ii) cocoa requires bigger capital investment than estimated by the province, while farmers' capacity is limited; and iii) techniques of planting and looking after the cocoa tree are more complicated than other crops like coffee or cashew.

Rumors about failures of cocoa also deprive people of trust. When asked why they refuse cocoa seedlings given for free by the project in 2007, a resident in Doc Duon Hamlet of Yang Tao Commune told: *"there are many rumors that make me reluctant... The rumor has it that the cost of seedlings will be reclaimed some day, because a project in Buon Ma Thuot once gave people things to grow some dozens of ha of coffee, then claimed all back and farmers became no more than hired labourers"*. Another person explained: "*although cocoa seedlings are given for free, many households don't dare to accept, fearing that they have to pay debts once products could not be sold*".[27] Chairman of a Farmers' Union confirmed that several people did not want to accept the seedlings for fear of being reclaimed. Group discussions in Dak Phoi Commune revealed that Tay households, who freshly immigrated in from Cao Bang northern province, found it easier to accept cocoa tree because they had no bad experience of failures from agricultural extension programs in the past.

Failures in the past become lessons for farmers in present. A M'nong woman growing cocoa in Yang Tao Commune said her family in 1998 had to burn 3 *sào*, equivalent to about 19 tons of of sugar cane, which were grown within another project, because no one bought the products then. She explained the reason for growing cocoa instead of sugar cane after having bitter experience with the latter: *"I decided to grow cocoa because if no one buys cocoa pods, I will cut the tree down for firewood. Cocoa tree can be used as firewood while sugar cane cannot."*

4.2. Lack of information and information disturbance

Most farmers and local officials lack information, especially information about market, processing, consumption, and techniques of taking care of cocoa. Data from interviews indicate that local residents and even a number of district and commune officers have vague

[27] Interview with Ms. H'Jun Kmăn in Yang Tao on 2nd November 2011.

knowledge of cocoa. A Women's Union officer said *"I know nothing about cocoa"* and *"I heard cocoa trees are only planted to keep the land*", *"I heard that no one buys cocoa products"*.

Many farmers who are growing cocoa do not know what cocoa is used for. They reported that cocoa was scatteredly grown long time ago, but only for children to eat the white pulp then discard the beans. A farmer who has grown 50 cocoa trees given by the project for 2 years said "*Cocoa bean is inedible, you can eat only the white pulp; if you eat the bean you will die immediately, it blooms into flower in your stomach and you die*". Being asked why companies buy cocoa beans, he said *"maybe they buy beans to make medicine or something, I don't know"*.

A young man in Yang Tao commune said he saw some neighbours growing cocoa, but the conmune authority never had an official announcement or training, so he and other people who have yet to grow cocoa have no information about this crop, including where and how to sell the product. Meanwhile, they know well about other crops such as coffee, maize, cassava… Dealers and vehicles also come to their doors to buy these products. There are three posts where cocoa beans are fermented in Yang Tao Commune, where local growers sell fresh cocoa pods, but most people in the neighbourhood do not know these are "outlets" for the product. Similarly, only owners of fermenting posts have contacts of purchasing agents, and are informed of the price - Cargill and Cao Nguyen Xanh (Green Highlands) Company would send them messages of price everyday. All first level agents of Cargill has incentive policies for bean purchasing and fermenting posts. Normally, Cargill set the minimum level of incentive at VND 1,600/kg to high quality product, but the application of the policy differs in reality. Cocoa growers have absolutely no information of this.

The information about cocoa comes mainly through Success Allience project and clubs organised by the project (with the support of USAIDS and Adivoca) in cooperation of the provincial agriculture extension agency, so other organizations (Women's Union, Farmers' Union, Citizen Mobilisation Department, etc.) are not invited to take part in the information dissemination process. Although Cargill Company cooperates with Dak Lak Provincial Television Station to make programmes broadcast on the 24 Hour news bulletin to introduce cocoa tree and cultivation techniques of cocoa, except for local cocoa stations, majority of local residents, except for cocoa focal points, neither know about the program nor watch it.

The greatest barrier is the lack of information on input and outlet for cocoa. At present, farmers in a few communes are growing cocoa within the project's framework, but many of them have not harvested and thus feel uncertain about the market. District officials also share this feeling. Lack of information about the market has been an important factor making both officials and farmers hesitate to believe in cocoa tree. An official of Ethnic Minority Affairs Department said: "*The greatest barrier in developing cocoa here is the market. A confidence in a stable market must be created for local residents. Unsold rice and maize can still be used as food. Unsold cocoa beans can only be disposed*". A Dak Lak provincial official commented: *"local people have clear, comprehensive understanding about coffee, for example which variety is good, how to take care of it, what diseases the tree can catch, how to treat them … however both officials and farmers have just a vague concept of cocoa"*. An official claimed that companies only bought raw, unfermented beans to earn more profits. Meanwhile, Cargill Company confirmed that they have a strict policy of buying only fermented beans. Cao Nguyen Xanh, the first level agent of Cargill only bought a small amount of fresh beans to conduct fermentation experiment, rather than buying unfermented cocoa on a large scale.

4.3. Unstable market

4.3.1 ***Seedling Market:*** There are currently 4 cocoa seedling suppliers in Dak Lak, namely Dak Lak Seedling Company, Cao Nguyen Xanh Company, Institute for Central Highlands Agro-Forestry Science and Technology, and household suppliers, which together provide 2,000,000 grafted seedlings/year. The majority of cocoa seedlings in Lak district is provided for free within the SA project, but local residents are still instructed to include seedling costs in their expenses. In-depth interviews reveal that *price of seedlings is unstable,* depending on the distance of transportation, general agents' ability of timely delivery, and also the fluctuated demand – supply relation between cocoa growers and seedling suppliers. Farmers in Yang Tao commune sometimes had to buy seedlings at VND 9,000 each. However in Dak Phoi commune, which has longer route for transportation, the price of cocoa seedling was down to VND 6,500 each at times.

As assessed by Mr. Nguyen Xuan Diep, Deputy Director of Dak Lak Agricultural Extension Center, many seedling providers are still cautious because the market is underdeveloped, relying on externally funded projects while the internal self-reliant market has not appeared. Cao Nguyen Xanh Company is holding up to 70% of seedling market share. Despite good quality of seedlings produced by individual household suppliers, their production scale is usually small, with limited ouput, in absence of good technical support as provided by large companies. The relatively small scale of cocoa market has naturally led to the monopoly of some enterprises.

In addition, all suppliers have been producing seedlings with orders of SA project, under the condition that they provide support to farmers through capacity building and technology transfer. However, none of the cocoa growing households receive any support of seedling suppliers. They mainly acquire technical skills through the trainer system of NLU, which is directly funded by SA, not seedling suppliers.

4.3.2 ***Market for products:*** In terms of market for cocoa products, local authorities believed that the world price was considerably high compared to 10 year price, yet it experienced great fluctuation. Study by Agrifood Consulting International (2008) shows that price of cocoa have strongly fluctuated. After the cocoa boom in late 1970s to mid 1980s, price decreased throughout the 1990s to a historically low level (in actual price) in December 2000.[28] Prices recovered since 2001, and reached a new peak of USD 2,690/tonne in 2008.

However, the picture of the market for cocoa products in Dak Lak is not that optimistic. Local residents in Yang Tao and Dak Phoi said in the harvest season of other crops like coffee, cashew, maize and cassava, collectors would come to their houses to pick up the products. In opposite, farmers have to carry cocoa pods to purchasing posts as cocoa pods are not ripe at the same time. If they come when the post is close, harvested cocoa might have to be disposed, wasting time and causing economic loss to farmers. The fact that a stable and transparent market for cocoa products has not been established is one of reasons for people putting little trust on this crop.

Households buying cocoa beans for fermentation seems to be ones making profits in the chain. However, they have to buy fresh pods at 3000 – 4000 Vietnam dong/kg, and each 12-14 kg of fresh pods can make 1 kg of dry beans. With the price of 45,000 - 47,000 dong/kg of high quality dry beans, these households cannot make profits, but mainly rely on the bonus for high quality beans paid by collectors. Cocoa exporters are getting growers and fermenting

[28] According to study by Agrifood Consulting International, in December 2000, the nominal price reached USD 801/tonne (equivalent to a real price of USD 462/tonne (US dollar deflated by the US CPI).

households to bear all the risks, when they only buy fermented beans that meet certain requirements.

In the current scope of market for cocoa beans, Cargill is the largest buyer. Cargill Vietnam started cocoa trading (collecting and exporting) activities since 2005, after its coffee business was affected by low quality of coffee beans. However, cocoa trading is only a supplementary business of Cargill Vietnam, whose main business is animal feeds.[29] In 2005, Cargill Vietnam had some activities to increase the area and output of cocoa, such as supporting the establishment of demo farms. Cocoa production in Vietnam is currently assessed to reach 1,700 tonnes/year, of which Cargill buys in 70%, and 2 or 3 other enterprises buy the rest.[30] Before May 2011, Cargill Vietnam accepted beans from individuals, but since June the same year, it only bought products from legal entities (meaning sellers have to issue red invoice to Cargill). Market policies of Cargill are quite strict. It buys only processed beans (fermented, dried), which is different from the rules applied in Indonesia i.e. buying fresh, unfermented beans. Asked about the company's long term strategy in the Vietnamese cocoa market, a Cargill officer indicated that in light of the company's top priority of quality (as required by the UTZ assessment system), Cargill's standpoint on Vietnam's cocoa sector was "Cargill remains in the market until the quality of cocoa meet requirements". This means cocoa growers have to continue worrying about a market for their products.

III. ROLES OF STAKEHOLDERS

1. The Government and cocoa development policies

At the national level, the policy of developing cocoa all over the country was initiated in 1998, but no sooner than 2005 was the Vietnam Cocoa Coordinating Committee (VCCC) eventually established. The Committee is not a steering committee, but plays the role of a communication hub for cocoa stakeholders. One of the most crucial and meaningful tasks of VCCC is to advise MARD on promulgating regulations on cocoa. Under current regulations on mandates and functions, it has not been powerful enough to push the development of cocoa industry. The delay in establishing an operating system has stalled the implementation of cocoa development plans[31]. By the end of 2007, the cocoa area reached only 10% of target, mainly thanks to a foreign funded project (Success Alliance), rather than government investments and programs.

Decision 2678/2007/QD-BNN-KH (2007) set two milestones for cocoa sector in Vietnam: i) By 2015, cocoa area reaches 60.000 ha, of which 35.000 ha give the harvest with an average yield of 1.5 tonne/ha and a total production of 52,000 tonnes of dry beans, corresponding to an export value of 50 - 60 million US dollars; ii) By 2020, cocoa area reaches 80,000 ha, of which 60,000 ha are harvested, with an average yiels of 1.8 tonne/ha and a total production of 108,000 tonnes beans, corresponding to an export value of 100 – 120 million US dollars. However, experts all agree that clear policies for cocoa development are absent.

The failures of cocoa in Vietnam in the past have been explained in many ways, partly due to a weak link with world market, partly due to unstable conditions (during the American war for example), and partly as the result of mismanagement (for instance, the uncessful experience of

[29] Interview with a collector of Cargill indicated that the total output of cocoa beans collected in Dak Lak and Dak Nong in 2009 was about 650 tons, in 2010 was about 700 tons, the objective of 2011-2012 was 1,000 tons (out of the expected amount of 1,300 tons).
[30] In fact the fierce competition led small cocoa buyers to bankruptcy.
[31] In 1998, the target for the year 2010 of 80,000 ha cultivated area in four regions (South Central Coast 13,000ha, Central Highlands: 28,500 ha, Southeast: 20,500 ha and Mekong Delta River: 18,000 ha).

building a processing plant in Quang Ngai in the 1990s). More importantly, lessons have been learnt that setting targets without making specific investment and operation plans, without promulgating specific policies, building capacities and allocating resources, without concrete databases (surveying, monitoring and researching) and understanding of market and farmers' motivations, set targets are unlikely to be achieved[32].

At local level, a proposal on developing 10,000 ha of cocoa by 2010 was approved in 2002 by the (former) Dak Lak Province People's Committee. After 8 years of implementation, there have been about 2,000 ha of cocoa planted (out of 6,000ha assigned to the new Dak Lak province), of which 30% is owned by coffee companies and over 25% was developed under the SA project. Particularly, in Lak district, none of cocoa area was developed within the provincial project of 10,000ha of cocoa – the newly developed 205 ha area of cocoa belongs to SA project, and the whole area of cocoa planted before 2007 no longer plays any role in the livelihood of farmer households.

The lessons for Lak district in the 1980s relate to the market for cocoa product. The district at that time planned to expand the area of cocoa, rather than to sell the products. In the beginning of Doi Moi – the Reform, Vietnam did not establish relationship with foreign partners, so there were no market for cocoa beans. The bankruptcy of cocoa in this period was inevitable. The stagnation at present results from the lack of synchronized policy system.[33] Despite the approval of cocoa project, related indicators have not been put in provincial, district's or commune's annual plans. Reviewing statistic indicators of Dak Lak province and all communes of Lak district, no indicators were found on area, output, and contribution of cocoa to the local economy. Cocoa is a crop requiring the concentration of resources, including human resources, materials and finance at the first stage. If the provincial policies are not concretized into action plans, the project will not be feasible.

In addition, the planned area for cocoa development of Dak Lak are mostly remote, disadvantageous areas, where the land is not suitable for coffee. This indicates that in planning, cocoa is given low priority. The proposed area is also where the poverty rate is high, people are difficult to be motivated to participate in the program.

Furthermore, cocoa development requires certain area of cultivated land. Lots of areas suitable for cocoa production are still managed by state owned agro-forestry farms, many of which have been making loss for years but cannot be dissolved. This means difficulties in mobilizing land for cocoa production.

Human resource for cocoa development is another issue of concerns. According to an officer of Provincial Agricultural Extension Center, the network of agricultural extension and plant protection in Dak Lak is limited in number of officers, while the scope of management is wide with various plants. Despite competence in various sub-disciplines, these officers lack knowledge of cultivation techniques of cocoa, which is a new crop.

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[32] Agrifood Consulting International (2008), *cited document*.

[33] In principle, after approving the project to develop cocoa sector, the province will provide guidance to Departments/Agencies/Organizations and districts to develop the orientaion plans and action plans, with specific indicators/objectives. Attached to action plans are budget allocation plans. Even when the action plans are available, there is need of crefit policy reform, which increases the loan size and term. With the current regulations on medium term credit, local residents – particularly poor households and ethni minorities – will find difficult to engage in cocoa production.

As a consequence of conflicting policy orientation, Dak Lak authorities at various levels show little interest in cocoa. In-depth interviews with province, district, and commune officials indicated that many of them were not convinced about the potential economic values of cocoa, so their reluctance in implementing the project is understandable. There have been no association specialized in cocoa (there is only Coffee – Cocoa association). In the surveyed area, Yang Tao Commune and Dak Phoi Commune, local authorities have not paid much attention to cocoa. Strategic reports of the communes still lay an emphasis on short-term crops such as maize and rice to ensure food security for local residents.

2. Private organizations

Private organizations (particularly international ones) play crucial role in promoting the development of cocoa production in Vietnam. The interest of key foreign private actors in the Vietnam's cocoa market dates back to 1993 when experts from Mars Incorporated paid their first visit[34]. During this visit, the experts suggested to MARD that cocoa had considerable potentials in Vietnam. Mars Incorporated has made several contributions to cocoa development in Vietnam since then: facilitating the introduction of new clones from Costa Rica to Vietnam; supporting research (in particular for Agro-Forestry University in Ho Chi Minh City) and established on-farm research station models during the period of 1997 - 2003 in many provinces including Dak Nong and Dak Lak.

During the past years, many activities relating to cocoa have been conducted by foreign private partners, including supporting research and cultivation, building capacity through trainings and workshops, offering inputs (e.g. seedlings), supporting agroforestry models (e.g. SCAS and HFA) and collaboration between international scientists and experts with Vietnamese counterparts. The major players in order of importance (measured by their contributions) are Mars Incorporated, Cargill, EDF Man, Touton and Nestle. Other players that could join soon include Ritter Sport and Mitshubishi Foods. The establishment and maintaining a programme for the public – private partnerships is one of the bases for funding of the Dutch Government for this study. The Cocoa Coordination Committee also includes private sector members such as Mars Incorporated, WCF, Cargill, and EDF Man.

Input suppliers: Input suppliers for cocoa production is limited in number, and have not had a market strategy (for not receiving reliable signals from the government policies). Seedling enterprises in Dak Lak has a policy of providing training for major customers only. Those customers have large areas of cultivation and hire labour to take care of trees, if their labourers are not provided with regular cultivation techniques, the trees may die. Most cocoa seedling providers do not target small, individual customers and have no support policies for them. An officer of an enterprise explained: "they pay for the seedlings, they will try their best get their investment back, so enterprises need not have technical support policy for them".

To programme/project customers, enterprises adopt the following procedure of seedling sales: i) working with the hamlet or farmers' union; ii) organize workshops and techinical training courses; iii) instruct farmers to register to buy seedlings and receive the deposit of 50%; iv) continue providing technical trainings; v) require full payment for seedlings; vi) deliver the seedlings. This is how enterprises deal with risks of bad debts. However, the advance cash payment may increase the risks to farmers. It is noticeable that seedling suppliers hardly have post-purchase policies. Once the seedlings are delivered to farmers, almost no obligations remain on the company. As the survival rate of newly planted cocoa seedlings is low in the

[34] www.mars.com/global/home.htm

weather condition of Dak Lak (strong sun and wind), farmers are more reluctant to engage in cocoa production.

In interviews with local officials and residents, other concerns were expressed:

> *"It is the worst case to receive seedlings from poverty alleviation programs, such as 135, or 30A, because it is only a form of disbursement. On one hand, they buy low quality seedlings because they want large quantity at low price. On the other hand, they buy seedlings at disbursement period, at the year end for instance, which might not be suitable periods for planting; so even if farmers has acquired techniques via training courses, a lot of trees will still die. Though it is the external environment that causes the death of the trees, people may be more likely to participate if enterprises have better promotion policies."*

Regarding this issue, enterprises hold that *"Giving seedlings for free should not be a common practice because it will distort the market and lead farmers not to take care of the trees because they are given for free, and just wait to be given next time."* Though such argument is quite convincing in the context of the market economy, it does not mean that developing the post-purchase policy is uncessary. Benefits from techinical knowledge is crucial but intangible, while benefits from the post purchase policy is tangible and more convincing to buyers.

Collectors/Traders: During the period 2004-2006, Cargill and Mars Incorporated collaborated in the Dutch Programme for Cooperation with Emerging Markets (PSOM) to professionalize the trading in the cocoa value chain by introducing trading practices, quality parameters/indicators, and appropriate testing facilities and skills. In 2003-2004, ED&F MAN started distribution of seedlings to farmers and became the first international buyer to provide a market for cocoa produced by farmers. Other companies followed this practice. Cargill has invested in collecting stations in Ben Tre and Dak Lak since 2005 and is now the largest buyer of cocoa beans in Vietnam. Other international collectors including Olam, Amajaro, and Mitsubishi are also buying cocoa beans or planning to buy soon. Cargill and Mars Incorporated (via Masterfoods) have supported the extension, research and information/technique dissemination activities.

However, with the current purchasing policies of companies, farmers are still worried and anxious about the market for their product. The fact that they can only sell products to collecting agents and cannot sell directly to the companies, together with vague quality criteria of products make them confused. The whole process and "cocoa value chain" as such look very much like a multi-level sales network, in which cocoa growers bear the highest risks from weather, pests and diseases, care and fermentation techniques. In this network, collecting agents and exporters bear the lowest level of risks.

Cocoa purchasing companies appear to be the first to promote cocoa production, then input suppliers enter the chain as a consequence. However the policies of both input suppliers and product purchasers have not effectively encouraged ethnic minority smallholders to participate in the cocoa value chain.

3. Support from NGOs and international donors

Apart from private sector, some non-governmental (not-for-profit) organizations (such as ACDI/VOCA, WWF, Helvetas, and Winrock) are also interested in developing cocoa in Vietnam. During the past decade, these organizations have engaged in projects, studies, capacity building and outreach activities to promote the development of cocoa sector. They have supported agroforestry combined model, preseve the biodiversity, promote the organic cocoa production and fair trade. These organizations have considerable experience in project management and working with smallholders. Some of these organizations are members of the

Cocoa Coordination Committee (e.g. WWF). Oxfam Novib and iSEE have recently considered the possibility of joining the VCCC.[35]

Major financial contributions to the cocoa sector used to come from international donors like GTZ, DANIDA and USDA. Currently the main donors are USAID (through SA), AusAID (through MARD), Dutch Ministry of Agriculture, and JICA. Other donors may get interested in the future, as cocoa is considered to help improve livelihood of smallholders, promote diversity, adopt sustainable practices, and promote the development of small and medium sized enterprises. CECO might be interested in organic cocoa and fair trade development. International financial organizations (for example WB and ADB) will also contribute to cocoa through the challenge funds to be implemented in the upcoming projects for Agricultural Competitiveness and Market for the Poor Phase II. IFAD, through its new country strategy programme focusing on integrating the poor in value chain, might also be interested in the development of cocoa sector.

Unfortunately, in the orientation of cocoa development of NGOs and international donors, the participation of local ethnic minorities has not been considered a central issue. Neither have any official assessments been made on the efficiency of experimental models, projects and capacity building activities conducted by NGOs. In general farmers' eyes, clubs and groups of cocoa growers are still closed group of certain farmers.

4. Research organizations

Despite the critical role of research and technological transfer, very few researchers and agricultural extension staff are involved in the development of cocoa sector. Staff of Agro-Forestry University in Ho Chi Minh City, Can Tho University, or Western Highlands Agricutural and Forestry Science Institute only participate in specific projects and contribute little parts of their time to cocoa.

In Agro-Forestry University of Ho Chi Minh City, a small group of researchers and technicians under the university's cocoa program are involved in almost all aspects of the crop. The most well known member of this group is Dr. Pham Hong Duc Phuoc. The team of Dr. Pham Hong Duc Phuoc has worked on propagation, breeding, irrigation, demonstrations, cocoa germplasm, introduction and propagation of new clones, pests and diseases management, clonal trials, fermentation experiments, preparation of training cirricula, etc. The Department of Farm Machinery of the NLU have manufactured a machinery system for processing cocoa beans at small scale; the Department of Food Technology works on sensory evaluation and chocolate processing. Mars Incorporated Company supported the university to establish a sensory lab and train a sensory panel to support research on cocoa bean quality. The Plant Protection Division works on Tricoderma to control Phytophthora. Lacking a section specialised in cocoa, the University has not had staff working fulltime for this industry.

In WASI, research activities have been traditionally focused on coffee, so there is only a small group working on cocoa seedlings, fermentation and pest and disease management. All researchers and technicians of this group have recently moved from working on coffee to working on cocoa, so their knowledge of cocoa is limited and this is a serious constraint to cocoa development in the Central Highlands in general and Dak Lak and Lak district in

[35] Nguyễn Việt Khoa, Lê Quang Bình, Lê Bách, Nguyễn Quang Thương (2008): *Report Assessment of opportunity and challenge to join Vietnam Cocoa Committee and Public Private Partnership for Oxfam Novib and iSEE.*

particular. This constraint has been mentioned by both provincial authorities and researchers themselves.

Beside the above two science institutions, some other scientific organizations have also participated in studies on cocoa development. During the period 2007-2009, Can Tho University was involved in the Project/Programme "*Cocoa Fermentation, Drying and Quality Assessment in Vietnam*" funded by Australian Government. Forest Science Sub-Institute of South Vietnam (FSSIV) is managing a sustainable cocoa agro-forestry model co-financed by Mars Incorporated.

In the process of cocoa development in Vietnam, there is an obvious mismatch between the current level of human resources and budget for conducting research on cocoa. SA Project- which is considered successful particularly in Mekong Delta River and the Central Highlands – ended without any research project on cocoa. WASI is assigned by MARD to do research and receives funds for research every year, but the fund for cocoa research is extremely limited. In addition, the National Cocoa Coordinating Committee assigned WASI and NLU to conduct research and training on cocoa, but did not allocate any funds or make any concrete plans. The ambitious objective to develop 80,000ha of cocoa in 2020 will be a great challenge.

As mentioned in the Introduction, most studies on cocoa have focused on technical issues, economic benefits, feasibility, suitability, and general social aspects. There have not been any research team paying attention to the development of cocoa in the local ethnic minority community. The Central Highlands and the South West of Vietnam are ethnic-sensitive areas. Research on the impacts of cocoa in social-cultural anthropological aspects is essential.

IV. CONCLUSIONS

1. Reviewing the analysis framework with 5 citeria identified in the first section of the report: i) whether local people consider cocoa as having superior values compared to existing practices, ii) whether it is compatible with the local cultural system; iii) whether it is simple enough for understanding and practice; iv) whether it could be verified through pratices; and v) whether it has concrete benefits, we found the development of cocoa in Lak district raising many issues for rethinking.

2. First introduced in Lak District in the 1980s, cocoa tree has only been paid attention since 2000. Analysis on technical and economic data shows that the economic benefits of cocoa are not superior to existing industrial trees such as coffee, cashew, rubber, and it cannot replace the position of food crops. However, in areas where growing coffee is no longer highly efficient, or where other industrial crops require distance between plants, cocoa can serve as an alternative or be intercropped.

3. The farming method of cocoa has not yet been compatible with the lifestyle and cultivation custom of local residents. Planting cocoa is compared to "taking care of a baby" that requires individual meticulous attention, unfit to the *'doi cong'* or mutual aid custom that is popular in the M'nong's livelihoods. Local people can neither make use of social network to lighten their workload, nor strengthen the community relations. On the other hand, intermittent harvest accompanied by intermittent income does not allow people to save and pay their debts, so cocoa is not attractive enough to motivate local residents to grow.

4. With highly demanding technical procedure, requiring concentration and devotion of time and effort, cocoa tree is considered a new, difficult and complicated crop to farmers. Moreover, experience of failures with cocoa as well as other crops make people more cautious

in developing cocoa. Especially, the lack of information and information disturbance about the market for cocoa product have made local officials and residents hesitate to trust this new crop.

5. Without explicit and superior economic benefits compared to other existing crops, requiring large investment in planting, caring and processing, suffering high risks of pests, disease and unfavourable weather, cocoa is not a crop for the poor, and should not be considered a crop for poverty reduction. Cocoa should be considered a secondary industrial crop rather than a top priority one.

V. RECOMMENDATIONS

1. National and local government policies

There are currently two different views on the prospects of cocoa development in Vietnam. One is optimistic, believing cocoa industry will grow fast to achieve the targets set by the government. The other is more cautious, affected by failed attempts to develop cocoa crop in the past. However, under both views, the expansion of cocoa is feasible and desirable, as long as appropriate policies, plans and investments are adopted to improve rural livelihoods and the environment.

Both views agree on the fundamental need of a strategy for the sector, but recognize the fact that such a strategy is still absent. Without a sector strategy, the rapid growth achieved over the past few years will not continue, and cocoa sector of Vietnam will remain in its small size. The rapid growth in the past few years has been achieved mostly through investments of donors and foreign private sector. Unless the Government makes commitments to invest, it will be very difficult for Vietnam's cocoa industry to reach its growth targets.[36]

In March 2005, Ministry of Agriculture and Rural Development established the Vietnam Cocoa Coordination Committee (VCCC) to facilitate formulation of policies related to cocoa sector. The VCCC members include key departments of MARD, private sector and reseach institutions. VCCC supported the formulation of the MARD Decision 2678/2007/QD-BNN-KH issued on14 September 2007, which indicates the objective of 60,000 ha of cocoa by 2015 and 80,000 ha by 2020. At local level, provincial authorities have been making plans and providing support to farmers to grow cocoa. Standards for cocoa industry were established in 2006 and 8 clones (TD1, TD2, TD3, TD5, TD6, TD8, TD10 and TD14) were approved in 2005.

For Dak Lak, many studies hold that the province has advantages in both natural and social conditions to develop cocoa, with estimately 185,000 ha of land with potential for cocoa development. In an effort to correct the pending status of the 10,000 ha cocoa project endorsed in 2002, the provincial Department of Agriculture and Rural Development in September 2011 developed and submitted another proposal for cocoa development by 2015 to the Provincial People's Committee. The proposal analyzed all the strengths, weaknesses, opportunities and threats to the development of cocoa in the locality. The new proposal also analyzed lessons learnt from failures of the previous project and suggested solutions.

It is necessary that the province reorganise its land allocation for farmers to have more land for cultivation, that planning go with timely implementation to avoid the "suspended"

[36] Agrifood Consulting International (2008), *cited document*.

situation; and that master policy be applied in orientation plan, action plan and financial plan.

2. Overcome the current monopoly market

According to Dak Lak Agricultural Extension Center, the consumption market of cocoa has higher demand than supply. Cocoa is purchased not only for export but also for domestic cocoa powder producers. Price and the availability of collecting stations and traders are among preconditions for farmers to join cocoa industry. However, market policies of cocoa enterprises operating in Dak Lak have yet to motivate farmers.

In the "outlet" market, main international buyers including Cargill, Armajaro, and ED&F MAN have had some activities and set up collecting stations in Vietnam. These traders are interested in seeking a stable supplier of cocoa beans. They have also played an important role in the development of cocoa industry by providing technical assistance, information, and promotion. A marketing network consisting of international collectors and individual collectors and traders have been existing in many places. The network is collecting both cocoa pods and beans from farmers and fermentation stations. In Dak Lak, only Cargill is still in operation, which inevitably leads to monopoly.

A similar circumstance occurs to the market of inputs. The cocoa nursery sector of Dak Lak province has strongly developed since 2002 thanks to the cooperation between DANIDA and NLU. Under significant influence of Success Alliance later, 14 commercial clones (of which 8 clones were approved by MARD in 2006) were introduced with an aim to expand the cocoa production area. Some nursery enterprises have in a short time reached a certain technical level and engaged in innovatives such as collaborating along the value chain and partnering with suppliers of inputs (e.g. chemical fertilizers) and farmers. However, there are only 4 seedling suppliers in Dak Lak province (Dak Lak Seedling Company, Cao Nguyen Xanh Company, Western Highlands Agriculture and Forestry Science Institute - WASI, and private households) with the capacity of 2,000,000 grafted seedlings/year; 70% of which is supplied by Cao Nguyen Xanh Company alone. The monopoly has deformed the input market of Dak Lak province. (In fact, the similar situation of monopoly happens in some other provinces. For instance, Duc Minh Company is almost the sole supplier of cocoa seedlings for the whole Binh Phuoc province.)

According to a study, nursery units in Dak Lak province are suffering from 6 basic problems, including i) Lack of a quality assurance system, ii) Shortage of finance for further expansion, iii) Limited access to quality inputs/seedlings, iv) Lack of policy support, v) Weak contract system, and vi) Scarcity of skilled nursery workers[37]. Only when these 6 problems are addressed will the provincial input market be stabilised.

It is required that Dak Lak province adopt measures to resolve the monopoly situation, ensure healthy competition and adequate information supply.

3. Enterprise's strategy (state-owned and private enterprises)

In compliance with the MARD Decision 2678/2007/QD-BNN-KH of 14 September 2007, the Vietnam Coffee Cooperation assigned its member companies to grow 2,500ha of cocoa by 2015; in Dak Lak alone the area of cocoa will be 2,150ha, most of which are transferred from

[37] Agrifood Consulting International (2008): *cited document.*

coffee. In state-owned business sector, some successful models of cocoa have been applied in Thang Muoi (October) Coffee Company, Krong Ana Coffee Company and Buon Ho Coffee Company. However, these state-owned enterprises only engage in the cocoa value chain as cocoa bean producer, rather than playing any significant role in developing cocoa crop in smallhoders, especially local ethnic minority smallholders.

Reformed policy and strategies of input and outlet service suppliers are needed to motivate the participation of households. In the first place, if the banking system is considered capital supplier, then the first intervention is to increase the term of loans for cocoa growers. Instead of short or medium term, banks should extend the term of credit to ensure the stable development of cocoa (the crop normally takes 5 years to pay off initial investments and starts to make profits from the 6th year). Seedling, fertilizer and pesticide suppliers should also adopt strategies appropriate to the characteristics of rural Dak Lak, the sensitive habitat of various ethnic groups with various cultures and levels of education. In order to achieve such targets, the government should have incentive or supporting policies to ensure the suppliers' strategies will bring about benefits to all stakeholders.

Enterprises need strategies suitable with the reality of Dak Lak province, paying more attention to the market with typical characteristics; and the government's incentive/supporting policies are required to achieve this.

4. Strengthening the multi-dimensional research

4.1. Cocoa cultivation and the compatibility with the ethnic cultures

How to mobilize farmers' participation, and how to make local ethnic minority people become independent in cocoa production, are questions posed by local leaders. Lessons have been learned from past failures and reasonably analyzed. One of the causes is failure to motivate local residents' participation. The research team found through the field trip that one of the (underlying) reasons for the absence of ethnic minorities in the cocoa value chain was the incompatibility of the cultivation methods with their traditional culture. Nevertheless, there has been no study on the compatibility of cocoa with the local ethnic groups' cultures, other than general studies on the cocoa development feasibility. This problem should be addressed before the project on developing 6,000ha of cocoa by 2015 commences.

4.2. Cocoa and the poverty issue

According to staffs and local ethnic minorities in Lak district, cocoa is not a crop for the poor. The analysis of initial investments has also verified this statement. Poor people find it hard to join cocoa production due to shortage of cultivation land, labour force and capital. Labourers from poor households hardly have chances to engage because most cocoa growing households own very limited area of cultivation land, which does not require much labour. Cocoa cultivation itself does not require as much labour as coffee or rubber does. Moreover, due to specific technical requirements, the concentration of labour at a point of time is unnecessary. As a result, considering cocoa a crop for poverty reduction appears to be unreasonable.

4.3. Cocoa and the gender equality issue

In regards of gender equality, there exists a certain gap between the expectation of provincial and district leaders and the reality in surveyed areas. The working time of women in cocoa production is no less than that of men. It is women who have to regularly monitor the development of cocoa. A female farmer jokingly said: "Growing cocoa is like caring for a baby, I have to visit the cocoa garden everyday". Meanwhile, women's opinion on income from cocoa might not be appreciated. In most interviews, respondents reported that men make

decision on how to invest in cocoa production. In-depth studies are thus needed to find solutions to gender inequality.

4.4. Cocoa and sustainable development issues

Issues of sustainable development have been studied comprehensively and in details by Agrifood Consulting International in *Suitability, Feasibility, and Socioeconomic Benefits of Cocoa Production in Vietnam* (2008). The study indicates that cocoa is a crop with high risk of pests/diseases, so using pesticide is inevitable. In some areas, farmers have used prohibited pesticides such as Methyl, Motox, Monitor, and Vofatoc, which can adversely affect the living environment of people.

In the same study, Agrifood Consulting International has also given convincing statistics on very low risk of cocoa expansion to the environment (deforestation, loss of biodiversity, climate change, soil fertily, watershed, pests and diseases). Cocoa tree also plays an important role in maintaining the biodiversity of birds, mammals, reptiles, amphibians, butterflies and insects.

Beside natural environment issues, many questions on socio-economic aspects were also mentioned in the study by Agrifood Consulting International: Who will get benefit from the development of cocoa sector and what are the expected socioeconomic impacts on different groups of residents? What management strategy will be more appropriate to minimize the environmental, agronomic, economic, and social risks that accompany cocoa industry? What is the scope of partnership between public and private sectors in supporting sustainable development and minimise the risks?

Unfortunately, the study by Agrifood Consulting International was conducted on too wide areas and too small size of samples for a quantitative survey. In each province, no more than 20 samples were chosen to conduct questionnaire interviews. Such a small sample size in a sociological study can hardly give relatively precise and objective results. As a result, studying on how cocoa cultivation affect the sustainable development (in environmental, economic, and social terms) is still one of the top questions for the local authorities.

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