

Multidimensional Poverty of Farmers: Results of Participatory Poverty Assessment in Gampong Cahya, Kabupaten Aceh Timur



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SMERU RESEARCH REPORT

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ABSTRACT

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Sirojuddin Arif and Herry Widjanarko

This paper reports on a participatory study on poverty in a village in the Kabupaten (District of) Aceh Timur in 2008. Gampong Cahya is a village community almost entirely reliant on agriculture and thus highly vulnerable to economic and environmental shifts such as fuel price rises and agricultural pests. By engaging the Cahya community in the mapping of local welfare standards, causes of poverty, and potential solutions, this paper offers a local perspective on the broader regional issue of poverty in agricultural communities.

Drawing on focus group discussions, it maps community perceptions of welfare, institutional support, and economic and environmental vulnerabilities. Furthermore, focus groups are used to determine priorities for efforts to overcome poverty. This study finds that the community sees opportunities for more stable welfare levels through the development of unused lands, the provision of support for pest control, and the creation of sources for capital funding. In the longer term, expansion of educational and employment activities would reduce the community's reliance on agriculture.

Gampong Cahya has access to a limited range of resources; the problem solving priorities and solutions determined by the community require some degree of external assistance, whether in the form of infrastructure, personnel, or capital investment. In this way, this research can help inform development priorities by focusing on the specific ways in which external agencies can engage with solutions to multidimensional poverty in agricultural communities.

Keywords: poverty, farmer, participatory approach, sustainable livelihood, vulnerability.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	i
ABSTRACT	ii
LIST OF TABLES	iv
LIST OF ABBREVIATIONS	v
EXECUTIVE SUMMARY	vi
I. INTRODUCTION	1
1.1 Background: Why Farmers?	1
1.2 Rural Poverty in Perspective	2
II. CAHYA: AN OLD VILLAGE ON A RIVERBANK	5
2.1 General Condition of the Village	5
2.2 Poverty Conditions in Cahya	5
III. POVERTY AND LIVELIHOOD DYNAMICS	8
3.1 Human Capital	8
3.2 Natural Capital	10
3.3 Physical Capital/Infrastructure	11
3.4 Economic/Financial Capital	12
3.5 Social Capital	16
IV. VULNERABILITIES AND COPING MECHANISMS	19
4.1 Natural Shocks	19
4.2 Impact of Seasonal Events	19
4.3 Social and Economic Vulnerabilities	20
V. INSTITUTIONAL CONTEXT	23
5.1 Roles of Local Government	23
5.2 Private Sector Activities	25
5.3 CSO/NGO Activities	26
5.4 National Government Policies and Their Impact	26
VI. POVERTY IN LOCAL PERSPECTIVE	28
6.1 The Causes of Poverty	28
6.2 Problem-Solving Alternatives and Priorities	29
VII. CONCLUSION	32
LIST OF REFERENCES	33

LIST OF TABLES

Table 1.	Growth of Rice Production in Kabupaten Aceh Timur (Wet and Dry Land)	1
Table 2.	Welfare Classification of Cahya Villagers	6
Table 3.	Changes to Welfare Levels	7
Table 4.	Main Occupations of Cahya Villagers	13
Table 5.	Types of Side Jobs among Cahya Villagers	14
Table 6.	Combination of Livelihoods	15
Table 7.	Participation in Community Activities	16
Table 8.	Decision-Making in the Community	17
Table 9.	The Number of Houses per Hamlet Based on Welfare Level	18
Table 10.	Community Sources of Assistance	20
Table 11.	Tenant Farmers' Expenditure	21
Table 12.	Changes Impacting Agricultural Systems in Cahya	22
Table 13.	Significance and Proximity of Various Agencies	23
Table 14.	Community Sources of Information	24
Table 15.	Main Problems Identified by the Community	28
Table 16.	Problem-Solving Priorities as Determined by the Community	30
Table 17.	Problem-Solving Alternatives as Identified by the Community	31

LIST OF ABBREVIATIONS

Askeskin	<i>Asuransi Kesehatan Keluarga Miskin</i>	Health Insurance for Poor Families
BLT	<i>Bantuan Langsung Tunai</i>	Direct Cash Assistance
Polindes	<i>pondok bersalin desa</i>	village maternity center
Posyandu	<i>pos pelayanan terpadu</i>	integrated health service post
Puskesmas	<i>pusat kesehatan masyarakat</i>	community health center
GAM	<i>Gerakan Aceh Merdeka</i>	Free Aceh Movement
KPA	<i>Komite Peralihan Aceh</i>	Aceh Transitional Committee
PPK	<i>Program Pengembangan Kecamatan</i>	Kecamatan Development Program
FGD		focus group discussion
Raskin	<i>Beras untuk Rumah Tangga Miskin</i>	Rice for the Poor
<i>gampong</i>		village
<i>kecamatan</i>		subdistrict
<i>kelurahan</i>		district
<i>pengajian</i>		Koran recital group
<i>rante</i>		a unit of measurement equal to 20m ²
<i>tuha peut</i>		head of the village representative council
<i>tuha lapan</i>		village representative council

EXECUTIVE SUMMARY

Introduction

This report uses data from qualitative research conducted in Gampong Cahya¹, Kabupaten (District of) Aceh Timur, in 2008 to consider the sources of poverty among farming communities and seeks the perspective of farmers themselves in determining solutions. This research is necessary given the role of poverty reduction programs in rural communities in reducing overall poverty rates and collecting region-specific data aids in broader development goals.

Although studies to poverty in Indonesian farming communities are quite abundant, this paper draws on local knowledge and seeks to establish an understanding of poverty specific to the geographic and cultural context of Cahya. Most research of this nature is based on communities in Java; this study acknowledges that conclusions drawn from such studies may not be generally applicable, and seeks to rectify this by directly engaging the community.

Research Site and Methodology

Gampong Cahya is a rural village in Kabupaten Aceh Timur that is heavily reliant on rice cultivation, and has limited resources and infrastructure. Some 73% of the 227 households in the village are registered for the government's Direct Cash Assistance (BLT) and Rice for the Poor (Raskin) programs. Although the area is dominated by rice fields, a lack of irrigation and road access has left around a third of the land uncultivated. Some facilities, such as the community health center and high school, are located in the *kecamatan* (subdistrict) capital, five kilometers away.

This study uses focus group discussions with residents to map out existing access to formal and informal services, relationships to community figures and government departments, and changes in the institutional and environmental context over time. Focus group discussions (FGDs) are also used to establish the welfare categories applicable in Cahya, based on elements such as education levels, access to land, livelihood activities, housing, and access to health services. Community priorities for tackling poverty are established through FGDs with three distinct groups: poor men, poor women, and young people.

Findings

The end of the secessionist conflict in Aceh has improved security in Cahya and made it possible for livelihood tasks to be carried out in relative freedom. Additionally, the introduction of technology such as irrigation pumps has facilitated the expansion of rice cultivation, and harvests can now take place twice a year. In this context, general improvements in welfare levels are observable. However, there are broader limitations on what these developments mean for economic security in Cahya; nation-wide fuel price rises have increased the costs of living and the costs of rice cultivation, and have dampened the impact of increased rice prices. In addition, access to land has trended towards becoming less egalitarian, with the poor now less likely than ever to own their own plots of land, and instead rely on rented land or work as day-laborers. More than 40% of the population owns no land, and average land holdings in general have decreased

¹Names of places have been changed throughout this report to conceal the real names of the communities.

to around 3 *rante* (a local measurement equivalent to 20m²). Thus, even where residents do own land, the rice they cultivate is often only enough to supply their own household needs and pay irrigation and other costs.

This study finds that cycles of debt are a regular feature of life in Cahya, both to fund large, irregular costs, as well as for cost-of-living expenses before harvest profits are received. The major problem feeding in to poverty is the susceptibility of crops to pests, primarily the golden snail. The community does not have the capacity to carry out effective control measures and, because of the area's near-total reliance on the profits made from rice production, its impacts are felt across the community. Residents of Cahya have limited access to formal financial institutions and were not able to recall any NGO activity in the area. The lack of financial capital means that options for creating nonagricultural economic opportunities are severely limited. Villagers engage in a variety of other activities to supplement their income from the rice fields, such as fishing, keeping livestock, growing other food crops, and palm plantation work. However, these activities are largely irregular in nature, or in the case of livestock management and horticulture, conducted on such a small scale, or in a disorganized fashion. This means that such supplementary activities are unable to secure community livelihoods.

The FGDs with residents found that young people consider agricultural pests, lack of education, and lack of employment to be the three major causes of poverty in the village. Poor women reported that impermanent work, lack of education, and lack of capital were the major factors, while the poor men's group focused more sharply on problems in agriculture, and concluded that unused land, agricultural pests, and lack of irrigation were the major drivers behind poverty.

Further to identifying the causes of poverty, FGD participants were also asked to prioritize the issues to be addressed, based on a consideration of resources available in the community, a problem's relationship to other community issues, and the range of people affected by the problem. In this instance, both the youth group and the men's group placed dealing with agricultural pests as the highest priority, while the women's group prioritized access to capital. The seven major problems identified across all three groups were then the subject of FGDs about problem solving alternatives; this exercise was designed to determine how existing community resources could be deployed, and the areas in which external assistance would be necessary. Ultimately, resolution of each of these problems would be facilitated by external assistance; the FGDs found that existing community resources are insufficient to overcome the problems currently faced by the community. For example, savings and credit groups have been established in the past, but were ultimately not sustainable, having been initiated largely for short-term purposes, to meet the conditions of various government direct aid programs. Pest control measures currently used do not deal with the golden snail problem on a wide enough scale, and no agricultural consultants are available to advise on further measures.

The outcomes of this study emphasize the role of community participation in designing poverty reduction measures; in the case of Cahya, the multidimensional nature of poverty and vulnerability to poverty is captured through community consultations. Engagement with the community ensures that the specific environmental, economic, and institutional structures that underwrite more general welfare conditions are not ignored, and this can in turn ensure that responses and solutions are relevant to community needs and make the most of existing community resources and potential.

I. INTRODUCTION

1.1 Background: Why Farmers?

There are several reasons why farmers or agriculture should be taken as one of the critical focus points in addressing poverty in Indonesia. First, some evidence indicates that most poor people in the country live in rural areas. According to a 2008 report by Statistics Indonesia, out of 37.17 million poor people, 23.61 million or 63.47% live in villages. Thus, it is understandable that many see the need to revitalize the agricultural sector as part of the national development agenda. Second, research into links between economic growth and poverty reduction shows that growth in rural agriculture is likely to have a significant impact on poverty (Suryahadi, Suryadarma, and Sumarto, 2006: 115). In line with this argument, therefore, a better understanding of rural poverty is needed in order to address the problem more effectively. Drawing on results of a 2008 participatory poverty assessment in Kabupaten (Subdistrict of) Aceh Timur, this paper aims to discuss this issue with an emphasis on the perspectives of the farmers themselves.

To begin with, it is necessary to establish the general context of poverty in Kabupaten Aceh Timur and the reasons why rural poverty is a major issue there. Based on the regional domestic product, it is apparent that agriculture is the main source of income for the majority of the population. Excluding mining and quarrying, agriculture made up 62.77% of the *kabupaten's* (district's) regional product in 2006 (BPS Kabupaten Aceh Timur, 2008: 457). Meanwhile, in terms of production levels, rice is one of the the main products of the agricultural sector in Kabupaten Aceh Timur. Out of 20 *kabupaten* in Nanggroe Aceh Darussalam (NAD) Province, Kabupaten Aceh Timur is considered one of the major rice producers. In 2003, the *kabupaten* produced 128,960 tons of rice, or 8.33% of the total production in NAD in the same year, which amounted to 1,547,499 tons (BPS Province NAD, 2003: 135). As Table 1 shows, despite a decrease from 2006 to 2008, in terms of total output and land productivity, rice production in Kabupaten Aceh Timur has generally increased during the last decade. However, looking at the poverty status of the *kabupaten*, such an outcome seems to have had no significant impact on the welfare of the people there. While the poverty level of NAD fell to 26.7% in 2007, poverty in Kabupaten Aceh Timur remained as high as 28.15% in the same period.

Table 1. Growth of Rice Production in Kabupaten Aceh Timur (Wet and Dry Land)

Year	Harvest Area	Production	Productivity
1997	35,145	131,496	3.74
2003	30,477	128,960	4.23
2006	37,465	193,104	5.15
2008	33,939	172,146	5.07

Source: BPS Kabupaten Aceh Timur, 2008; BPS Province NAD, 2003.

^aFor wet land. Dry land produced only 2.4 tons per hectare.

1.2 Rural Poverty in Perspective

Rural poverty has been a point of interest among many scholars from different backgrounds. Various methodological approaches or theoretical orientations have been developed in order to help us better understand different aspects of rural poverty (Geertz, 1963; Singarimbun, 1971). However, it is apparent that most of these works have been conducted in a Javanese context. In fact, it is obvious that Java differs very much from other islands in terms of both geographic and cultural conditions. What is found in Java is not always suitable or applicable for other islands like Sumatra or Kalimantan. Even Java itself is not a homogeneous island, inhabited by several cultural groups, like the Sundanese and the Javanese, and characterized by geographically different areas, ranging from mountainous land to low land. Therefore, in order for us to better understand farmers' poverty, especially those living outside Java, geographically specific studies are necessary.

In many works on farmer poverty or agricultural development it is lack of land ownership or control, population growth, and cultural barriers that are often cited as the main causes. In *Agricultural Involution*, Clifford Geertz (1963) explained that one of the main causes of poverty among Indonesian farmers, especially in Java, was their faithful adherence to traditional norms, particularly of "togetherness". Instead of developing a modern system of commercial agriculture, which is financially more efficient and profitable, Javanese farmers developed a certain type of agricultural system that allowed every community member to maintain their livelihood however meager it was. Initially, agriculture in Java was based on communal rights to land, in which every member of the community was entitled to work on communal land. Later, with the development of the individual right system, the land was divided into small plots to be given to those working the land.

This development was later followed by a more complex system of labor exchange, in which a land owner might earn some more income by sharecropping or working on others' land. This development was caused by the fact that the size of land that could be owned became smaller and smaller due to the rapid growth of population in Java. However, instead of creating a sharp socioeconomic division between landlords and agricultural laborers, the Javanese culture of sharing led to an increasing number of small farmers. Indeed, many of them had no land at all but, due to sharecropping mechanisms and other types of labor exchange, these small and landless farmers could still have access to agricultural works and income. Because of this, according to Geertz, there has been an involution in the development of agriculture in Java. Despite the development of the complex system of sharing, agriculture in Java could not develop further into an effective and efficient system. As a result, not only did people have to share access to agricultural resources, but they also had to share poverty caused by the involution of their agricultural system.

Unlike Geertz, who emphasized the influence of culture, Singarimbun and Penny (1976) stressed population size as the cause of the problem. The rapid growth of population in Java, according to the latter writers, was the culprit behind the incidence of massive poverty on the island. In terms of technical capacity, the cultivation system practiced by Javanese farmers was once sufficient to produce enough food. However, as the population expanded and arable land became scarce, the agricultural sector was no longer able to produce enough food. From the beginning of the twentieth century, arable land in Java was already exhausted. That was why the Dutch colonial administration moved a large number of people from Java to other islands like Sumatra. Building on advances in education and irrigation, the colonial government also employed a transmigration policy as part of its Ethical Policy, in order to improve the economic condition of the Javanese

people. However, despite the transmigration policy, which was also adopted by the post-independence Indonesian government several decades later, the population of Java continued to grow. As a result, other than land scarcity, unemployment also became a problem. The working-age population was too large to be absorbed by the agricultural sector. In Desa Sriharjo, where Singarimbun and Penny conducted their study, they found that two out of three male laborers had no land. The combination of land scarcity and a large, unabsorbed labor force created perfect conditions for a massive growth in poverty levels.

In response to this, some have suggested that the real problem of poverty lies neither in the high pressure of population growth, as Singarimbun and Penny argued, nor the cultural barrier of traditional values or norms as suggested by Geertz, but in the unequal structure of land ownership among Javanese farmers. While few rich farmers, landlords, and local elites controlled the majority of the arable land, most of the villagers were small and nearly landless farmers with land holdings of less than 0.5 ha, or agricultural workers sold their labor to landowners.

Under such unequal land ownership, agricultural development programs implemented by the government, or socioeconomic changes that followed the development programs often benefited only the rich farmers or landlords. For example, during the Green Revolution, agricultural modernization programs carried out by the New Order administration only benefited the wealthy or those with significant land holdings, not the majority of small and near-landless farmers. The problem was that in order to access the credit facilities provided by the government to buy seeds, pesticides, and other modern agricultural needs, people had to present a certificate of land ownership as credit collateral. However, where land was not large enough to constitute collateral, or where no land certificate had been issued, small and near-landless farmers could not enjoy the government credit facilities, and had to rely on their own resources instead. This was a heavy burden for them since the cost of production increased significantly as they had to buy seeds, pesticides, and other means of modern cultivation.

For landless farmers, agricultural modernization had a serious impact as it brought with it many changes in the traditional planting and harvest system. For those without land, planting and harvest seasons provided employment opportunities in rural areas. However, mechanization brought by the Green Revolution decreased the number of employment opportunities quite significantly so that they had to search for other opportunities outside agricultural sector.

Considering the multidimensional nature of poverty, different explanatory approaches to rural poverty may enrich our understanding. Other than cultural barriers, land scarcity, population growth, and structural inequality, government policies may also contribute to people's movement out of or into poverty. However, looking at the main problem discussed by these different theoretical approaches, it is apparent that geographical factors or sociocultural variation among many different ethnic groups has not been discussed sufficiently.

In his study on agricultural development, Geertz explicitly made distinctions between Java and other islands, and his study argued that the finding on shared poverty applied only in a Javanese context. Meanwhile, without mentioning any distinctions between Java and non-Java, many other major works on this issue were conducted in many different places in Java. Because of this, it is understandable that the major issues discussed by these works very much reflected the condition of Java in general, particularly those related to land scarcity and population density. In non-Javanese contexts, the main problem behind poverty could be different. Even though it cannot be easily quantified, migration flows of farmers and poor people from Java to Sumatra, Kalimantan, Sulawesi, and Papua indicate that population pressure is not as severe in those regions as in Java.

In light of this, this study provides an in-depth analysis of poverty among farmers in Cahya, Aceh. In doing so, it contributes to broader discussions of rural poverty in Indonesia and provides a specific, non-Javanese example of poverty. This report approaches the issue of poverty from a multi-dimensional perspective: by way of context, Chapter 2 provides an overview of the study area, and Chapter 3 considers the nature of poverty and sources of livelihood in the area. Chapter 4 investigates the nature of external factors that render the community vulnerable to poverty, and Chapter 5 considers the nature and impact of government and civil society interventions. Finally, Chapter 6 is based on focus group discussions with the community, and establishes local explanations for poverty, and possible solutions.

II. CAHYA: AN OLD VILLAGE ON A RIVERBANK

2.1 General Condition of the Village

Gampong Cahya is located in a lowlands region and is dominated by approximately 85 hectares of rice field areas divided by asphalt road. Nevertheless, roughly one-third of the rice field areas are not arable and cannot be managed by the villagers since there is no road or irrigation access to the land. In addition, due to its geographical location, the land has to rely on nature to drain rainwater, so it is usually flooded during the rainy season, and it takes quite a long time for the land to dry up. Surrounded by agricultural land, the villagers' main livelihood is dependent upon agriculture. It can be said that almost the whole population of Cahya are farmers, divided into land-owner farmers, tenant farmers, and agricultural workers.

Located on the side of a *kabupaten* road, Cahya is not a remote village. The village is only five kilometres away from the *kecamatan* capital and can be reached by public transportation or an *ojek* (motorcycle taxi), which costs Rp4,000 to Rp5,000 one way. In this *kecamatan* capital, there are a number of public facilities that can be accessed by Cahya villagers such as a high school, a *puskesmas* (community health center), and a market.

Cahya has a population of 1,038 people or 227 households. The majority are of Acehnese ethnicity. The villagers' settlements are spread across three adjacent hamlets surrounding the paddy field areas.

2.2 Poverty Conditions in Cahya

The data shows that about 74% of the population is registered for the Rice for the Poor program (Raskin) and the Direct Cash Transfer (BLT) program. However, based on a discussion with the villagers about welfare conditions, the villagers in general can be classified as very poor (37%), poor (48%), and modest (15%).² The wealthy were not mentioned by the community because they constitute only a very small number of people, so the villagers simply incorporate them into the "modest" category. The characteristics of each welfare category were then determined and agreed on by the community members during the discussion on welfare classification attended by men and women from various welfare backgrounds. These characteristics can be seen on Table 2.

²In community consultations, participants used the Indonesian terms *fakir*, *miskin*, and *sederhana*. Very poor, poor, and modest in this classification scheme are equivalent to poor, middle, and rich levels in other communities.

Table 2. Welfare Classification of Cahya Villagers

	Characteristics		
	VERY POOR (37%)	POOR (48%)	MODEST (15%)
1. Types and condition of houses	<ul style="list-style-type: none"> - Improper houses, leaky sago palm roof, bamboo wall, dirt floor - floating toilet (above a small river or unoccupied field) 	<ul style="list-style-type: none"> - Wooden (high) house, sago palm roof, wooden wall, partially cemented floor - floating toilet (above a small river or unoccupied field) 	<ul style="list-style-type: none"> - Semi permanent/permanent house - Water closet and well
2. Source of income	<ul style="list-style-type: none"> - Farming (rented rice fields) 	<ul style="list-style-type: none"> - Farming, fishing, coconut harvesting. 	<ul style="list-style-type: none"> - Farming (self-owned rice field) - Civil service. Side-jobs: Fishing, coconut collection, and daily labor
3. Education level	<ul style="list-style-type: none"> - Elementary school (SD) 	<ul style="list-style-type: none"> - Elementary school, junior high school (SMP) 	<ul style="list-style-type: none"> - Elementary school and junior and senior high school.
4. Property ownership	<ul style="list-style-type: none"> - Do not own agricultural lands - Own a bicycle/walk - Have cattle(3) 	<ul style="list-style-type: none"> - Own agricultural lands (2–12 <i>rante</i> of rice fields) - Own a television, radio, mobile phone (few) - Have livestock (goats, geese) 	<ul style="list-style-type: none"> - Own agricultural lands (12,5–15 <i>rante</i> of rice fields) - Own a television, sofa, mobile phone, bicycle, motorcycle, and car - Own cattle
5. use of health services	<ul style="list-style-type: none"> - Village midwife and secondary community health center (<i>Pustu</i>) - Village traditional healer 	<ul style="list-style-type: none"> - Community health centre (<i>puskesmas</i>) with health insurance for the poor (<i>Askeskin</i>) - <i>Pustu</i> 	<ul style="list-style-type: none"> - <i>Puskesmas</i> - Public hospital and private practices
6. Income	<ul style="list-style-type: none"> - Approximate income per month Rp300,000 	<ul style="list-style-type: none"> - Approximate income per month Rp200,000–Rp700,000 	<ul style="list-style-type: none"> - Approximate income Rp3,500,000 per month and Rp50,000 per day

Source: An FGD on welfare classification with community members from different welfare categories (poor and nonpoor), 28 July 2008.

Note: *Rante* is a local unit of measurement, which is equal to 20 m².

Nevertheless, poverty as a social fact is not a static phenomenon. It is quite dynamic, and may change in accordance with the socioeconomic changes of society or the individuals who have to bear it. First, it is dynamic in the sense that the poverty rate may change overtime. The number of those living in poverty may increase or decrease following shifts in various factors that may affect their welfare status. Compared with conditions in 2003, the FGD on welfare classification also revealed that people's welfare has tended to increase, as the signing of the 2005 peace agreement has allowed people to engage freely in their livelihood and economic activities again. In addition, a significant amount of aid was distributed to the villagers. Table 3 shows that the number of people in the very poor group is decreasing, and many of those people have been able to improve their welfare and move to the poor category, while a few poor families have been able to move up to the modest group.

Table 3. Changes to Welfare Levels

Year	Welfare Level		
	Very poor	Poor	Modest
2008	37%	48%	15%
2003	46%	43%	11%

Source: An FGD on welfare classification with community members from different welfare categories, 28 July 2008.

Secondly, this change of poverty distribution is closely related to social, economic, and political as well as environmental condition in which the poor live. For example, the number of poor people may increase due to economic shocks caused by the increase of fuel prices. It may be also the case that the number of people living in poverty may not change, but the level or severity of their poverty may change due to economic changes, like the rise of food prices, or natural disasters, like flood or a long dry period. Moreover, individual circumstances such as illness may also cause people to fall into poverty. To address the problem of poverty more accurately, therefore, requires better understanding of people's livelihood and the processes and factors that may affect the dynamics of their livelihood. Beginning with the assets owned by Cahya villagers, the next sections will discuss these factors and processes in order to get better understanding of poverty, especially in a rural context, in Kabupaten Aceh Timur.

III. POVERTY AND LIVELIHOOD DYNAMICS

Poverty is related not only to people’s income or consumption, but also to their access to assets, either as individuals or as members of the public. The availability or absence of such assets may influence their well-being. Similarly, asset changes may also affect their life or poverty level in particular. Therefore, understanding people’s assets and associated changes may help us better understand not only the welfare conditions of society but also the nature of poverty. Using an asset pentagon, which consists of human capital, natural capital, physical capital (infrastructure), economic or financial capital, and social capital, the general condition of people’s welfare can be mapped, as in the following diagram.

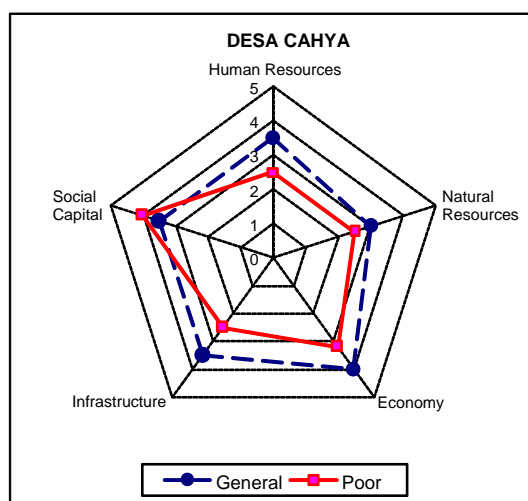


Figure 1. Asset Pentagon of Cahya Villagers

Source: Authors’ analysis based on FGDs with community members and interviews with key informants.

To assist in the depiction of comparative assets, each asset is scored ranging from 1 to 5. The better the condition of the asset, the higher the score. Dashes show the condition of asset owned by the villagers in general, while solid lines show the condition of assets held by the poor. Generally speaking, the pentagon indicates that except for social capital, poor people have considerably fewer assets or access to public assets than the non-poor.

3.1 Human Capital

In 2003, Cahya’s population consisted of 180 households; five years later, it has increased considerably to 227 households or 1,038 people, consisting of 496 men and 542 women. In terms of age, some informants stated that the ratio of young people to adults appears to show no significant gap.³ They also stated that the population has increased as many people who left the village during the conflict have now come back to the village as conditions are now safe. In addition, a few people from neighboring villages arrived following marriages to people from Cahya.

³There is no age-based population data available.

Lack of skills and access to education, especially for the poor, became the main problem for Cahya villagers seeking to improve the quality of their human resources. In terms of skills obtained by the community members, both men and women are mainly dependent upon agriculture, with few of them also keeping livestock. These two basic skills are usually transferred traditionally from one generation to the next, and tend to be traditional in manner. There are a few other skills, but only certain people have them. Thus, put together, the skills of Cahya male villagers include farming, keeping livestock, gardening, and fishing. Slightly different from the men, most Cahya women can farm, keep livestock and gardening, and some may make cakes and weave mats as well. Some villagers can make sago palm roofing for self use, not for sale. But once again, all of these are undertaken in a traditional manner, and not used as additional sources of income.

Within the last five years, there have been no considerable changes or improvement to the skills possessed by the Cahya villagers. In agriculture, some changes took place with the introduction of hand tractors for preparing land. However, it did not make a significant difference to their welfare. The same situation can also be seen in horticultural activities. Despite potentials for productive use of land, villagers have not managed to utilize it optimally, as they have no additional horticultural skills. They cultivate plants without commercial purpose, and so they miss out on potential extra income. In fact, some villagers stated that aside from growing fruit trees or other crops, their lands are apparently quite suitable for keeping cows and goats. However, direct observation and interviews with some villagers show that only a few people utilize their extra land to breed livestock. However, these few people do not tend their animals appropriately due to their traditional understanding of keeping livestock. Therefore, cows or goats in Cahya are generally thin as they are simply left by the owners by the village road to graze.

The lack of skills has made it difficult for Cahya people to get jobs in the cities or in nonagricultural sectors. Indeed, employment opportunities in nonagricultural sectors in the village itself are very limited. This condition is exacerbated by low levels of education. Few people could finish senior high school and even fewer people could go to college or university. With higher educational backgrounds, they could work as civil servants, teachers, or professionals in the formal sector.

In contrast to the older generation, the younger generation may have better opportunities. All children, both males and females, can obtain basic education. Schooling opportunities are generally equal for boys and girls; the villagers do not practice gender discrimination against girls in education. In fact, data shows that the dropout rate at junior high school level is higher among male students than female. Some people stated that the high cost of schooling has led boys to choose to go to work instead of continuing their education. Yet people reported that all children of school age can now finish their primary education, thanks to the availability of an elementary school in the village and the School Operation Assistance (BOS) program—that has made elementary school education free.

However, it appears that many people still find it difficult to send their children to junior high school. Indeed, the number of students who could continue their education after elementary school is increasing, as junior high schools are available in the *kecamatan* capital. However, many students, especially those from poor households, withdraw from high school due to their parents' financial limitations. Transportation costs from the village to the school, which is Rp4,000 per day, is an additional burden for poor families. For them, it is quite expensive and unaffordable. Some poor households can send their children to high school, but in the majority of cases it is difficult. In contrast, rich households can send their children to senior high school, or even university level.

Meanwhile, FGDs with community members show that no serious diseases have affected the villagers within the last ten years. The most common disease is itchy skin. However, health

facilities are not available in Cahya. The village maternity center (*polindes*), for instance, is currently not functional due to its dilapidated condition. Consequently, people have to go to the community health center (*puskesmas*) in the *kecamatan* capital. Otherwise, they have to go to private health service providers, such as the village midwife, where they have to pay for the services. Since the midwife now runs her practice at her house, she charges people for her assistance, which is becoming more expensive. Her fee for assisting in childbirth now is Rp600,000.

The asset pentagon shows that the human capital in Cahya is by and large improving, as indicated by some improvement in the villagers' educational attainment or the growing interests among children as well as their parents in education. Although they have to go to the *puskesmas* in the *kecamatan* capital to access health services, the distance is still within their reach. Furthermore, the government has provided health insurance for the poor (*Askeskin*) that guarantees that poor people can get free basic health services. Nevertheless, for the poor it should be noted that their human capital is still below that of Cahya in general. This is caused by the limited access the poor have to secondary or further education. The cost of transportation to the nearest high school (SLTP) in the *kecamatan* capital is relatively high for them. To deal with this issue, secondary education and the provision of a functional village maternity center could increase their human capital. In addition, it is also worth noting that efforts to improve skills, in agriculture or other strategic areas, as recommended by the youth group, are also needed.

3.2 Natural Capital

Paddy fields, which are fertile and productive, have the most potential of Cahya's natural resources. These lands are also easily accessible by the villagers as they are located near their homes. It is a fact that most the land in Gampong Cahya consists of rice fields, with approximately 85 hectares divided by an asphalted road connecting Jeumpa Barat and Bintang. Unfortunately, some of these areas, especially those located in the outer northern part of the village could not be cultivated; there are no roads or irrigation. Meanwhile, natural drainage systems in the location are inadequate for cultivation (water floods which takes a long time to subside). In fact, the area is quite large, spanning approximately 30 hectares. Were it utilized, it would help the farmers very much as the average land controlled by Cahya farmers has been decreasing in size.

FGDs on livelihood strategies with different groups of villagers show that more than half of the villagers own rice fields and plantation areas of varying size. However, a closer look indicates that the average land ownership varies from 2 to 12 *rante*.⁴ Only a few villagers own expansive areas of more than 5 hectares. Meanwhile, more than 40% of the population does not have any rice fields. They usually rent land from other villagers with a rice payment system of 20 kilograms per *rante*, paid after the harvest. For those that do own paddy fields, the average size of plots has decreased over the last 10 years. In the past, a household owned on average 5 *rantes*, but now the average area may be as little as 3 *rante*. One of the reasons is that lands have to be divided among the children as family members are increasing.⁵

In addition to rice fields, there are also plantation areas in Cahya. Some are located near the village residential area, but large plantations are also located between villagers' settlement complex and the river at the south border of the village. Unfortunately, even though almost all houses have

⁴*Rante* is a local unit of measurement, which is equal to 20 m².

⁵Very poor families usually do not have rice fields, while the poor have about 2 to 12 *rante* (0.1–0.6 hectares), and modest families can have rice fields more than 15 *rante* (0.75 hectares).

surrounding plantation areas, these lands are apparently not managed adequately and are planted only with plants and trees for their own consumption. Moreover, many areas appear to be neglected by their owners. It seems that horticulture has not been considered as a source of additional income for the villagers so the available, potential gardens are not managed appropriately. According to some people, this is due to their lack of skills. In addition, there are many disturbances from wild animals from surrounding areas such as monkeys and squirrels that eat the villagers' fruit trees.

Water is generally abundant in Cahya, thanks for the Jeumpa River that supplies the water, and is essential for rice cultivation. For the last five years the Jeumpa River has been set up with two water pumps to irrigate the paddy fields. With this system, the farmers can harvest rice twice a year. Unfortunately, not all paddy fields in the village have access to the permanent irrigation facilities built by the Agricultural Agency (*Dinas Pertanian*) and the Kecamatan Development Project (PPK Program). The reason is that the irrigation canal is still not long enough to reach the paddy area. Other than that, it is quite expensive to run the equipment. The use of fuel to run the machine has made the irrigation costs increase following the rise of fuel prices. Prior to the rise of fuel prices in 2005, farmers had to pay 13 kilograms of rice for each *rante* irrigated under the system. After the rise of the fuel price that year, the irrigation cost increased to 17 kilograms of rice for each *rante*. This fee is paid to the water contractor responsible for bearing the cost of the machine and ensuring its smooth functioning.

In terms of rice production, it is apparent that the introduction of water pumps has increased the total amount of rice produced every year; the current irrigation system allows farmers to plant rice twice a year. However, rice production is dependent not only on water supply, but is also influenced other factors such as climate and diseases. Compared to the past, even though the total annual rice production has risen following the introduction of water pumps, productivity is decreasing due to widespread pest and disease infestation. Golden snail infestations in the beginning of the cultivating season affect the quantity as well as the quality of rice harvested. Due to the attack of this pest, rice fields become visibly sparse with gaps in several places.

Other than rice field irrigation, the river water is also used to fulfill the daily needs of most residents for cooking, drinking, bathing, and also washing.⁶ Unfortunately, the water is rather muddy that it is not healthy for fulfilling such needs. A lack of clean water means that people have to rely on the river. Several houses have their own well, either protected or not, and some other modest families have access to water sourced from deep wells. However, most of the villagers still rely on the river for fulfilling their water needs.

3.3 Physical Capital/Infrastructure

The condition of the villagers' houses generally reflects the welfare level of the owner. Modest (rich) people may have a permanent building made of bricks and a sizeable garden. There are several families from the modest welfare category who live in large wooden stage houses (*rumah panggung*). In contrast, residents of the poor category usually live in wooden or semi-permanent houses of medium size. Finally, members of the very poor group often have improper houses with wood and sago palm roofs. Several houses of this group are located at a distance from the main settlement area.

⁶Indeed, the main function of the river in the past was to fulfill these daily necessities as Cahya farmers used to rely on rain for watering their paddy fields. Due to its location, which is lower than the village paddy field areas, the river water does not run into the fields.

Differences can be also seen in the facilities available within the houses. Other than access to clean water, explained in the previous subsection, access to electricity also differs among villagers. Direct observation suggests that the electricity network covers almost all village areas. However, while more than 80% of all houses have been connected to the electricity network provided by the state-owned electricity company (PLN), only about 60% of the houses have a legal electricity connection. There are approximately 15 houses which do not have any electricity facilities, since their residents cannot afford to pay the installation fee. To cook, these villagers mainly still use kerosene stoves, while some of the poor still use firewood. In terms of communication facilities, there is no cable telephone network. Nevertheless, cellular phone signals are very good in the village. Many people, especially from the modest welfare category or well off villagers use mobile phones.

Due to its location near the district road as well as the *kecamatan* capital, public facilities are quite easy to access. Facilities that are not available in the village can be accessed in the *kecamatan*. The district road which passes through the village is still in good condition, having been newly repaired with smooth hot-mix asphalt. The road is also used by four-wheeled public transportation vehicles connecting Jeumpa and Bintang. Another mode of transportation available in the village are motorcycle taxis (*ojek*) which are often used by community members to travel to Jeumpa or Kampung Ayie. However, for poor people in particular, transportation to the *kecamatan* capital is not always easy, especially for ongoing purposes like attending school. Many children from poor households cannot continue their education to secondary level due to their parents' inability to provide transportation costs.

Inside the village, some stretches of road are made of gravel while other parts are made of red soil. For transportation within the village, people usually use motorcycles, bicycles or travel by foot. With the availability of credit, the number of villagers who own a motorcycle in the village is increasing.

3.4 Economic/Financial Capital

Given the geographical conditions of the village, the main source of livelihood of almost all Cahya villagers is farming. As can be seen in Table 4, some villagers work as merchants, construction workers, and civil servants, but these workers do not exceed 30% of the population. An FGD with residents of modest welfare standing revealed that the number of people working outside the agricultural sector is actually smaller. Only 4% of the population work outside the agricultural sector, while the rest work mainly as farmers. However, a closer look at the composition of farmers in Cahya shows that farmers could be divided into three different categories: land-owning farmers, sharecroppers or tenant farmers, and agricultural workers. The last category have neither lands nor the resources to rent from others.⁷ An FGD on welfare classifications with representatives from all welfare categories showed that few people work their own land, while the majority works either as sharecroppers or agricultural workers on other people's land.

⁷Land rent costs 20 kg of unhulled rice per *rante*, paid annually.

Table 4. Main Occupations of Cahya Villagers

No	Occupation	Fakir Group	Modest Group
1	Self-employed farmers	16%	46%
2	Tenant farmers	44%	34%
3	Farm workers	10%	16%
4	Coconuts collectors	5%	
5	Merchants/traders	15%	
6	House construction workers	8%	
7	Civil servants/government employees	2%	4%

In terms of gender differentials, both men and women are actively engaged in livelihood activities. For households relying on the agriculture sector, either as tenant farmers or agricultural workers, both husband and wife utilize or work on the paddy fields together. However, they usually have different tasks or responsibilities. Such differences are also apparent in other livelihood activities outside agriculture. Women usually play a bigger role in keeping small livestock, trading, and baking cakes or producing handicrafts. Meanwhile, collecting coconuts, fishing, working in rubber plantations and driving *ojek* are roles considered to be in the male domain.

Nevertheless, it should be noted that that most of these non-farm activities often serve as side jobs. Due to their limited income from agriculture, people—especially those from poor households—also maintain side jobs to supplement their income. These additional income sources vary among those in need, and include laboring in rice fields or plantations (rubber, palm oil, and coconut), fishing in rivers, making cakes or palm sugar, keeping cattle (chicken/geese, goats and cows),⁸ and sewing. Table 5 below shows the types of side jobs and main occupations of Cahya villagers in general as explained by the villagers themselves in FGDs. The FGDs for occupational analysis were conducted with two different groups: the poor and the middle income groups.

⁸Very poor families generally only have several chickens, while poor families have chicken and goats, and only several modest families have cows.

Table 5. Types of Side Jobs among Cahya Villagers

	Activity	Very Poor Group	Modest Group
1	Fishing	14%	3%
2	Palm oil plantation workers	13%	
3	Keeping chickens/ducks	5%	
4	Rubber tapping workers	10%	
5	Keeping cows	24%	
6	Keeping goats	17%	
7	Sewing	3%	
8	Farm work	62%	
9	Motorcycle taxi (<i>Ojek</i>) driver	7%	3%
10	Baking cakes	11%	4%
11	Selling fish		4%
12	Self-owned rice field		4%
13	Gardening		10%
14	Construction work		5%
15	Breeding livestock		53%
16	Selling spices		4%
17	Plaiting mats		2%
18	Collecting coconuts		4%
19	Working in a coffee shop		3%
20	Drivers		2%

Sources: FGDs

It appears that the types of side jobs undertaken by poor households are different from those of non-poor households. While breeding livestock is a popular side job for many non-poor households, working in agriculture is the main additional income source for poor households. Indeed, some poor households also keep livestock as the non-poor households do. However, the FGDs informed us that many do not own cattle themselves; they keep other people's cattle with the expectation that the offspring are to be divided equally, a process termed *mawah*. The FGDs also revealed that some side jobs are carried out during times of scarcity before the harvest. The nature the work is generally irregular and can be done individually; in the local language, villagers call this *mocok-mocok*. Taking into account people's main livelihood activities, Table 6 shows the combination of main and side jobs, and the portion of income earned from each kind of job.

Table 6. Combination of Livelihoods

Combination	(%)		Contribution to income	
	Very Poor	Modest	Very Poor	Modest
1. Farm work and fishing	10		99:1	
2. Farm work and keeping chicken/ducks	31		85:15	
3. Farm work and keeping cows	5		90:10	
4. Farm work and keeping goats	14		96:4	
5. Tenant farming and farm workers	30		35:65	
6. Tenant farming and keeping chicken/ducks	11		80:20	
7. Tenant farming and keeping cows	6		70:30	
8. Tenant farming and keeping goats	6		75:25	
9. Collecting coconuts and making palm sugar	11		36:64	
10. Merchant and Farm work	6		50:50	
11. Rice Field (Rent)+Keeping Livestock		n.a		69:31

Source: FGD on types of livelihood.

For the poor households in particular, the FGDs on types of livelihood revealed that additional income is necessary as their income from working as agricultural laborers is often insufficient to support their household. For those that own small plots of paddy field, their harvest is seldom sold as it is usually insufficient to fulfill even their basic needs until the next harvest season. For these people, unhulled rice (*gabah*) is usually milled for the household's daily needs. Meanwhile, to fulfill other needs, they usually rely on side jobs. In Cahya, the price of unhulled rice has risen more than twofold from Rp1,000–1,500 per kilogram in 2003 to Rp3,000 per kilogram in 2008. But since the prices of basic daily goods have also risen, as the consequence of the rise of fuel prices and inflation, the benefits accrued from the increased profitability of unhulled rice have not made it easier for the poor to fulfill their basic needs.

The absence of formal financial institutions and savings and credit facilities in the village has led to the emergence debt-dependence as a mechanism to deal with financial difficulty, either to cover basic daily needs, or to cover agricultural enterprise expenses. Almost all production costs, from land rent, irrigation, hand tractor rental, fertilizers and pesticides, to harvesting and rice milling, are paid after the harvest.⁹ Consequently, the net harvest profit is often insufficient to fulfill family needs through to the next harvest season. Furthermore, to cover their daily needs, it is common that villagers, especially the very poor and poor, have to get loans from well-off neighbors or shop owners. The villagers cannot save money since they often have no surplus at all. Instead, they often save in the form of livestock such as chicken and ducks. When they are in need, these livestock can be sold or cooked. People from the modest welfare category can buy cattle such as cows, buffalos, and goats, which become a safeguard against difficult times they may encounter in the future.

⁹Cost per *rante* (in unhulled rice): irrigation, —17 kg; fertilizers, —5 kg; manual removal of Golden Snail,—3 kg; paddy cutting,—20 kg.

3.5 Social Capital

Social capital can be defined simply as assets owned by the community members gained through social relations and networks built in the context of community norms, values, traditions, and trust. A strong and abundant reserve of social capital could be used by the community members to support efforts to improve their welfare condition or to help the community reduce their vulnerability. For instance, good social relations or networking may help people have better access to job opportunities.

In Cahya, some informants stated that religious activities such as *wirid* and *pengajian*¹⁰ help villagers maintain harmonious social relations. They note that such activities help facilitate business transactions— like renting land, getting loans, and cyclic work on rice fields. Various activities involving the whole community are also flourishing after the armed conflict between the Free Aceh Movement (GAM) and the Indonesian government ended several years ago. Villagers now feel safe in holding social gatherings or meetings.

Nevertheless, it was reported that many activities are restricted to men, such as village deliberations or meetings, cooperative community projects (*gotong royong*), pig hunting, mosque construction, sporting events, and art festivals. Besides religious activities, women can participate in the Family Welfare Movement (PKK) and savings and credit association. Except for the latter where access is limited, women’s participation is mandatory, not of their own initiative (Table 7).

Table 7. Participation in Community Activities

No.	Type of Activity	FGD (Women)				FGD (Men)			
		2008		1998		2008		1998	
		F	M	F	M	F	M	F	M
1	Village deliberation/meeting					-	√	-	√
2	Cooperative community projects	-	√	-	√	-	√	-	√
3	Pig hunting					-	√	-	√
4	Constructing mosques					-	√	-	√
5	PKK	√	-	√	-				
6	Savings and credit association	√	-	-	-				
7	Religious gathering	√	√	√	√				
8	Communal feast					√	√	√	√
9	Death/condolence visit /disaster					√	√	√	√
10	Quran recitation (<i>Pengajian</i>)/ Prophet’s birthday celebration (<i>Maulid</i>)/Islamic holidays	√	√	√	√	√	√	√	√
11	Praying in mosque					√	√	√	√
12	Mosque youth association					√	√	√	√
13	Sport events					-	√	-	√
14	Art festivals					-	√	-	√

Source: FGDs with male and female groups.

¹⁰*Wirid* (or *wiridan*) is an activity (usually done individually or in groups in a mosque) in which *Surah Yaasiin* (a chapter in the Koran) is recited and/or chant God’s name, while *pengajian* is usually an activity in which people listen to a preacher in a mosque.

Almost all decisions in the community are made by men, in the form of village meetings related to government aid programs, village development, or other activities that involve many people in the community. Decision-making which involves women takes place only in meetings about wedding packages. Social bonds are also apparent in the sharing of financial resources in the case of the death of a family member, and also for celebrations or festivities (Table 8).

Table 8. Decision-Making in the Community

Type of Decision	FGD (Women)				FGD (Men)			
	2008		1998		2008		1998	
	Women	Men	Women	Men	Women	Men	Women	Men
1 <i>Gampong</i> /Village deliberation	-	√	-	-				
2 <i>Gampong</i> regulations					-	√	-	√
3 Village development					-	√	-	√
4 Irrigation construction meeting	-	√	-	-				
5 Cooperative projects (<i>gotong royong</i>)					-	√	-	√
6 Aid Program					-	√	-	√
7 Rice for the Poor beneficiaries	-	√	-	-				
8 Rice field communal feast (<i>Kenduri</i>)	-	√	-	√	-	√	-	√
9 The Prophet's birthday celebration (<i>Maulid</i>)/The night of ascension (<i>Isra' Mi'raj</i>)	-	√	-	-				
10 Wedding packages (<i>Pakat Perkawinan</i>)	√	√	√	√				

Source: FDGs with male and female groups.

Occasionally, decision-making only involves certain prominent figures in the village, such as in the case of government aid distribution. Indeed, these programs often lead to social jealousy between *dusun* and cause disharmony in social relationships.

Inter-*dusun* conflicts have been taking place in Cahya for a long time. Based on the social mapping conducted with community members, it is apparent that one hamlet looks poorer than others. Indeed, as Table 9 shows, most of the poor people live in Dusun Terang. Partly triggered by this socioeconomic situation, and political struggles between members of each *dusun* to serve as village head, residents of Dusun Pinang and Dusun Terang are both likely to feel neglected if one *dusun* appears to benefit more from a program. Those from Dusun Terang feel that other than having a longer history, their *dusun* has more historical value than Dusun Pinang.

Table 9. The Number of Houses per Hamlet Based on Welfare Level

Hamlet	Modest	Poor	Very Poor	Sub-Total
Terang	7	49	30	86
Indah	7	15	9	31
Pinang	18	45	14	77
TOTAL	32	109	53	194

Source: Social and resources mapping with community members, 29 July 2008.

In addition, riots and conflicts with other villages have been also experienced by the villagers, especially the young people. According to some sources, this has become a classic problem between Cahya young people and their counterparts from Gampong Rayek. These riots often escalate to a situation in which other villagers, especially adults or their parents, ask for help from the police, the village head and prominent figures from each village to meet and settle the conflicts.

IV. VULNERABILITIES AND COPING MECHANISMS

In Cahya, vulnerability to poverty generally results from high levels of dependency on rice cultivation as a source of income. As explained in the previous chapter, except for a few people who work as traders and civil servants, there is no other source of primary income generation other than that derived from the rice cultivation and livestock breeding. However, livestock has not been employed as an alternative source of primary income in Cahya. People usually keep cattle casually without any intensive care. Other than these occupations, people do not have any other skills to be relied on. Some are skilled in mat and sago palm roof plaiting. However, these activities are not profitable enough to become a main source of livelihood. Therefore, any disruption to the agriculture sector would automatically undermine the economic stability of the entire village. As will be discussed below, various shocks and events often place agriculture in Cahya in a difficult position. The broader social and economic conditions and vulnerabilities also provides clarity on the broader context of these agriculture-specific vulnerabilities.

4.1 Natural Shocks

Various shocks often disturb Cahya farmers. Some strike each year, such as cattle diseases, yet the most disruptive events are those disturbing the agricultural sector. At least twice in the past, Cahya farmers have experienced widespread harvest failure caused by flood and drought. The most recent drought hit Cahya's rice fields in 2001, when a long dry season caused rice fields to dry up. In such a situation, people lose both potential income and the ability to be self-sustaining for the following period. A similar situation emerged when a huge flood struck Gampong Cahya in 1996. For several days rice fields and homes were flooded. As a consequence, rice crops were damaged and could not be harvested.

4.2 Impact of Seasonal Events

The villagers' vulnerability is also influenced by seasonal events. Beyond their direct control, these events often disturb their livelihoods. Regarding the agricultural work pattern in particular, farmers feel very helpless during the months of December and January during which rainfall reaches its peak. During December, the extent of rainfall means that villagers are restricted from engaging in paddy field work and other livelihood activities. For farmers in Cahya, December is the most difficult month and is known as *bulan paceklik* (the period of shortage before harvest); there are no income generating activities to be relied upon during the period. The farmers can only survive from surplus from the previous harvest. However, for many poor people, this kind of reserve does not exist. Many of them eventually have to seek aid in the form of debt. Table 10 below shows that such debt can be acquired from relatives, well-off neighbors, or shop owners. Hence, besides being known as *musim paceklik*, this month is also known as "the debt month", especially among the poor.

Table 10. Community Sources of Assistance

Type of Activity	Assistance	
	Type of Need	Source of Assistance
Preparing the field	<ul style="list-style-type: none"> - Use of tractor - Irrigation 	<ul style="list-style-type: none"> - Tractor owners - Water contractors for irrigation
Cultivating the paddy	<ul style="list-style-type: none"> - Fertilizers, seeds, pesticides, water, - Plow 	<ul style="list-style-type: none"> - Fertilizers, seeds, pesticides purchased on credit from local retailers. - Rent plow from rich or well off neighbors. - Rice fields rented from the land owner
Daily consumption needs	Cash, rice, fish, oil, etc.	<ul style="list-style-type: none"> - Buying items on credit from local retailers - Borrowing money directly from wealthier residents, head of village.

Source: various FGDs with different categories of participants.

Furthermore, in relation to debt, an FGD with men of the village suggested that locals incur debt not only over the difficult period around December, but also during the period of rice cultivation. Debt is usually used to cover production costs such as buying seeds, fertilizers, and pesticides. Additionally, poor people also often borrow money to pay their children’s education costs, and the beginning of a new academic year is also recognized as a financially strenuous period. These debts are then paid after harvest season. Therefore, other than the “Debt Season” of December, the villagers are also familiar with “Repayment Season”, which usually takes place in the months of March and October.

Finally, apart from a high rainfall rate, the security of Cahya villagers is also often affected by cattle diseases, especially those which strike their chicken or geese flocks. Every year, these diseases emerge around June and July and have no remedy. Indeed, the disease inflicts heavy loss. Many of their cattle die because of the disease, known locally as *ta’en*.

4.3 Social and Economic Vulnerabilities

From the existing trends, it is apparent that improved security conditions following the Helsinki Peace Agreement in 2005 have led to a significant improvement in people’s welfare. Although some feelings of distrust still color social relations among certain people or groups of people, the village is now generally safe. Villagers are free to go to work and undertake their daily activities. They are also free to go anywhere they want. It is apparent that life has gone back to a normal situation, similar to before the conflict. While farmers can go back to work their rice fields, traders can run their business again. Several merchants from outside the village such as fish-mongers are able to once again come to sell their goods in the village. However, the villagers feel that security improvements have not automatically led to an improvement of their economic situation. Besides the security factor, the villagers have also been influenced by the rise in commodity prices triggered by the rising cost of fuel.

This situation is, to some degree, caused by the fact that there has been no significant progress in their livelihood standards, and debt remains an important vulnerability. The introduction of technology is not efficient enough to compensate the arising obstacles or cost in production. Compared to five or ten years ago, the development of some agricultural technologies such as

tractors, water pump machines, fertilizers, and pesticides has eased the burden of agricultural work. For example, after the water pump was introduced, farmers in Cahya were able to cultivate their rice fields twice a year, effectively doubling their output. However, this increase in the rice production becomes less significant when we also count the increasing cost of production induced by this technological innovation. It is a fact that to cover the cost of production, many farmers, especially poor ones, often incur a substantial debt. Only after the harvest are they usually able to pay their debt. This is typical of villagers' cultivation patterns, which makes it difficult for them to accumulate the surplus needed to enhance their livelihoods. Table 11 shows the cost that needs to be paid by the farmers to work during one cultivation season.

Table 11. Tenant Farmers' Expenditure

Type of Expenditure	Cost
Land rent	20 kg/ <i>rante</i>
Hand tractor rent	
Irrigation cost	17 kg/ <i>rante</i>
Fertilizer (minimum)	5 kg/ <i>rante</i>
Golden snail pesticide (minimum)	3 kg/ <i>rante</i>
Rice-cutting fee	20 kg/ <i>rante</i>
Rice transportation fee	Rp25,000.-

Source: Result of FGD with male group on sources of livelihood.

Furthermore, in other FGDs the community members (Table 12) indicated that recently, rice cultivation has become more difficult. Golden snail pest infestations, which can occur throughout the year, are very difficult for farmers to combat. Besides extending their work hours, because they have to go to their rice fields more often to apply pesticides, or, for those without the financial means to do so, manually remove the snails from their crops. The limitation of the existing irrigation system adds another problem for rice cultivation in Cahya. Other than the limitations of the existing irrigation canal, such as unrepaired damage and the inability of the existing canal to reach all paddy fields in Cahya, the villagers also highlighted problems with the water pump machine and its maintenance. While the existing pumps have been deteriorating significantly, the community does not have the money to replace them. Even in terms of fuel, the farmers have had many problems guaranteeing the availability of fuel for the machines. As a result, water supplies for their paddy fields are frequently disrupted. Although it has been outsourced to a water contractor, many people complain that the water supply to their rice fields has not run smoothly. Many think that the contractor also has difficulty covering the high operational costs of the water pumps.

Table 12. Changes Impacting Agricultural Systems in Cahya

	10 years ago (1998)	5 years ago (2003)	Now (2008)	Remarks
Rice Production	<ul style="list-style-type: none"> - Harvested once a year - Rice was still rain-fed - 1 <i>rante</i> could produce 120 kg 	<ul style="list-style-type: none"> - Water pumps had been introduced - Harvested twice a year - Production output remains at 120 kg 	Rampant golden snail pest	<ul style="list-style-type: none"> - Fuel price increases, production cost becomes more expensive and golden snail pest has decreased agricultural production - Lack of capital - High operational cost in handling pests
Pests	<ul style="list-style-type: none"> - There were no golden snails 	<ul style="list-style-type: none"> - Golden snail already apparent 	<ul style="list-style-type: none"> - Increasing infestations 	<ul style="list-style-type: none"> - No ability to cope with the pests and their damage
Pesticide use	<ul style="list-style-type: none"> - Matador (grass poison) used 	<ul style="list-style-type: none"> - Still use pesticides 	<ul style="list-style-type: none"> - Increasing use of pesticide 	<ul style="list-style-type: none"> - The existence of golden snail pest
Livelihood	<ul style="list-style-type: none"> - Villagers generally worked as farmers, and had 5 <i>rante</i> 	<ul style="list-style-type: none"> - Land ownership decreased to 3 <i>rante</i> because of population increases 	<ul style="list-style-type: none"> - Land ownership remains at 3 <i>rante</i> 	<ul style="list-style-type: none"> - The increase of the population led to more division of lands, especially among the children
Rice price	<ul style="list-style-type: none"> - 1 kg → Rp850.- 	<ul style="list-style-type: none"> - 1 kg → Rp. 1,500.- 	<ul style="list-style-type: none"> - 1 kg → Rp. 2,800-3,000.- 	<ul style="list-style-type: none"> - Rice prices increased after the rise of fuel prices, but this only covers the increased cost of production.

Source: FGDs with various groups.

V. INSTITUTIONAL CONTEXT

Although located near the *kecamatan* capital, many government services and offices in Cahya do not function well. Noticeable improvement in the aftermath of the Helsinki Memorandum has only occurred in the economic and trade sectors; merchants from Cahya and other regions, especially rice merchants, can be economically active once again. Meanwhile, in social terms, apart from an increase in general safety, there has not been any significant progress felt by the members of community.

5.1 Roles of Local Government

Officially, village administration serves as the representative of government at the lowest level. In Cahya, this consists of the village head, village secretary (*dusun* head, imam, and youth leader). The village head is mainly responsible for managing the village and is assisted by the village secretary. At *dusun* level, the village head is assisted by a hamlet head for each hamlet. There are a total of three hamlet heads in Cahya, in accordance with the total number of hamlets. Unfortunately, the village government does not have a central office to provide public services or even to store documents. All government files and documents are kept in staff members' houses. Consequently, documentation is a problem in Cahya and even basic data is unavailable.

Besides village administration, which could be considered as an executive agency, the Cahya government is also equipped with what is called in the local language *tuha peut* and *tuha lapan*. *tuha lapan* is the eight-member village representative council headed by the *tuha peut*. The council was established several years ago alongside the establishment of village representation bodies in many parts of the country. However, instead of implementing the widely used Village Representative Board (BPD), Acehese people use their own nomenclature which echoes similar historical bodies.

Table 13. Significance and Proximity of Various Agencies

No.	Agencies/Individuals	M		F	
		Importance	Proximity	Importance	Proximity
1	Village head	2	2	1	1
2	Village secretary	3	3	1	2
3	<i>Kades</i>	2	2	1	2
4	PMD chairperson			3	3
5	Head of village representative council	3	4	1	2
6	Village imam	2	1	1	1
7	Head of subdistrict	1	6		
8	Fishers' and farmers' groups	6	4	3	4
9	Village midwife	4	3	1	3
10	Agricultural agency	6	5		
11	Veterinary assistant	7	4	5	6
12	Agricultural officer			4	6
13	Family Welfare Movement (PKK)			2	3
14	Cooperative association			5	4
15	Mosque youth association			4	4
16	Civilian security officer	5	4	6	7

Source: FGDs with male and female groups.

Generally speaking, the result of FGDs shows that village government branches have close relationships with the villagers. The village head and his staff are the main source of information for the villagers regarding government programs like Raskin and immunization. However, as seen from the Table 13, male and female villagers perceive differently the importance of different aspects of village government. This table shows the results of an activity in which participants were asked to give numerical value to the perceived importance (in terms of relaying information) and perceived closeness of each local figure or group to the community, where a value of 1 represents the most important or closest official or agency. The male participants consider the village imam to be the closest figure to them. Although the village head, village secretary and *dusun* head also have close relations with them, these three parties are less close to them than village imam. But in terms of information provision, the village head's role is considered to be the most important, followed by the *dusun* head.

In contrast, it is apparent that sources of information for female villagers are more varied. In general, while the men consider the village head as the main source of information, the women stated that it is *dusun* heads that provided the most information. Given values of 2 and 3 are the village secretary, and village head respectively (Table 14).

Table 1415. Community Sources of Information

No.	Type of Information		M	F
	Type of Information	Value		
1	Rice for the poor (Raskin)	1	Village head	Village head, village secretary, hamlet head
		2	Hamlet head	
		3	District head	
2	Fertilizer assistance	1	Village head	Village head, hamlet head agricultural officer
		2	Hamlet head	Village secretary, neighbors
		3	Farmer Group	Paramedics
3	Basic needs allocations (JADUP); Direct Cash Assistance (BLT)	1	Hamlet head	
4	Free medicines	1	Village midwife	Village midwife, Village head
				Village Secretary, <i>dusun</i> head
				Neighbors, agricultural officer, paramedic, PKK
5	Immunization; integrated health service post (<i>posyandu</i>)	1		<i>Dusun</i> head
				Village midwife, Village secretary
				Neighbors
6	Building of <i>pesantren</i> ; roads, irrigation	1	Village head	Village head
				Village secretary, hamlet head
7	Entertainment	1		Neighbors
8	Village Meeting	1		Village secretary, hamlet head
				Village head, neighbors
9	Death	1		<i>Dusun</i> head
				Neighbors
10	Cultivating rice; agricultural mentoring	1		Hamlet head, agricultural officer
				Village head, village secretary, neighbors
11	Cake baking training	1		PKK
				Village secretary
				Village head

Source: FGDs with male and female groups.

Many villagers complained that village administration was not operated very well. In terms of government aid distribution, some people, especially from poor families, think that they have been treated unfairly by the village administration and other well-off villagers as the aid that was supposed to benefit them was distributed evenly among all villagers, regardless of their different levels of need.

Similar weaknesses were also found in other services. Cahya has *polindes*, where public services for community members should be delivered. However, the building is currently damaged and can no longer be used. The house provided by the government for the village midwife is in disrepair, so that she has to stay in a villager's house at the border of Gampong Cahya and Gampong Rayek. With the absence of the village *polindes*, the midwife conducts her practice in her house as a private practice, for which patients must pay.

In relation to the armed conflict between GAM and the GoI that deeply affected village life, the Aceh Transitional Committee (KPA) also has its representative office in Cahya. For some villagers, especially ex-combatants, the KPA provides assistance to resocialize with the village community in general. The Committee also helps them to access aid programs offered by the government. However, this has led to some jealousy among other community members as the government aid programs were largely directed at the KPA and its members, leaving non-combatant community members who were nevertheless impacted by the conflict feeling shortchanged.

Another problem raised by the villagers regarding the role of government agencies in Cahya is the absence of agricultural advisory staff. It is a fact that agriculture is the main source of Cahya villagers' livelihood, for both the poor and non-poor. Therefore, the absence of such advisory staff very much affects their activities, as there is nobody with whom they can consult in relation to problems they encounter in their food crop cultivation.

5.2 Private Sector Activities

A number of private agencies operate and provide services for the villagers. These agencies are broad in scope, and range from trade to educational enterprises. But based on the intensity of the activities, it is apparent that most are engaged in trade.

In this sector, rice is the main commodity that has attracted interest from traders, both from within Cahya and beyond. It is understandable that as an agricultural village Cahya can produce a surplus of rice to sell to other regions. As conveyed by one of the village merchants, on average of 25 tons of rice are sold by Cahya farmers for one harvest season. The harvest is usually gathered by village merchants, after which large-scale traders— often from Medan—collect the rice for transport to other cities or regions. In Cahya, there are about five people involved in the business. Some of them also transport rice to Medan themselves, instead of selling to other traders. But in most cases they act as suppliers for bigger traders from outside the village.

Other than attracting merchants, rice also invites the development of rice mills and agricultural retailers that provide agricultural necessities such as seeds, fertilizers, and pesticides. At the time of this study, a large rice mill and several agricultural shops operate in the village. Usually, the owners of these shops are also involved in rice trading as village merchants. Other than rice, they also receive other local commodities such as palm oil.

Also related to paddy cultivation, one type of agency that actually plays an important role but probably receives less attention is irrigation or water contractors. As part of an agreed contract, the contractor assumes responsibility for the availability of irrigated water during the cultivation season, from the time farmers begin cultivating paddy seeds through to the harvest period. In return, they are provided with 17 kilograms of rice for each *rante* of land irrigated under the contract.

Outside the agricultural sector, a few people provide education and health services on private basis. A local religious leader built a religious boarding school (*dayah*) for local people, especially children and young people, to study religious teachings. As discussed in the previous section, the village midwife now serves as a de facto private healthcare provider, given the dilapidation of public facilities.

Finally, it is also important to note that there are some shops that provide for people's daily needs such as sugar, cooking oil, eggs, and vegetables. A number of coffee stalls, where people socialize with fellow villagers, are also in existence. However, some people lamented the lack of financial institutions that may help them access credit for improving their business or beginning a new one. Some also emphasized the need for new industries near the village to create more employment opportunities for people from Cahya and other villages.

5.3 CSO/NGO Activities

It is quite surprising that according to villagers, there have been no NGOs operational in Cahya. They lamented that while their needs are not fully met by local government, they cannot ask NGOs for help either. In addition to the institutions discussed above, some villagers did mention the *tuha peut* and *tuha lapan*, but these are more appropriately classified as government bodies, as discussed earlier.

5.4 National Government Policies and Their Impact

Arguably, our understanding of social institutions and their role in local society cannot be separated from broader social processes, even when these processes are generated by a broader context of national policy that exists beyond the control of the community members. It is worth noting that other than government, private, and civil agencies, there are also independent events, regulations and agreements that contribute to the formation of local dynamics as well as people's welfare in general. Indeed, these events and regulations sometimes also influence the existence of those agencies.

Among the recent events that have influenced village social dynamics and welfare, especially for the poor, was the rise of fuel (BBM) prices in 2005. That fact is that the fuel price increase was followed by an increase in the cost of other basic goods. Thus, other than having to pay more for irrigation, as the water pumps used for this purpose require fuel, villagers also pay more for other goods and services. Because of this, many people—especially the poor—feel that life has become more difficult. They do not deny that the rise of fuel prices has also increased the selling price of rice they produce. However, they feel that it does not compensate for the increasing cost of agricultural production as well as general living costs.

Other policies that directly affect village life are government assistance and subsidy programs such as Raskin, Kecamatan Development Program (PKK), and provision of seeds, fertilizers and other aids. Generally speaking, the villagers are of the opinion that these programs have helped them deal with the difficulties they encountered. For those programs that are directed to all villagers, and for community-wide programs like the construction of irrigation canal under the PKK, there were no serious complaints about the program (Notwithstanding the fact that the irrigation canal could not reach the each paddy field area in Cahya). However, individually targeted programs, especially those targeted at the poor, have led to complaints from villagers. Many criticized the distribution of aid, as it was disbursed regardless of individual welfare conditions. As a result, nonpoor villagers, who according to the design of the program should be ineligible for assistance, also receive it. Some informants stated that such an aid-for-all distribution mechanism was chosen by the village government to avoid social jealousy amongst villagers. However, from the poor's point of view, the mechanism is not fair as it does not distinguish between needy and well-off residents.

In terms of agriculture, a number of local regulations are in place that govern local livelihoods. Amongst these are regulations on land rent and irrigation fees. According to the village regulation, land rent is to be paid following each harvest at a cost of 20 kilograms of rice per *rante*. For irrigation, farmers pay 17 kilograms of rice to the water contractor, with a provision that 1 kilogram of this amount shall be donated to the village treasury. Similar to land rent, payment of the irrigation fee also takes place after the harvest. In addition, the villagers also practice a benefit sharing model, especially in regards to livestock. The regulation states that the profits or offspring should be shared between the livestock owner and those taking care of it.

VI. POVERTY IN LOCAL PERSPECTIVE

In order to obtain a general picture of poverty from local perspectives, to include as many social categories as possible, focus group discussions (FGDs) on poverty and its solutions were held with three different participant groups, namely poor adult men, poor adult women, and young villagers. The last FGD combined male and female participants in one discussion. The results of these FGDs demonstrate that they face relatively similar problems, although different groups may emphasize different aspects of poverty.

6.1 The Causes of Poverty

Influenced by their different individual backgrounds and life experiences, it appears that villagers perceive differently the conditions and factors that lead to poverty as well as the effect on their livelihood and daily activities in general. The result of FGDs with the male and female participants, for instance, clearly shows how different their perspectives are. However, a deeper analysis of their responses shows that they actually share the same views on the main problems felt to cause poverty. As seen from the Table 15, except in the degree of emphasis, these three groups (poor adult men, poor adult women, and young villagers) see the problems in agriculture, education, capital, and employment as the main problems behind poverty in Cahya.

Table 16. Main Problems Identified by the Community

No	Adult Male	Adult Female	Youth
1.	Fallow land	Cyclic (impermanent) work	Agricultural pests
2.	Golden snail pest	Lack of education	Lack of education
3.	Lack of irrigation	Lack of capital	Lack of employment
4.	No agricultural extension workers	Agricultural pests	Lack of capital
5.	Lack of capital	Lack of irrigation	Harvest failure

Source: FGDs with different categories of participants.

Analysis of these results shows that among men, attention is focused on livelihoods, which in Cahya means agriculture. This is probably influenced by their roles and responsibilities as the heads of households. The primary issue they raised was the vast area of neglected and inarable lands in Cahya. Other than indicating the problems stemming from under-utilized land, it also implicitly signals the lack of land ownership among villagers, especially poor people. Interviews with some villagers show that most farmers in Cahya control less than 12 *rante* (0.6 hectares). The average land ownership among common people is even limited only 3–5 *rante*. Moreover, nearly half of the villagers do not own their own land; they have to work as tenant farmers or agricultural workers on other people's land. In such a situation, it is understandable that the existence of vast area of inarable land is seen as a huge problem.

Second to land problems is the attack of the golden snail. The pest is seen to have a significant impact on community welfare, since infestation has been massive. It can be said that all paddy fields in Cahya are vulnerable to this pest attack. As a result, without any mass poisoning effort, it is impossible to exterminate this pest in Cahya rice fields. Individual efforts that have been

undertaken, involving either pesticides or manual collection, have been considered ineffective because on the next day the pest will appear again, either coming from the remnants of pests in that field or other surrounding fields. Indeed, the pest attack causes large scale loss on the part of farmers since the pest eats and causes fundamental damage to the rice crops.

The men's group also mentioned the lack of irrigation facilities as one of the main problems. According to them, the existing irrigation canal cannot reach the whole paddy field in Cahya, especially those lands located far from irrigation canal. Physically, beside damages in several parts, the existing irrigation canal has not been fully completed yet. In some parts, the channel is constructed with soil and has not been neatly arranged, so that the water sometimes spills over to the road, even to residents' gardens. Lastly, related to agriculture, the men's group complained about the absence of agricultural consultant workers, because without such workers available they have no access to advice about dealing with pests, or other agricultural issues.

Unlike the men's group, the women's group focused their attention more on the issues of unemployment, low levels of education, and lack of capital. Agricultural problems are still considered of high importance, but more attention is placed on the previous three problems. The fact that many people do not have permanent work is seen as the main problem underlying villagers' poverty, because it prevents people from having a dependable, regular income. The next problem is the lack of education; the limitations caused by low education levels are recognized as the cause of unemployment and a failure to improve the general welfare conditions. The next problem is the absence of financial capital. In contrast to male villagers, who only consider capital in relation to enterprise and so do not prioritize it, the women's group sees financial capital as one of the top priorities because the lack of capital leads not only to difficulties in starting an enterprise, but also in sending children to high school or further education.

Quite similar to the perspectives of the women's group, the young villagers also emphasized the importance of education. After the issue of pest infestations, the young people considered low levels of educational attainment among their parents and the older generation as one of the main causes of poverty in the village. Other than that, and probably related to their own hopes, the young people complained about the limited employment opportunities in the village. This issue was also raised in the women's group, but the youth group positioned the problem in the context of the shortage of agricultural land, side jobs and other employment opportunities outside agriculture. Finally, other than the problem of financial capital as mentioned above, another issue raised from the discussion with young villagers was the harvest failures that hit the village more than once several years ago.

6.2 Problem-Solving Alternatives and Priorities

To determine the most important and urgent problems to be solved, and how to approach them, the problems mentioned above were evaluated based on the following criteria:

- a) Does the issue exacerbate other problems?
- b) Does the problem need to be addressed?
- c) Does the problem affect many people?
- d) Are there local resources for resolving the issue?

As shown in Table 16, based on these criteria, the attack of golden snail and the lack of financial capital have become the two most important problems that need to be solved. This makes sense

as these problems are related directly to income generation and the general livelihood of the village. After these two problems, the men’s group then placed attempts to utilize the inarable land, while women preferred the creation of more employment opportunities. An interesting thing to be noted here is the urgency of the problem of education, especially for the young generation as revealed in the FGD with the young people.

Table 17. Problem-Solving Priorities as Determined by the Community

No.	Men’s group	Women’s group	Youth group
1.	Agricultural pests	Lack of capital	Agricultural pests
2.	Lack of capital	Irregular work	Harvest failure
3.	Inefficient land utilization	Agricultural pests	Lack of education
4.	Lack of irrigation	Lack of irrigation	Lack of employment
5.	Absence of agricultural consultants	Lack of education	Lack of capital

Source: FGDs with different categories of participants.

There are seven main problems that villagers identify as impacting the community's welfare and poverty levels. Based on prioritization of problem resolution determined by the villagers themselves, possibilities for resolving these seven problems can be seen on Table 16. The table also shows alternative solutions to cope with these problems. From the villagers’ discussions, it is apparent that many efforts to cope with the problems are beyond the community’s capacity. The alternative solutions to these problems are heavily dependent upon the existence of external help. In coping with the attack of the golden snail for example, existing community potential encompasses things they have tried before, to no avail. Alternative solutions such as mass poisoning are dependent on the support of an outside authority, especially the regional government.

In some areas, existing village potential is abstract, and awaits further development, likely through the provision of outside assistance. Take the absence of financial capital for example; it is said that one of the potentials available in the village to cope with the problem is to establish a farmer’s group or *julo-julo* (rotating savings association). However, as revealed in another discussion, there are no such groups in the village. They have been established in the past, but only on temporary bases, especially for the purpose accessing government aid programs. After the funds had been received, and the programs required by the funding had been implemented, the groups became ineffective. This suggests that even in areas where community members identify an existing capacity, there is still a need for some external guidance or assistance to make these activities sustainable and effective in improving livelihood standards.

Table 18. Problem-Solving Alternatives as Identified by the Community

Problem (based on problem priority scale)	Type of Problem-Solving		
	Community solutions	Community solutions requiring outside support	Externally-reliant solutions
Golden Snail	Poisoning, manual removal, making insecticide themselves	Conducting mass poisoning.	Poisons, insecticides which can cope with pests; training and mentoring for pest eradication; agricultural experts and pest researchers.
Lack of venture capital	Farmers' group	Establishing cooperatives, savings and credit groups	Capital assistance
Irregular work	- Daily job (8-12 AM, meals, and wage of Rp20,000) - Work in other people's rice fields	Skills training (embroidery, sewing, automotive repair, electronics)	Creation of new industries/ Employment opportunities, work capital aid
Under-utilization of fallow land		- Plowing rice field - Constructing ditches - Constructing roads	- Tractor - Excavator
Lack of education and knowledge	Passing on existing knowledge	Mentoring	- Scholarships - School buses (transportation facilities) - Establish junior and senior high schools in closer proximity.
Lack of irrigation facilities	-Wealthy residents people fund machine irrigation (repaid at harvesting)	- Constructing ditches, water canal	- Constructing dam - Constructing irrigation canal (non-pump) - Water pumps
There are no agricultural extension workers			Agricultural mentoring expert

Source: FGDs with different categories of participants.

VII. CONCLUSION

The result of this participatory poverty analysis at village level shows that security disturbances and natural turbulences generally affect the farmers' welfare very much. As observed in Cahya, protracted conflict between GAM and the GoI brought huge difficulties, since it prevented the community from going to work freely. Furthermore, the conflict forced many people, especially the male members of the community, to flee to safer places and leave their livelihoods behind in the village. Meanwhile, droughts and huge floods have caused harvest failures in Cahya several times. To most of the villagers, this is a massive event since the product of their paddy fields is their main source of income.

With the signing of the peace agreement in 2005, the villagers were able to improve their welfare, and indeed general improvements are observable since the end of the conflict. However, high levels of vulnerability to poverty, caused by socioeconomic shocks and natural events, have limited the impact of these gains. The fuel price rise in 2005 made many other basic goods and services more expensive, including agricultural necessities such as fertilizers and seeds, irrigation costs, and general living costs. Although this also increased the price at which rice could be sold, most people cultivate rice crops for their own subsistence. This situation has been exacerbated by the massive infestations of golden snail in agriculture, and limited access to capital for establishing other businesses.

To cope with such problems, the villagers consider pest eradication and agricultural development—supported by attempts to improve their limited access to capital—to be the most urgent issues. Besides this, basic health services are also necessary. As a longer term goal, improvement of access to further education and vocational training needs to become a development priority in Kabupaten Aceh Timur. However, this development will require significant outside support, particularly from government. It is only with outside support that the limited potential and resources of the village can be fully utilized.

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