



Study of the Sustainable Livelihood Framework on the Implementation of the Agrarian Reform Program (Case Study: Pasaman Regency)

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Abstract

Poverty and employment are socio-economic issues that are often a problem in West Sumatra. The high poverty and unemployment rates in West Sumatra cause its people trying to make use of their capital to survive. One of the basic components utilized by the community is the availability of land. However, the level of inequality in the distribution of land tenure and ownership is quite high. To solve these problems, government developed the Agrarian Reform Program. One of the locations of the agrarian program is Pasaman Regency. The use of land as an effort to support people's livelihoods depends on the livelihood strategies and influences livelihood outcomes. The livelihood outcome depends on external and internal factors that are inherent in people's livelihoods, as stated in the Sustainable Livelihood Framework (SLF). This research uses the SLF method because the SLF can be used to sharpen the monitoring and evaluation system in development projects. Since 2019, this activity had never been evaluated and it is not yet known how it will impact the community's sustainable livelihoods. Therefore, this study aims to examine the factors that influence the impact of the implementation of the agrarian reform program on the livelihoods of the people in Pasaman Regency. The research results show that the agrarian reform program provides livelihood outcomes in the form of increased welfare, increased income and reduced community vulnerability. This livelihood achievement is influenced by the community's ability to manage livelihood capital, the level of vulnerability and the transformation of structures and processes to support the community's sustainable livelihoods.

Keywords: agrarian reform; livelihood; livelihood capital; sustainable livelihood; vulnerability.

1. Introduction

Poverty is a social phenomenon that is often a problem in Indonesia, including in West Sumatra Province. Currently, poverty in West Sumatra is 6.63% of the total population, as many as 370,670 people (BPS, 2022). Besides poverty, employment issues are also one of the socio-economic issues that are of government's concern. Employment is an important field in measuring the level of social welfare because it can show the quality and ability of the community to fulfil their needs. The number of unemployed in West Sumatra is quite high, as many as 179,948 people and an open unemployment rate of around 6.17% (BPS, 2022). The high poverty and unemployment rate in West Sumatra decreases over the last 5 years, but in 2021 the rate had increased. This trend is caused by the

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pandemic which has caused many economic activities to not be able to run as usual, so that people's income has been depressed (Fauzia, 2021). Based on these problems, one of the basic components utilized by the community to get out of the poverty line and unemployment status is the availability of land resources. Land has an important meaning for human life because most people's lives depend on land. However, currently there is an inequality in the distribution of control and ownership of land in West Sumatra. This is shown from the gini index of land ownership in West Sumatra, which is equal to 0.61 and is also included in the high category (Kementerian ATR/BPN, 2019). One of the government's programs to solve those problems is to the agrarian reform program. As one of the PSN, agrarian reform program is one of the economic distribution programs which are land-based (Agam, 2017).

The implementation of agrarian reform in West Sumatra is carried out in 3 main activities, namely asset reform, access reform, and a combination reform (Kementerian ATR/BPN, 2021). One of the locations for implementing the program is in Pasaman Regency. This program has been running since 2019 in Lubuk Sikaping District. The program is implemented in the form of asset reform activities, namely land redistribution with 641 freehold title (SHM) outputs (Kantor Pertanahan Kab. Pasaman, 2019). Lubuk Sikaping District was chosen as location of this activities because Lubuk Sikaping had many unregistered lands in this area. Since Lubuk Sikaping is the capital of the district and the centre of activity in Pasaman Regency, accelerating land registration in Lubuk Sikaping was being a priority. This is related to an increase in the economic value of certified land, which also has an impact on increasing investment opportunities and community participation to improve their standard of living. In this case, land is one of the assets that can generate carrying capacity and value for human livelihoods.

The use of land as an effort to support people's livelihoods depends on the livelihood strategies adopted by the community. The livelihood strategies of each community can be different from one another. It depends on external and internal factors that are inherent in people's livelihoods, as stated in the Sustainable Livelihood Framework (SLF). SLF explains the many factors that affect people's livelihoods where these factors are interrelated with one another (Saragih et al, 2007). Since the implementation of the land redistribution in 2019, this activity has never been evaluated and it is not yet known how it will impact the community's sustainable livelihoods. Evaluating the impact on the sustainability of livelihoods is something new in evaluating land activities, because usually activity evaluations only focus on quantitative results and do not discuss the sustainability impacts of the activity. Thus, the purpose of this research is to examine the factors that influence the impact of the implementation of the agrarian reform program on the livelihoods of the people in Pasaman Regency in the Sustainable Livelihood Framework.

2. Literature Review

2.1 Agrarian Reform

Agrarian reform is interpreted as reforming the agrarian structure which includes land tenure, production relations (capture/leasing, institutions) and agricultural support services such as irrigation, credit, education, taxes (Bachriadi, Faryadi and Setiawan, 1997 in Salim, 2020). According to Tuma (in Bachriadi, 2007), agrarian reform is systematic, planned and carried out relatively quickly, within a certain and limited period of time, to create welfare and social justice and to pave the way for the formation of a 'new' society that is democratic and fair; which began with steps to rearrange the control over the use and utilization of land and other natural resources, then followed by a number of other supporting programs to increase the productivity of farmers in particular and the people's economy in general. Ben Cousin (in Limbong, 2012) states there are three concepts of agrarian reform, namely:

1. The concept of land reform, namely the rearrangement of land tenure structure.
2. The concept of access reform, which is related to the arrangement of more productive use or utilization of land, accompanied by the arrangement of supporting facilities and infrastructure to enable farmers to gain access to economic resources in the area.
3. The concept of policy/regulation reform, which relates to regulation of policies and laws that are in favour of the common people.

2.2 Sustainable Livelihood

The livelihood concept was developed in 1990 by the Department for International Development (DFID). Sustainable Livelihood (SL) can be seen as a way of thinking about development goals, scope, and priorities, to increase progress in poverty reduction by capturing and providing an understanding, the underlying causes and dimensions of poverty by focusing not only on a few factors such as economic problems, food security, etc. (Majale, 2002). This approach also attempts to sketch the relationships between different aspects (causes, manifestations) of poverty, enabling more effective prioritization of actions at the operational level. According to Chambers and Conway (1991), a sustainable livelihood includes capabilities, capitals (savings, resources, claims, and access) and activities needed for a means of living: sustainable livelihoods that can cope with and recover from stress and shocks, maintain or enhance their capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and that contribute net benefits to other livelihoods at local and global levels and in the long and short term.

Capitals discussed in this theory consist of 5 capitals including natural capital, physical capital, human capital, social capital, and financial capital (DFID, 1999).

1. Human Capital: Health, knowledge, skills, information, workforce capabilities.
2. Natural Capital (Environment): Natural resources (soil, water, wildlife, biodiversity, environmental resources).

3. Physical Capital: Basic infrastructure (water, sanitation, energy, transportation, communication), housing and production facilities and equipment.
4. Social Capital: Social resources (relationships of trust, group membership, networks, access to a wider range of institutions).
5. Financial Capital: available financial resources (regular remittances or pensions, savings, credit provision).

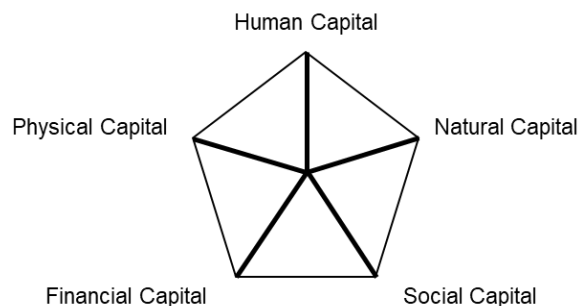


Figure 1. The Assets Pentagon (DFID, 1999)

2.3 Sustainable Livelihood Framework

The Sustainable Livelihood Framework (SLF) was developed by DFID in 1999 by creating a conceptual framework that became the formulation of action programs for implementing projects to reduce poverty and underdevelopment in many developing countries (DFID, 1999). SLF describes the main factors that affect people's livelihoods and the special relationship between these factors. This framework can be used both to plan new development activities and to assess the contribution of existing activities to livelihood sustainability (Saragih, 2007). In Kollmair and Gamper (2002), there are 5 (five) main elements of SLF.

1. Vulnerability contexts refers to external factors that can affect people's lives. The vulnerability context consists of trend vulnerability, shock vulnerability, and seasonal vulnerability.
2. Livelihood capitals show 5 types of capital, namely human capital, physical capital, natural capital, financial capital, and social capital to support people's livelihoods.
3. The transformation of structures and processes describes institutional changes, changes in laws and government regulations. Structure can be described as the hardware (private and public organizations) that establishes and implements policies and laws, delivers services, purchases, trades and performs all sorts of other functions that affect livelihoods (DFID, 1999). While the process is the software that determines the way structures and individuals operate and interact.
4. Livelihood strategies are the effort to improve livelihoods and get out of vulnerability. Based on the concept of Ellis (1998), community livelihood strategies are divided into 3, namely on-farm strategies, off-farm strategies, and non-farm strategies.
5. Livelihood outcomes are the results of the livelihood strategies that have been implemented. Livelihood outcomes directly affect assets and change their levels dynamically, offering new starting points for strategies and other outcomes.

3. Methodology

This study uses an exploratory research approach with a mix-methods. The mixed methods approach in this study uses a convergent design. The purpose of the convergent design is to combine the results of quantitative and qualitative data analysis (Creswell, 2015). This research was conducted in Lubuk Sikaping District, Pasaman Regency. Lubuk Sikaping District was chosen as the research location because it is the location for the implementation of the agrarian reform program in Pasaman Regency in 2019. This program was implemented in 4 villages namely, Nagari Tanjung Beringin, Nagari Durian Tinggi, Nagari Pauh and Nagari Aia Manggih.

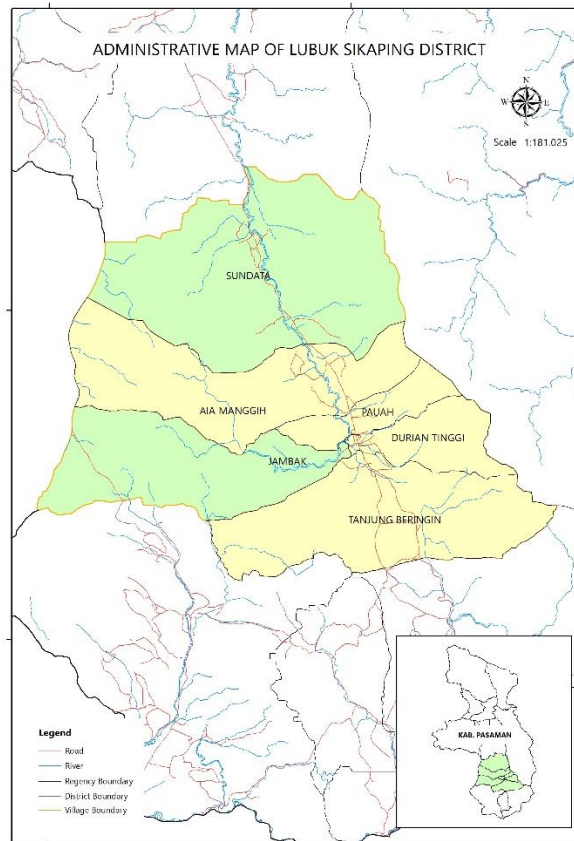


Figure 2. Administrative Map of Lubuk Sikaping District

The data collection method was carried out by collecting primary data in the form of questionnaires and in-depth interviews, as well as secondary data in the form of literature review and report document. Questionnaires and interviews were conducted using a purposive sampling method. The respondent's criteria for questionnaires are the community of the agrarian reform program and the informant's criteria for interviews is government officials and the community of the agrarian reform program. The number of sample questionnaires in this study were 99 people spread across 4 villages. This study used several data analysis methods, including quantitative descriptive analysis, content analysis and sustainable livelihood analysis. The results of the questionnaire were analyzed using quantitative descriptive analysis, while the results of the interviews were analyzed regarding content analysis. The results of the quantitative descriptive analysis become substance for analysing sustainable livelihood framework (SLF). The indicators used to measure the level of vulnerability context and level of livelihood capital in SLF refer to the DFID study. The list of indicators used is as follows.

Table 1: Vulnerability Contexts Indicators

Vulnerability Contexts	Indicators	Code
Trend vulnerability	1. Number of dependent family member	T1
	2. Access to financial institutions	T2
Shock susceptibility	1. History of chronic disease	SH1
	2. Frequency of crop failure	SH2
Seasonal vulnerability	1. Comparison of the amount of income and expenses	SE1
	2. Employment status	SE2
	3. Harvest frequency	SE3

Source: Synthesis Results, 2022

Table 2: Livelihood Capital Indicators

Livelihood Capitals	Indicators
Human capital	1. Level of education
	2. Employment status
	3. Ownership of health insurance
	4. Special skills
Natural capital	1. Area of land owned
	2. Types of plants grown in the land

Livelihood Capitals	Indicators
	3. The existence of a water resource
Social capital	1. Availability of economic institutions (farmer groups) 2. Community participation in farmer groups 3. Availability of financial institutions (cooperatives) 4. Community participation in cooperatives 5. Availability of other institutions or organizations 6. Community participation in other organizations 7. Community participation in activities in the village
Financial Capital	1. Total income 2. Ownership of savings
Physical Capital	1. Condition of the house 2. Area of the house 3. Road accessibility 4. Irrigation canals accessibility 5. Water accessibility 6. Public transportation accessibility 7. Telecommunications accessibility 8. Electricity accessibility 9. Owned vehicle

The results of the processing of indicators of the context of vulnerability and livelihood capital are in the form of index calculations. The index calculation is carried out based on the maximum value, minimum value and average value of each indicator, using the following formula.

$$\text{Index} = \frac{(\text{Average value} - \text{minimum value})}{(\text{Maximum value} - \text{minimum value})}$$

The maximum value, minimum value and average value of each indicator is determined based on the coding for each indicator which is stated in the ratio interval scale. After coding and calculating the index, the average index is calculated for each context of vulnerability and livelihood capital.

4. Results and Discussions

This section will explain the analysis of the sustainable livelihood framework based on vulnerability context analysis, mapping of livelihood capitals, analysis of transforming structures and processes, analysis of livelihood strategies and analysis of livelihood outcomes of the communities of the agrarian reform program in Pasaman Regency.

4.1 Vulnerability Context Analysis

The vulnerability context used in this study consists of trend vulnerability, shock vulnerability and seasonal vulnerability. The factors that make up the vulnerability context are important because they have a direct impact upon people's capital status and the options that are open to them to pursuit of beneficial livelihood outcomes (DFID, 1999). DFID defines that trend vulnerability is a predictable and has an important influence on the rate of return (economic or otherwise) to the livelihood strategy chosen. Shock vulnerability is a change that is sudden and difficult to predict, can destroy assets directly. Seasonal vulnerability is a change that is periodic and often occurs in certain periods. Based on the quantitative analysis of each vulnerability context, the index calculation for all villages as follows.

Table 3: Vulnerability Context Index

Location	Trend Vulnerability		Shock Vulnerability		Seasonal Vulnerability		
	T1	T2	SH1	SH2	SE1	SE2	SE3
Tanjung Beringin	0.378	0.022	0.089	0.578	0.600	0.133	0.911
Durian Tinggi	0.350	0.050	0.100	0.650	0.550	0.300	0.875
Pauh	0.452	0.048	0.048	0.429	0.571	0.238	0.738
Aia Manggis	0.538	0.231	0.154	0.346	0.308	0.308	0.462
Lubuk Sikaping	0.409	0.061	0.044	0.582	0.591	0.212	0.808
	(Medium)	(Low)	(Low)	(High)	(High)	(Low)	(High)

The table above shows indicators that are included in low vulnerability are access to financial institutions, history of chronic illness and employment status. A indicator that is included in medium vulnerability is the number of dependent family member. Meanwhile, indicators that are included in high vulnerability are the frequency of crop failures, the ratio of income and expenses, and the frequency of harvests.

Based on these data, the communities of the agrarian reform program in Lubuk Sikaping District are very vulnerable to the level of land productivity as seen from the frequency of crop failure indicators and the frequency of harvest indicators. According to the analysis, the community sometimes experiences crop failure due to seasonal

changes. As for harvest frequency, most community harvest less than 4 times per year. Besides that, to fulfil their daily needs, the community also has high vulnerability on it. This can be seen from the indicator of the comparison of total income and expenditure which shows that the total public expenditure is greater or equal to the total income. This has an impact on the level of fulfilment of community needs which tends to be mediocre and most people seek to fulfil these needs by borrowing from others. Thus, based on vulnerability context analysis in the sustainable livelihood framework, the community has a high dependence on the land productivity and the amount of income to be able to achieve the livelihood outcomes expected by the community.

4.2 Livelihood Capital Mapping Analysis

In the sustainable livelihood framework, there are five categories of capital to support livelihoods, namely human capital, natural capital, social capital, financial capital, and physical capital. The focus of DFID about livelihood capital is to increase access to these capitals, both in the form of property rights and use rights to support livelihoods and alleviate poverty (DFID, 1999). The five livelihood capitals are visualized in the form of an asset pentagon to illustrate the relationship between capital. The pentagon shape is used to show variations in people's access to capital, where the midpoint of the pentagon represents zero access to capital and the outer limit represents maximum access to capital.

Table 4: Livelihood Capital Index

Location	Capital Type				
	Human	Natural	Social	Financial	Physical
Tanjung Beringin	0.536	0.499	0.199	0.356	0.652
Durian Tinggi	0.593	0.506	0.255	0.358	0.506
Pauh	0.614	0.651	0.342	0.476	0.622
Aia Manggis	0.567	0.667	0.415	0.231	0.521
Lubuk Sikaping	0.572	0.566	0.261	0.384	0.795
	(Medium)	(Medium)	(Low)	(Medium)	(Tall)

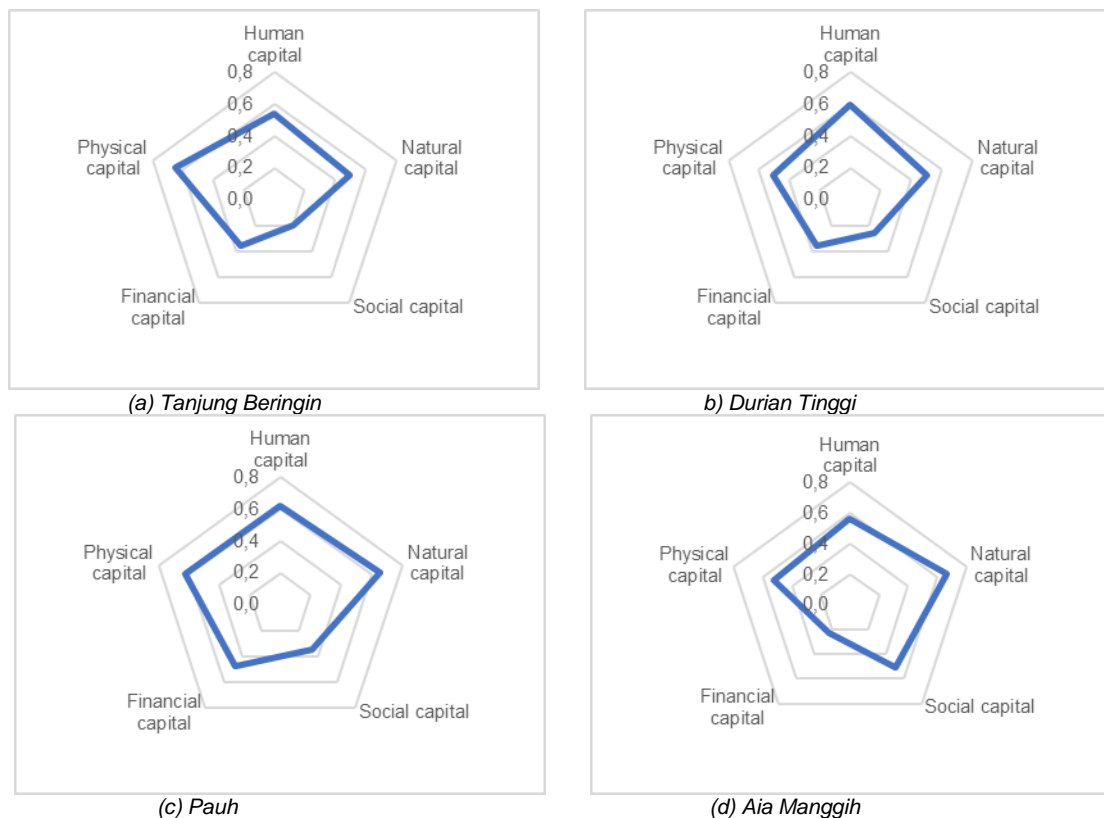


Figure 3. The Assets Pentagon for 4 Villages

Based on the Tanjung Beringin's asset pentagon in part (a), physical capital is the furthest point reached by the community. The furthest point indicates that it is easiest for the community to gain access to physical capital. Otherwise, social capital as the closest point is the livelihood capital whose access is the most difficult to reach.

Based on the sequence, the livelihood capital from the most accessible to the most difficult for the people of Tanjung Beringin is physical capital, human capital, natural capital, financial capital, and social capital. Furthermore, based on the Durian Tinggi's asset pentagon in part (b), the community has the furthest access to the point of human capital, while the closest access is to social capital. This shows that human capital is the most accessible livelihood capital for the community, and social capital is the most difficult livelihood capital to access. Based on the order, the livelihood capital from the most accessible to the most difficult for the people of Durian Tinggi is human capital, physical capital, natural capital, physical capital, financial capital, and social capital.

In part (c) of Pauh's pentagon assets, the community can reach the three furthest points, namely human capital, natural capital, and physical capital. This is because the index values of the three capitals have values that are almost close together. As for social capital and financial capital, the community has the closest access to both. Thus, the most accessible livelihood capital for the people of Pauh is natural capital, physical capital, human capital, financial capital, and social capital. Then for the Aia Manggih's pentagon asset in part (d), natural capital is the furthest point reached by the community, while financial capital is the closest point. This shows that the Aia Manggih community's access to natural capital is better than the community's access to financial capital. If sorted from the easiest access to the most difficult access, then the order of livelihood capital reached by the people of Aia Manggih is natural capital, human capital, physical capital, social capital and financial capital.

Based on the results of the pentagon asset analysis for each village, it can be concluded that the shape of the pentagon assets is different each other. The order of livelihood capital from the easiest to access to the most difficult in each village is also different. This is influenced by the level of accessibility of the community to obtain each of the different livelihood capitals. In addition, the socio-economic characteristics of the people in each village also determine people's access to livelihood capital.

Referring to the livelihood capital index of the Lubuk Sikaping community in general, the livelihood capital included in the low category is social capital. Livelihood capital included in the medium category is human capital, natural capital, and financial capital. While livelihood capital included in the high category is physical capital. Therefore, the communities of the agrarian reform program in Lubuk Sikaping District have the easiest access to physical capital and have the most difficult access to social capital. In the context of sustainable livelihoods, livelihood capital has an influence in supporting community livelihoods, so that the better the community's access to livelihood capital, the higher the possibility that the community's livelihood can be achieved.

Physical capital consists of basic infrastructure and production goods needed to support people's livelihoods (DFID, 1999). The basic infrastructure is generally public goods that are used without direct payment, provided by the government. The indicators used in analysing physical capital are the condition of the house, the size of the house, access to roads, access to irrigation channels, access to water, access to public transportation, access to telecommunications, access to electricity and vehicle ownership. The high access of the community to reach physical capital is supported by the availability of basic infrastructure in 4 villages in Lubuk Sikaping which is classified as good and making it easier for the community to access it. While the community has difficult access to social assets. In the context of sustainable livelihoods, social capital is defined as the social resources used to pursue their livelihood goals (DFID, 1999). Social capital is developed through networking and connectedness, which increases people's trust and ability to cooperate or membership in more formal groups and their regulatory systems (Kollmair & Gamper, 2002). The indicators used in analysing social capital are availability of farmer groups, participation in farmer groups, availability of cooperatives, participation in cooperatives, availability of other organizations/institutions, participation in other organizations/institutions and participation in activities held in village. Based on the results of the analysis, the level of community accessibility to each indicator in social capital is generally low, except for the availability of farmer groups. There are quite several farmer groups in Lubuk Sikaping District, but the level of community participation in them is very low. The community's access to the existence of cooperatives and other institutions in the community is also very low, which also affects the level of community participation in membership and attendance at each routine meeting.

4.3 Transforming Structures and Processes Analysis

Structure in the sustainable livelihoods framework is defined as the hardware (organization) that establishes and implements policies and laws, provides services, purchases, trades and performs all kinds of other functions affecting livelihoods (DFID, 1999). The structure in implementing the agrarian reform program consists of the actors involved in implementing the agrarian reform program, which are divided into 4 groupings, namely the structure at the central, provincial, district and village levels in table 4. The structures are then grouped into 4 quadrants, based on their power and interest.

Table5: Structures in the Implementation of the Agrarian Reform Program

Central Level	Provincial Level
<ul style="list-style-type: none"> • Minister of ATR/Head of BPN • Director General of Agrarian Arrangement • Director of Land reform 	<ul style="list-style-type: none"> • Head of BPN Regional Institution Prov. West Sumatra • Head of Land Arrangement of Regional Institution of BPN Prov. West Sumatra • Head of Land Infrastructure at the Regional Institution of BPN Prov. West Sumatra • Head of Administrative Section of Regional Institution of BPN

	Prov. West Sumatra • Head of Land Reform and Land Consolidation Section of the Regional Institution of BPN Prov. West Sumatra
Regency level	Village level
<ul style="list-style-type: none"> • Head of Land Institution Pasaman (BPN) • Head of Land Arrangement Section of BPN Pasaman • Head of the Land Infrastructure Section of BPN Pasaman • Regent of Pasaman • Deputy Regent of Pasaman • Head of Resort Police (Kapolres) of Pasaman • Secretary of Pasaman • Government Assistant of Pasaman • Head of Bappeda Pasaman • Head of Institution of Public Works and Spatial Planning Pasaman • Head of Cooperatives & UKM Institution of Pasaman • Head of Agriculture Institution • Head of Food Service Institution • Head of Public Administration Section of the Regional Secretariat of Pasaman • Head of Legal and Human Rights Section of the Regional Secretariat of Pasaman • Head of Subdivision of General Administration and Land Facilitation of the Regional Secretariat of Pasaman • Head of District of Lubuk Sikaping 	<ul style="list-style-type: none"> • Head of village in Tanjung Beringin, Durian Tinggi, Pauh, Aia Manggih • Head of jorong in Tanjung Beringin, Durian Tinggi, Pauh, Aia Manggih • Head of Kerapatan Adat Nagari (KAN) in Tanjung Beringin, Durian Tinggi, Pauh, Aia Manggih • The communities

Structural transformation to support the communities' livelihoods is divided into structural transformation related to the vulnerability context, and structural transformation related to livelihood capital.

1. Transforming structures related to vulnerability context

Structural transformation related to the vulnerability context emphasizes external encouragement to overcome and minimize the impact of vulnerabilities, especially vulnerabilities that are included in the high category. From the results of the vulnerability context analysis, it was concluded that the communities of the agrarian reform program are very vulnerable to the level of land productivity and in terms of efforts to fulfil their daily needs. Therefore, a form of structural transformation to overcome this vulnerability is to involve the Community Empowerment Institution to empower the community in the land sector, expanding the role of private institutions to provide assistance to the community in collaboration with the Community Empowerment Institution, reforming the Agriculture Institution to increase agricultural productivity, reforming the Food Institution to increase accessibility to food, and involving the Trade, Industry and Manpower Institution in efforts to provide facilities and skills training facilities.

2. Transforming structures related to livelihood capital

In relation to the results of the analysis of livelihood capital mapping, transforming structures can be carried out in several ways depending on the objective, to create capital or to increase access to capital. Related to the objective of creating capital, the transforming structures that is being carried out is by reforming the Department of Trade, Industry and Manpower Institution in providing skills training for the community, opening opportunities for the private sector to invest in skills training, reforming the Cooperatives, Small Enterprises and Intermediate Institution in improving the organizational capacity of cooperatives, as well as forming and reactivating savings and loan cooperative institutions in village. Meanwhile, related to the objectives of increasing access to capital, the form of structural transformation that is being carried out is reforming at the Agriculture Institution in improving the quality of farmer human resources and supervising farmer groups, reforming internal farmer group institutions, expanding cooperation with the private sector in order to increase investment in farming business, as well as developing financial service organizations (savings, credit, insurance) such as banking institutions.

The existence of structure is very important because structure makes a process work. If structures can be thought of as hardware, then processes can be considered as software. The process referred to in this analysis consists of policies, laws and regulations, institutions, culture, and power relations. Processes are needed to regulate every aspect of life. Therefore, to support sustainable livelihoods, transforming processes must in line with transforming structures. The transforming processes to support the transforming structures is as follows.

1. Reforming policies which are related to increase skills in agriculture by Agriculture Institution.
2. Preparing infrastructure development plans in the form of skills training facilities by Trade, Industry and Manpower Institution in collaboration with Public Works Institution.
3. Reforming policies which are related to increase skills in the non-agricultural sector by Trade, Industry and Manpower Institution.
4. Developing policies for the development of public transportation by Transportation Institution.
5. Expanding public access to financial services including overcoming barriers related to savings and loans by Cooperatives and SMEs Institution.

6. Arranging land ownership and land use through a land certification program that is right on target by Ministry of ATR/BPN in collaboration with local governments and village governments.
7. Providing agricultural technology training programs to improve land productivity by Agriculture Institution.
8. Increasing community participation in membership of farmer groups by Agriculture Institution in collaboration with the village government.

4.4 Livelihood Strategy Analysis

Livelihood strategy denotes the overall effort of the activities and choices made or undertaken by the community to achieve livelihood goals (DFID, 1999). Based on the research results, there are three types of livelihood strategies carried out by the communities of the agrarian reform program in Pasaman District. The three strategies include:

1. On-Farm Strategy

As many as 50.5% of households make a living by working in the agricultural sector using their own agricultural land. Based on the characteristics of the communities of the agrarian reform program, all households have their own land that has been certified. Most people have agricultural land of more than 1,000 m². With this land ownership, most of the community utilizes the land area to plant seasonal or annual crops. Communities who have a large land area will use the land to diversify various types of plants. This is done to obtain greater profits from the production of the land. Besides that, communities that are members of farmer groups also receive support from the government for fertilizers and seeds which are used to increase land productivity. Fertilizers and seeds are routinely provided by the government through Agriculture Institution to each village to be distributed to farmer groups in the village.

2. Off-Farm Strategy

As many as 40.4% of households make a living with an off-farm strategy, namely by leasing land for other people to work on. Most of the people who choose off-farm livelihood strategies are people who have other main professions but have large agricultural land or plantations. It is considered that agricultural or plantation land will be damaged if it is not processed or utilized. Therefore, the community chooses to lease the land to other people to cultivate to maintain the quality of the land. Apart from renting out their land, the people who choose this livelihood strategy also act as suppliers of agricultural products. Thus, agricultural products obtained from the leased land are also sold and distributed on a small or large scale in the market.

3. Non-Farm Strategy.

As many as 9.1% of households make a living by working outside the agricultural sector. Communities that choose this strategy are those who own land with an area of less than 1,000 m² with non-agricultural land use. People tend to use the land as a place to live and plant types of crops whose crops are only enjoyed by the community itself. Because land use does not have an impact on people's income, to make a living, people choose to work in the trade and industrial sectors, as well as government. The average community works as traders, laborers or PNS/TNI/Polri employees. This shows that people depend on jobs outside the agricultural sector to earn income.

Based on the results of the analysis of the three types of livelihood strategies, it can be concluded that the livelihood strategies chosen by the community depend on the availability of livelihood capital they have. The more livelihood capital owned, the more choices of livelihood strategies that can be implemented by the community. This indicates that the community has a choice of various options to maximize positive livelihood achievements, rather than just depending on the only livelihood strategy being undertaken.

4.5 Livelihood Outcomes Analysis

The term livelihood outcomes indicate the achievements or outputs that are expected to be achieved by the community based on the choice of livelihood strategy. The achievement expected by DFID (1999) is obtaining a sustainable livelihood. However, in this analysis what is meant by livelihood outcomes is a combination of DFID goals and the goals of the community. Based on the results of the analysis, the forms of livelihood outcomes for the communities of the agrarian reform program are as follows.

1. Increase in the amount of income

Based on the community's economic conditions, the income level of the community ranges from IDR 1,000,000 to IDR 2,500,000 per month. If compared with the value of the Regency UMR, the community's income is still below the Regency UMR. This shows that in general the income level of the community is still low. The low income of the community is inseparable from the low crop production and the high frequency of crop failures. Seasonal changes, pest and disease attacks, quality of seeds and fertilizers and natural disasters are factors causing high crop failures. In addition, for people working outside the agricultural sector, there is no side job, and the number of dependent family member also causes a limited amount of income received. The large number of dependent family member affects the amount of the expenditure of each family. Based on the results of the analysis, it is known that most people have an amount of expenditure that is equal to the amount of income. In other words, to fulfil expenditure needs, people often use all their monthly income. Under these conditions, an increase in total income is a form of livelihood achievement that is highly expected by the community.

2. Reduce vulnerability context

The vulnerability context analysis discussed in section 3.1 shows that communities have different levels of vulnerability in the context of trend, shock and seasonal vulnerability. The level of vulnerability is influenced by the socio-economic conditions of the community which is clarified in the analysis of livelihood capital in section 3.2. The community's access to livelihood capital will determine how people get out of high vulnerability. Therefore, by using existing livelihood capitals, the community seeks to reduce their level of vulnerability first. Efforts to reduce the level of vulnerability are the main form of livelihood achievement for people who have a high level of vulnerability. Examples of efforts made by the community are expanding the employment sector and diversifying plant species. This is in line with previous community livelihood achievements that wanted an increase in total income. In addition, so that the level of community vulnerability can be minimized, it is hoped that the transformation of structures and processes can be carried out properly.

3. Welfare improvement

Welfare improvement is a form of non-material livelihood achievement. In addition to the expectation of increased income and reduced vulnerability, the community also expects a sense of well-being derived from a sense of security and comfort, such as a sense of security over land ownership, a sense of security because they already have health insurance, a sense of comfort over easy access to infrastructure and public services, and so on. In this study, the object of research are people who receive freehold title as a form of legality of land ownership. Before the agrarian reform program, people who owned land did not have legal certainty over the land they owned. Therefore, through the agrarian reform program, the community receives benefits such as a sense of security because they already have warrant of legal land ownership in the form of freehold title. The community finds that the agrarian reform program has had an impact on increasing the welfare of society in general. However, to support this welfare, the community also needs support such as additional infrastructure, provision of cash capital assistance, guidance from related stakeholder, provision of seeds and fertilizer assistance, as well as marketing assistance from related stakeholder.

4.6 Analysis of Sustainable Livelihoods

Based on the sustainable livelihood framework, it is known that the impact of the implementation of the agrarian reform program on the livelihoods of the communities of the agrarian reform program in Pasaman Regency can be seen from the livelihood outcomes that the community wants to achieve. In this study, the most visible livelihood achievement and the most related to the agrarian reform program is the increase in people's welfare. This can be seen from the level of community satisfaction after the agrarian reform program which is high. Freehold title as an output from the agrarian reform program are considered to have provided a sense of security and comfort for the people who own the land. The existence of proof of legality of the land can have an impact on improving welfare that is non-material for the community.

Apart from having an impact on improving welfare, ownership of freehold title can also have an impact on other livelihood outcomes, namely increased income and reduced vulnerability. Related to these two livelihood achievements, land certificates can be used as guarantee for banks to obtain capital support. For the community, especially those working in the agricultural sectors, capital support is related to community efforts to increase their land productivity. The increase in land productivity is aimed at obtaining additional income and reducing the vulnerability of the community to low levels of land productivity. However, in the context of achieving increased incomes and reduced vulnerability, the impact of the agrarian reform program on people's livelihoods will be more beneficial if the community is able to maximize the benefits of ownership of their freehold title. If the certificate is not used, the community will not be able to achieve these livelihood outcomes.

In general, the outcome of sustainable livelihoods depends on the community's choice of livelihood strategies. People who implement two livelihood strategies will have the opportunity to achieve better livelihood outcomes compared to people who only choose one livelihood strategy. This is motivated by the ability of the community to carry out their livelihoods based on ownership of livelihood capital which consists of human capital, natural capital, social capital, financial capital, and physical capital. In the sustainable livelihood framework, capital ownership is an internal factor that influences the outcomes of the community's livelihoods. Apart from internal factors, livelihood outcomes is also influenced by external factors, the level of community vulnerability and the transformation of structures and processes.

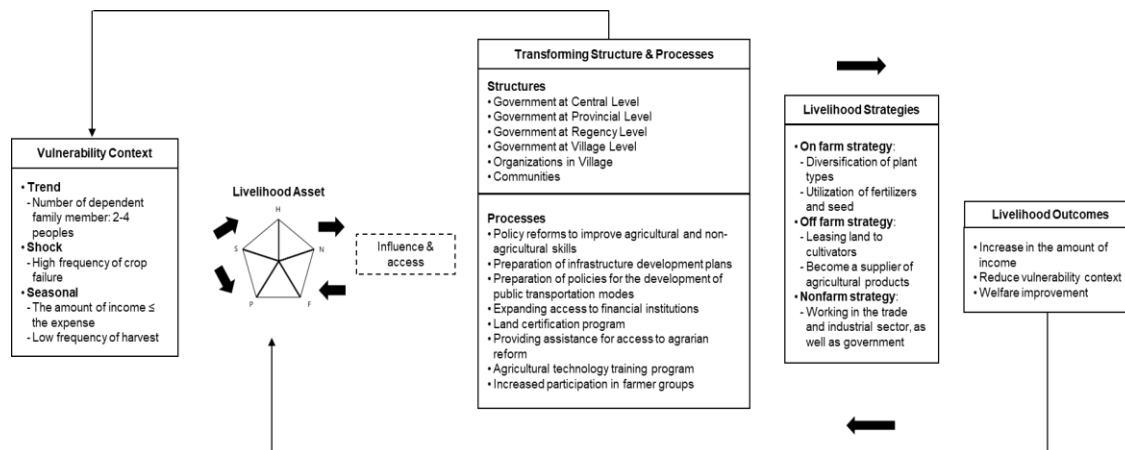


Figure 4. Sustainable Livelihood Framework

5. Conclusion

The impact of the implementation of the agrarian reform program on the livelihoods of the community of the agrarian reform program in Pasaman Regency can be seen from the sustainable livelihood outcomes to be achieved by the community which is depend on the choice of livelihood strategies. Community livelihood strategies are influenced by community internal and external factors. In the sustainable livelihood framework, ownership of livelihood capital is an internal factor that influences community livelihood outcomes and the external factor are the level of community vulnerability and the transformation of structures and processes. The availability of livelihood capital supported by structural and process transformation will have an impact on community livelihood outcomes. In addition, the context of vulnerability which also has a direct impact on people's livelihood capital can be minimized by the transformation of structures and processes. Therefore, the implementation of agrarian reform in one region will only have an impact on the community's livelihoods if each factor in the sustainable livelihood framework can complement one another.

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