

Field Schooling by ASNIKOM: Bridging the Structural Gap

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Abstract: Purpose of the study is to examine the roles of ASNIKOM in preparing coffee farmers to be included in the chain scheme by This Side Up. Qualitative approach was used to identify problems faced by coffee farmers. For this purpose, in depth interview and FGD as well were used to collect information. Interview questions were made in structured and flexible ways. FGD was organized to focus on critical issues related to structural problems. Literature review was concentrated on structural problems and related concepts such as convertability, functionality of structure, knowledges and structuration. Field Schooling is an essential part of active approach to change ways of farming and processing produces for better quality. *Findings:* structural problems defined by farmers themselves in their own words. Most of them were related to the structural problems identified by Neilson and Schoone. Only about 5% of the problems have been solved through the use of active approach. *Conclusions:* ASNIKOM has become a mediating structure connecting farmers and consumers through the use of Field Schooling approach. *Recommendations:* Actors having played in quality improvement need to be included in policy and program developments. Collaboration between ASNIKOM and This Side Up in regenerating Robusta coffee need to be considered for policy development.

Keywords: ASNIKOM, Rikolto, Catholic Local Church, This Side Up, Manggarai

1. Introduction

This article is designed to give a reasoning, why active approach developed by ASNIKOM can be considered as one of social resources available in Manggarai to be included in development program for coffee, or even for horticultures. For this purpose, there are four groups of ideas to be discussed: (i) Scoones on livelihood resources and strategy [10] and Scoones et al. on transformation to sustainability through the use of three related approaches, namely structural, systemic and enabling [11]. (ii) Structural constraints faced by Manggarai coffee farmers [7]; these

constraints are discussed through the use of Scoones's perspectives by focusing in the role of institution [10] and the interrelated approaches [11]. (iii) Enabling and systemic approaches by Schoone et al. are somehow related to Field Schooling developed by ASNIKOM since 2010, which is considered as institutionalization process. This process is addressing to structural constraints, where local resources or capitals need to be converted into economic capital, by which access to money is closer for farmers [1]. Only in functional social structure, convertability can be developed in rational way [2]. Field Schooling can only be functional for social transformation, if both farmers and Farmer Groups on one

side and ASNIKOM on the other side develop themselves through practicing new knowledges [3, 12, 13] regarding with good farming and processing as well. Such kind of new knowledges are seen as guidances or rules for both farmers and ASNIKOM to follow. How the rules are internalized is explained by conceptual frameworks of structuration [3], or institutionalization [12] where structure (here: new knowledges) on one hand and agencies or practices or activities or actions on the other, are interrelated, or interinfluencing each other through production, reproduction [1, 3]. The results can be reinforcing rules (structure) in the terminology of Giddens, or pattern of behavior in the terminology of Berger and Luckmann, that can be used for further structuration or institutionalization, or typification. Seen this way, structuration is never ending, and so also is the field schooling. Field schooling is seen as structuration or institutionalization (interchangeably used), where farmers can access market through quality of coffee they produce.

From historical perspective, ASNIKOM cannot be separated from Rikolto, an international NGO working in Manggarai since 1960s, local Catholic Church, This Side Up since 2017, Community for Protection of Geographical Indication (called as MPIG) for Arabica since 2018, MPIG Robusta since 2020, and of course farmers and Farmer Groups with whom and for whom ASNIKOM has been working so far. Among the actors, This Side Up Global Value Chain, has made a historical step where farmers and ASNIKOM are trusted to develop coffee of good quality for export (<https://thissideup.coffee/ontosoroh>). After all those achievements and especially after both Arabica and Robusta coffees were formally registered at Directorate General for Property Rights where ASNIKOM played significant role, local government and societies at large are taking parts in their own ways to support coffee development. The formation of Research Center for Coffee and Cacao in Ruteng and the rise of some modern cafes in Ruteng and are noted as the beginning of coffee-based new way of life in Manggarai.

2. Methods

Interview and focused group discussion (FGD) were used to collect information from organizations and coffee farmers as well. Field research was organized as follow.

Information on structural constraints were inspired by Neilson's report on problems faced by Manggarai farmers [7], and two framework analysis developed by Scoones [10] and by Scoones et al. [11]. Both interview and FGD were designed in structured and unstructured ways. There were two separated days spent for interview and FGD. The first day was spent for ASNIKOM staffs, and the second day for

farmers in the fields.

Field research were conducted two times. The first was conducted in December 2021 amidst the covid pandemy threats. Therefore, the interview and FGD with ASNIKOM staffs were conducted in hybrid ways. Some topics discussed here, were Field Schooling, the role of ASNIKOM in preparation for MPIG, local government's involvement in farmer empowering, collaboration with Rikolto (VECO) and with This Side Up, with Ruteng Diocese and Societas Verbi Divini (SVD), and others. The second, was conducted February 2023 on structural problems faced by coffee farmers. Both interviews and FGDs were concentrated on a critical issue stated by ASNIKOM head staff saying that "coffee in Manggarai will be seriously damaged or disappearing due to aging factor, if no prompt action is taken".

Detailed information was written down and documented in a special attachment (of the main report). Part of the information was used to write this article. For practice reasons, the transcriptions are translated into English, and written down in italics.

Secondary data are used to illuminate what is coffee crisis meant to be. It is unfortunately, that statistical report does not include three kinds of coffee comprising of yellow caturra, red caturra (Kolumbia in local term), and *juria* which is believed to be Manggarain specific.

Only Team Leader knows Manggarain language, which was used if it is related to specific terminology, which could not be translated anyway into Indonesian; the others can only speak in Indonesian with informants. But all of the informants however can speak Indonesian fluently.

3. Literature Review

The most comprehensive description on the coffee issues in Flores in general, and Manggarai in particular was given by Neilson [6] in his research entitled "Coffee-based livelihoods in Flores, Indonesia". This report however did not include coffees of yellow caturra, red caturra and Juria, grown by farmers both in Eastern Manggarai and Manggarai as well. Even in Manggarai in Figure, both yellow and red caturras are also excluded. The three kinds of coffees, are now processed in modern packaging. Both yellow and red caturra are planted in Kecamatan Lelak-Manggarai (and also in Eastern Manggarai).

Neilson's research in 2013 was prior to some remarkable achievements made by ASNIKOM, which were resulted from the use of active approach called as Field Schooling to improve the quality of coffee produced by farmers. The achievements can be seen in the following table.

Table 1. Achievements made by ASNIKOM through the use of active approach.

Achievements
The best rank of Arabika coffee after cupping tes was made in Jakarta International Expo in November 2015. (https://indonesia.rikolto.org/id/berita/ .) In collaboration with Rikolto in developing Field Schooling. Practiced by ASNIKOM
International trust in the capacity of ASNIKOM to carry out Field Schooling, especially with respect to processing. https://thissideup.coffee/ontosoroh). It

Achievements

was initiated by This Side Up to ask ASNIKOM to train Robusta coffee in Rende Nao in 2017

Proposal development for Kopi Arabika Flores Manggarai (KAFM) registered formally at General Directorate for Property Rights, the Ministry of Law and Human Right Affairs, September 15, 2018 (IG.00.2016.000005). Kopi Robusta Flores Manggarai (KRFM) was registered at the same Directorate January 2, 2020 (IG.00.2019.000009) (dgip.go.id).

36 tones Robusta coffee exported to the Netherlands in 2021 (<https://www.manggaraitimurkab.go.id/berita/berita-matim/256-36-ton-kopi-robusta-manggarai-timur-diekspor-ke-belanda.html>)

Remarkable dates noted by This Side Up regarding regeneration are as follows (<https://thissideup.coffee/ontosoroh>):

2021: The Circular Fashion Project is born, and gorgeous new cotton bags were designed by Spanish designer Sylvia Calvo and her team to be reused as garments or tote bags. At the same time, the Regenerative Robusta Project is born in Flores, the first steps begin to develop.

2022: The Regenerative Robusta Project first visible results sprout.

2023: we significantly increase our Rende Nao stock, making it our most sought coffee in our Indonesia portfolio. The Circular Fashion Project launches its second season. New creative possibilities sprout.

When Arabica coffee produced by ASNIKOM got the highest rank of cupping test in Jakarta in 2015, the quality of coffee had nothing to do with “organicness”. The quality was resulted from Field Schooling adopted by ASNIKOM to improve quality of coffee after harvest. The Field Schooling was an idea initiated by VECO (Rikolto) in response to the underqualified coffee produced by Manggarai coffee farmers. The Field Schooling was developed by VECO (formally changed into Rikolto in 2017) in collaboration with coffee farmers who were asked by VECO to organize themselves into Farmer Groups at village level, and Association of Manggarai Coffee Farmers called as ASNIKOM. The Field Schooling was equipped with curricula consisting of two parts. Part one was aimed at structural change in farming: (i) *elementary ecosystem*, (ii) *micro local organism development*, (iii) *liquid fertilizer development*, (iv) *solid fertilizer development*, (v) *organic pesticide development*, (vi) *pruning*, (vii) *holing around the coffee tree for fertilizer*

composing, (viii) *fertilizing*, (ix) *oculation method*, (x) *insect and disease observation*, (xi) *sanitation*, (xii) *shadowing*, (xiii) *seedling*. Part two was aimed at processing sequences made after harvest according to standards such (i) *picking*, (ii) *sorting*, (iii) *wet milling*, (iv) *fermentation*, (v) *putting in the open air*, (vi) *drying up to 12% moist*, (vii) *dry milling*, (viii) *last sorting* (Source: interview 2021, and 2023). When preparation team for Geographical Indication from Jakarta came to check items needed for registration, Field Schooling lacked of laboratory test and some other detailed requirements for labeling. However, as far as all basic steps are taken in correct way as required by good standards, coffee produced by Field Schooling knowledges and practices can be categorized as “organic”. It is important to know that ASNIKOM took a significant role in MPIG preparation both for Arabica and Robusta. The following table depicts distribution of “organic” coffee of KAFM label.

Table 2. Estimation of “organic” KAFM coffee in Manggarai year 2023 (KRFM: not available) produced by means of active approach.

Kecamatan	Robusta (ha)	Arabika (ha)		Total (ha)	Percentage of KAFM to total area
		Non-KAFM	KAFM		
(1)	(2)	(3)	(4)	(5)	(7)
1. Satar Mésé	274,00	131,00	23,00	428,00	0,46
2. Satar Mésé Barat	192,10	1,00	0	193,10	0
3. Satar Mésé Utara	220,00	172,00	7,00	399,00	0,14
4. Langké Rembong	110,15	131,75	14,00	255,9	0,28
5. Ruténg	475,15	478,25	79,00	1.032,4	1,59
6. Waé Ri'i	309,00	84,00	30,00	423,00	0,60
7. Lelak	146,25	84,00	60,00	290,25	1,20
8. Rahong Utara	371,00	187,25	0	558,25	0
9. Cibal	617,00	191,00	10,00	809,00	0,20
10. Cibal Barat	369,00	128,00	0	497,00	0
11. Réok	0	0	0	0	0
12. Réok Barat	0	72,00	0	72,00	0
	3.155,55	1.583,25	228,00	4.966,80	4,59

Source: Processed from Manggarai in Figure 2019 and Masyarakat Perlindungan Geografis Kopi Arabika Flores Manggarai 2018

The area covered of KAFM coffee was only 228 ha or 4.59% which is too little for selffulfilling prophecy. If 25% rate of diffusion is used as conservative basis for selffulfilling prophecy without internet interventions [9], then there must be extra efforts to tackle the structural problems of about 20%. How much internet contribution was made and how much still needed to increase diffusion rate are unclear yet. However, a number of cafes in Ruteng (<https://www.tripadvisor.co.id/>), the best ten cafes in Labuan

Bajo (<https://www.tripadvisor.co.id/>), or the inclusion of Manggarai coffee into digital reports made by Rikolto and This Side Up, are somehow prospective. Regenerating program funded by This Side Up, the diffusion rate can be more than 5%.

Behind the problems identified by Neilson, by Rikolto, by local Catholic Church or even by ASNIKOM, there is something special to coffees produced in Manggarai (or in Flores) in general and in Robusta in particular. What is

special according to This Side Up, is in its specialty which is presented in Box-1.

Box-1: WHERE SPECIALTY ROBUSTA BEGAN FOR US

At the time in 2016, this certainly was our most controversial project. Having studied the successes of specialty robusta in India and Ecuador, we thought of the idea of upgrading the existing, low growing robusta on the island of Flores. Through Adri Yahdiyan, founder of Ontosoroh Coffees, we learned that not only does the island boast a range of unique robusta varieties, but that the quality of these "fine robustas" was already known worldwide. He then introduced us to ASNIKOM, a locally owned cooperative in the regency of Manggarai who could do something as radical as intuitive: process robusta with the same machinery and standards as arabica - and we vowed to pay them the same premium as they would get for fine arabicas. In 2017, the first results came in: a spicy, very full bodied robusta that is pleasantly bitter because of its caffeine content, sweet chocolaty and very clean.

Since 2018, our crop was sourced from three families within a single village of Rende Nao as opposed to multi sources (within Manggarai) last year. We also tweaked the pulped natural and did some semi-washed and fully washed experiments to highlight body and the crisp chocolaty overtones. For the unbiased roaster, this coffee could either be a wacky single origin or a beautiful supplement to blends that provide the flavour that traditional coffee drinkers sometimes miss so clearly (and vocally) in our specialty coffee niche... (<https://thissideup.coffee/ontosoroh>)

The last achievement made by ASNIKOM (and of course all chains of the scheme) was 36 tones Robusta coffee (KRFM) exported to the Netherlands in 2021 despite pandemic.

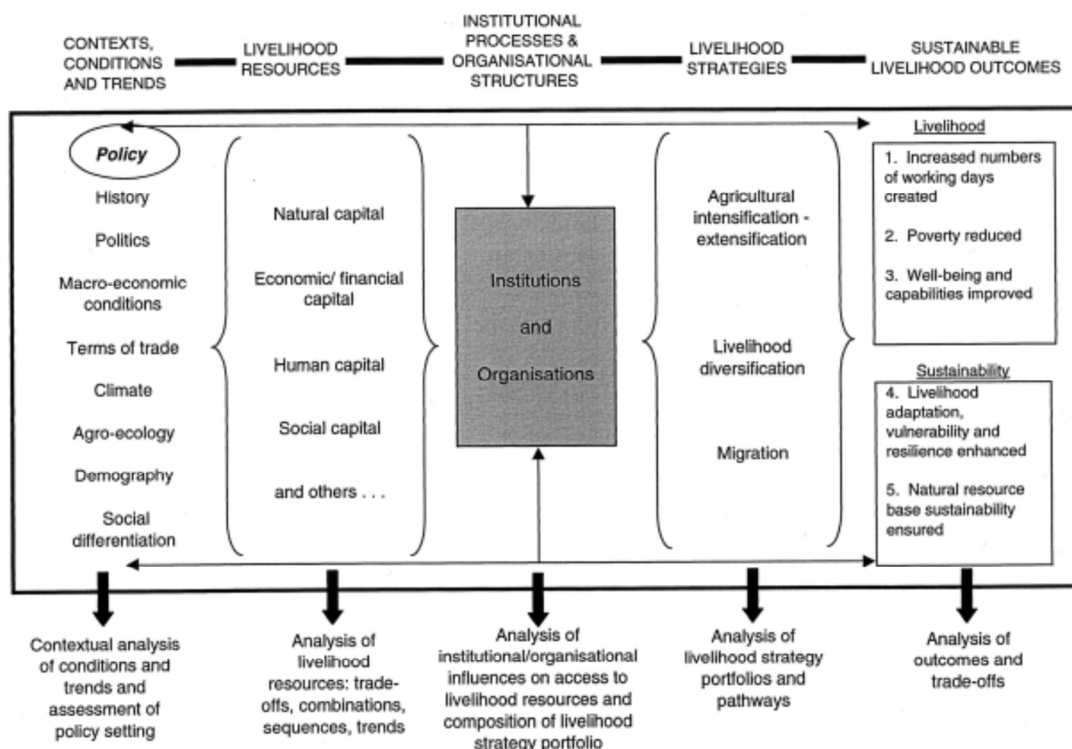
The Schoone's three complimentary approaches are helpful in understanding the Field Schooling approach. Each approach is defined as follows:

1) 'structural approaches', referring to fundamental changes in the way production and consumption is governed, organized and practiced by societies; 2) 'systemic approaches', referring to intentional change targeted at the interdependencies of specific institutions, technologies and constellations of actors in order to steer complex systems towards normative goals; and 3) 'enabling approaches'

focused on fostering the human agency, values and capacities necessary to manage uncertainty, act collectively, identify and enact pathways to desired futures.' [11]

In order to make the approaches work, some additional perspectives need to be considered for integration.

Structural approach [11] can only be developed and carried out for change if structural supports and constraints as well are identified and defined in operational terms. Neilson's findings were mostly dominated by structural constraints [7] without any identification on structural supports that can be used for structural change. Therefore, the frameanalysis developed by Scoones [10] can be helpful in identifying what have to do as it is presented in the following framework.



Source: Schoone 1998, p.4

Figure 1. Sustainable rural livelihoods: a framework for analysis.

1) Four (or more) capitals - natural, economic/financial, human and social - are sources to be considered in developing strategies for livelihood. The capitals are not end in themselves. They are only sources that must be converted into economic capital and then into cash money [1]. How to do that, no specific answer. Bourdieu says that it is

‘Depending on the field in which it functions, and at the cost of the more or less expensive transformations which are the precondition for its efficacy in the field in question, capital can present itself in three fundamental guises: as *economic capital*, which is immediately and directly convertible into money and may be institutionalized in the form of property rights; as *cultural capital*, which is

convertible, in certain conditions, into *economic capital* and may be institutionalized in the form of educational qualifications; and as *social capital*, made up of social obligations (“connections”), which is convertible, in certain conditions, into *economic capital* and may be institutionalized in the form of a title of nobility.’ [1]

For practical purpose, capitals in the Schoone’s framework namely natural capital, economic/financial capital, human capital and social capital are translated into Bourdian framework where convertability becomes possible if certain condition is met. The following figure depict the process of convertability and its condition.

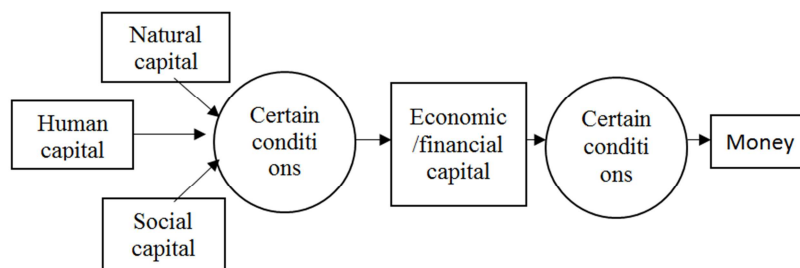


Figure 2. Convertability of capitals into money.

2) Question to be answered is in what conditions the capitals can be convertible into economic capital and then into money? Hypothetically, the answers can be as follows:

Condition -1: there must be willingness of farmers or Farmer Group and ASNIKOM to be changing.

Condition-2: there must be social medium in which convertability is socially constructed intentionally or unintentionally.

Condition-3: there must be an insurance that the convertability will be resulting in money, preferably cash money.

Condition-4: There must an institution responsible for making the three conditions work.

What kind of institution which can be trusted to assume this responsibility? This question is answered through the use of social construction of reality [12, 13]. Institution in the view of Berger and Luckmann is socially constructed where knowleges play important role. According to Berger and Luckmann, ‘... knowledge refers to any and every set of ideas accepted by a social group or society of people, ideas pertaining to what they accept as real for them’ [13]. And according to McCarty, social construction is only possible by the use of knowledges. In his theory of structuration, Giddens suggests a clear position on the duality of structure and agency, where knowledges are not separated from every day life. In its relation to action, Giddens says that both structure and action cannot be separated, as he says that

[‘]‘Structure’ and ‘action’ are necessarily related to one another. Societies, communities or groups only have ‘structure’ in so far as people behave in regular and fairly predictable ways. On the other hand, ‘action’ is only possible because each of us, as an individual, possesses an

enormous amount of socially structured knowledge’ [3].

According to Giddens, both social structure and action (or agency) are two related pillars of human life as he says that

‘... our lives do not consist just of random assortments of events or actions; they are structured, or patterned in distinct ways. There are regularities in the ways we behave and in the relationships we have one another.... Human societies are always in the process of structuration. They are constructed every moment by the very ‘building blocks’ that compose it - human beings like you and me’ [3].

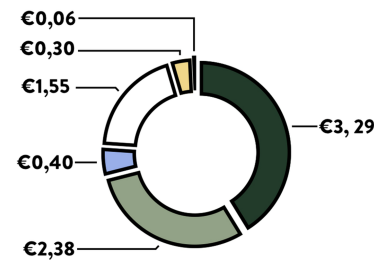
3) In order to make institution in the Scoones’s framework [10] work at local context, it must be seen as structuration from within, avoiding the use of isomorphic ways of developing institution [14]. As a structuration, institution can be started from new knowledges on farming and processing (in the case of farmers) which must be made understandable first, and practiced while waiting for results made from changing in behavior. As far as coffee farming is concerned, it takes one year to see the results (harvest) coming from behavioral changes. If the behavioral changes are resulting in good harvest, then farmers typify their set of actions for themselves. In this case, instituonalization process at individual level is developing and typified in certain patterns. Because of the good results, the pattern will be reproduced the next year hoping the similar result will be coming. The pattern of behavior can be diffused to the other farmers, if the good results known to them. Institusion here is defined as pattern of behavior and the process is called as typification [12].

4) Through Field Schooling on on-farm issues (conditions -1 and 2) convertability of physical capital (coffee farms -

trees and land) is made, resulting in good harvest as supposed to be. This convertability is based its process on mutual trust between farmers and ASNIKOM staffs. However, the harvested coffee must be conversed further into economic capital where good product can be sold in better price. One of the last stages of this process is the use of social capital embedded in the structure of This Side up Value Chain to buy the products in better price. In short, all the three conditions in which convertability is possible, is in the practice of Field Schooling where knowleges are used.

Conditions where convertability can take place are changing. After about four-year collaboration, This Side Up introduced a project called Regenerative Robusta Project (see table on achievements) which combines three complementary approaches of Scoones et al. [11]. Aging coffee trees as complained by ASNIKOM staff, was really a structural problem. In order to solve this problem, This Side Up has developed price scheme where consumers are responsible for sustainability of coffee, for which individual buyer is charged

€ 0.06 for transaction. The following diagram depicts the policy in transparent and accountable ways.



Source: (<https://thissideup.coffee/ontosoroh>).

Figure 3. Fund for regeneration project by This Side Up.

Single purchase by buyer was little (€ 0.06) but the aggregation of total purchases, was really big. The following table depicts the allocation of total fund for four activities of the project.

Table 3. Allocation of regeneration fund by activities.

Activities	€	Specification
Seedlings	5,878	ASNIKOM received €5000 for the purchase of seedlings. The final seedling cost, including transport, was equivalent to €5 904,70 on the day of purchase, the additional cost was covered by ASNIKOM themselves.
Agroforestry foundations manual	5,280	This was a technical guide for the design of coffee-based agroforestry systems that aims to be applied in other regions as well.
Carbon foundation manual	5,280	This is a technical introduction to the importance, loss and sequestration of carbon in coffee agroforestry systems. This document presented a profile of three species\ - avocado, durian and pepper - for application in coffee agroforestry systems. Examples and discussions focused on intercropping situations where coffee was the main crop.
Three technical manuals	1,440	The profiles were supplemented with generic year-by-year advice for the establishment and management of each species. The content was designed for use by field staff working with the farmers to implement agroforestry systems.

Processed from This Side Up (<https://thissideup.coffee/ontosoroh>).

What is called as structural approach defined by This Side Up is very essential for coffee existence in Manggarai. Although the scope of the problem is limited to coffee regeneration, the above project is the answer to what is called by Schoone as three complimentary approaches namely structural, systemic and enabling. This project also responds

correctly to the structural problems defined by Neilson. Trust of This Side Up in ASNIKOM since 2017, has been resulting the other bigger trust in participating in this project. It means that Field Schooling is trusted in making transformation to sustainability in the real sense.

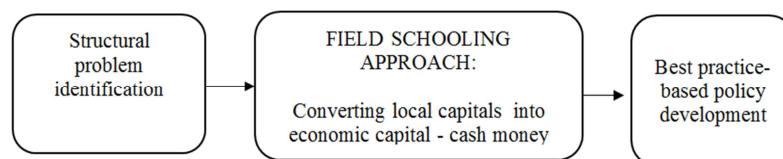


Figure 4. Framework analysis fo transformation process through field schooling approach.

Structural problems identified by Neilson, statistics and This Side Up are summarized in the following table.

Table 4. Structural problems in summary.

References
Structural constraints by Neilson [7]: Access to land (74% herited), Age of coffee tree (77% before 1990s), Prior Land use of current coffee farms (food crop 76%). Productivity (size 0.7 ha, Arabica 200 kg/household, 288kg/ha, Robusta 40,9 kg/year), passive approach, natural pulping (73%), hand cranked (66%), Average drying days: 4 days; Maximum days dried: 21 days, Rp/kg: 16,458; or 57% of ICO price, buyers (local trader 94%), participation in extension program (45%), no access to credit (77%).
Manggarai in Figure 2019: landholding (0.5), destroyed trees (7.05%), immaturated (26.21%), total area (7,444.62 ha), production (515.00 kg), household (14,028).
This Side Up and ASNIKOM: aging coffee trees.

4. Findings and Analysis

The following presentation of findings, is characterized by qualitative approach, where farmers define themselves what are called as structural problems. Consequently, the definitions vary from one to another persons.

1. To the problem caused by the aging coffee trees, an informant gave different response saying that *'coffee area of mine now was inherited from my father and my father also got the heritance from his father. I just continue while taking benefit from the inheritance. I*

was happy. I had no plan to plant replacing the olds nor the new ones.' (Source: R-I-R). A discussion was coming to the fore especially when I said that the coffee trees must be sixty or seventy years old. He was likely to understand that the older the coffee trees, the lesser the production must be. If Field Schooling approach is applied in interactive ways, there will be less objection.

2. The different picture regarding aging coffee trees, is given by the following statistical report.

Table 5. Planting Area and Production of Coffee and landholding of Manggarai Regency, 2018.

Commo-dities	Plating area (ha)				Production		Household	Ha/Household
	Immatured	Already produces	Destroyed	Total	Ton	Kg/ha		
Coffee	1951.82 (26.21%)	4966.80	525.00 (7.05%)	7444.62	2559.60	515.00	14,028	0.53
Robusta	906.46 (20.69%)	3155.55	318.00 (7.26%)	4380.01	1617.62	513.00	8,524	0.51
Arabica	1045.36 (34.12%)	1811.25	207.00 (6.75%)	3063.61	941.98	520.00	5504	0.55

Source: Manggarai in Figure 2018; percentages and ha/household: added

If the statistical figure is true, then no reason to be sceptical to the future of Manggarai coffee, as it is seen from ratio 26: 7 between the immatured and the destroyed. However, there is also reason to be sceptical to the exclusion of some new varieties such as yellow, red caturras, Komasti, S-795. I doubt, if the statistical updating is not done.

3. Productive age of coffee tree is less than 18 years. After that, the tree is already old and not productive any more. The informant told us the problems he has in farming (source: Y-I-L, A-I-L).

'Coffee trees here were about 18 years - somewhat old. Consequently, production was decreasing every year. Production was about 500-700 Kg/Ha/year'. No weeding, no nourishment, no replanting; all goes naturally. No access to qualified seeds. Varieties plant in Lelak were Yellow and Red Caturra, Komasti, S-795. Komasti refered to seed developed by local government at the Research Center for Coffee and Cacao. We had permission to grow coffee in forest since 2014 for 35 years. Although no fertilizer is used, shadow trees were used. Pruning was limited.' Lessons learned from the short story are that, first he understands the need to regenerate coffee trees, second, active approach can be useful for production increase. If Field Schooling applied to this kind of man, there will be no serious difficulties.

4. The other structural problems regard with process after harvest, floating price, manipulation and domination of Chinese traders in Ruteng in determining price. The following transcription depicts the whole problem for him (Source: Rh-I-PD).

Problem of coffee quality before selling. Because 75% of Manggarai coffee farmers did not sort coffee, selling price became low. As results, some farmers wanted to leave coffee farming, cut or stay abandoned, if no gain was

taken. Besides, the price of coffee was not clear; that made farmers got disadvantaged. The one who made price were Chinese traders in Ruteng. The price of coffee beans was about Rp 25.000 - 30.000/kg. It happened frequently the wight was less significantly on their steelyard. 12 kg was originally weighted became only 10 kg at their steelyarding.

Lessons learned from this information is that domination of big traders like Chinese traders in Ruteng who have long collaboration with exporters or traders in Surabaya, determine prices at farmer level. Manipulation in steelyarding (called also as stealing weight) is of the old story in collecting practices made by local collectors. This problem seems to be out of Field Schooling curricula.

5. For smallholders, coffee is not everything. Coffee farmers' life cannot be depending on coffee alone. Harvest is only once a year. Intercropping system which has been traditionally transmitted inter generation, is still capable of meeting needs for the whole year. The reasons given by farmers are as follows (Source: Rh-I-PD, R-FGD-A):

For smallholders, relying only on coffee for life, was not correct. (i) Coffee for > 600 m altitude like Arabica was harvested May - June; Robusta was harvested June - September. Conversely, coffee grown in low altitude of < 600 m above sea level, harvested February. (ii) In order to meet food need, cloves, corn, and rice were also grown.

Lessons learned from this case is that there is no one answer for all problems. Each crop has its own character. Intercropping system.

6. Pest attacks are common to all farmers anywhere. Damages are frequently serious and deadly. Pest attacks can be somehow identified at least through local knowledge owned by farmers through experiences. The capacity of farmers to deal with all

these matters is limited. When the attacks are coming, they give up. They said that their coffee trees were ‘frequently attacked by stem borer and leaf rust. The cause was not identified’ (Source: Rh-K-PD). Curricula on how to develop pesticide in Field Schooling, seems capable of solution in part.

7. Knowledgeable ASNIKOM staffs who are much involved in coffee matters since its establishment in 2010, have paid attention on seed, finance, productivity, qualification through Q grader test and marketing chains, gave their evaluations on the problems faced by farmers in Manggarai. They said that (Source: Rh-I-PD, R-FGD-A):

‘In case some farmers should make replanting, they used seeds growing around the trees. This way of seedling, has been done since the years when coffee was introduced eighty years ago. In the mean time, there were still farmers trapped in “ijon” practice. Productivity was still around

400 kg/year, harvested once a year. No quality grader for coffee. Q grader training was joined by the same participant two times, but resulting in failure. If we had Q Grader, Manggarai coffee could be sold directly to buyers. Marketing was going into high competitiveness due to many actors were professionally capable of processing after harvest. Marketing chains vary in the following relations: farmers - cooperation, farmers - ASNIKOM, farmers - collector at village level, farmers - processor (Kopi Mane).

Small part of the problems can be solved by Field Schooling, but the rests must be solved through a comprehensive policy which allows smallholding farmers to farm in modern ways.

8. How to solve those problems? In order to answer this question, let us make a recapitulation taken from each of problems aforementioned.

Table 6. Recapitulation of structural problems as defined by farmers and solutions proposed.

Items	Solutions
Data updating	Working with Farmer Groups for updating
Regeneration	Regeneration is made on Farmer Group basis. Research Center for Coffee and Cacao and ASNIKOM can take part in collaboration with international NGO like This Side Up.
High yield variety	Farmer Groups can be involved in its program design and implementation Yellow and red caturras need to be considered
Processing	Training in processing can be tackled by ASNIKOM sMPIG of Arabical and Robusta can be involved.
Exploitation	Clear policy on coffee price Cooperation can be used to fight the acute exploitation
Intercropping approach	ASNIKOM needs to deepen the system for more effective strategy and mutual symbiosism.
Pest attack	It has been anticipated by ASNIKOM Field Schooling
Seedlings	To be coordinated by local government research institution Collaboration with ASNIKOM is necessary in line with This Side Up policy.
Q grade	To be coordinated by local government including funding.

5. Conclusion and Recommendations

5.1. Conclusion

Most of Neilson’s structural problems [6] are underlined by farmers.

Three related approaches of structural, systemic, enabling by Scoones [11] have been somehow translated by ASNIKOM into Field Schooling practices and the Robusta generation project by This Side Up.

Collaboration among Rikolto, Local Catholic Churches, ASNIKOM and This Side Up has been resulting in quality improvement.

Local resources have been capitalized into capitals, and the capitals have been converted into economic capital (Schoone 1998) through Field Schooling. ASNIKOM has been improving quality of coffee of both on-farm and off-farm.

5% of Manggarai coffee can be categorized as “organic” according to Geographical Indication standards. The number

can be potentially increased through the implementation of Robusta generation project developed by This Side Up.

ASNIKOM has been playing role as mediating structure connecting farmers with domestic and international consumers.

5.2. Recommendations

To develop a solid statistical report which is reliable for policy development.

To integrate actors having played in quality improvement such as ASNIKOM, MPIGs, Rikolto, This Side Up, Local Churches and Government in synergy way.

To develop a policy where active approach is used in its integration with livelihood approach.

Special recommendation for program development of Robusta generation project by This Side Up and ASNIKOM, can be referring to the destroyed Robusta in about 318.00 ha, which involve 8,524 households. The distribution can be seen in the following table.

Table 7. Distribution of Robusta coffee according to statistical report.

Commo-dities	Plating area (ha)			Production		House-hold	Ha/House-hold	
	Immatured	Already produces	Destroyed	Total	Ton			Kg/ha
Robusta	906.46 (20.69%)	3155.55	318.00 (7.26%)	4380.01	1617.62	513.00	8,524	0.51

A farmer in Lelak gave information on the permission they got to grow coffee in forest since 2014 for 35 years. This information can be helpful for ASNIKOM and This Side Up as well.

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