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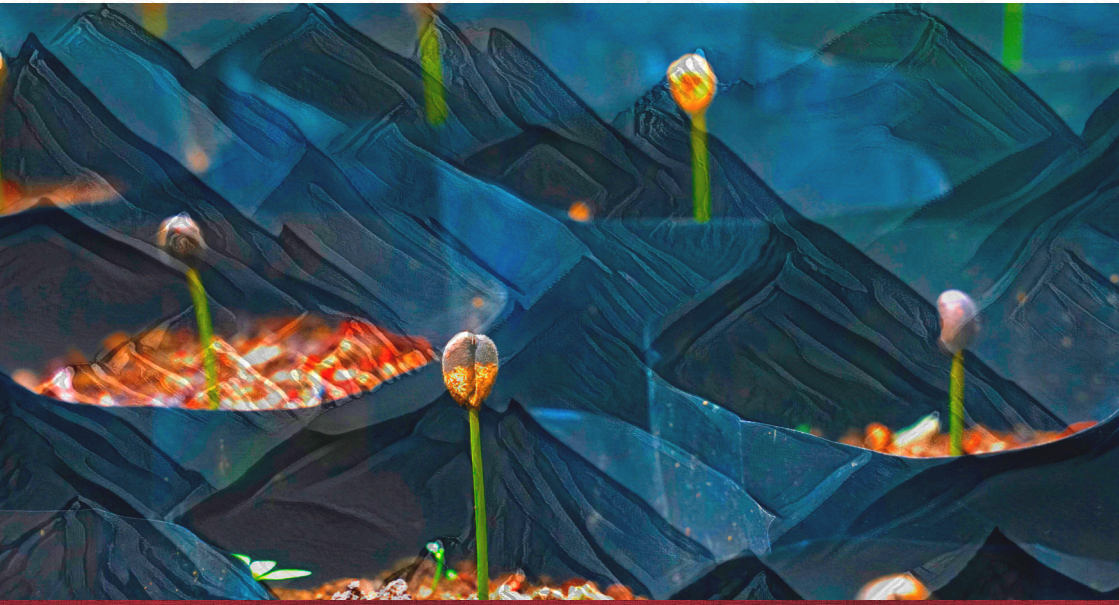
Leveraging and Expanding Agri-Aqua Production in Bangsamoro

Assessing the Coffee Value Chain in Basilan and Sulu:

Market Insights • Feasibility • Gaps



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Assessing the Coffee Value Chain in Basilan and Sulu:

Market Insights, Feasibility, Gaps [1]

1 This is an integrative report of the three studies conducted for coffee in Basilan and Sulu. The full technical report for each study is available with PIN Philippines' website: **philippines.peopleinneed.net.**

INTRODUCTION

Coffee farming, processing, and trading benefit the coffee value chain (VC) stakeholders and the local economy. Based on 2021 production data, the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) ranked 3rd contributing 17.3% to total national coffee production[2]. During the same year, the provinces of Sulu and Basilan ranked 3rd and 8th among the top 10 coffee-producing provinces with a share of 8.1% and 2.4%, respectively. In 2023, Sulu retained the 3rd spot contributing 8.2% to total national coffee production while Basilan slipped to the 19th spot with a 1.1% share.[3]

Coffee shops locally termed 'kahawahan' in Tausug are integral to the Islamic culture. It is where old folks and professionals gather to sip coffee and hear from each other and where their social fabric and cohesion are formed and strengthened. Nonetheless, the coffee industry in both provinces is beset with challenges that need to be addressed accordingly.

The Leveraging and Expanding Agri-Aqua Production in Bangsamoro (LEAP) Project aims to strengthen the resilience of agriculture and aqua-culture value chains, particularly coffee, seaweed, and their intercropping opportunities, in the island provinces of Basilan, Sulu and Tawi Tawi (BASULTA). In support to the European Union (EU) funded Bangsamoro Agri-

2 Source: PSA, 2022 Selected Statistics on Agriculture and Fisheries; measured in terms of dried berries with pulp, all varieties.
3 Source: PSA Openstat

Enterprise Programme (BAEP), the LEAP Project is implemented by the People in Need (PIN)21 in partnership with its consortium partners Maranao People Development Center Inc. (MARADECA) and United Youth of the Philippines-Women (UNyPHIL-Women). In line with the EU's thrust to support BARMM's economic development, this proposed action of the LEAP Project will work with various VC actors of the coffee and seaweed industry in the said three BARMM provinces.

This integrative report contains the major highlights of the results from three studies conducted related to coffee: (1) the value chain (VC) and market assessment which mapped and segmentized VC stakeholders, analyzed current market trends, identified roles of women and other marginalized sectors, and identified opportunities and gaps in the market supply and demand for coffee; (2) the review of good agriculture practices (GAP) in coffee farming; and, (3) the economic feasibility of coffee farming which also looks into economic prospects and potential barriers to business development.

Both primary data gathering was employed through key informant interviews (KIIs)[4] and small group discussions amidst a dearth of secondary data at the provincial and municipal levels. KII guide questionnaires were developed and used. Among the key tools adopted included the value chain analysis approach and framework, the Participatory Market Systems Development (PMSD) toolkit, the Agricultural Cooperative Development International/Volunteers in Overseas Cooperative Assistance (ACDI/VOCA) gender toolkit, and the PIN's Good Practice Guides on Market- Analysis. Among the key informants, the IPs comprised 28%, women at 45%, youth at 25%, and the PWDs at 2%.

4 Separate KIIs were conducted in both provinces with a total of 93 respondents/key informants distributed as follows: Study 1 (VCA) – 43; Study 2 (Economic Feasibility) – 19; and, Study 3 (GAP Review) - 31. Key informants include those from the project focus areas (Lamitan, Maluson, and Lantawan in Basilan; Talipao, Patikul, and Indanan in Sulu).

CONTENTS

KEY FINDINGS

Coffee Varieties and Product Forms

On top of PSA data, the KIIs revealed that both provinces produce all four commercially important coffee varieties (Table 1). All common coffee product forms are found to be dominant in both provinces (Table 2). Sulu also produces civet coffee, locally known as Kahawa kubing[5]. Civet coffees commands higher prices, about thrice than ordinary coffee, due to the uncommon production means.

Table 1. Coffee Varieties in Basilan and Sulu

PROVINCE	ARABICA	EXCELSA	LIBERICA	ROBUSTA
Basilan	✓	✓	✓	✓
Sulu	✓	✓	✓	✓

Table 2. Key Coffee Products Traded in Basilan and Sulu

REGION/ PROVINCE	RIPE/DRIED CHERRY BEANS	GREEN COFFEE BEANS	ROASTED COFFEE BEANS	GROUND COFFEE	POWDERED COFFEE	CIVET COFFEE
Basilan	●	●	●	●	●	
Sulu	●	●	●	●	●	●

The coffee VC map of Basilan and Sulu depicts the functions, operators, and enablers in each segment of the chain (Figure 1).

Both provinces have few farmers' group-based and non-BPI accredited nurseries and several private entities selling farm inputs, equipment, and implements. Basilan has around 400 coffee farmers while Sulu has an estimated 3,000[6]. Although there is no available updated data on definite production volume per municipality, key informants share that the notable producing municipalities/cities include Isabela City, Lamitan City, Lantawan, Sumisip, Maluso and Al-barka for Basilan as well as Patikul, Talipao, Indanan, Omar, Parang and Maimbung for Sulu.

5 Kubing in Tausug dialect refers to Sulu palm civet.
6 Triangulation of data between Sulu PCIP, OPAG Sulu and MAFAR Sulu. Individual MMOs data estimates revealed a huge outlier particularly for Talipao at around 13,000 farmers.

The study documented at least five (5) and at least 16 secondary processors as well as at least four (4) major traders and at least nine (9) traders/consolidators in Basilan and Sulu, respectively. Sulu has numerous kahawahans local coffee shops. The distribution of these VC players by municipality is depicted in Figures 4-5. Finally, there are numerous enablers including the national government agencies (NGAs), the BARMM government, the local government units (LGUs), the government and private financing institutions, the state universities and colleges (SUCs), and private higher education institutions (HEIs), the RDIs, the local and international non-government organizations (NGOs), the official development assistance (ODA) partners, as well as the organized coffee groups and cooperatives.

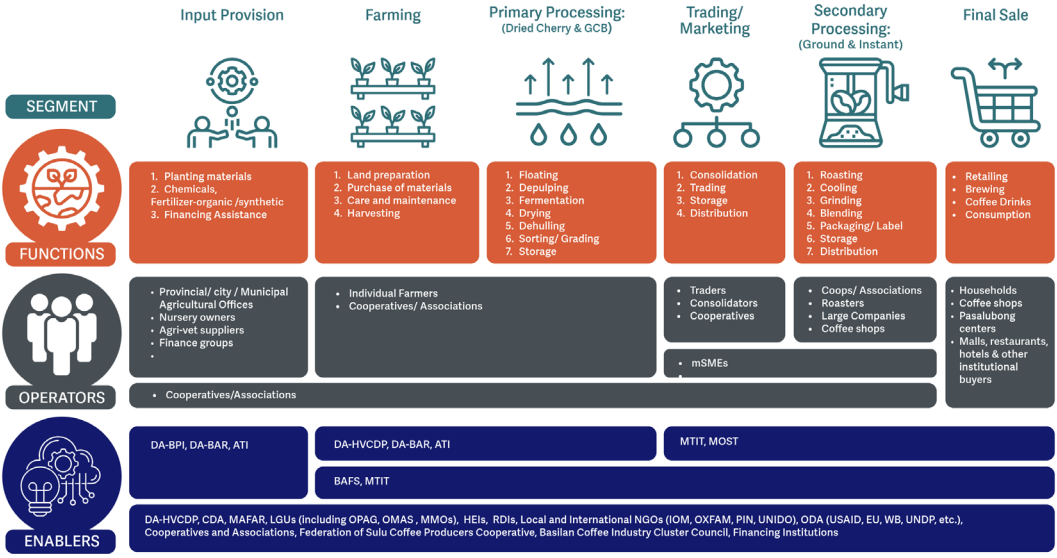


Figure 1. Processed Coffee Value Chain Map in Basilan and Sulu[7]

7 Source of basic data: KIIs, PRDP Mindanao Coffee VCA

Figure 2. Coffee Industry Structure in Basilan[8]

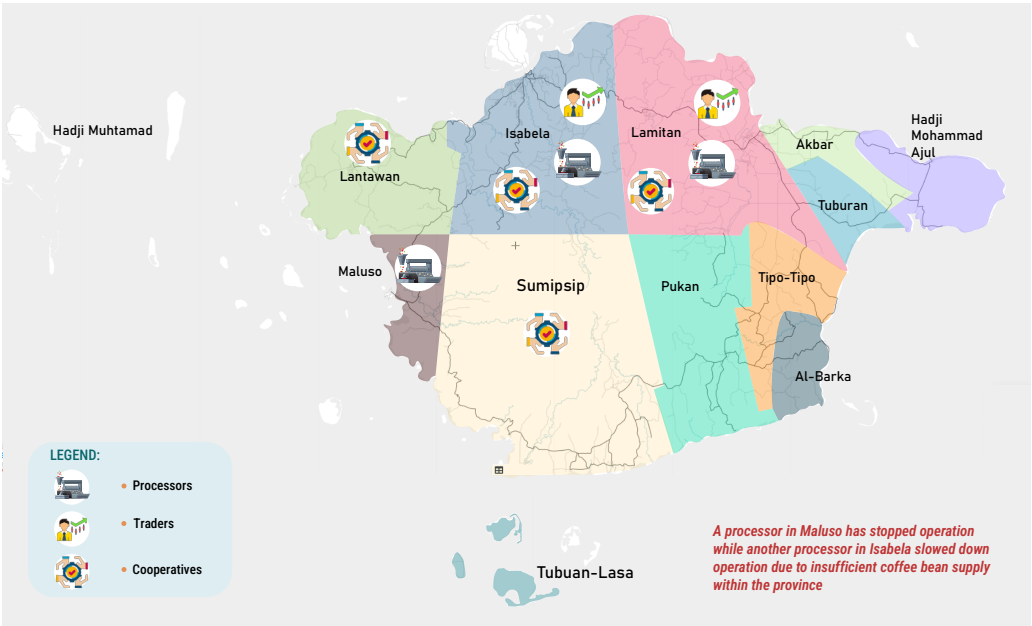


Figure 4. Commodity Map for Coffee in Basilan[9]

8 Source of basic data: KIIs
9 Source of basic data: KIIs

Figure 3. Coffee Industry Structure in Sulu[10]

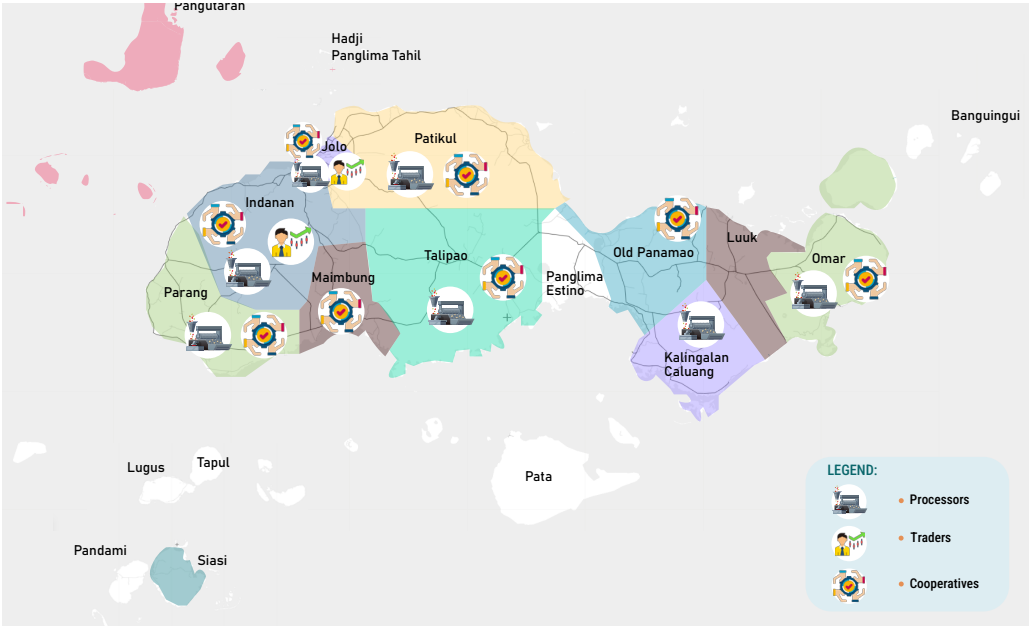


Figure 5. Commodity Map for Coffee in Sulu[11]

10 Source of basic data: KIIs
11 Source of basic data: KIIs

Farming Practices
(including the Good Agricultural Practices)

Many farmers in both provinces practice intercropping coffee with other crops, such as coconut, banana, fruit trees, corn, root crops, and vegetables in Basilan and coconut, lanzones, durian, mangosteen, rambutan, mango, cassava, banana, and vegetables in Sulu. Since coffee farming has been a century-old economic activity in both provinces, coffee trees in these areas are a mix of old and newly planted ones.

More than half of the key informant farmers in Basilan while less than half in Sulu are familiar with the Philippine Coffee GAP[12] they learned the information from previous training provided by some partner NGAs, iNGOs, schools, and from actual work experience.

Only a few of those familiar with coffee GAP applied it to their farms due to: a lack of financial resources; familiarity with old/traditional practices; and, lack of information on how and where to apply for certification.

The coffee GAP covers relevant practices during: primary production (production site location, farm sanitation, waste management, planting materials selection, land preparation, soil conservation, fertilization, water management, pruning, detopping, rejuvenation, pest, and disease management, and harvest operation); primary processing (wet and dry processing, packaging, storage); control of operations (documentation and record keeping); and, workers' welfare, health and hygiene (labor conditions, personal hygiene, and sanitary facilities, training, and production information and consumer awareness). It aims to ensure food safety and sustainability of coffee production.

12 The DA-BAFS, the mandated agency in the Philippines to develop quality product standards based on science that can be the foundation for developing pertinent technical regulations, led the crafting of the Philippine National Standard (PNS) and Code of Good Agricultural Practices (GAP) for Coffee (PNS/BAFS 169:2015) commonly known as the Philippine Coffee GAP

Key findings and observations during the compliance with the coffee GAP review include:

- Basilan's experience in the past on industrial scale coffee farming with Nestle Philippines was an advantage re: awareness of its coffee farmers on Philippine Coffee GAP
- Many farmers, especially those from Sulu, gave importance to their traditional farming practices (e.g., single pass striping locally termed as the "armalite" method of harvesting is the old practice inherited from their forefathers and is easier to do)
- Sulu lags in terms of awareness and compliance with the Philippine Coffee GAP

- Variability in compliance with the recommended practices is observed (e.g., width and depth of hole during transplanting, age of the coffee tree when pruning)
- Some farmers interchange pruning and detopping/topping
- Presence of good practices in each province (e.g., KCC in Sulu)
- Some coffee GAP measures require additional investment (e.g., application of synthetic fertilizers and pesticides; use of mechanical, all-weather, or elevated driers) while others require a shift from traditional practices (e.g., segregation of healthy from defective beans)
- Market/economic incentive is an important driving force to encourage standards compliance among farmers.

Relevant recommendations include:

- A localized and simplified coffee GAP document for Basilan and Sulu may be crafted
- Focus can include – pruning, detopping/topping, rejuvenation, IPDM, harvesting, how to get GAP certified
- Take into consideration actual conditions on the ground and uphold cultural sensitivities

Translated into local language

- Maybe in the form of an easily digestible pamphlet/brochure with local pictures/illustrations (caricature)
- Supplement GAP training with learning site visits to model farms practicing coffee GAP (within/outside the province)
- Link farmers to financial and technical assistance providers to enable the former to fully apply in their respective coffee farms their learnings from coffee GAP training (including access to all-weather/solar dryer, etc.)

Strengthen IEC on:

- Benefits of complying with the coffee GAP
- Gap certification process, eligibility, requirements, fees, etc.
- Benefits of soil analysis (must have corresponding intervention from relevant government agencies to make the service accessible to farmers)
- Food safety
- Animal Welfare Act (Republic Act 8485) awareness

Figure 6. Coffee Drying Using an All-Weather Dryer[13]

Figure 7. Coffee Drying Using Traditional and Natural Sun Drying at Kankitap Consumers Cooperative

13 Source: KCC

Primary Processing Technologies

Organized farmer groups such as cooperatives already make use of all-weather dryers (Figure 6) to produce good quality GCB. Aside from preventing impurities and contamination, the use of an all-weather dryer also allows drying to continue even during bad weather, a good climate-proofing strategy, and saves time and effort of farmers viz the traditional drying under the direct heat of the sun along pavements. There are still coffee farmers in Basilan and Sulu, however, who are using the traditional/natural sun drying methods as shown in Figure 7.

Aside from the few who have access to all-weather driers, nobody from the coffee farmer informants from Basilan and Sulu has experience in utilizing modern solar technology for coffee farming or farming in general except for a very few who utilize solar for home lighting. All coffee processors in both provinces rely on conventional electricity from the grid for their processing needs.

Economic Feasibility

Inter-cropping is given focus since 85% and 98-100% of the coffee farmers in Basilan and Sulu practice this, respectively.[14] The original intent was to do separate computations for each common variety but due to limitations encountered (e.g., farmers plant mixed varieties of coffee on their farm and harvest them all together without segregating the harvest per variety since there is no price premium on the buying price of locally produced GCBs for each variety such that all GCBs are bought by traders at Php 150/kg regardless of variety), only the cost and return for Robusta is presented in this report.

Most of the coffee farmers in both provinces have a low intercropping density of 500 coffee trees per hectare only or even less. This is low compared to the Coffee GAP and DA-ATI recommended Robusta intercrop planting distance of 2m x 3.5m which when fully maximized can accommodate up to 1,500 trees/ha[15].

The low-productivity and high-productivity sub-scenarios are considered in the computation (Table 3). The low productivity scenario refers to existing productivity rates in the BARMM with very minimal to no practice of coffee GAP.[16] This is what other locals call “organic by neglect”. The high productivity scenario, on the other hand, refers to ideal productivity levels resulting from the consistent practice of coffee GAP.

14 Source: KIIs

15 This abridged report showcases the 500 trees/ha while additional computations for 1,000 trees/ha and 1,500 trees per hectare are shown in the full report.

16 Low planting density, no replanting, no bending, no regular ring weeding /under brushing, no fertilization, no foliar fertilizer spraying, no bio-pest control, and no pruning either formative or phytosanitary, no rehabilitation/rejuvenation of old and senile coffee trees, harvesting is via the armalite or all-in method.

Table 3. Average Productivity/ Recovery Index per Tree (kg of red cherry bean or RCB), Low viz High Productivity Scenarios

SCENARIO	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7
Low productivity (non-practice of GAP, typical farm)[17]	0	0	1.40	1.8	2.20	2.60	3.20
High productivity (with GAP)[18]	0	0	2.50	4.00	5.50	7.00	7.00

Tables 4 and 5 show the detailed computation of cost and return for a hectare of intercrop Robusta coffee farm in a low-productivity and high-productivity scenario, respectively.

For a typical farm with an average density of 500 coffee trees/ha imputing labor and wilding seedling cost and with a 30% mortality rate, the investment cost in Year 1 stands at Php 6,749 only. Meanwhile, its equivalent GAP farm with the same cropping density will require at least Php 34,322 or at least 3.5 times the former. Net profit from GCB during the first year of harvest up to the peak year in the high productivity scenario is also three times and so is the cost. This implies that ideally, practicing coffee GAP will mean not going to thislow farming density since it will not maximize the optimum benefits. Nonetheless, ROI among farms practicing some coffee GAP is at least 60-80% higher ROI compared to non-GAP practicing farms.

The following are the non-GAP current practices that significantly constrained the achievement of the optimal economic potential of coffee farming in Basilan and Sulu:

- Non-availability of high-quality planting materials from accredited nurseries
- Low planting density
- Non-practice of pruning and rehabilitation of old and senile trees
- Non- fertilization
- Non-practice of pick-red harvest method

Absence of premium on the buying price of different coffee varieties Nonetheless, despite the non-practice of coffee GAP, the coffee tree productivity of Basilan and Sulu remains higher compared to the national average presenting a huge potential for higher production and productivity once coffee farmers in these two provinces start to adopt the coffee.

Farmers may start adopting GAP practices that are non-capital intensive, such as increasing plant density to the maximum number prescribed in the coffee GAP. They can also start practicing pruning and rehabilitation/rejuvenation of old coffee trees provided they will be trained by coffee experts on this aspect. All these will lead to higher income among coffee farmers thereby contributing to the betterment of the quality of

17 Source of basic data: based on KIIs, Philippine Statistics Authority (PSA), National Coffee Roadmap
18 Source of basic data: Philippine Rural Development Project VCA for Coffee Mindanao

life.

Table 4. Detailed Cost and Return for a Hectare of Intercrop Robusta Coffee Farm at 500 trees/ha[19], Low-Productivity Scenarios

ITEM	UNIT	UNIT PRICE (PHP)	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5		YEAR 6		YEAR 7	
			QTY	COST/ VALUE (PHP)	QTY	COST/ VALUE (PHP)	QTY	COST/ VALUE (PHP)	QTY	COST/ VALUE (PHP)	QTY	COST/ VALUE (PHP)	QTY	COST/ VALUE (PHP)	QTY	COST/ VALUE (PHP)
GROSS INCOME																
Ave. productivity (kg of RCB/tree)			0.00		0.00		1.40		1.80		2.20		2.60		3.20	
Red cherry beans	kilogram	20.00	0	-	0	0.00	490	9,800.00	630	12,600.00	770	15,400.00	910	18,200.00	1,120	22,400.00
Dried cherry with pulp	kilogram	40.00	0	-	0	0.00	245	9,800.00	315	12,600.00	385	15,400.00	455	18,200.00	560	22,400.00
GCB	kilogram	110.00	0	-	0	0.00	123	13,475.00	158	17,325.00	193	21,175.00	228	25,025.00	280	30,800.00
EXPENSES																
Labor																
Clearing/ Brushing/ Contouring	man-days	326.00[20]	2	652.00	0	-	0	-	0	-	0	-	0	-	0	-
Field Layout/ Staking	man-days	326.00	2	652.00	0	-	0	-	0	-	0	-	0	-	0	-
Hole Digging (100 holes/man-day)	man-days	326.00	5	1,630.00	0	-	0	-	0	-	0	-	0	-	0	-
Basal Fertilization and Transplanting	man-days	326.00	2.5	815.00	0	-	0	-	0	-	0	-	0	-	0	-

19 Mortality rate of 30%, no replacement
20 RTWPB recommended minimum wage for BARMM

Harvesting	man-days	326.00	0	-	0	-	7	2,129.87	8	2,738.40	10	3,346.93	12	3,955.47	15	4,868.27
Drying	man-days	326.00	0	-	0	-	1.5	489.00	2	652.00	2.5	815.00	4	1,304.00	4	1,304.00
Dehulling, Cleaning and Bagging	man-days	326.00	0	-	0	-	1	326.00	1.5	489.00	1.5	489.00	3	978.00	3	978.00
Transportation (from farm)	kilogram	5.00	0	-	0	-	490	2,450.00	630	3,150.00	770	3,850.00	910	4,550.00	1,120	5,600.00
Sub-total: Labor				**3,749.00**		**-**		**5,394.87**		**7,029.40**		**8,500.93**		**10,787.47**		**12,750.27**
Materials																
Stakes	pc	1.00	500	500.00	0	-	0	-	0		0		0		0	
Planting Materials: Coffee, Seedlings	pc	5.00	500	2,500.00	0	-	0	-	0		0		0		0	
Plastic Container for Harvesting	pc	50	0	-	0	-	3	150.00	3	150.00	5	250.00	5	250.00	5	250.00
Jute Bags	pc	50	0	-	0	-	4	204.17	5	262.50	6	320.83	8	379.17	9	
Sub-total: Materials				**3,000.00**		**-**		**354.17**		**412.50**		**570.83**		**629.17**		**250.00**
TOTAL EXPENSES				**6,749.00**	**-**	**-**	**-**	**5,749.03**	**-**	**7,441.90**	**-**	**9,071.77**	**-**	**11,416.63**	**-**	**13,000.27**
NET INCOME				**(6,749.00)**		**-**		**7,725.97**		**9,883.10**		**12,103.23**		**13,608.37**		**17,799.73**
ROI	%			-100.00%				134.39%		132.80%		133.42%		119.20%		136.92%
COST OF PRODUCTION	Php/kg of GCB							46.93		47.25		47.13		50.18		46.43

Table 5. Detailed Cost and Return for a Hectare of Intercrop Robusta Coffee Farm at 500 trees/ha[21], High-Productivity Scenarios

ITEM	UNIT	UNIT PRICE (PHP)	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5		YEAR 6		YEAR 7	
			QTY	COST/ VALUE (PHP)	QTY	COST/ VALUE (PHP)	QTY	COST/ VALUE (PHP)	QTY	COST/ VALUE (PHP)	QTY	COST/ VALUE (PHP)	QTY	COST/ VALUE (PHP)	QTY	COST/ VALUE (PHP)
GROSS INCOME																
Ave. productivity (kg of RCB/tree)			0.00		0.00		2.50		4.00		5.50		7.00		7.00	
Red cherry beans	kilogram	20.00	0	-	0	0.00	1,250	25,000.00	2,000	40,000.00	2,750	55,000.00	3,500	70,000.00	3,500	70,000.00
Dried cherry with pulp	kilogram	40.00	0	-	0	0.00	625	25,000.00	1,000	40,000.00	1,375	55,000.00	1,750	70,000.00	1,750	70,000.00
GCB	kilogram	150.00	0	-	0	0.00	312.5	46,875.00	500	75,000.00	687.50	103,125.00	875	131,250.00	875	131,250.00
EXPENSES																
Labor																
Clearing/ Brushing/ Contouring	man-days	326.00[22]	2	652.00	0	-	0	-	0	-	0	-	0	-	0	-
Field Layout/ Staking	man-days	326.00	2	652.00	0	-	0	-	0	-	0	-	0	-	0	-
Hole Digging (100 holes/ man-day)	man-days	326.00	5	1,630.00	0	-	0	-	0	-	0	-	0	-	0	-
Basal Fertilization and Transplanting	man-days	326.00	2.5	815.00	0	-	0	-	0	-	0	-	0	-	0	-
Replanting (10%)	man-days	326.00	0.5	163.00	0	-	0	-	0	-	0	-	0	-	0	-

21 Mortality rate of 10%, with replacement
22 RTWPB recommended minimum wage for BARMM

Ringweeding/ Underbrushing (4x)	Tree	1.00	2,000	2,000.00	2,000	2,000.00	1,000	1,000.00	1,000	1,000.00	1,000	1,000.00	1,000	1,000.00	1,000	1,000.00
Sidedress Fertilization (2x)	Bag	150.00	2	600.00	2	600.00	3	900.00	3	900.00	3	900.00	3	900.00	3	900.00
Foliar Fertilizer Spraying (4x)	knap-sack	40.00	3	480.00	3	480.00	3	480.00	3	480.00	3	480.00	3	480.00	3	480.00
Bio-Pest Control (4x Spraying)	knap-sack	400.00	3	480.00	3	480.00	3	480.00	3	480.00	3	480.00	3	480.00	3	480.00
Bending/ Training of Coffee	hill	0.50	500	250.00		-		-		-		-		-		-
Pruning (Formative/ Phytosanitary)	man-days	326.00	0	-	1	326.00	1.5	489.00	2	652.00	2	652.00	2	652.00	2	652.00
Harvesting	man-days	326.00	0	-	0	-	8	2,716.67	13	4,346.67	18	5,976.67	23	7,606.67	15	4,868.27
Floating/ Drying (Dry Processing)	man-days	326.00	0	-	0	-	5	1,630.00	5	1,630.00	5	1,630.00	5	1,630.00	4	1,304.00
Dehulling, Cleaning and Bagging	man-days	326.00	0	-	0	-	1	326.00	2.5	815.00	3	978.00	3	978.00	3	978.00
Transportation (from farm)	kilogram	5.00	0	-	0	-	1,250.0	3,750.00	2,000	6,000.00	2,750	8,250.00	3,500	10,500.00	1,120	5,600.00
Sub-total: Labor				**7,722.00**		**3,886.00**		**11,771.67**		**16,303.67**		**20,346.67**		**24,226.67**		**24,226.67**
Materials																
Stakes	pc	1.00	500	500.00	0	-	0	-	0		0		0		0	

Planting Materials: Coffee Seedlings	pc	35.00	500	17,500.00	0	-	0	-	0		0		0		0	
Synthetic fertilizers (N120-P120-K120)	bag	1,650.00	3	4,950.00	3	4,950.00	6	9,900.00	6	9,900.00	6	9,900.00	6	9,900.00	6	9,900.00
Foliar Organic Fertilizer (based on leaf analysis)	liter	500.00	1.5	750.00	1.5	750.00	3	1,500.00	3	1,500.00	3	1,500.00	3	1,500.00	3	1,500.00
Biocontrol repellants	liter	500.00	1	500.00	1	500.00	2	1,000.00	2	1,000.00	2	1,000.00	2	1,000.00	2	1,000.00
Pruning Shear	pc	500	1	500.00	0	-	1	500.00		-		-	1	500.00	1	500.00
Knapsack Sprayer	unit	3,300.00	1	3,300.00	0	-	0	-		-		-		-		-
Plastic Container for Harvesting	pc	50	0	-	0	-	5	250.00	5	250.00	10	500.00	10	500.00	10	500.00
All Weather Drier (20 Meters)	pc	2,500.00	0	-	0	-	2	5,000.00	2	5,000.00	3	7,500.00	3	7,500.00	3	7,500.00
Jute Bags	pc	50	0	-	0	-	10	520.83	17	833.33	23	1,145.83	29	1,458.33	29	1,458.33
Sub-total: Materials				**28,000.00**		**6,200.00**		18,670.83		18,483.33		**21,545.83**		**22,358.33**		**22,358.33**
TOTAL EXPENSES				**35,722.00**	**-**	**10,086.00**	**-**	**30,442.50**	**-**	**34,787.00**	**-**	**41,892.50**	**-**	**46,585.00**	**-**	**46,585.00**
NET INCOME				**(35,722.00)**		**(10,086.00)**		**16,432.50**		**40,213.00**		**61,232.50**		**84,665.00**		**84,665.00**
ROI	**%**					**-100.00%**		**53.98%**		**115.60%**		**146.17%**		**181.74%**		**181.74%**
COST OF PRODUCTION	**Php/kg of GCB**							**97.42**		**69.57**		**60.93**		**53.24**		**53.24**

Market Trends

There are at least eight (8) documented market channels for coffee in Basilan and six (6) in Sulu as shown in Figures 8 and 9, respectively. Meanwhile, the internal and external flow of coffee products in each province are depicted in Figures 10 and 11.

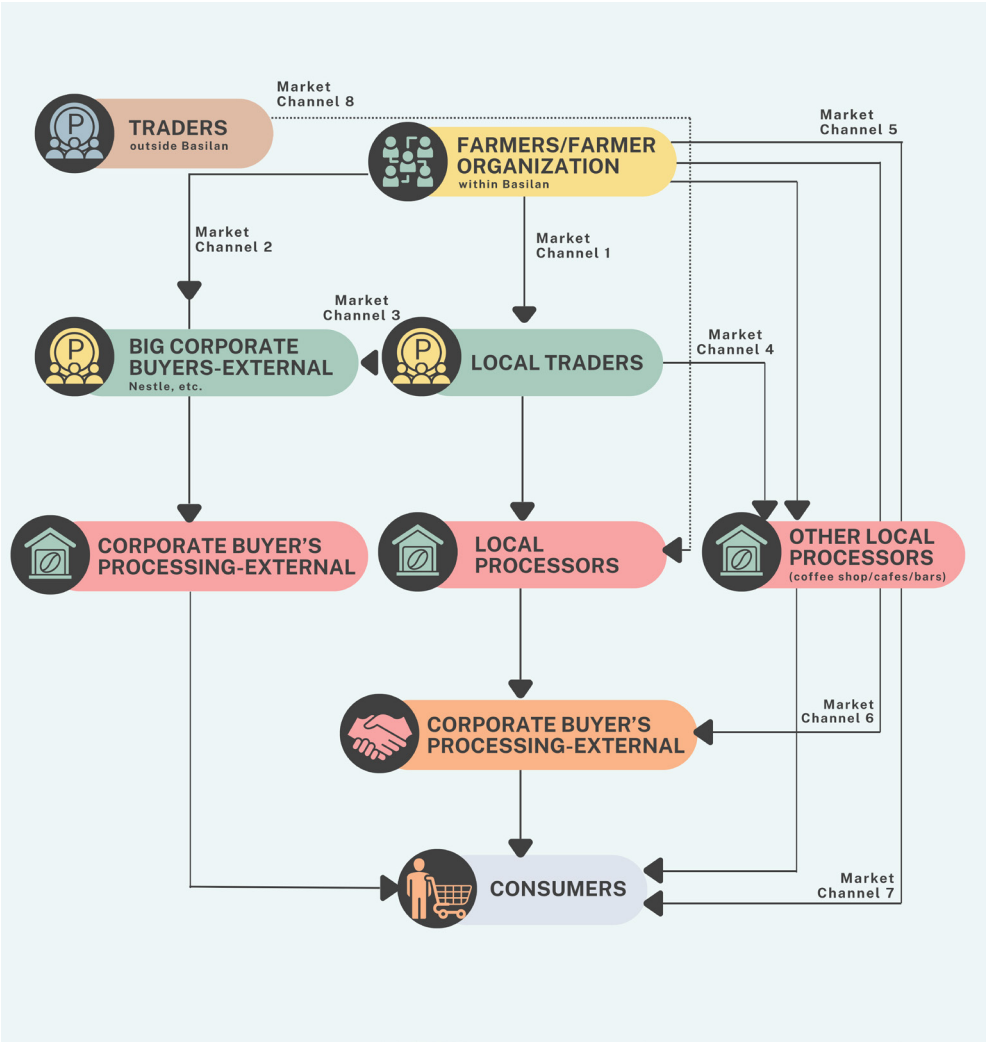


Figure 8. Market Channels for Coffee in Basilan[23]

23 Source of basic data: KIIs

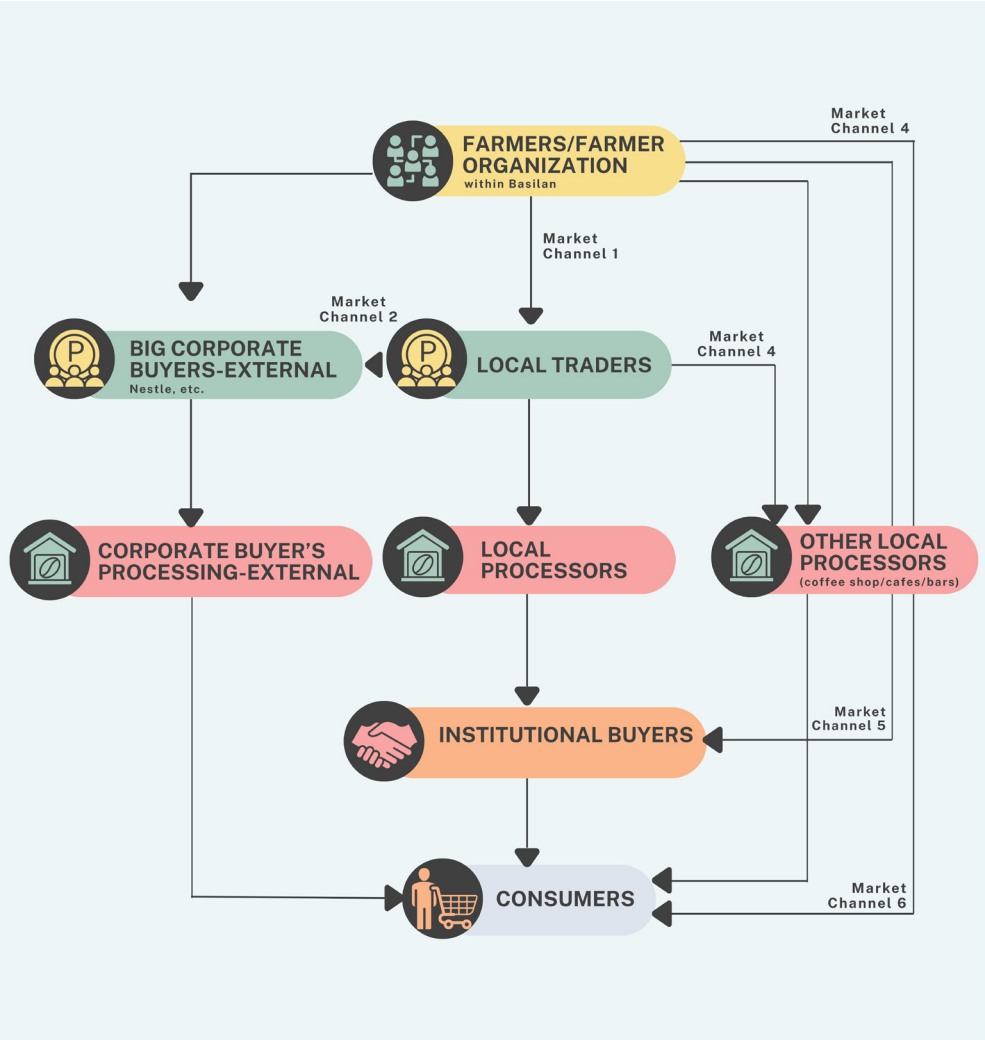


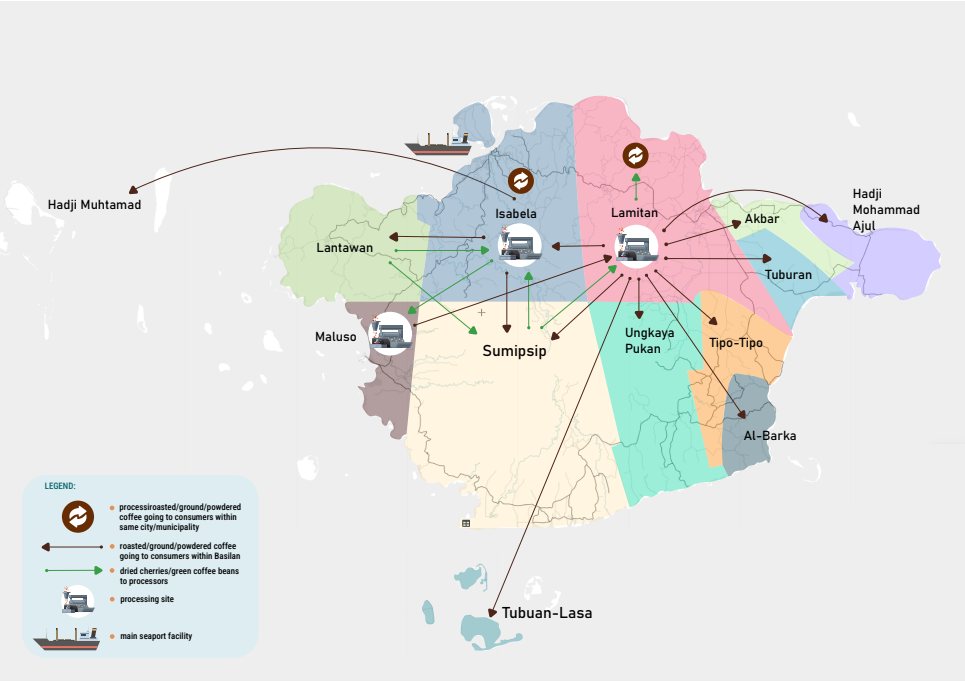
Figure 9. Market Channels for Coffee in Sulu[24]

Coffee traders and processors in Basilan source their raw materials such as dried cherries with pulp from the coffee-producing municipalities and cities in the province such as Sumisip, Al-barka, Lantawan, Lamitan City, and Isabela City. Still, other secondary processors such as EJN and Jezreel have suppliers outside of Basilan reaching as far as Bukidnon, Cotabato, Lanao del Sur, and Sulu. This is a clear manifestation that local supply within the province of Basilan is not enough for the requirements of these local processors.

24 Source of basic data: KIIs

Secondary processed products from Basilan are marketed within and outside the province. For instance, EJN and UWARBMPC market their products to Zamboanga City while SCARBDC's ground coffee reaches as far as Cotabato, Palawan, and Pagadian.

Internal Geographical Flow of Coffee in Basilan



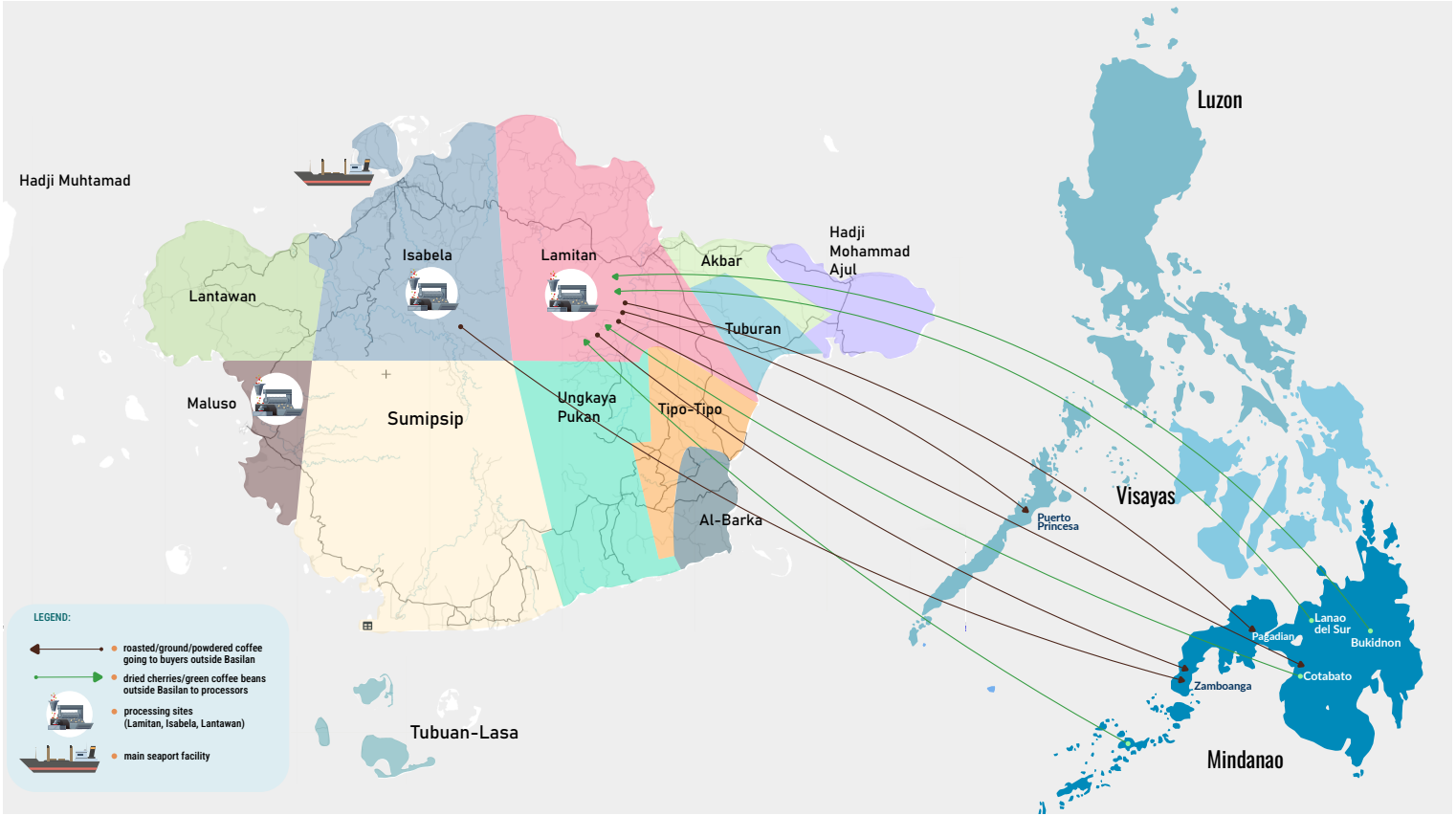
Note: A processor in Maluso has stopped operation while another processor in Isablea also slowed down operation due to insufficient coffee bean supply within the province.

Figure 10. Geographical Market Flow of Coffee from Basilan[25]

25 Source of basic data: KIIs

Geographical Market Flow of Coffee from Basilan

External Geographical Flow of Coffee in Basilan



In Sulu, the coffee beans as raw materials for processing are all sourced from local coffee farmers within the province. Coffee products from Sulu are marketed in different areas all over the country.

In Zamboanga City, these can be found in local restaurants like Dennis and other local malls and coffee shops in the city. Lupahsug's Suluanos Kape: Kahawa Lupah Sug, KCC's Qahwa Sug, and Herman and Co.'s Kauman Sulu Coffee reach as far as the cafes in Cebu, Metro Manila, Davao City and Cotabato City. The other processors and traders also deliver Sulu coffee products to Tawi-Tawi, Basilan, Zamboanga City, the rest of the Zamboanga Peninsula, and Cagayan de Oro City. Some of Sulu's coffee products also reached as far as Saudi Arabia, Malaysia, Europe, and Japan through informal channels as pasalubong items of families, relatives, and friends.

Internal Geographical Flow of Coffee in Sulu

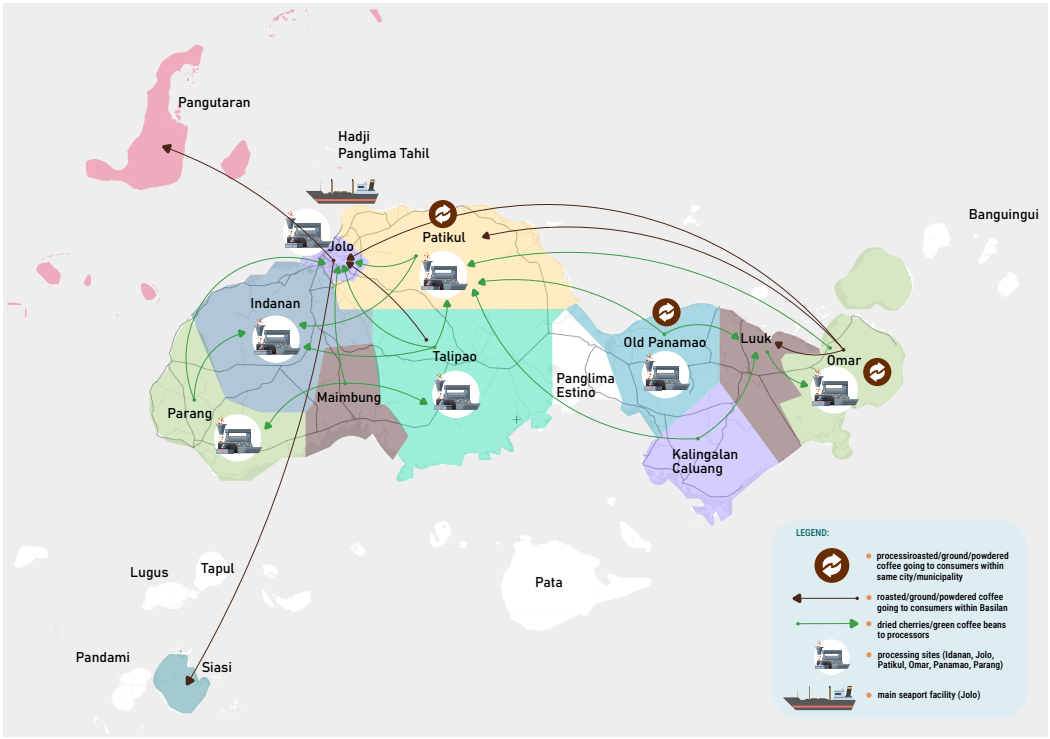
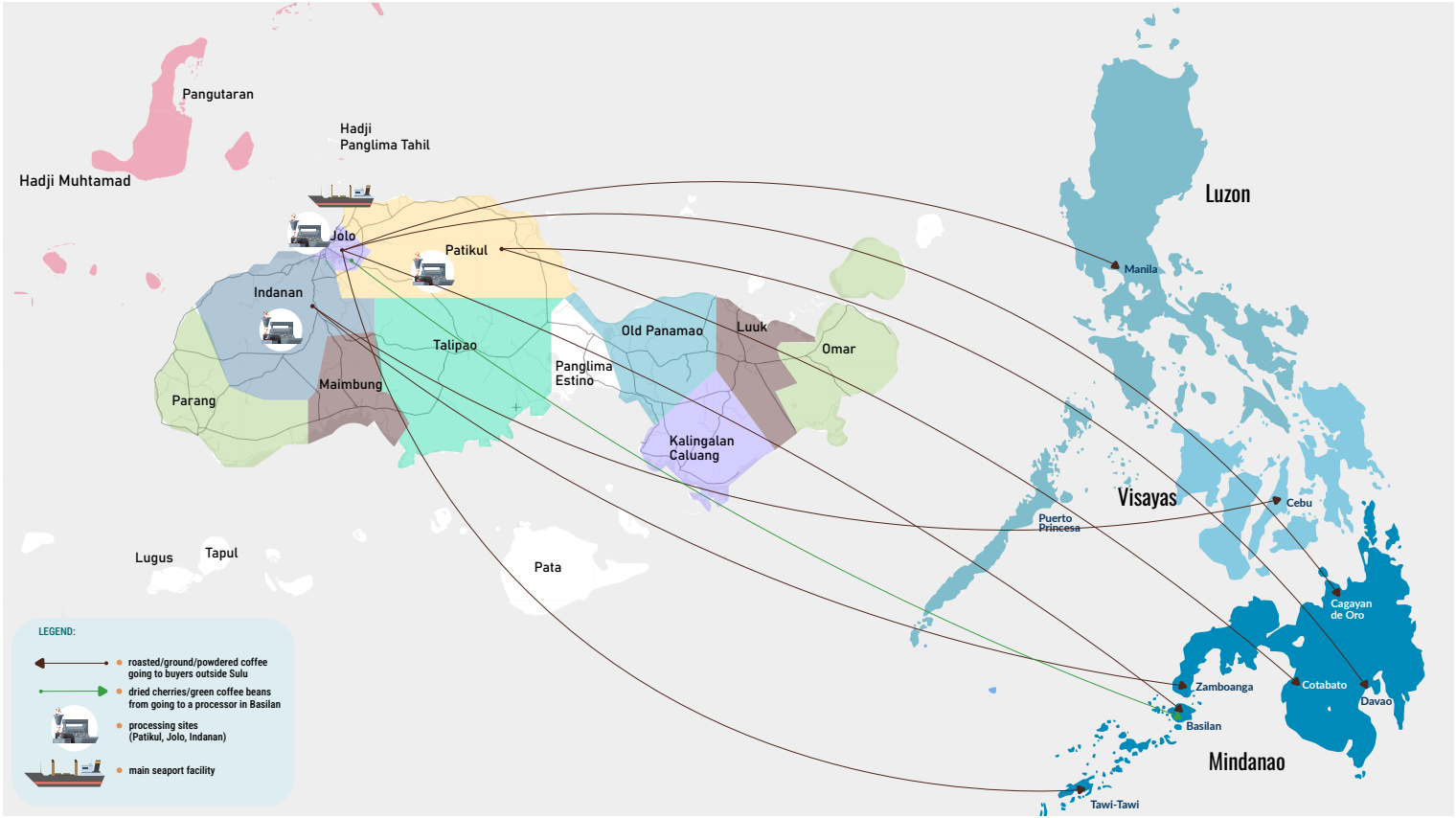


Figure 11. Geographical Market Flow of Coffee from Sulu[26]

26 Source of basic data: KIIs

Geographical Market Flow of Coffee from Sulu

External Geographical Flow of Coffee in Sulu



Recommended Business Model

Concerning product flow in Figures 8 and 9, the suggested business model is shown in Figure 12. For small coffee farmers to be able to engage directly with big corporate buyers as well as go into processing, they would need to have a large volume of raw materials. Given the small farm areas among coffee farmers, this can be made possible via consolidation of produce or consolidation of farm areas. This is where coffee groups via cooperatives should come in. For those that are currently formed as associations, the goal is to graduate them into coffee cooperatives for them to have the legal entity to engage in business.

To ensure standard produce quality, these small farmers must follow the Coffee GAP from farming to postharvest. Those who will venture into processing will also have to comply with good manufacturing practices (GMP) and other necessary market certifications (e.g., halal, etc.).

Moreover, the practice of Coffee GAP and GMP entails financial costs that small coffee farmers rarely have the financial capacity to invest in. Key to achieving the full potential of the coffee industry is the financial capital requirement of farmers for them to be able to afford the necessary farm inputs and implements necessary in compliance with the Philippine Coffee GAP.

This is where both government and non-government financing intuitions as well as other enablers of the coffee value chain can come in and provide the necessary financial and non-financial support.

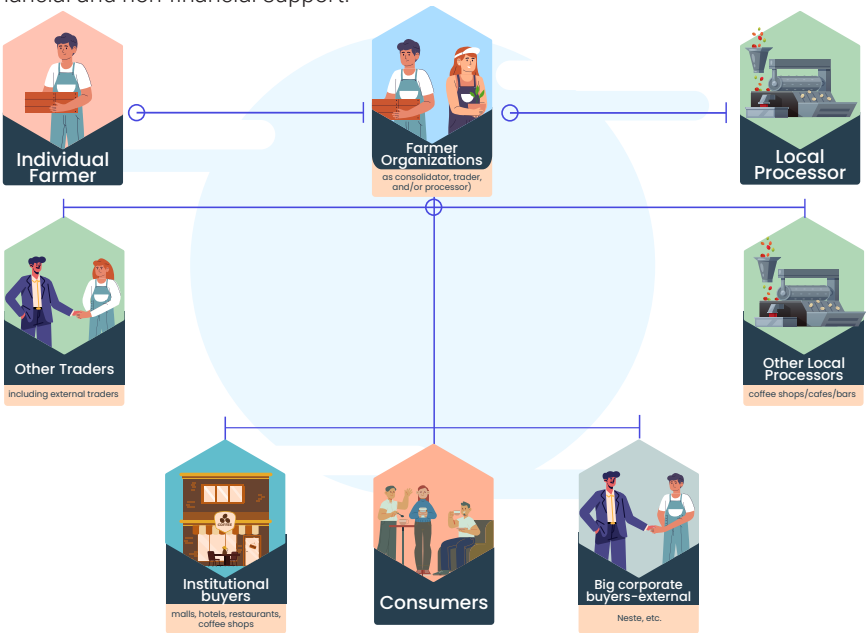


Figure 12. Geographical Suggested Business Model

Role of Marginalized Sector

Historically, the original ethnic/native inhabitants of the BASULTA area are the Yakans of Basilan, the Tausugs of Sulu, and the Samas of Tawi-Tawi. Over time, however, these ethnic groups also migrated to neighboring island provinces in the Sulu archipelago. It should be noted that the inhabitants of BASULTA prefer to be called ethnic groups rather than indigenous peoples. The Tausug of Sulu comprised 99% of the provincial population. Even the key informants in Sulu are all Tausug. The Badjao comprised the minority group in Sulu. Basilan, on the other hand, has a more varied ethnic group composition with many Bisaya already settling in the province. Those considered IPs are the Badjaos and Yakans.

SULU	BASILAN
ETHNIC GROUPS	
Planting, Harvesting/ Picking, Sorting, Drying, Packaging	Farm labor (Badjao), Harvesting, Sorting, Drying, Processing
WOMEN	
Planting, Harvesting/ Picking, Drying, Sorting, Packaging, Marketing	Planting, Harvesting, Sorting, Coffee shops staff (82% of Nanies Cafe, 90% of Dennis Cafe)
YOUTH	
Planting, Harvesting/ Picking, Drying, Sorting, Packaging	Planting, Farm management (including fertilizing), Harvesting (bean picking), Sorting, Drying, Processing, Marketing (canvassing of buyers)
PWDs	
Planting, Harvesting/ Picking, Drying, Sorting, Packaging	Farming, Harvesting, Sorting, Drying, Processing

Source: KIIs

Challenges and Opportunities

Presented in Table 4 is the list of opportunities as well as challenges in all segments of the coffee VC in Sulu and Basilan ranging from concerns on input supplies, farm management and other agricultural practices, harvesting and drying practices, access to modern technologies and equipment for farming and processing, access to financing both regular and Islamic, product certifications, packaging and labeling, market access, role of marginalized sectors, data generation and information management, research and development, individual capacities and organizational development, among others . These challenges ought to be resolved via a multi-stakeholder and convergence approach amidst the myriad enablers.

Table 3. Average Productivity/ Recovery Index per Tree (kg of red cherry bean or RCB), Low viz High Productivity Scenarios

INPUT PROVISION

Opportunities

- **Availability** of seedlings and farm input distribution projects and programs from government and NGOs
- **Presence** of coop-owned nurseries though not yet BPI-accredited (e.g., SCARBIDC in Basilan, KCC in Sulu)
- **Availability** of technology on QR-based tagging of coffee seedlings indicating nursery source, variety, and clone, and details on inspection
- **Availability** of technology on integrated nutrient management (i.e., use of agricultural waste products and other indigenous materials that can be used as fertilizer)
- **Availability** of modern farm equipment and implements in the market

Presence of coffee farmer groups such as cooperatives

Constraints

- **Limited** access to locally available high-quality and disease-resistant planting materials (no BPI-accredited nursery in the province)
- **Some** planting materials distributed by the government are still of low quality
- **High cost** of inorganic fertilizers
- **Lack of/Limited access** to other farm inputs, implements, and modern farm tools and equipment (e.g., tractors) and corresponding training for usage

FARMING

Opportunities

- **Availability** of **Philippine National Standards** for Coffee Production (i.e., Philippine Coffee GAP)
- **Availability** of **IEC materials** such as coffee production booklets, charts, and video instructional materials
- **Availability** of **coffee model** farms in other parts of Mindanao that practice sustainable and even organic (e.g., Bukidnon)
- **Availability of "coffee mentors"** training approach (e.g., ACDI/VOCA) where farmer leaders are trained to be trainers to other farmers
- **DA** has already **established processes** and made the GAP certification accessible at the RFO levels
- **GAP certification** is free of charge
- **Availability of technology** on integrated pest and disease management or IPDM (e.g., use of non-toxic fungus Beauveria basssina to control coffee pod borer infestation, aphids, etc.)
- **Basilan and Sulu** are **relatively safe** from the threats of the predicted temperature rise compared to the other coffee-producing provinces in mainland Mindanao
- **Farm insurance** application, submission, and approval can be all done online

Constraints

- **Declining** coffee production and productivity in Basilan
  Despite some farms claiming to practice coffee GAP, there are no GAP-certified farms in both provinces
- **Lack** of irrigation infrastructure and support services and/or limited water source during dry season
- **Occurrence** of coffee pests & diseases (e.g., leaf spot, scooty molds, aphids during the rainy season)
  "Cocolisap" infestation in Basilan pushed farmers to cut down infected coconut trees destroying the coffee trees in the process too as the fallen coconut trees fell on the former
- **No climate** mitigation measures implemented (unpredictable weather condition affects farm productivity and income)
- **Stray animals** destroy coffee plants
- **Declining interest** among coffee farmers whenever buying prices become extremely low
- **Some farmers** are still not practicing the "pick red" harvest method due to low awareness of its impact on the quality of beans and/or security threats (in the case of Sulu)
- **Non-availment** of crop insurance due to many farmers are not informed of its availability and perceived cumbersome requirements

PROCESSING

Opportunities

- **Demand** for coffee products is on the rise with increasing population
- **Insufficient** supply of electricity and water for processing
- **GMP standards** in place
- **Available technology** on utilization of coffee wastes and "excess" for food and non-food products

Constraints

- **Limited access** to modern postharvest and processing materials/ equipment/machinery/facilities; many are still using the traditional method
- **Low quality of GCB** from some local sources
- **Limited supply** of coffee beans as raw material for processing (some Basilan processors source out their raw materials from as far as Bukidnon, Lanao del Sur, and Cotabato)
- **Small processors** are not yet GMP-compliant
- **Absence of FDA-LTO** registration and compliance with other market standards and certifications (e.g., halal, fair-trade, organic, etc.) delimiting command for a better price and wider market access including institutional buyers and export
- **Lack of proper packaging** and labeling among small and start-up processors

MARKETING

Opportunities

- **Availability of online** platform/e-commerce (i.e., Shopee, Lazada, Facebook marketplace, TikTok, etc.)
- **Availability of certified Robusta** and Arabica Q-graders based in Mindanao, from private, to conduct coffee beans grading officially
- **Regular conduct** of the Philippines Coffee Quality Competition (PCQC)
- **Enabling policies and standards** for coffee products are in place (e.g., PNS for GCB and Agricultural Machinery for Coffee Processing, etc.)
- **Good reputation** of Sulu's single origin Robusta coffee
- **Availability of private institutions,** NGOs such as ACDI/VOCA-PhilCafe, coffee enthusiasts' groups such as Philippine Coffee Guild, with a considerable Mindanao-based number of members organizing different coffee advancement and market promotion activities

Constraints

- **Limited market access** (smallholders and even local associations and cooperatives in Sulu have no direct access to bigger markets and corporate buyers)
- **Non-transparency of prices** between buyers and farmers due to: lack of periodic coffee bean grading as one of the bases for pricing and trading; no clear GCB buying system and guidelines in place; non-conformity and contrasting perceptions of existing quality standards for coffee between farmers and traders/buyers which often results in price disagreement; and, no institutional market information source resulting in low and/or variable buying price
- **Presence of many middlemen traders** who control price (low buying price)
- **Poor coffee beans** (dried and GCB) quality (more concern in Sulu) resulting in low buying prices as traders are hesitant to buy poor-quality produce
- **Traders** face a limited supply of coffee beans

ENABLING ENVIRONMENT

Opportunities

- **Presence of enablers** that provide free technical and other support (e.g., animal wires, other farm inputs and implements, training, etc.)
- **Presence of Halal certifying** bodies within BARMM
- **Presence of Coffee Council** and Federation
- **New tools** available like color-coded maps, Climate Resiliency and Vulnerability Assessment (CRVA) of DA, landscaping program of DA, food consumption, and quantification project
- **Best practices** on private-public sector partnership on systematic and digitized data gathering in other parts of Mindanao and the country
- **Internal value chain** financing among coffee players like cooperatives and processors (credit provision to coffee farmers from input suppliers or buyers)
- **Presence of government** and **private** financing institutions (i.e., Landbank of the Philippines, cooperatives, microfinance, etc.)
- **Presence of Mindanao State University** (MSU) Jolo
- **Availability of existing research** and collaboration with the private sector, academe, and other enablers for the advancement of the coffee industry (I.e., between and among Nestle Phil, ACDI/VOCA, and academic institutions such as the Sultan Kudarat State University in Sultan Kudarat, Davao del Sur State College in Davao del Sur, and Central Mindanao University in Bukidnon, etc.)

Constraints

- **Varying degrees** of technical capacities among individual coffee farmers and organizational maturity among coffee farmer groups and other coffee VC groups (groups in their infancy stage lack organizational capacities; well-established groups still need regular training and re-training)
- **Lack of coffee technicians**
- **Not all farmers** are RSBSA registered yet constraining them from availing of assistance such as the free crop insurance for small farmers
- **Coffee industry data gaps** at the provincial level
- **Absence of a Management Information** System in the coffee industry in the BARMM
- **Limited access to financing** (small coffee VC players have limited financial capacities amidst rising cost of farm inputs and implements as well as other processing materials and equipment)
- **Coffee VC players not aware** of the presence of Islamic financing through Al-Almanah Bank in Sulu
- **No accredited SUCs** as "coffee academies" to offer the Coffee Production NC II Program from TESDA in Basilan and Sulu
- **Limited,** if not absent, of R&D for coffee in Basilan and Sulu
- **Traditional gender role** biases and discrimination
- **Difficulty of access** and social exclusion among PWDs
- **Weak interfirm relations** especially in Sulu among the different coffee VC players across different levels or segments in the chain (while individual farmers have strong relationships among themselves, there is an apparent disconnect between them and the individual traders and processors)

CONCLUSION

While the coffee industry in Sulu is robustly growing, maintaining the province's ranking among the top coffee-producing provinces in the country, the coffee industry in Basilan has gone through the phase of being a sunset industry with rubber and coconut topping over its priority commodities. This is evident in two of its coffee processors sourcing their dried cherry beans from other provinces in Mindanao. Nonetheless, with the remaining coffee trees that need rejuvenation and rehabilitation and the renewed interest currently shown by farmers in the province, the Basilan coffee industry has now begun to become a sunrise industry again.

The coffee VC players remain optimistic that with the renewed interest in coffee farming among farmers and with new coffee farmers coming in, coupled with the right mix of technical and financial assistance including peace dividends from these previously war-torn areas, the coffee industry in both provinces will eventually achieve its full potentials.

People in Need

People in Need (PIN) is an international non-profit organization providing humanitarian and development assistance and has operated in over 40 countries worldwide since 1992. PIN began in the Philippines serving communities affected by Super Typhoon Yolanda in 2013. Ever since then, our actions in the Philippines have focused on sustainable livelihood, social cohesion, women and youth empowerment, renewable energy, health, disaster resilience, and good governance.

MARADECA, Inc.

Maranao People Development Center Inc. (MARADECA) is a non-stock, non-profit service oriented institution catering to the needs of the Moro People in their quest for socio economic advancement and to struggle for peace and development. It adopts a people-based, community based, integrated and sustainable development framework that creatively reflects the aspirations of one Moro People.

UnYPhil-Women,Inc.

United Youth of the Philippines-Women (UnYPhil-Women) is a non-profit women and youth focused organisation based in Cotabato City. The focus of its work with women is to help women who are subjected to violence, sexual and physical abuse, trafficking and other forms of discrimination. Over the years, its services have expanded to include peacebuilding, reproductive health and humanitarian response especially in the conflict-affected areas in the Bangsamoro.

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