



DANDELION
SMALL-BATCH
CHOCOLATE

SOURCING REPORT

2021 | 2022





THE PURPOSE OF THIS REPORT

Every chocolate bar we make begins on a farm somewhere between 20 degrees north and 20 degrees south of the Equator, thousands of miles from our factories in San Francisco and Tokyo. In this zone, more than 90 percent of the world's cocoa production takes place on small farms, where income is generally subject to both volatile world-market whims, and the vagaries of farming in a changing climate. Historically, it's been difficult for consumers to view the supply chain and the conditions surrounding cocoa production.

As a craft chocolate maker, we are part of a small but growing movement that seeks to make chocolate whose origins are distinct, clear, and sustainable. The following report functions as a platform to connect our producers and their practices with anyone interested in learning about where cocoa is sourced. If you buy our chocolate, you might be curious how much money reaches cocoa producers on the other end of the supply chain. If you're a producer, you may be interested in how other producers ferment, dry, or cultivate their cacao. We believe practicing transparency increases accountability, fairness, responsible stewardship, and best practices across the supply chain. We hope the information included here will serve that mission.

It's challenging to describe our relationships through metrics, and to capture cocoa-supply-chain economics solely with data. In this report, we've done our best to clarify our philosophy and the value chain within which we work. People often ask us how much money makes it to the farmers; and because we buy from cooperatives, individuals, single estates, and through import companies, determining that number is complex. The amount we pay per metric tonne of beans is called the "landed cost," which includes the price paid to the producer, estate, fermentary, or company from which we purchase the beans, as

well as fees for anyone hired to import, export, or transport beans to our local storage location. The landed cost does not equal the "farm gate," which is the amount received by the person who grew the cacao. Right now, this accounting approach is the best we have, and we hope to find a more thorough way to break down costs in the future.

Our report details how each producer ferments, dries, and transports their product to us. It also shares how much cocoa we've purchased from each producer to date, and the amount we paid for that cocoa. In the end, everyone from the producers we work with to the customers who buy our chocolate is an integral part of the cocoa supply chain. Our aim here is to facilitate information flow between parties, and to empower us all to ask critical questions. Our industry is currently working to develop universal grading standards and a common lexicon to help chocolate makers and producers align practices. Clear communication will drive our industry to achieve common goals, including economic empowerment in developing communities, fair pay, and delivering the best chocolate we are able to produce.

OUR PHILOSOPHY

We strive to work directly with the producers who grow, ferment, and dry the cocoa we buy. We travel to origin as frequently as possible to learn about our producers' best practices, exchange feedback, and make sure that high standards of quality and sustainability are met. We pay a premium far above the fixed world-market price, and aim to strengthen our relationships year after year in order to maintain our collective commitment to sharing the best, most distinctive cocoa with you. We seek beans with good, consistent flavor, and partners with whom we are excited to work. We are happy to use intermediaries as long as they add value and are paid fairly for the work they do, and as long as their payment does not come out of producers' pockets. We believe that good business practices can help foster positive social, environmental, and economic change, and we are committed to increasing transparency in both our own process, and across the supply chain.



NOTE FROM GREG & RON

It's exciting to be back for another sourcing report! 2021 and 2022 had their ups and downs, but overall there were a lot of ups. We are still sorting out how best to work with the producers whom we depend on, as well as what our customers are looking for. As you read the report you'll see we've introduced a few new origins, and some new approaches to the existing ones. We've introduced a new financial structure that you might find interesting, and we are looking to the future to understand what comes next. Welcome back!

First and foremost the Dandelion sourcing team has expanded. While I've been handling the sourcing for Dandelion since its inception, I'm pleased to say that Ron Sweetser is now working with me as our Cocoa Sourcing and Quality Manager. Ron has been with Dandelion since 2015 and has done everything from making chocolate to machine commissioning to running experiments. As our program has grown, so does our team!

One of the core tenets of our sourcing philosophy has always been consistency. Working with cocoa producers is a two-way street; while we look for

consistency in the product they sell us, we strive to provide consistency as a customer as well. Commodity markets are designed around fungibility: As long as all cocoa beans are considered the same, then you can buy from anyone and get the same price anywhere in the world. This is great for buyers but not so great for bean sellers. It implies that someone buying from you now might not buy from you tomorrow. Economists would say that someone else will just buy from you instead, but this removes the power and control on the part of the producer. There isn't much incentive to make a better product if you'll always be given the market price and your customers will constantly be changing.

A consistent relationship is helpful for Dandelion, as well as for producers. It takes time to learn how to work together. What sort of expectations do we both have? When we say we want 10 tonnes, do we mean it? When a producer says they can make 10 tonnes, can they? What do we each mean by "high quality"? How do we resolve misunderstandings? What do we mean by "well sorted"? There are a million details, so we try our best to continue working with the same producers who have proven to be good partners. We

hope this consistency helps give their business a bit more predictability, too.

Partnership sounds great, right? Um, but how do we keep things interesting in our product lineup when we focus on two-ingredient, single-origin chocolate, and the origins stay the same? Karthikeyan Palaniswamy from Regal Estates in India had a great idea! He wanted to try making a new product using what they had. What they have are cacao trees intercropped with coconut trees and nutmeg trees. So they did a bit of an experiment — they fermented their usual beans with everything from the nutmeg tree: fruit, mace, and meg. The end result was outstanding and turned into one of the best bars we have ever made, in my opinion. Ron is now working with many of our producers to come up with new experimental beans using what they have. The good news is that you'll get to try some of these experiments in late 2023! I think you'll be pleasantly surprised.

Now that we've explored what's happening on the organoleptic side of things, let's shift into the financial side. I know it might seem like an odd thing to discuss, but part of the goal of this report is to help people understand everything that goes into sourcing, and figuring out the financial side is a big part of that. For the past ten years we've been doing our best to buy beans approximately one year before we need them. This has worked well from a planning perspective, but it means we have a lot of capital tied up in cocoa beans. While not the end of the world, we know we could do better.

Fortunately, some of the people we already work with have been working with other makers much larger than we are, and knew that this time would come. We've started to work with both Cacao Latitudes and Uncommon Cacao around Vendor Managed Inventory, or VMI. In this structure we still maintain the relationship with the cocoa producers, but someone else buys and stores the beans for us until we need them. Of course they charge a small fee for this

service, but it means that we have the beans we need waiting to be used without having all of our capital tied up in them for sometimes up to two years. As other makers grow, this is a service worth considering — because while it does increase the cost of your beans a bit, it really flattens out your cash flow, which in these economic times is crucial.

As we come to the end of the intro, as always, we look to the future. What does the cocoa world look like five or ten years from now? My best guess is that the environment will take center stage. Climate change is accelerating. There is a biodiversity crisis looming. Europe has already put deforestation-free legislation in place and I suspect others will soon follow. Cocoa is well positioned to be a force for nature-positive outcomes in the world. As it developed in Amazonian rainforests, it co-exists well with other flora and is well liked among the fauna. The Smithsonian has even done research to show that cacao, when grown in a certain way, can be an outstanding habitat for birds. In fact, Zorzal Cacao is now the first-ever Bird Friendly Certified cacao farm in the world.

The last twenty years have shown the growth of the social enterprise, and I believe the next twenty will be all about environmental enterprises. The big question is how all of this will get paid for; environmental work is expensive and cocoa beans are not. This is the challenge to us and the rest of the industry: How do we share the burden of building a better environment with cocoa producers throughout the world, instead of hoping they figure out a way to afford it? The answers are out there, and we'll all need to approach the questions with fresh eyes and open minds.

Please enjoy the rest of this sourcing report and feel free to be in touch if you have questions, bean samples, or tasty chocolate that you'd like to share. We love all those things!

– Greg & Ron



CADMIUM & LEAD

(HEAVY METAL THUNDER)

Fun fact: Cadmium is a metal found in the Earth’s crust; it naturally occurs in the soil as a result of volcanic emissions that have taken place over thousands of years. Plants pull compounds from the soil into their trunks, leaves, fruits, and seeds. Cadmium is no exception, and can be found in high concentrations in fruits and vegetables, particularly root vegetables, and leafy greens such as spinach and kale. Cereals, rice, nuts, pulses, soybeans, shellfish, organ meats, and other foods also have naturally high concentrations of cadmium.

But wait, what does this have to do with chocolate?

Cadmium and lead became a hot topic at the end of 2022, when a *Consumer Reports* article discussed cadmium and lead in chocolate — so we thought it was worth diving into some detail for the interested reader.

There are no U.S. federal regulations or guidelines on dietary exposure to cadmium. The sole U.S. regulation regarding cadmium and lead in chocolate, that we know of, is California’s Proposition 65. Prop 65 was created in 1986 as a way to give consumers recourse if businesses exposed them to dangerous compounds. *Prop 65 was designed as a right-to-know law, and not a determinant of safety.*

Hundreds of compounds are listed under Prop 65, and limits for each were set based on the No Observable Effect Level (NOEL) — as determined, per the California Office of Environmental Health Hazard Assessment (OEHHA), “based on the most sensitive study deemed to be of sufficient quality (22 CCR Section 12803(a)(4)).” The NOEL level (an amount that would cause no harm) was then divided by 1000. Alternatively, a study could indicate the Lowest Observable Effect Level (LOEL), and that number would be divided by 10, and then divided again by 1000. The resulting micro-quantities are considered a Maximum Allowable Dose Level

(MADL). *To be clear, the MADL is either 1000 times below what is found to cause no harm, or 10,000 times lower than what is shown to cause harm.* Prop 65 does not state that anything beyond the MADL is dangerous — just that anything beyond the MADL requires a warning.

As a side note, while the vast majority of our products are under Prop 65 limits, we provide warning signs at our points of sale, both in person and online, to ensure that our guests are informed, and that we are compliant with California law.

Interestingly, Prop 65 provides an exemption for any compounds that are “naturally occurring” — that is, not potentially resulting from processing, or from metal packaging. This is why there are no warnings printed on foods such as spring-mix salad (which contains much higher levels of both cadmium and lead, per serving, than chocolate), or sunflower seeds (which have similarly high levels). Since these products are not “manufactured,” they fall under the exemption.

Over time, several organizations have tested various products using the Prop 65 guidelines, and based on what they’ve found, have initiated lawsuits. As You Sow is one such organization that focuses on chocolate. They tested bars from multiple makers, and detected differing levels of cadmium and lead. Their case against nine manufacturers was brought together in a summary judgment that decided three things:

1. A number of chocolate makers needed to pay settlement money to As You Sow (this is their income stream).
2. As You Sow was required to conduct and publish a study determining where and how cadmium and lead come to exist in chocolate, and whether the two metals are present in cocoa beans.

COVERED PRODUCT	CADMIUM CONCENTRATION	LEAD CONCENTRATION
CHOCOLATE PRODUCTS WITH UP TO 65% COCOA CONTENT	0.40 PPM	0.10 PPM
CHOCOLATE PRODUCTS WITH 65% TO 95% COCOA CONTENT	0.45 PPM	0.15 PPM
CHOCOLATE PRODUCTS WITH GREATER THAN 95% COCOA CONTENT	0.96 PPM	0.225 PPM

3. New, more practical limits were agreed upon for cadmium and lead levels in chocolate. The minimum lead and cadmium concentrations necessitating Prop 65 warnings are shown above, in parts per million (ppm).

The fact that chocolate can contain cadmium and lead has been in the news largely because As You Sow published their report in August of 2022. Their document outlines that cadmium is naturally occurring, coming into chocolate through the soil in which cacao trees grow; and that lead comes into cocoa beans via environmental exposure.

At Dandelion, we test for both microbiological contaminants and heavy metals in every new delivery of beans: We have a 10-percent representative lot sample drawn by an independent company and delivered to Anresco Laboratory in San Francisco, for testing. Currently we will reject any beans that test positive for E. coli, salmonella, and / or listeria, and we monitor levels of cadmium, lead, arsenic, and mercury.

Additionally, we test all of our finished chocolate for cadmium and lead to ensure that levels are extremely low, and we compare our results to the levels set by the summary judgment. We’ve found traces of cadmium in nearly all of our chocolate, though the only bars that have shown levels requiring a Prop 65 warning are our bars made of beans from Ecuador.

Ecuador tends to have higher soil levels of cadmium than other origins, but we don’t want to abandon the country’s cocoa farmers and producers, with whom we’ve worked for years; hence we warn consumers of the general risk.

As noted above, lead in cocoa is less well understood than cadmium; it’s assumed to come from the environment. The highest level of lead we’ve ever found in our chocolate was 0.034 ppm, which is barely above the detection threshold, and an order of magnitude below the Prop 65 limit of 0.15 ppm (shown above). None of our bars contains significant levels of lead: Of the 17 bars we tested recently, 10 of them showed no lead at all, and the other seven were only slightly above the detection threshold of the test (around 0.01 ppm).

We were curious about cadmium and lead levels in other foods, so we tested a wide variety from local grocery stores, and cadmium and lead were detected in almost all of them. This was by no means a scientific study, but we were curious how prevalent cadmium and lead are in general, and the answer is that there seem to be low levels of both metals just about everywhere.

We believe it’s always a good idea to understand the benefits and potential risks of foods that we eat. In assessing risks that any food might pose, we encourage you to consider your current health,

as well as the food's source, and the quantity consumed. According to the Centers for Disease Control, most orally ingested cadmium passes through the gastrointestinal tract unchanged, as most healthy individuals absorb only about 2.5 percent of cadmium ingested in food.

A European Union study on dietary exposure to cadmium found that grains and grain products cause the largest degree of exposure to cadmium (26.9 percent), followed by vegetables and vegetable products (16.0 percent), and starchy roots and tubers (13.2 percent). Chocolate and chocolate products accounted for only 4.3 percent of the dietary exposure to cadmium. It also found that often it's not foods with the highest cadmium levels, but foods consumed in larger quantities, that have the greatest impact on dietary exposure to cadmium.

If cadmium is of specific concern, we suggest avoiding our chocolate bars made from Ecuadorian cocoa, as chocolate produced from those beans tends to test higher for cadmium than other cocoa origins. When it comes to lead, based on the data, we believe that none of our chocolate is cause for concern.

We hope this information about cadmium and lead in general, as well as cadmium and lead in chocolate, proves useful. The natural world is fascinating and complex, and if you examine one small component, it can seem surprising; we find that the context around cadmium and lead in food has helped us understand our risk factors, and hope you feel the same!

ORIGIN	HARVEST	PERCENTAGE	CADMIUM (PPM)	LEAD (PPM)
AMBANJA, MADAGASCAR	2017	70%	0.177 PPM	NONE DETECTED
AMBANJA, MADAGASCAR	2019	70%	0.221 PPM	0.029 PPM
CAMINO VERDE, ECUADOR	2020	70%	0.619 PPM	NONE DETECTED
CAMINO VERDE, ECUADOR	2022	70%	0.018 PPM	0.027 PPM
CAMINO VERDE, ECUADOR	2022	100%	0.9 PPM	0.034 PPM
HACIENDA AZUL, COSTA RICA	2022	70%	NONE DETECTED	NONE DETECTED
COSTA ESMERALDAS, ECUADOR	2020	70%	1.226 PPM	NONE DETECTED
COSTA ESMERALDAS, ECUADOR	2020	85%	1.561 PPM	NONE DETECTED
SEMULIKI FOREST, UGANDA	2022	70%	0.323 PPM	0.016 PPM
ANAMALAI, INDIA	2019	70%	0.057 PPM	0.02 PPM
KOKOA KAMILI, TANZANIA	2019	70%	0.016 PPM	0.016 PPM
MAYA MOUNTAIN, BELIZE	2021	70%	0.261 PPM	NONE DETECTED
MAYA MOUNTAIN, BELIZE	2021	85%	0.45 PPM	NONE DETECTED
TUMACO, COLOMBIA	2021	70%	0.271 PPM	0.015 PPM
TUMACO, COLOMBIA	2022	70%	0.264 PPM	NONE DETECTED
ZORZAL COMUNITARIO, D.R.	2018	70%	0.155 PPM	NONE DETECTED
ZORZAL COMUNITARIO, D.R.	2021	70%	0.167 PPM	NONE DETECTED



FOOD	CADMIUM (PPM)	LEAD (PPM)
SPRING-MIX SALAD	0.1 PPM	0.016 PPM
KALE	0.076 PPM	NONE DETECTED
TOMATO	NONE DETECTED	NONE DETECTED
CARROT	0.011 PPM	0.011 PPM
SWEET POTATO	NONE DETECTED	0.015 PPM
ORGANIC BROWN MUSHROOMS	NONE DETECTED	0.013 PPM
EXTRA-FIRM TOFU	0.017 PPM	NONE DETECTED
SUNFLOWER SEEDS	0.305 PPM	0.042 PPM
EXTRA-LONG-GRAIN WHITE RICE	0.015 PPM	0.014 PPM
ORGANIC BROWN JASMINE RICE	NONE DETECTED	0.015 PPM
STEEL-CUT INSTANT OATMEAL	0.054 PPM	0.011 PPM
FAST-FOOD FRIES	0.073 PPM	NONE DETECTED

ORIGINS



	ORIGIN & COUNTRY	REGION	SOURCE
01	AMBANJA, MADAGASCAR	SAMBIRANO VALLEY	BEJOFO ESTATE
02	BẾN TRE, VIETNAM	BẾN TRE	MAROU
03	CAHABÓN, GUATEMALA	ALTA VERAPAZ	ADIOESMAC
04	CAMINO VERDE, ECUADOR	GUAYAS	CAMINO VERDE
05	COSTA ESMERALDAS, ECUADOR	ATACAMES	COSTA ESMERALDAS
06	HACIENDA AZUL, COSTA RICA	CARTAGO	HACIENDA AZUL
07	KOKOA KAMILI, TANZANIA	MOROGORO	KOKOA KAMILI
08	MAYA MOUNTAIN, BELIZE	TOLEDO	MAYA MOUNTAIN CACAO, LTD.
09	MILILANI, HAWAI'I, U.S.A.	HAWAI'I	GREEN FARMS HAWAII
10	RANSIKI, INDONESIA	WEST PAPUA	BIJI KAKAO
11	SEMULIKI FOREST, UGANDA	SEMULIKI	LATITUDE TRADE COMPANY
12	TUMACO, COLOMBIA	NARIÑO	CACAO HUNTERS
13	WAMPU, HONDURAS	GRACIAS A DIOS	CACAO DIRECT
14	ZORZAL, DOMINICAN REPUBLIC	DUARTE	ZORZAL CACAO

YEARS PURCHASED	LAST VISIT	ROAST PROFILE BY
2012-2022	11.2015 GREG	ERIC
2018-2021	09.2019 GREG, RICHARD, BECCA, CYNTHIA, MARY, YUKI	RICHARD (U.S.A.) YUKI (JAPAN)
2014-2021	09.2023 RON	NATE (U.S.A.) YUTO (JAPAN)
2013-2022	08.2018 GREG, KAREN, RICHARD, MEGAN	ERIC (U.S.A.) AIJI (JAPAN)
2016-2022	08.2018 GREG, KAREN, RICHARD, MEGAN	ERIC
2017-2022	12.2022 GREG	ERIC (U.S.A.) MARIKO (JAPAN)
2014-2022	06.2022 GREG, TOMO	NATE
2013-2022	09.2023 RON	TREVOR (U.S.A.) YUKI (JAPAN)
2021	03.2021 GREG	NATE
2021	03.2022 GREG	N/A
2022	11.2023 GREG	TREVOR
2017-2022	11.2018 GREG	PABLO
2017-2022	10.2018 GREG, CHIEKO	ERIC (U.S.A.) SENNA (JAPAN)
2013-2022	10.23 GREG	TREVOR ZCC (U.S.A.) MARI ZCC (JAPAN) RON ZOE (U.S.A.) MARIKO ZOE (JAPAN)

THE NUMBERS

As the goal of this report is to provide as much information as possible, we believe the easiest way to do that is to list every shipment we receive. We hope this will give you insight into how the cocoa logistics of a company such as ours work.

2021

DATE PURCHASED	ORIGIN	TOTAL WEIGHT (KG)	TOTAL	PRICE (KG)
FEB 2021	BẾN TRE, VIETNAM	2,500	\$22,150.00	\$8.86
MAR 2021	MILILANI, HAWAII, U.S.A.	300	\$7,260.00	\$24.20
MAR 2021	WAMPU, HONDURAS	4,020	\$30,150.00	\$7.50
APR 2021	CAHABÓN, GUATEMALA	2,040	\$16,728.00	\$8.20
JUN 2021	CAMINO VERDE, ECUADOR	12,006	\$82,481.22	\$6.87
JUN 2021	MAYA MOUNTAIN, BELIZE	5,995	\$35,370.50	\$5.90
JUL 2021	RANSIKI, INDONESIA	500	\$3,875.00	\$7.75
OCT 2021	ZORZAL, DOMINICAN REPUBLIC	5,040	\$29,030.40	\$5.76
OCT 2021	TUMACO, COLOMBIA	6,000	\$45,300.00	\$7.55
OCT 2021	CAMINO VERDE, ECUADOR	6,003	\$41,240.61	\$6.87
NOV 2021	COSTA ESMERALDAS, ECUADOR	5,984	\$48,949.12	\$8.18
DEC 2021	MAYA MOUNTAIN, BELIZE	4,905	\$28,939.50	\$5.90
2021 TOTAL		55,293 KG	\$391,474.35	

2021 AVERAGE PER KG \$7.08

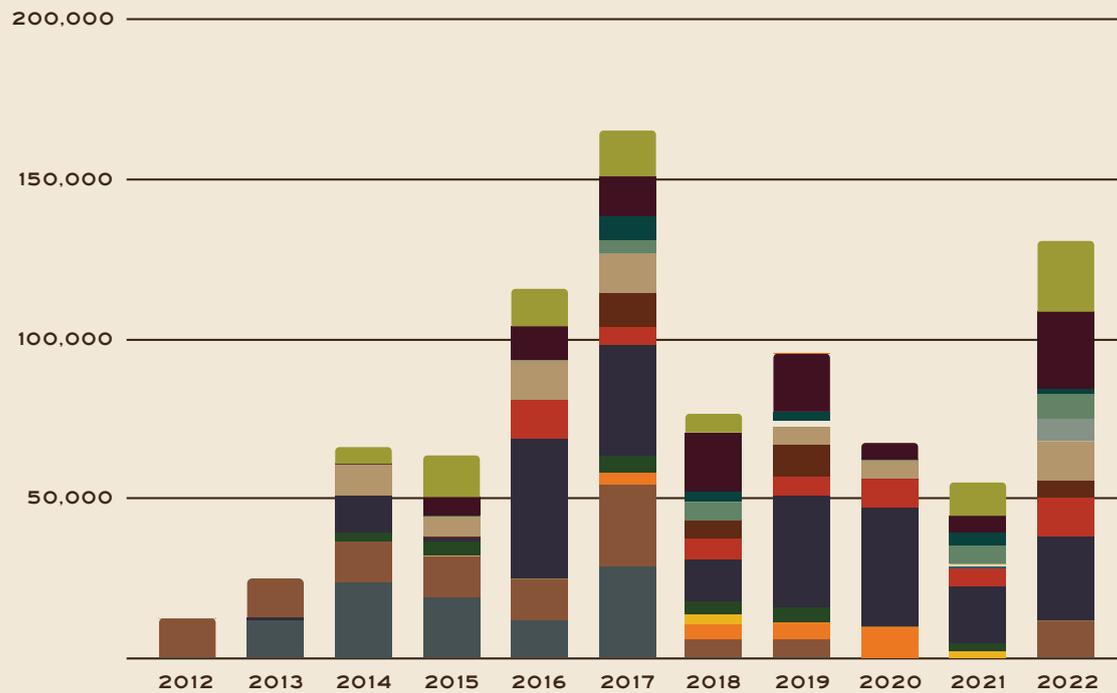
2022

DATE PURCHASED	ORIGIN	TOTAL WEIGHT (KG)	TOTAL	PRICE (KG)
FEB 2022	MAYA MOUNTAIN, BELIZE	3,025	\$25,712.50	\$8.50
MAR 2022	ZORZAL, DOMINICAN REPUBLIC	8,820	\$48,421.80	\$5.49
APR 2022	CAMINO VERDE, ECUADOR	6,003	\$43,821.90	\$7.30
MAY 2022	AMBANJA, MADAGASCAR	12,025	\$71,789.25	\$5.97
JUL 2022	MAYA MOUNTAIN, BELIZE	13,585	\$84,906.25	\$6.25
JUL 2022	TUMACO, COLOMBIA	8,000	\$60,000.00	\$7.50
AUG 2022	COSTA ESMERALDAS, ECUADOR	12,512	\$90,712.00	\$7.25
SEP 2022	SEMULIKI FOREST, UGANDA	7,000	\$53,060.00	\$7.58
OCT 2022	MAYA MOUNTAIN, BELIZE	3,025	\$26,166.25	\$8.65
OCT 2022	WAMPU, HONDURAS	1,000	\$8,400.00	\$8.40
NOV 2022	CAMINO VERDE, ECUADOR	20,010	\$162,081.00	\$8.10
NOV 2022	HACIENDA AZUL, COSTA RICA	5,280	\$39,600.00	\$7.50
DEC 2022	ZORZAL, DOMINICAN REPUBLIC	15,190	\$87,494.40	\$5.76
DEC 2022	KOKOA KAMILI, TANZANIA	12,600	\$74,466.00	\$5.91
2022 TOTAL		128,075 KG	\$876,631.35	

2022 AVERAGE PER KG \$6.84

ANNUAL QUANTITY PURCHASED

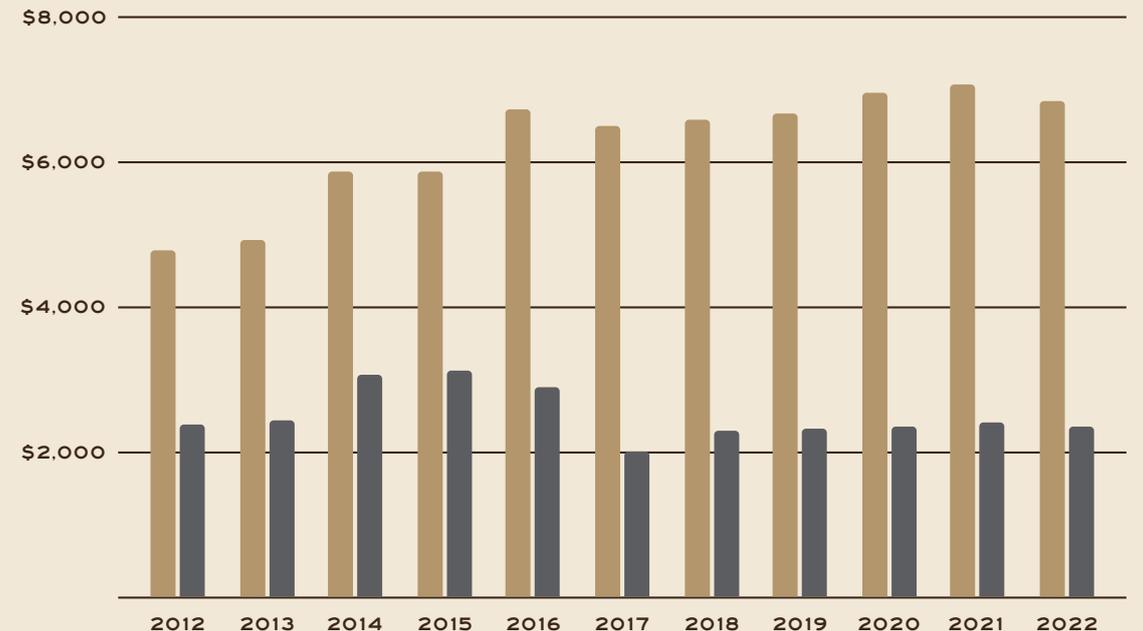
Now that we have been purchasing cocoa for over a decade, our data are interesting in aggregate. This graph shows all substantial purchases we've made; origins that we no longer use are lumped together, while current origins are broken out per year.



- Ambanja, Madagascar*
- Anamalai, India*
- Bén Tre, Vietnam*
- Cahabón, Guatemala*
- Camino Verde, Ecuador*
- Costa Esmeraldas, Ecuador*
- Hacienda Azul, Costa Rica*
- Kokoia Kamili, Tanzania*
- Maya Mountain, Belize*
- Mililani, Hawai'i, U.S.A.*
- Ransiki, Indonesia*
- Semuliki Forest, Uganda*
- Tumaco, Colombia*
- Wampu, Honduras*
- Zorzal, Dominican Republic*
- Vale Potumujú, Brazil*
- Discontinued Origins*

AVERAGE PRICE PER TONNE

Price isn't everything, but we believe it is only fair to pay an appropriate amount for cocoa. Unless you work in cocoa, you might not follow market trends, but we thought it would be interesting to show the ups and downs of the average commodity price versus the average price we pay. Products get better, cost of living increases, and therefore the prices we pay should increase over time.



- Average Dandelion Chocolate Price*
- Average World Price*

Fermentation

Drying

Logistics

AMBANJA MADAGASCAR



4-TIERED BOXES



RAISED WOODEN BEDS
& CEMENT PATIOS



AKESSON'S ORGANIC ESTATE
GROWS, FERMENTS, & DRIES BEANS



EXPORT BY
AKESSON'S ORGANIC ESTATE



IMPORT BY
CACAO LATITUDES FOR
DANDELION CHOCOLATE

BẾN TRE VIETNAM



LINEAR BOXES



RAISED MESH BEDS



SMALLHOLDER FARMERS
GROW BEANS



TWO LOCAL FERMENTERS BUY,
MAROU BLENDS BEANS



EXPORT BY
MERIDIAN CACAO



IMPORT BY
MERIDIAN CACAO

CAHABÓN GUATEMALA



LINEAR BOXES



RAISED MESH BEDS
WITH GREENHOUSE



ADIOESMAC (CO-OP) GROWS,
FERMENTS, & DRIES BEANS



CACAO VERAPAZ BUYS
& BLENDS BEANS



EXPORT BY
CACAO VERAPAZ



IMPORT BY
UNCOMMON CACAO

CAMINO VERDE ECUADOR



LINEAR BOXES



CEMENT PATIOS



SMALLHOLDER FARMERS
GROW BEANS



CAMINO VERDE BUYS, FERMENTS,
& DRIES BEANS



EXPORT BY
AGROARRIBA



IMPORT BY
MERIDIAN CACAO

COSTA ESMERALDAS ECUADOR



5-TIERED BOXES



RAISED MESH BEDS
& CEMENT PATIOS WITH
GREENHOUSE



COSTA ESMERALDAS ESTATE
GROWS, FERMENTS, & DRIES BEANS



EXPORT BY
COSTA ESMERALDAS



IMPORT BY
COSTA ESMERALDAS

HACIENDA AZUL COSTA RICA



3-TIERED BOXES



RAISED MESH BEDS
WITH GREENHOUSE



HACIENDA AZUL ESTATE
GROWS, FERMENTS, & DRIES BEANS



EXPORT BY
BUENA NOTA IMPORTS



IMPORT BY
BUENA NOTA IMPORTS

KOKOA KAMILI TANZANIA



3-TIERED BOXES



RAISED MESH BEDS



SMALLHOLDER FARMERS
GROW BEANS



KOKOA KAMILI BUYS, FERMENTS, &
DRIES BEANS



EXPORT BY
KOKOA KAMILI



IMPORT BY
MERIDIAN CACAO

Fermentation

Drying

Logistics

MAYA MOUNTAIN
BELIZE



LINEAR BOXES



RAISED WOODEN BEDS
& CEMENT PATIO WITH
GREENHOUSE



SMALLHOLDER FARMERS
GROW BEANS



MAYA MOUNTAIN CACAO BUYS,
FERMENTS, & DRIES BEANS



EXPORT BY
MAYA MOUNTAIN CACAO, LTD.



IMPORT BY
UNCOMMON CACAO

MILILANI
HAWAI'I



LINEAR BOXES



RAISED MESH BEDS
WITH GREENHOUSE



GREEN FARMS HAWAII ESTATE
GROWS, FERMENTS & DRIES BEANS



EXPORT BY
GREEN FARMS HAWAII



IMPORT BY
DANDELION CHOCOLATE

RANSIKI
INDONESIA



LINEAR BOXES



RAISED MESH BEDS
WITH GREENHOUSE



EIBER SUTH CO-OP GROWS,
FERMENTS, & DRIES BEANS



EXPORT BY
BIJI KAKAO



IMPORT BY
MERIDIAN CACAO

SEMULIKI FOREST
UGANDA



LINEAR BOXES



RAISED WOODEN BEDS
& CEMENT PATIO WITH
GREENHOUSE



SMALLHOLDER FARMERS
GROW BEANS



LATITUDE TRADE CO BUYS,
FERMENTS, & DRIES BEANS



EXPORT BY
LATITUDE TRADE CO.



IMPORT BY
CACAO LATITUDES FOR
DANDELION CHOCOLATE

TUMACO
COLOMBIA



LINEAR BOXES



RAISED WOODEN BEDS
WITH GREENHOUSE



SMALLHOLDER FARMERS
GROW BEANS



MULTIPLE CO-OPS FERMENT
& DRY BEANS & CACAO HUNTERS
BLENDS BEANS



EXPORT BY
CACAO HUNTERS



IMPORT BY
UNCOMMON CACAO

WAMPU
HONDURAS



LINEAR BOXES



RAISED WOODEN BEDS
WITH GREENHOUSE



SMALLHOLDER FARMERS
GROW BEANS



CACAO DIRECT BUYS, FERMENTS,
& DRIES BEANS



EXPORT BY
CACAO DIRECT



IMPORT BY
CACAO DIRECT

ZORZAL
DOMINICAN
REPUBLIC



4-TIERED BOXES



RAISED MESH BEDS
& CEMENT PATIO WITH
GREENHOUSE



ZORZAL CACAO & SMALLHOLDER
FARMERS GROW BEANS



ZORZAL CACAO FERMENTS
& DRIES BEANS



EXPORT BY
CACAO DEL BOSQUE



IMPORT BY
DANDELION CHOCOLATE

AMBANJA, MADAGASCAR

In 2012, Dandelion Chocolate purchased our first full container of beans — from Bertil Akesson’s Bejofo Estate, which has been growing cacao in Ambanja, Madagascar since 1920. We’ve bought from them consistently ever since, and for the first time in 2017, purchased two full containers (around 25 tonnes) of Bejofo Estate beans.

Akesson’s 600-hectare estate, where cacao trees up to 80 years old flourish, is the largest single estate with which we work. Bertil’s operation is smooth and consistent. Every morning during harvest season, farm workers cut down about 400 ripe pods each, crack them open, and move the juicy pulp-coated beans quickly into fermentation boxes, where the beans ferment for six days. Fermenting beans immediately after harvest is a crucial piece of quality control, and Bertil ensures that it happens within hours. Once fermented, the beans dry briefly in full sun on cement patios before being moved to elevated drying decks to finish drying slowly. While it’s hard to know for certain, we believe this two-part drying process is partially responsible for the beans’ flavor.

We are proud to work with Bertil both because we love his beans, and because we believe that he has paved the way for much of specialty cocoa’s

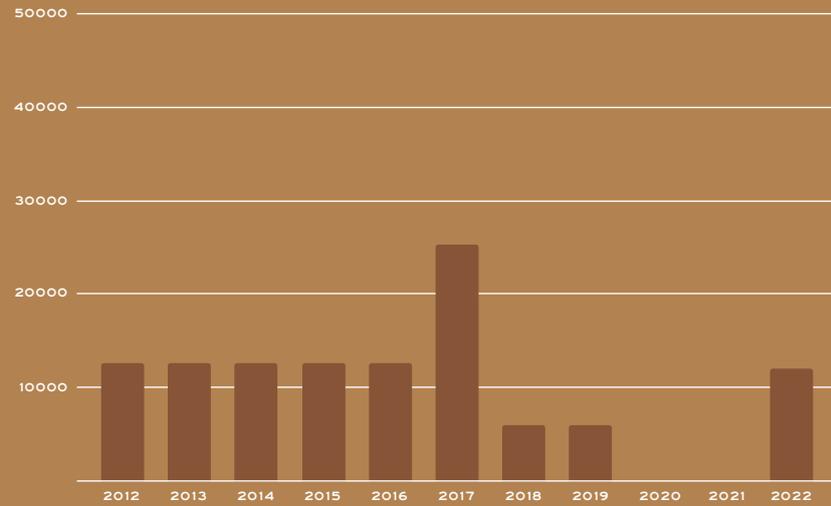
development. The flavors in his beans change slightly every year, but always include bright fruit and punchy acidity. The bars we create from Bertil’s cocoa are among our customers’ favorites; they taste nothing like what most Americans think of as “chocolatey.” When Bertil started producing beans, most makers were seeking something that tasted like, well, chocolate. Bertil broke the mold and produced cocoa that was intriguing, fruity, and intensely different. Many new chocolate makers now use these beans because they invariably yield distinctive, attention-grabbing bars.

Once cocoa producers saw that there was a market for uniquely flavored cocoa, the floodgates opened and producers started creating new and interesting flavors. Bertil was the first to take this risk. We look forward to continuing our relationship with Bertil, and making some of our most interesting chocolate from his beans. He has begun a variety of projects in countries beyond Madagascar, and we are eager to see what the future holds for Bertil and his impact on the cocoa industry.

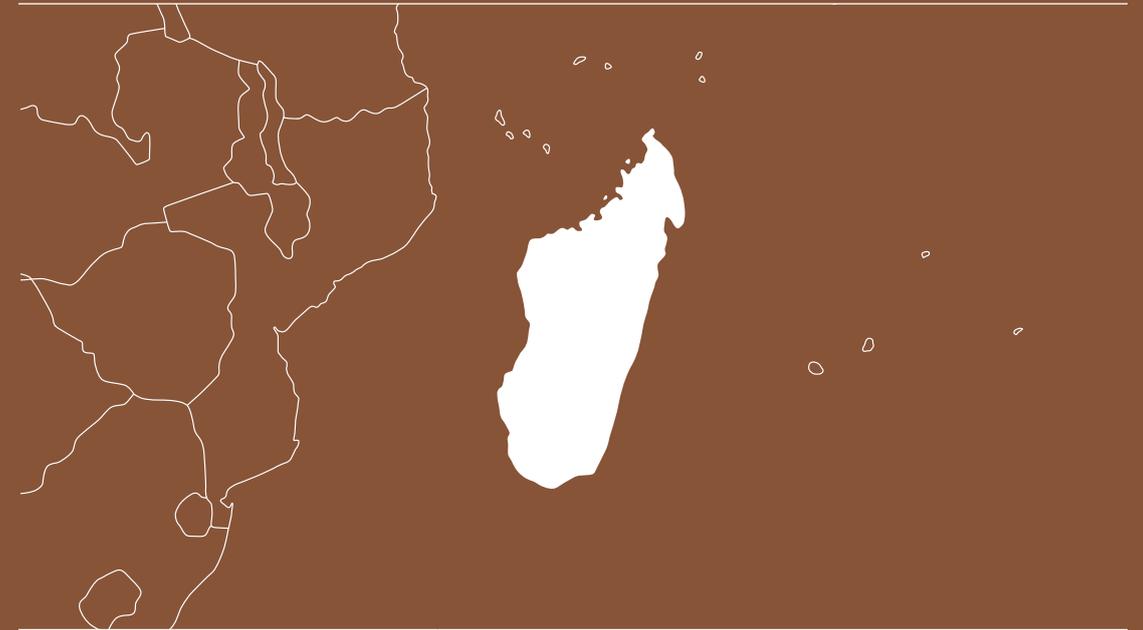
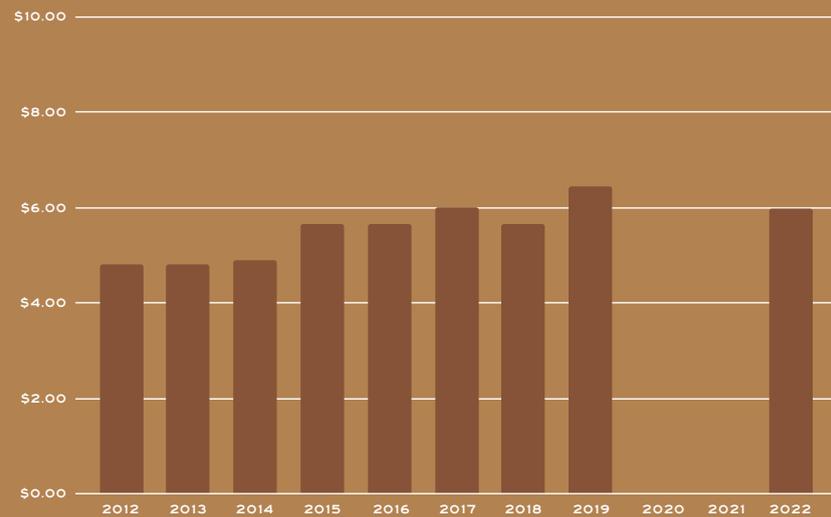


AMBANJA, MADAGASCAR

Quantity Purchased (in Kilograms)



Average Price per Kilogram



13°39'27.8"S 48°28'02.2"E

FERMENTATION STYLE | 4-TIER BOXES

DRYING STYLE | RAISED WOODEN BEDS, CEMENT PATIOS

PROFILE BY | ERIC

FLAVOR NOTES | AMARELLE CHERRY, YOGURT, TOASTED SOURDOUGH



AKESSON'S ORGANIC ESTATE
GROWS, FERMENTS, & DRIES BEANS



EXPORT BY
AKESSON'S ORGANIC ESTATE



IMPORT BY
CACAO LATITUDES FOR
DANDELION CHOCOLATE

Percentage of total beans purchased from all producers over 2021 & 2022

6.5%



BẾN TRE, VIETNAM

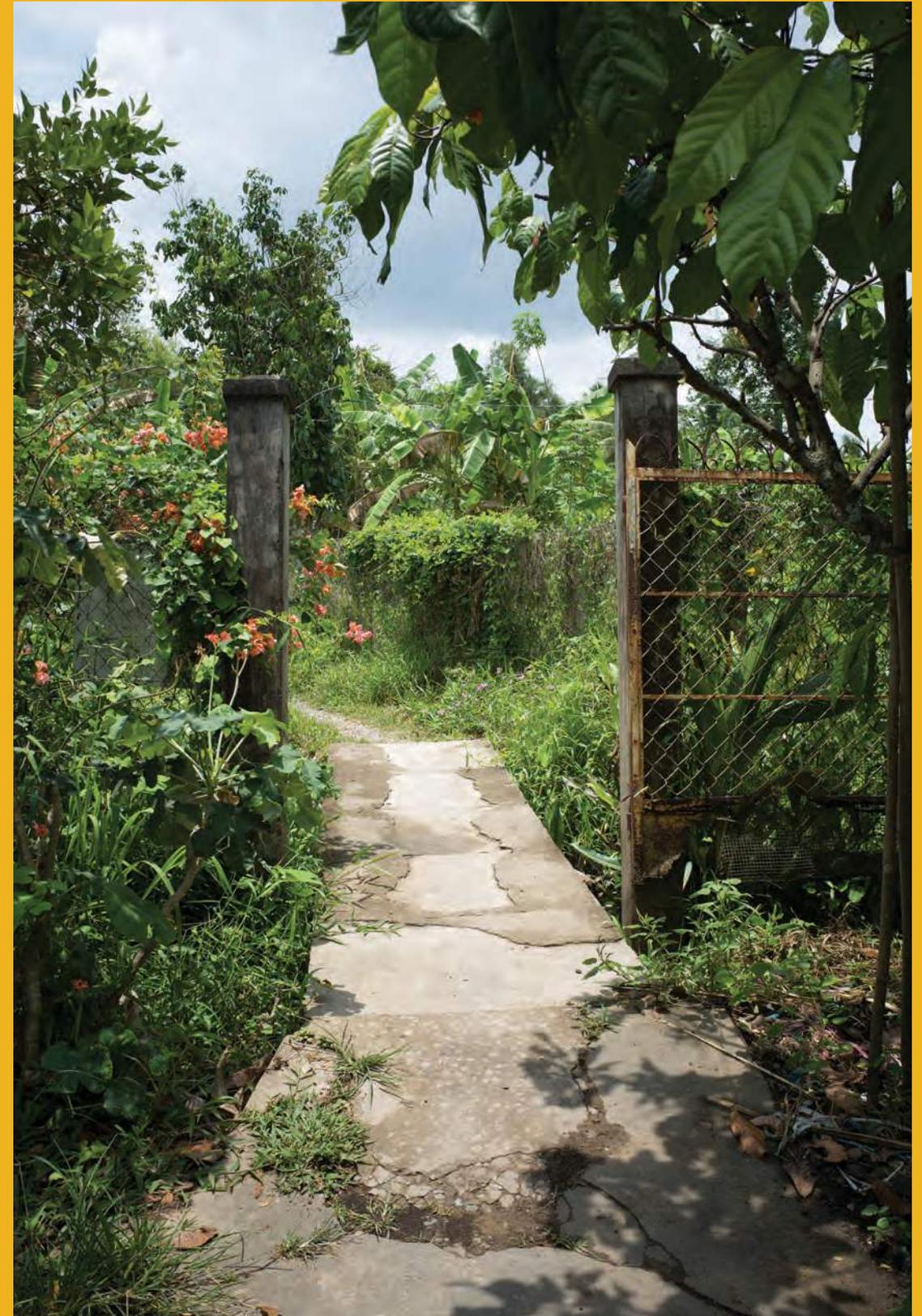
You might know Marou Faiseurs du Chocolat (Marou), more as a chocolate brand than a cocoa supplier. We also first got to know them through their tasty chocolate and beautiful packaging. Marou started their business in 2011, just a year after Dandelion Chocolate, and we've been consistently impressed by their products since. While we've focused on making two-ingredient, single-origin chocolate using cocoa sourced from many countries, Marou has concentrated on making chocolate products in Vietnam, from Vietnamese ingredients. They have built relationships and provided support to a network of cocoa producers throughout Vietnam, and in turn produce chocolate from each small, unique origin.

In 2019 Greg and a portion of the Dandelion Chocolate U.S. and Japan teams visited Marou to learn more about the company and the producers with whom they work. They were able to visit a number of producers, as well as the Marou factory and both Maison Marou café / patisserie locations. It was fascinating to see the parallel between Dandelion and Marou.

As Dandelion and Marou emerged over the same time, making similar products, it felt natural to both of us that we should work together. We love Marou's chocolate and hoped to procure some of the same beans, thereby increasing the quantity of beans purchased from producers at premium price. The question was which producer could supply enough beans for both Marou and another company like us. We didn't need an enormous quantity compared to the amount we source from other origins. (To date, our smallest origins typically sell us approximately one to three tonnes of beans, but even three tonnes is a lot for a small group to produce.)

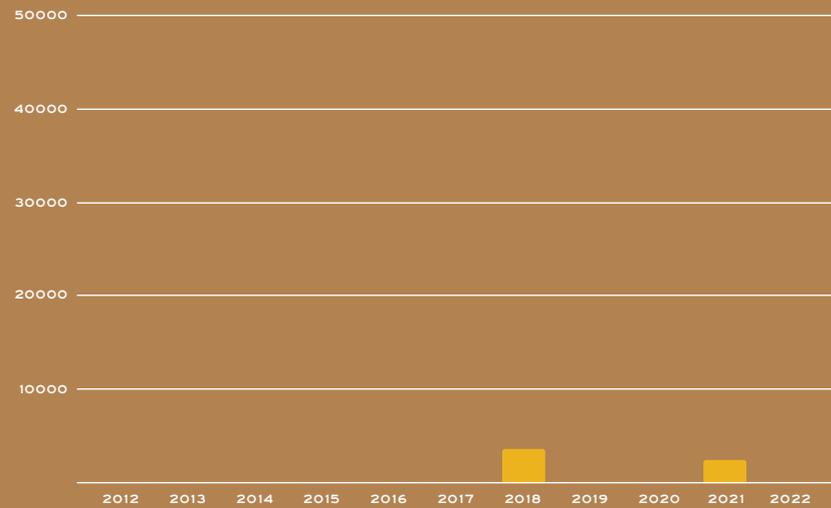
At Marou's suggestion, we decided to work with Bến Tre, located in southern Vietnam along the Mekong Delta. In part, this was because we love the flavors in the Bến Tre bar that Marou makes, but also because Marou felt confident that the producers could reliably supply enough beans for both of us. These beans are produced by two small fermenters, Mr. Son and Ms. Ban. Marou has been working with them for many years. Each fermenter buys cacao pods from their neighbors, purchasing from around 60 small farmers in total. They ferment the beans in linear boxes and dry them on elevated mesh decks. The Marou team inspects and purchases the best beans, and then blends them for consistency. This last step is a key factor for beans we use at Dandelion, as it helps ensure we can keep flavor consistent within a single harvest of beans.

If you'd like to learn more about Marou or Bến Tre, Marou's website contains a sourcing report which provides additional information. There are a number of people involved in the value chain that brings these beans from Vietnam to San Francisco (and then sends a portion on to Tokyo), and we are honored to work with each and every person who makes this possible. Marou and Dandelion both continue to grow: We've opened new shops, created new products, and worked with new origins, and we both purchase a similar quantity of cocoa. We look forward to what the future holds for both companies.

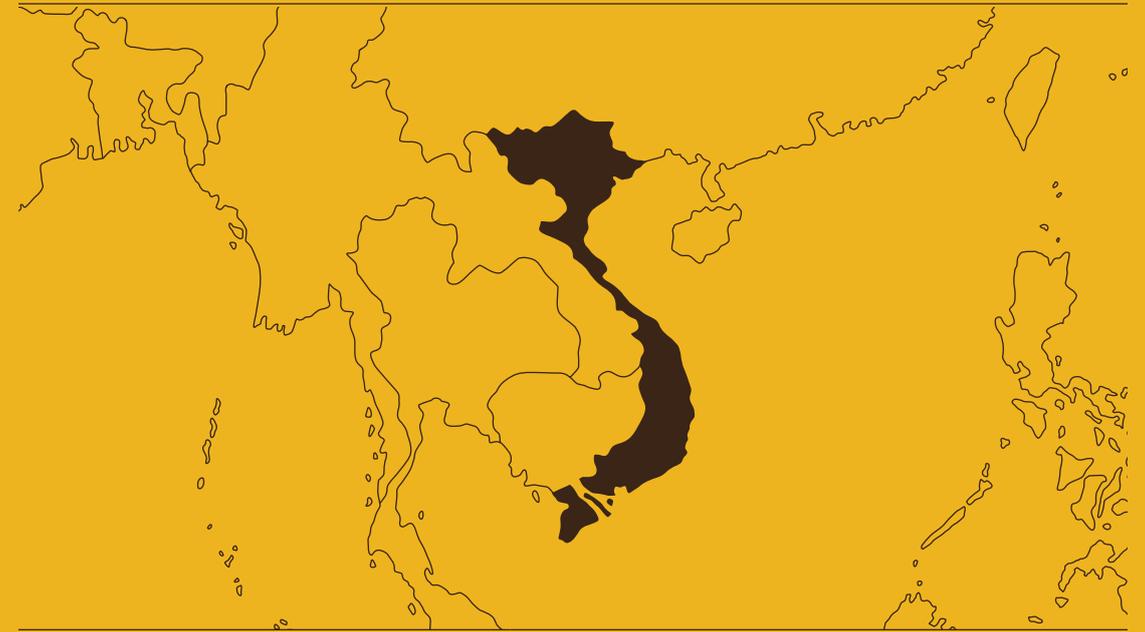
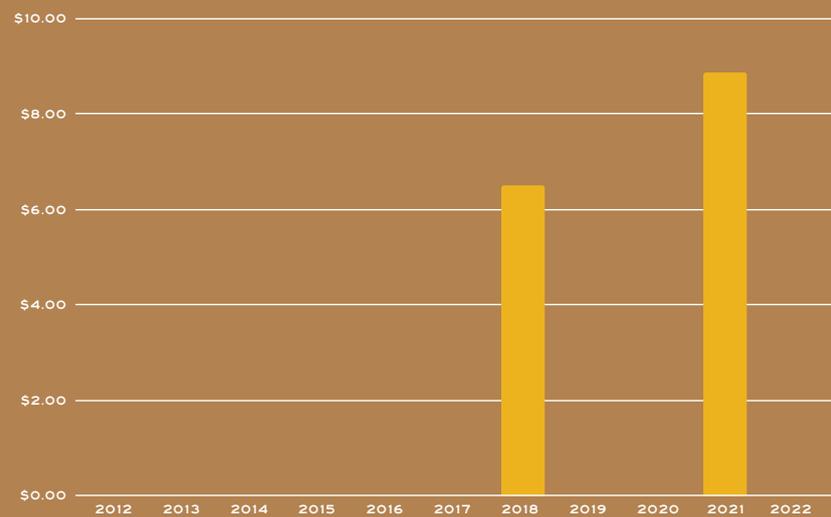


BẾN TRE, VIETNAM

Quantity Purchased (in Kilograms)



Average Price per Kilogram



10°18'17.4"N 106°14'16.5"E

FERMENTATION STYLE | LINEAR BOXES

DRYING STYLE | RAISED MESH BEDS

PROFILE BY | RICHARD (U.S.A.) & YUKI (JAPAN)

FLAVOR NOTES | CANDIED GINGER, MOLASSES, APPLE CIDER


SMALLHOLDER FARMERS
GROW BEANS

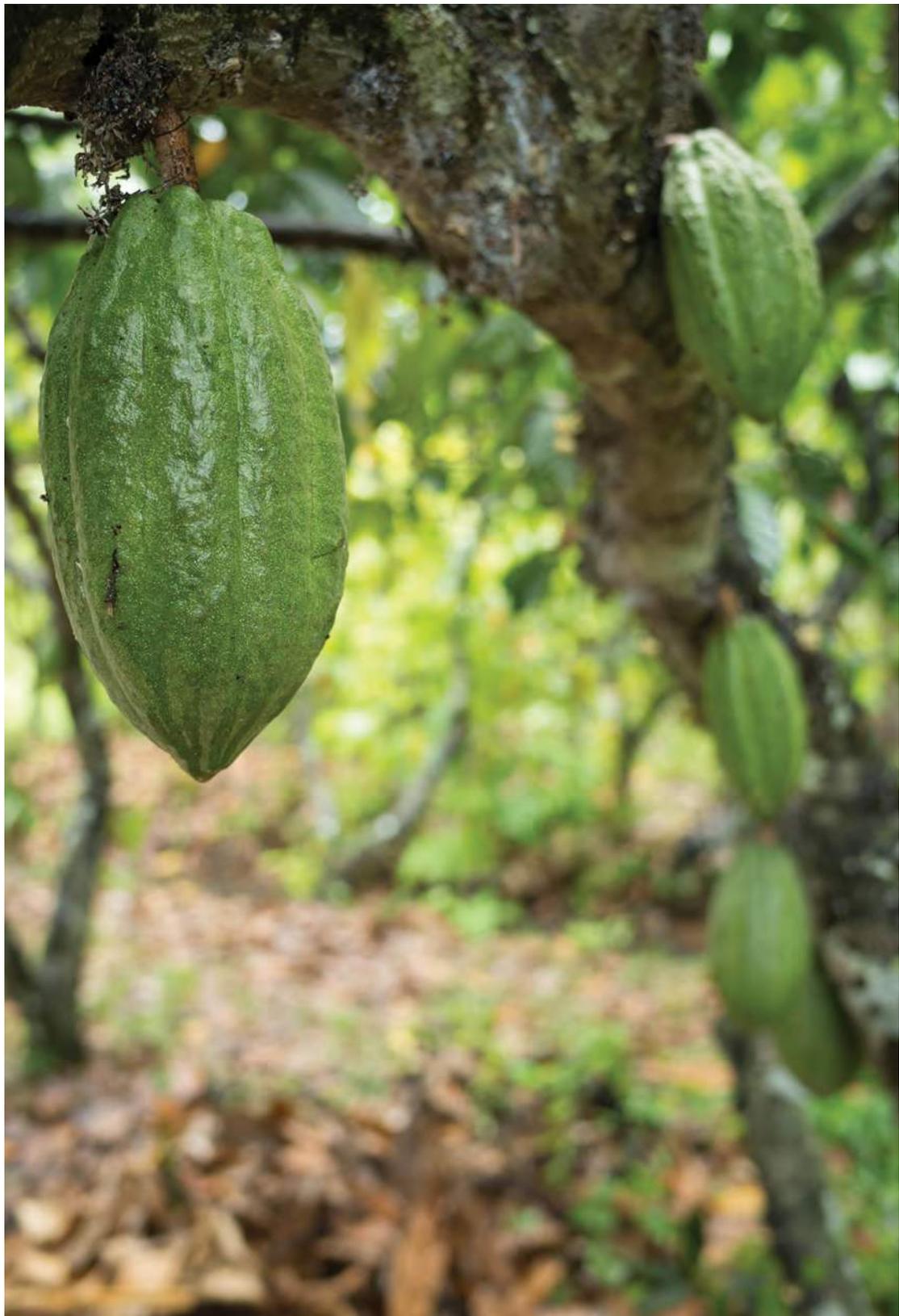

TWO LOCAL FERMENTERS BUY,
MAROU BLENDS BEANS


EXPORT BY
MERIDIAN CACAO


IMPORT BY
MERIDIAN CACAO

Percentage of total beans purchased from all producers over 2021 & 2022

1.3%



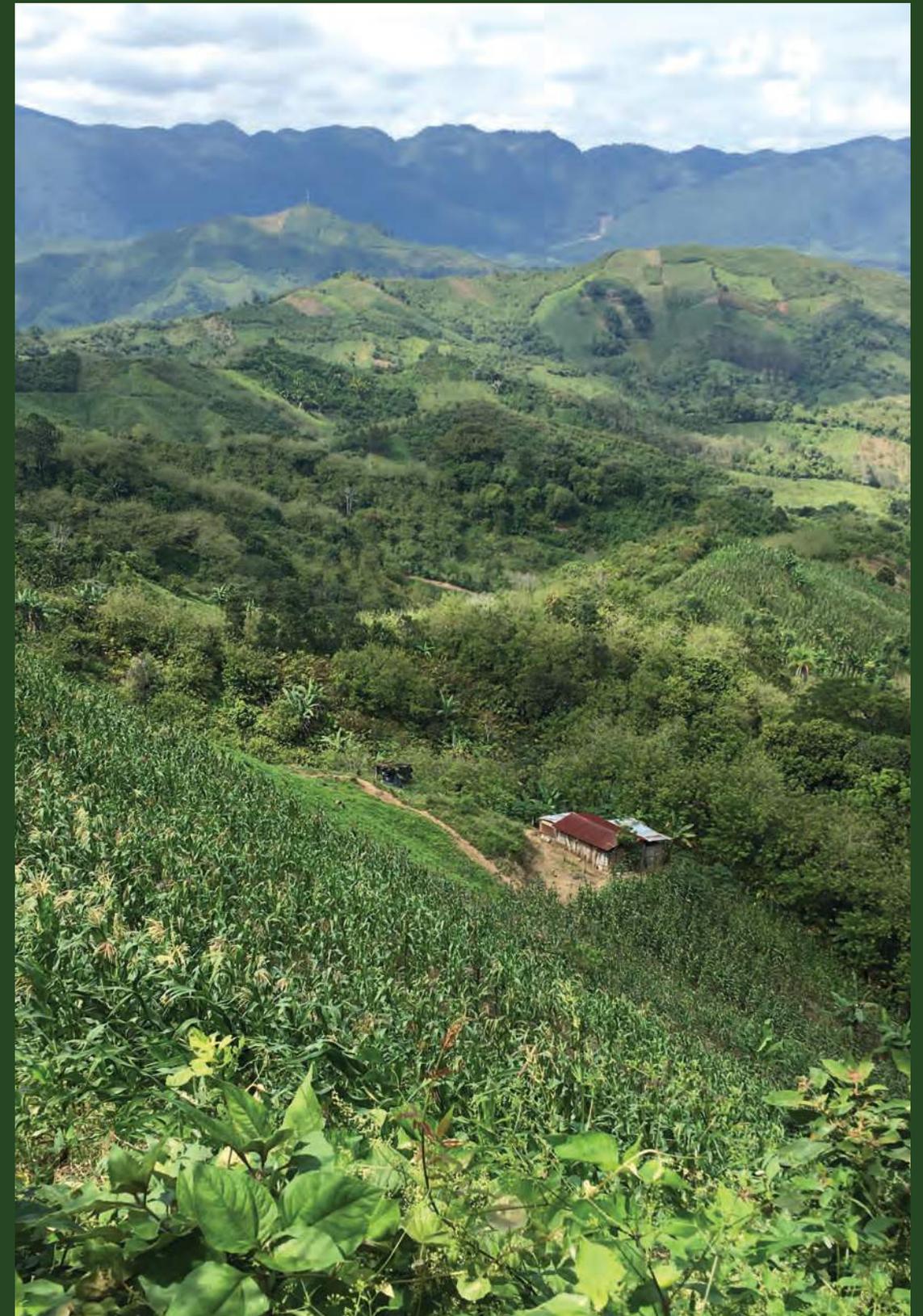
CAHABÓN, GUATEMALA

Since 2014, we have been purchasing beans from ADIOESMAC (the Asociación de Desarrollo Integral Ox' Eek Santa María Cahabón) through Cacao Verapaz S.A., a social enterprise and export group that works primarily with indigenous Maya farmers in the Alta Verapaz department of northern Guatemala. In the Cahabón region of Alta Verapaz, one of the poorest sections of the country, Cacao Verapaz offers technical support and processing-technique training to the farming families comprising ADIOESMAC, which allows the farmers to sell finished beans at a higher price than they could with their old practice of selling unfermented beans.

Cocoa is a promising source of income for the community. The reputation of cocoa from the area has continued to grow and production has steadily risen in recent years. 2017 saw the construction of a new fermentation and drying facility financed by the government's Rural Development Program of the North (PRODENORTE) and the International Fund for Agricultural Development. This significant investment in the Tzalamtun community of Cahabón is due to the region's recognized cocoa-producing potential.

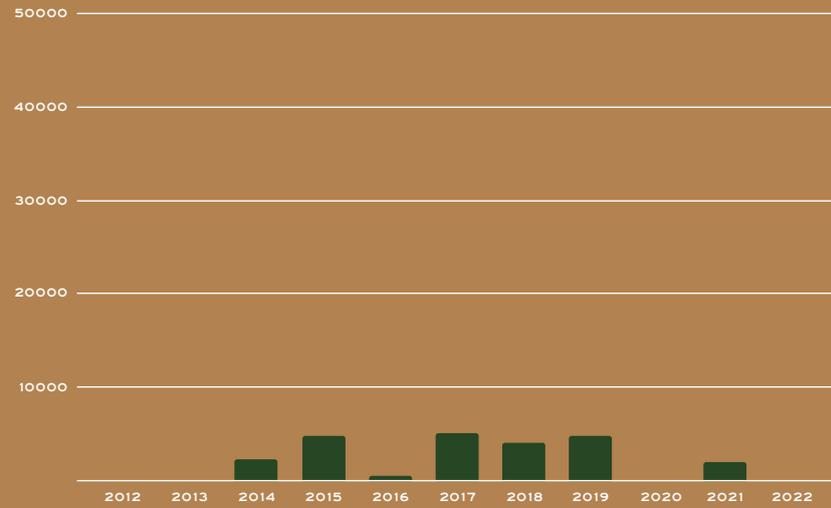
Some believe that Guatemala is the birthplace of cacao, which fuels a desire for development in this sector. Cacao Verapaz's role in the country since 2013 (and with ADIOESMAC since 2014) has ensured more stable payments to producers, and connected them to international markets where their high-quality cocoa can garner higher prices. The additional income has provided capital resources for further development. Cacao Verapaz also offers support in the form of working capital so that ADIOESMAC can pay farmers on time for their wet cacao deliveries, and provide cacao sacks and GrainPro bags for storage to ensure that fermented, dried cocoa is not damaged.

Dandelion Chocolate has been buying beans from ADIOESMAC through Cacao Verapaz since 2014, and the commitment of the Association and Cacao Verapaz to high-quality cocoa is evident. Dandelion was ADIOESMAC's first international market partner, and we feel proud to have played a key role in growing the cocoa industry in this historically important and underserved region.

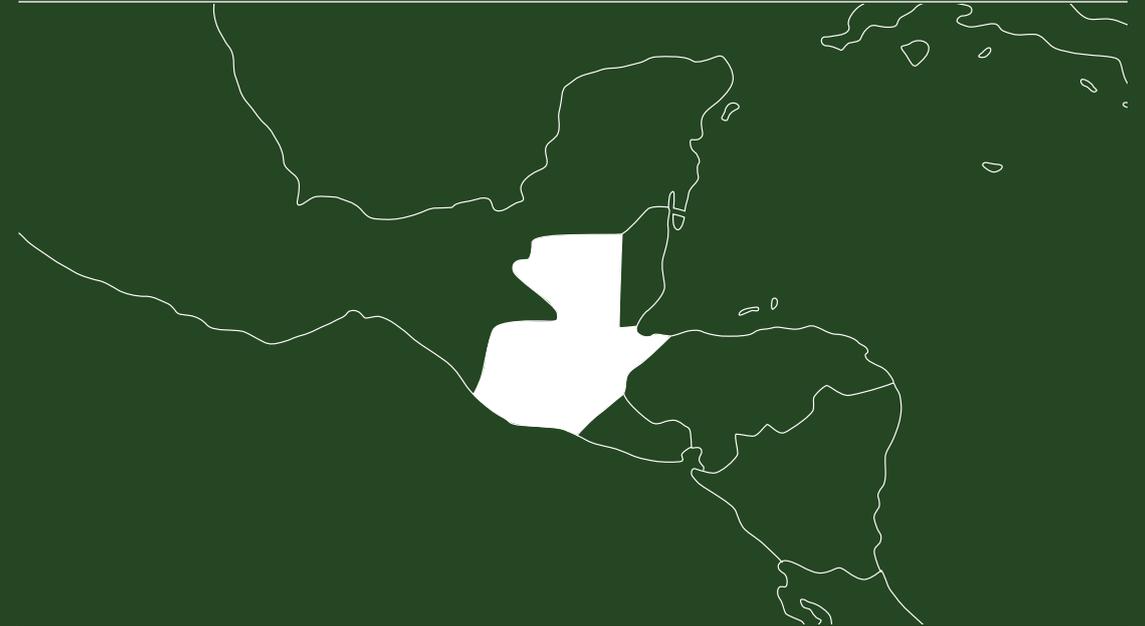
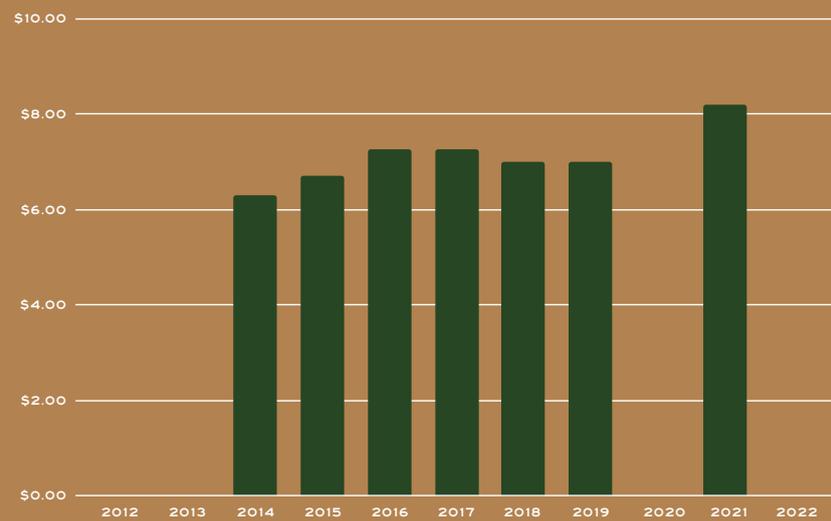


CAHABÓN, GUATEMALA

Quantity Purchased (in Kilograms)



Average Price per Kilogram



15°33'40.0"N 89°49'24.5"W

FERMENTATION STYLE | LINEAR BOXES

DRYING STYLE: RAISED MESH BEDS, GREENHOUSE

PROFILE BY: NATE (U.S.A.) & YUTO (JAPAN)

FLAVOR NOTES: WALNUT, FRESH CRANBERRY, MOCHA

ADJOESMAC (CO-OP) GROWS, FERMENTS, & DRIES BEANS

CACAO VERAPAZ BUYS & BLENDS BEANS

EXPORT BY CACAO VERAPAZ

IMPORT BY UNCOMMON CACAO

Percentage of total beans purchased from all producers over 2021 & 2022

1.1%



CAMINO VERDE, ECUADOR

Vicente Norero, the owner and general manager of Camino Verde Cacao, is one of the most innovative cocoa producers we know. We love the flavor of his beans so much that not only do we make them into two chocolate bars, an 85% and a 100%, but we also turn them into 70% chocolate, which we use in nearly all of our drinks and many of our pastries at our U.S. cafés.

Camino Verde's base of operations is in Duran (near Guayaquil), where Vicente ferments and dries beans, and runs a full chocolate factory where he co-manufactures chocolate for multiple makers. Making chocolate in his own factory means that Vicente has the capacity to develop specific flavor profiles for customers, tweaking his own process and getting instant, direct feedback about what various cocoas taste like as chocolate. He buys freshly harvested, unfermented beans from over 100 farmers and associations around Ecuador, searching out beans that best represent the uniqueness of cacao in Ecuador. Working successfully with beans from all over the country means constantly learning new things about fermentation. For instance, cacao grown at a high altitude may not ferment in the same way as cacao grown at sea level. Each set of beans from each part of Ecuador requires time and experimentation to learn how it is best fermented.

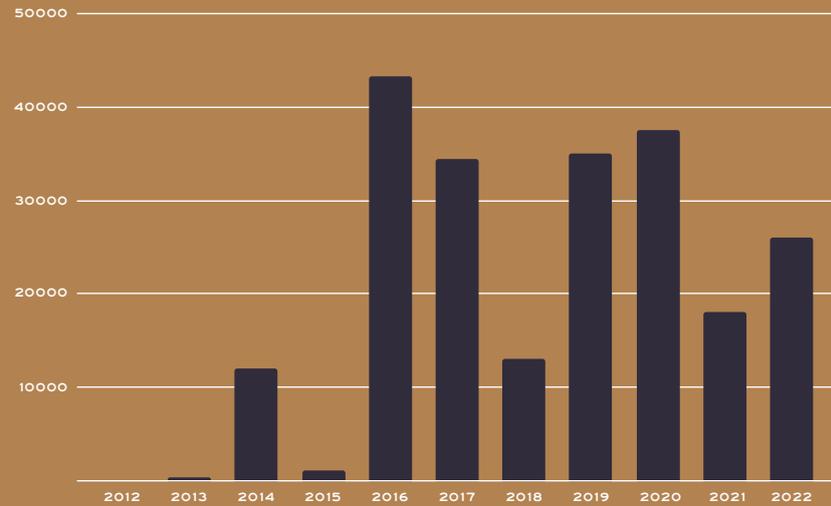
In addition to focusing on unique, high-quality cocoa, Camino Verde works with marginalized groups from Los Ríos, in central Ecuador, and Esmeraldas, in the north, to improve their crops — and, as a consequence, their livelihoods. Camino Verde has opened dedicated bean-collection points near distant farms, and built the infrastructure needed to ferment beans locally before shipping them to Duran.

We have worked with Vicente for many years and are excited to witness the growth of his operation. We are deeply impressed by his dedication to the pursuit of flavor, as well as by his efforts to boost farmers' incomes. Dandelion Chocolate has purchased more beans from Camino Verde than any other single producer, and we couldn't be happier with that decision.

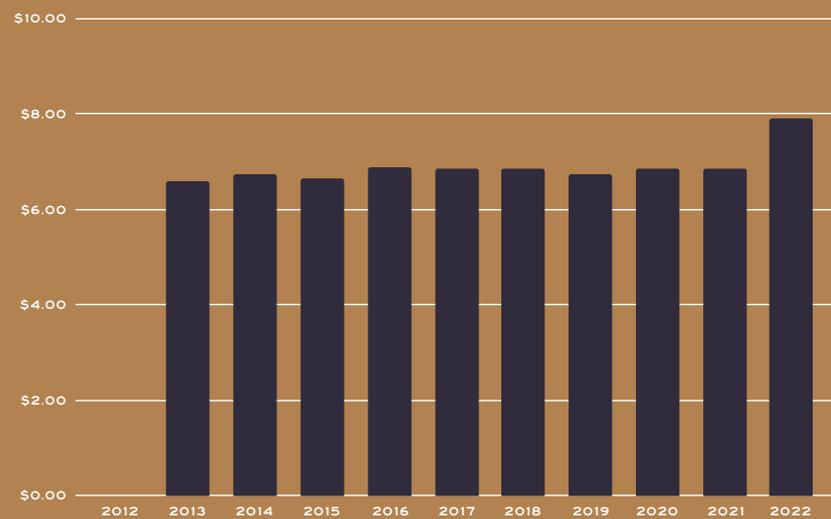


CAMINO VERDE, ECUADOR

Quantity Purchased (in Kilograms)



Average Price per Kilogram



2°12'23.7"S 79°48'24.4"W

FERMENTATION STYLE | LINEAR BOXES

DRYING STYLE | CEMENT PATIOS

PROFILE BY | ERIC (U.S.A.) & AIJI (JAPAN)

FLAVOR NOTES | BROWNIE, CAFFE LATTE, ROASTED PEANUT


SMALLHOLDER FARMERS
GROW BEANS


CAMINO VERDE BUYS, FERMENTS,
& DRIES BEANS


EXPORT BY
AGROARRIBA


IMPORT BY
MERIDIAN CACAO

Percentage of total beans purchased from all producers over 2021 & 2022

24%



COSTA ESMERALDAS, ECUADOR

Costa Esmeraldas' Freddy Salazar produces fascinating and unique cocoa that we make into one of our favorite bars. Nearly 15 years ago, Freddy's father purchased two properties on the northeastern side of the beautiful Esmeraldas coast. The properties were covered by dry pastureland, a eucalyptus farm, and wild forest inaccessible by road — and were not ideal for growing cacao. Father and son set out to construct a farm and a cocoa-processing facility.

What began as a passion project for the Salazar family has evolved into a thriving cacao farm of over 340 hectares, 200 of which are used for growing cacao. While most of the trees, and the beans we buy, are Neo-Nacional, the farm also produces CCN-51 pods as a cash crop, selling to the local bulk-cocoa market. In addition, the farm produces bananas and citrus, and 50 hectares of land have been preserved as virgin forest, providing a thriving habitat for flora and fauna.

Freddy's Neo-Nacional trees, crossbred from the original Ecuadorian Nacional variety and other varieties to increase production and disease tolerance, require different growing conditions from CCN-51 hybrid trees. CCN-51 is a clone used throughout Ecuador for bulk cocoa, due to its hardiness, disease resistance, and ability to grow prolific numbers of pods. When the Salazars started their farm, they received advice only about growing based on CCN-51 — tips such as not to use shade trees. This meant the family had to work hard to shift the farm from where it started to ensure that their Neo-Nacional trees thrived: via shade creation, careful disease management, and frequent pruning.

It has not been easy for the Salazars to adjust; at one point they considered selling their farm. However, Freddy has helped push the business

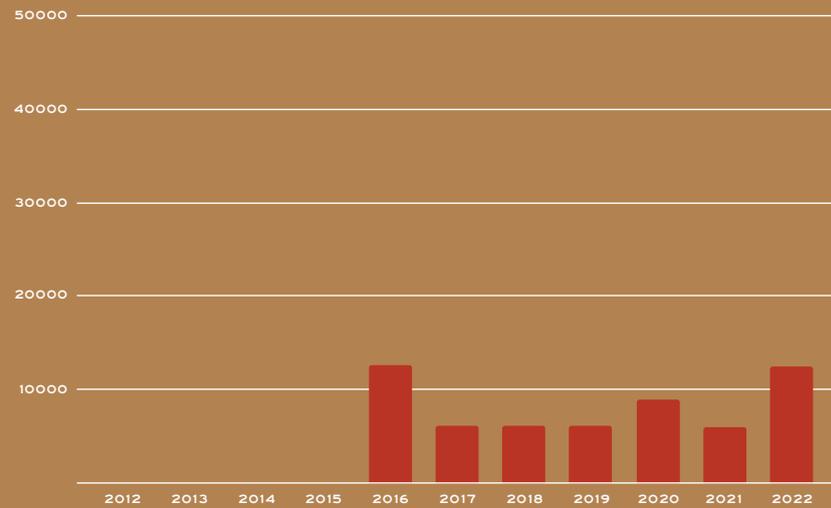
toward experimentation, and he continually learns from others in the industry. At Costa Esmeraldas, Freddy and his team place high value on being good neighbors to nearby communities, and to flora, fauna, water, soil, workers, and everyone involved in or affected by the farm's operations. In 2017, they carefully expanded the farm based on analysis of both the cost-effectiveness of new plantings, and the environmental impact of expansion; they selected cacao varieties they envision will cater to chocolate makers' future desires. They also completed a fermentation and drying facility designed by Dan O'Doherty, based on designs from the Fundación Hondureña de Investigación Agrícola (FHIA), the Honduran institute specializing in agriculture and cacao.

In 2019, the many investments paid off when Costa Esmeraldas earned a Cocoa of Excellence Award. We've worked with Freddy since 2016, and expect that under his leadership, Costa Esmeraldas' well-deserved reputation as a source of high-quality cocoa for global craft chocolate makers will continue to grow, as will his business.

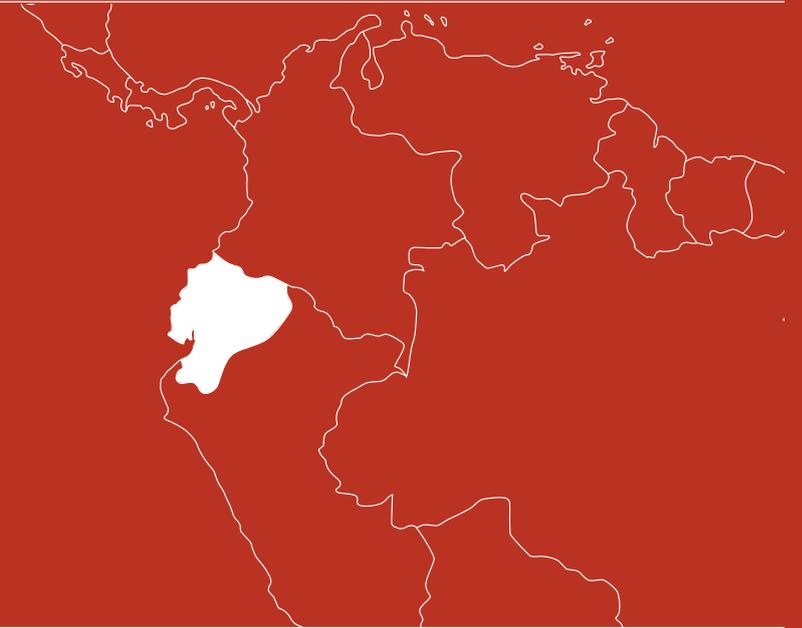
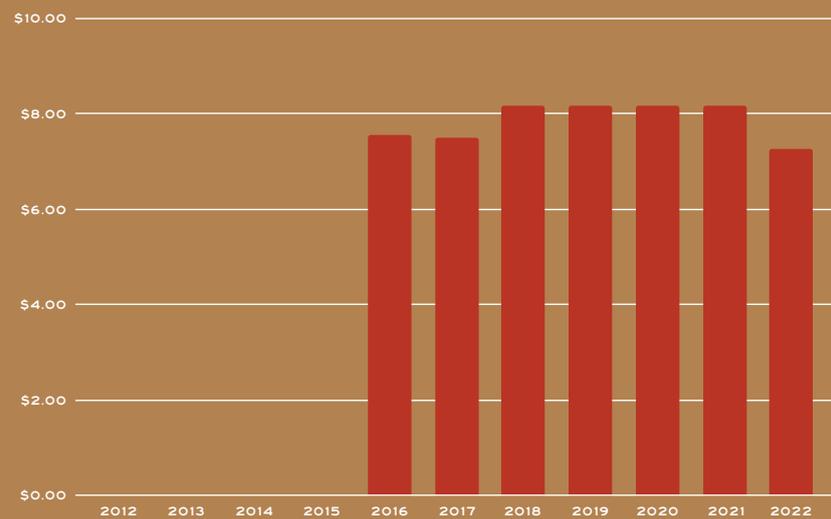


COSTA ESMERALDAS, ECUADOR

Quantity Purchased (in Kilograms)



Average Price per Kilogram



0°47'48.9"N 79°56'16.1"W

FERMENTATION STYLE | 5-TIER BOXES

DRYING STYLE | RAISED MESH BEDS, CEMENT PATIOS, GREENHOUSE

PROFILE BY | ERIC

FLAVOR NOTES | CHOCOLATE GANACHE, BLUEBERRY JAM ON TOAST



COSTA ESMERALDAS ESTATE
GROWS, FERMENTS, & DRIES BEANS



EXPORT BY
COSTA ESMERALDAS



IMPORT BY
COSTA ESMERALDAS

Percentage of total beans purchased from all producers over 2021 & 2022

10%



HACIENDA AZUL, COSTA RICA

In 2017 we began working with Eric Sharvelle of Buena Nota Imports, and with Wilfred Zeuner, who runs Hacienda Azul, a single-estate cacao farm located near Turrialba, Costa Rica. Nearly half the estate's 87 hectares are planted with cacao sown over the last 10 years, and the most recent plantings thrive in the shade of Mexican cedar trees. The estate is a truly beautiful piece of land on which a river bisects gently sloping hills, making the property perfect for growing cacao.

Wilfred's estate embodies the application of 30 years of cacao research by CATIE (the Tropical Agricultural Research and Higher Education Center). Meticulously breeding cacao cultivars to achieve disease resistance and high, good-quality yields, CATIE put together a set of six cultivars (known as CATIE-R1, CATIE-R4, CATIE-R6, CC-187, ICS-95 T1, and PMCT-58) selected to increase Central American cacao quality and productivity, thanks to the trees' hardiness and ability to cross-pollinate effectively. In brief, these cultivars are clones produced by a variety of crossbreeding experiments. The resulting trees are not genetically modified (a.k.a. "GMO"), but selected and cultivated to strengthen specific characteristics. Wilfred chose to work with all six cultivars and has seen excellent results.

On the farm, Wilfred and his team's attention to detail extends to their processing setup. The cacao trees grow on sloped hills, so during harvest, pods are cut from the trees, then rolled to the bottom of each hill for collection by tractor. This approach improves efficiency and removes the labor of carrying heavy sacks of pods.

The system for cracking pods has also been upgraded, separated into a series of efficient steps. First, the

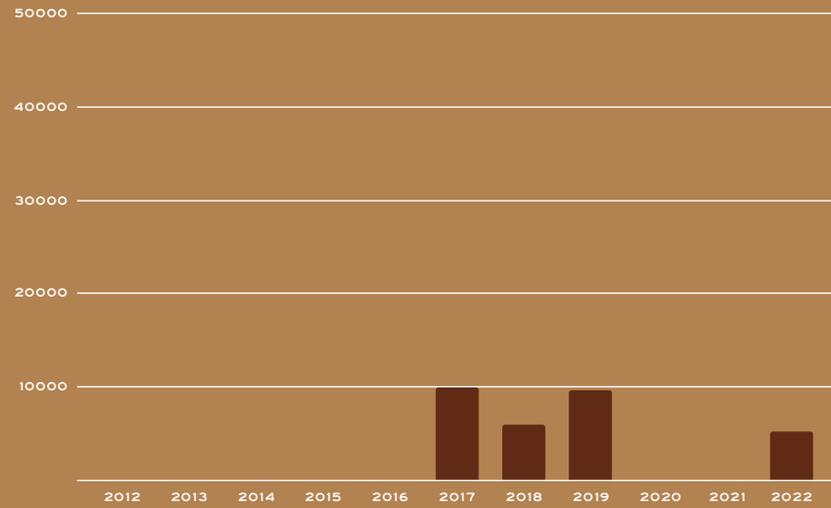
pods are cracked on an angle iron embedded in a block of wood, and tossed onto a mesh bed. Next, someone at the mesh bed scoops the beans from each pod and collects them in buckets, from which they are poured into fermentation boxes. Wilfred then ferments the beans in a five-tiered fermentation setup, after which they are moved into a greenhouse-enclosed drying facility outfitted with mobile racks small enough for all of the beans to be turned by hand. By hand-turning beans rather than raking them, workers can see and remove any imperfect beans, so only the best beans are bagged and sent to customers.

Every step of Hacienda Azul's process is performed with care and attention, similarly to how we make chocolate at Dandelion. Consistent, high-quality beans become consistent, high-quality chocolate. It is invigorating to work with people who share our commitment to crafting an outstanding product, and we hope you enjoy the results in the bars we make.

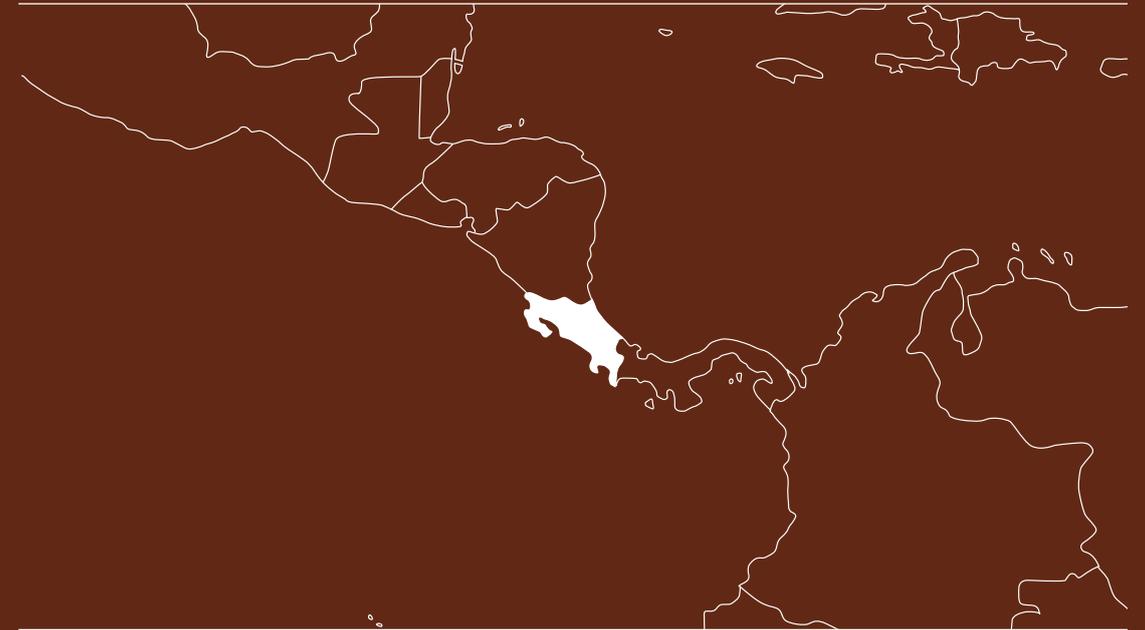
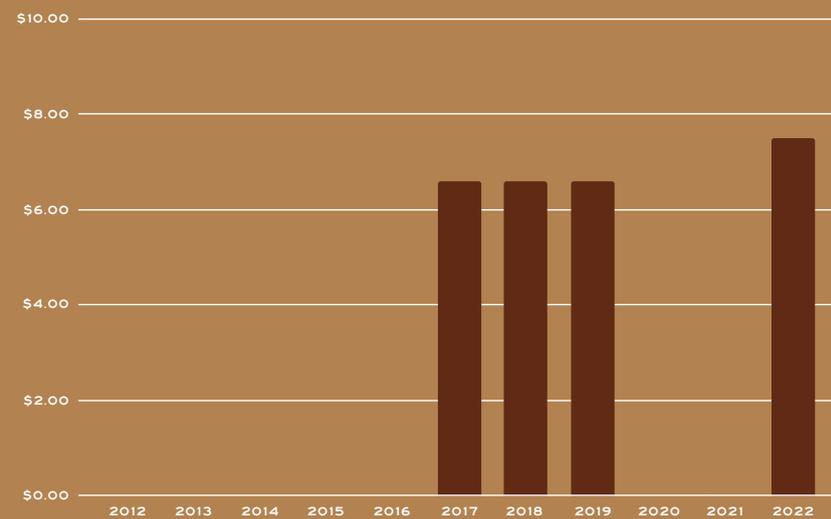


HACIENDA AZUL, COSTA RICA

Quantity Purchased (in Kilograms)



Average Price per Kilogram



9°57'46.1"N 83°37'08.5"W

FERMENTATION STYLE | 3-TIER BOXES

DRYING STYLE | RAISED MESH BEDS, GREENHOUSE

PROFILE BY | ERIC (U.S.A.) & MARIKO (JAPAN)

FLAVOR NOTES | CHOCOLATE ICE CREAM, MARSHMALLOW, PISTACHIO



HACIENDA AZUL ESTATE
GROWS, FERMENTS, & DRIES BEANS



EXPORT BY
BUENA NOTA IMPORTS



IMPORT BY
BUENA NOTA IMPORTS

Percentage of total beans purchased from all producers over 2021 & 2022

2.8%



KOKOA KAMILI, TANZANIA

Brian LoBue and Simran Bindra of Kokoa Kamili have built a successful cacao business in the remote Kilombero region of Tanzania, while learning from industry colleagues and seeking to improve conditions for everyone in the value chain. Kokoa Kamili works with over 5,000 Tanzanian farmers, buying wet beans, then fermenting and drying them in a centralized facility. By consistently controlling and enhancing quality in this way, they produce an outstanding cocoa bean, are able to garner a premium price, and are a large supplier of specialty cocoa to the global craft-chocolate market. Kokoa Kamili invests the same degree of care and thought into their cocoa that we aim to put into our chocolate, making them an ideal Dandelion partner.

We have worked with Kokoa Kamili since 2014, and are inspired by their growth — from shipping their first container, to supplying chocolate makers around the world. To meet the needs of their cocoa operation more effectively, in early 2023 they began planning a new production facility that includes a permanent drying space (as opposed to mobile drying beds), will allow for an increase in capacity, and has a nursery to create more than half a million seedlings to distribute to their farmer network.

Additionally, in 2022 they brought on a full-time agronomist, Annanias, who will, among other projects, build out the team's "mother tree" selection procedure: ensure that the best possible trees are selected for propagation; develop a grafting program for the nursery; and further professionalize Kokoa Kamili's farmer trainings on good agronomic practices.

Kokoa Kamili's production continues to expand with new buyers every year — 2022 being their biggest production year yet — and they recently began

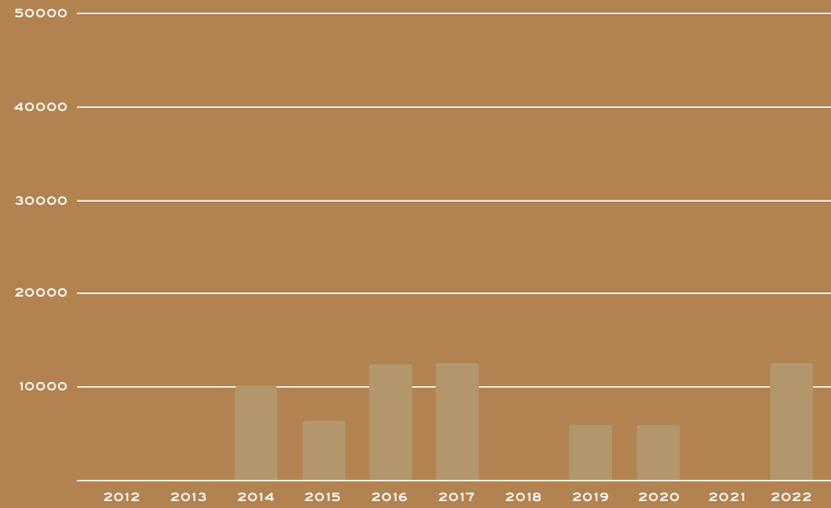
offering cocoa powder and cocoa butter through Meridian Cacao. Despite their production growth, quality remains high and the prices consistent. Kokoa Kamili's bean quality is evidenced by the number of small-scale chocolate makers sourcing from them year after year. The team's continuous learning has also paid off in other ways, earning them a coveted Cocoa of Excellence Award at the 2017 International Cocoa Awards in Paris.

Because we love the Kokoa Kamili team so much, we bring guests to visit them! In 2017, Kokoa Kamili began annually hosting a group from Dandelion Chocolate, composed of our customers, along with the occasional chocolate maker. These trips help people from around the world to learn more about Kokoa Kamili, and allow their team to meet end customers of their product. We find it's a great way to close the loop on a complex supply chain, while learning more about each other along the way.

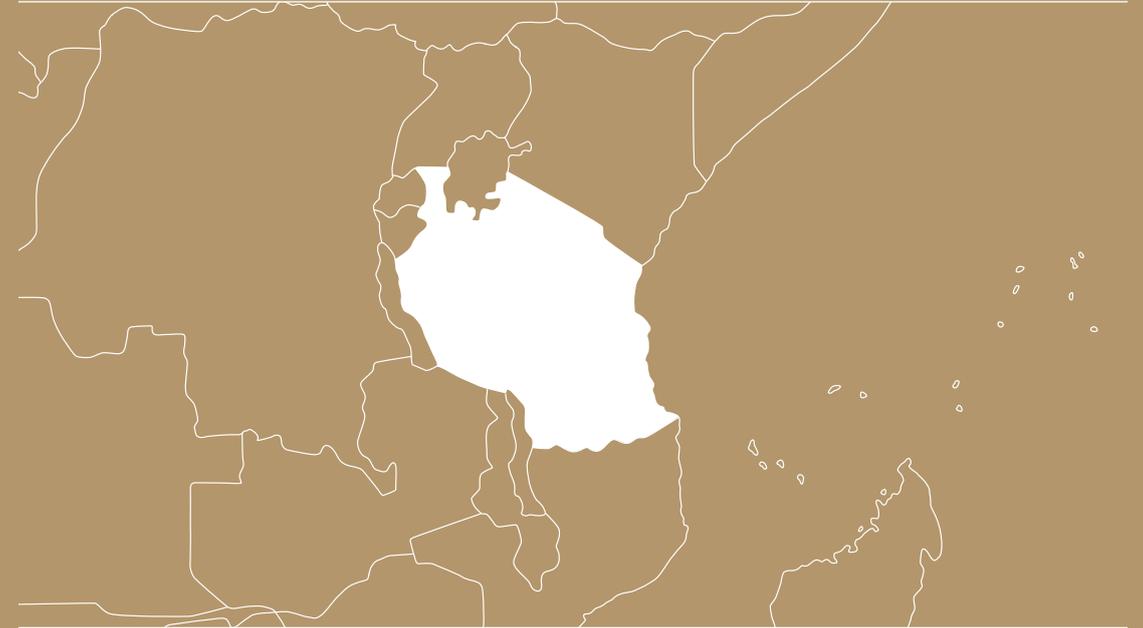
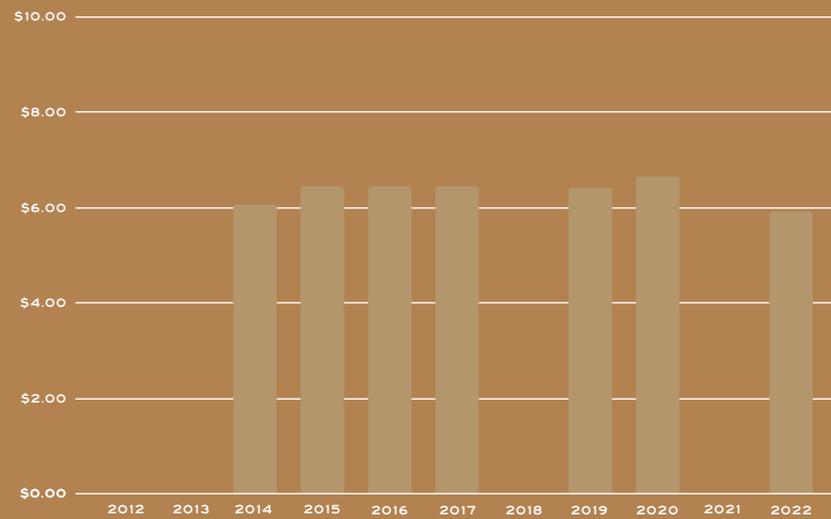


KOKOA KAMILI, TANZANIA

Quantity Purchased (in Kilograms)



Average Price per Kilogram



8°12'11.8"S 36°14'56.5"E

FERMENTATION STYLE | 3-TIER BOXES

DRYING STYLE | RAISED MESH BEDS

PROFILE BY | NATE

FLAVOR NOTES | KIWI, CRÈME FRAÎCHE, HONEYSUCKLE



SMALLHOLDER FARMERS
GROW BEANS



KOKOA KAMILI BUYS, FERMENTS, &
DRIES BEANS



EXPORT BY
KOKOA KAMILI



IMPORT BY
MERIDIAN CACAO

Percentage of total beans purchased from all producers over 2021 & 2022

6.8%



MAYA MOUNTAIN, BELIZE

Maya Mountain Cacao (MMC) is a social enterprise established in order to connect small-scale cacao growers in Belize to the international specialty-cocoa market. Located in Toledo, near the coast, they were the first company in the country to buy wet beans from farmers and emphasize the importance of bean quality. With a centralized fermentary, MMC purchases from family farms in southern Belize, committing to a consistent price throughout the season. MMC is currently buying from 450 farmers who are registered and certified organic — the majority of whom identify as indigenous Q'eqchi' and Mopan Maya. Dandelion has been buying beans from MMC since 2013 and it has been a pleasure to witness their growth and success.

The popularity of craft chocolate generally, and bars made from Belizean cocoa in particular, has been growing for years. Dandelion Chocolate and other makers are producing Belizean bars, so people around the world began paying attention to the tiny amount of cocoa coming out of southern Belize. This led to something of a gold rush. Up until 2016, the only buyers in Toledo were MMC and the Toledo Cacao Growers Association (TCGA). In 2017, six new buyers joined the market, operating with a variety of business models. Still others came along as part of Christian missions and development grants. While competition can be a good thing, in this case it caused a market bubble, driving prices up. At one point in 2017, MMC was paying producers a high of \$4.50 per kilogram dry-weight equivalent for wet beans, in order to compete. If you're familiar with the history of other market bubbles, you can imagine what happened next. Many farmers had sought loans to buy seedlings, etc., hoping to capitalize on the high prices — and when prices crashed, they were left holding the bag.

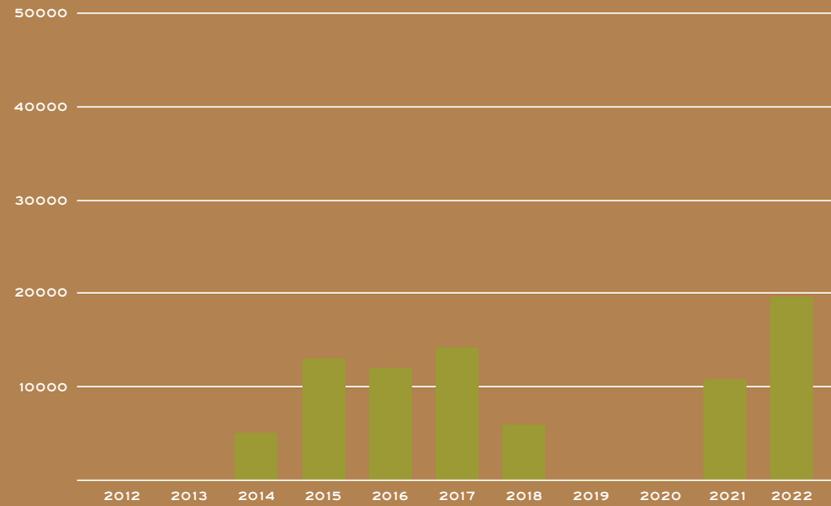
As of 2019, only MMC and two other buyers remain in Belize (TCGA and BCC). There wasn't enough cocoa to support so many businesses, and there wasn't enough demand on the craft chocolate side to buy cocoa at the temporarily inflated prices. While it seems like making more money, even for one year, is a good thing, there is a downside when it sets an incorrect expectation. The money that was spent on expanding cocoa production is not coming back, and the other crops that were ignored need to be tended again. The farmers who took out loans need to pay them back. Today, MMC is paying \$3.13 per kilogram dry-weight equivalent for wet beans. This is still significantly more for wet beans than farmers around the world typically receive for dried beans, but it's lower than what farmers thought they would make. Farmers bore the brunt of the market collapse.

MMC is now buying more beans than before, and they are following through on projects they had started pre-2017, such as a demonstration farm. This farm helps educate producers on best practices and allows them to try out new management techniques such as grafting, or use of different genetics. MMC's post-harvest processing facility is more centrally located and more efficient than it was, making it easier and cheaper for MMC to produce better cocoa, which allows them to buy more. The hard work is paying off: In 2021, for the first time, MMC exported 85 metric tonnes of organic cocoa, and expanded facilities to accommodate the higher production volumes. We are excited to see what the future holds for Maya Mountain Cacao.

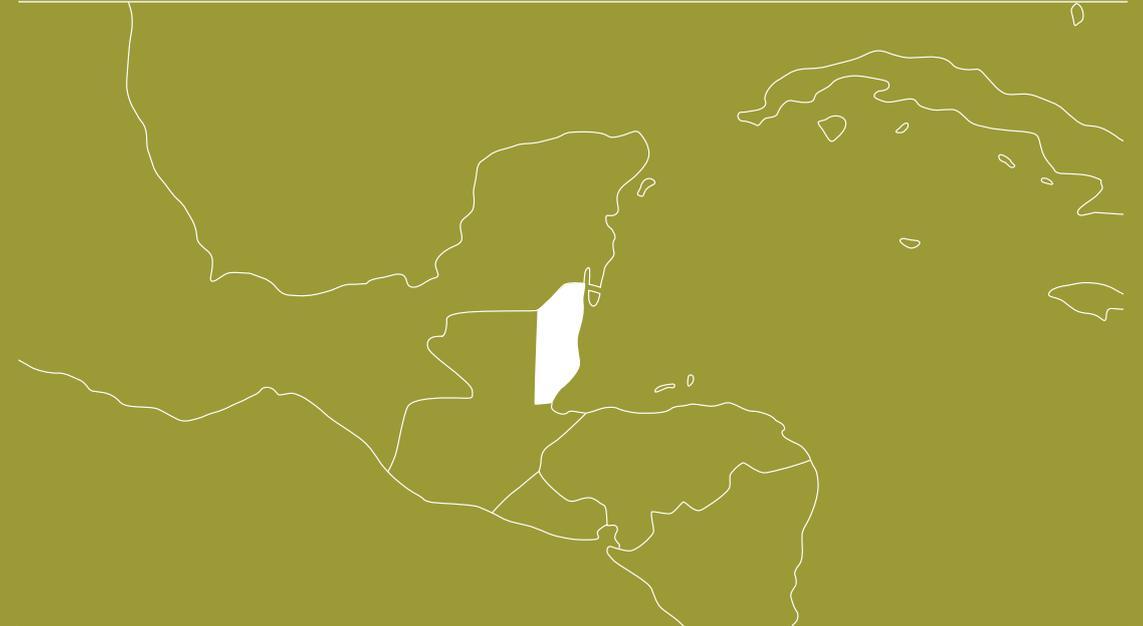
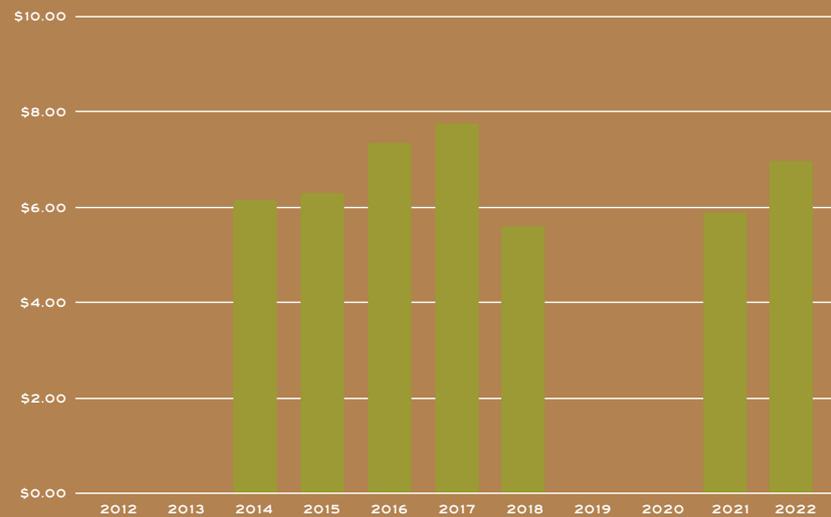


MAYA MOUNTAIN, BELIZE

Quantity Purchased (in Kilograms)



Average Price per Kilogram



16°13'16.2"N 88°55'48.6"W

FERMENTATION STYLE | LINEAR BOXES

DRYING STYLE | RAISED WOODEN BEDS, CEMENT PATIOS, GREENHOUSE

PROFILE BY | TREVOR (U.S.A.) & YUKI (JAPAN)

FLAVOR NOTES | FRESH STRAWBERRY, HONEY, CHEESECAKE


SMALLHOLDER FARMERS
GROW BEANS

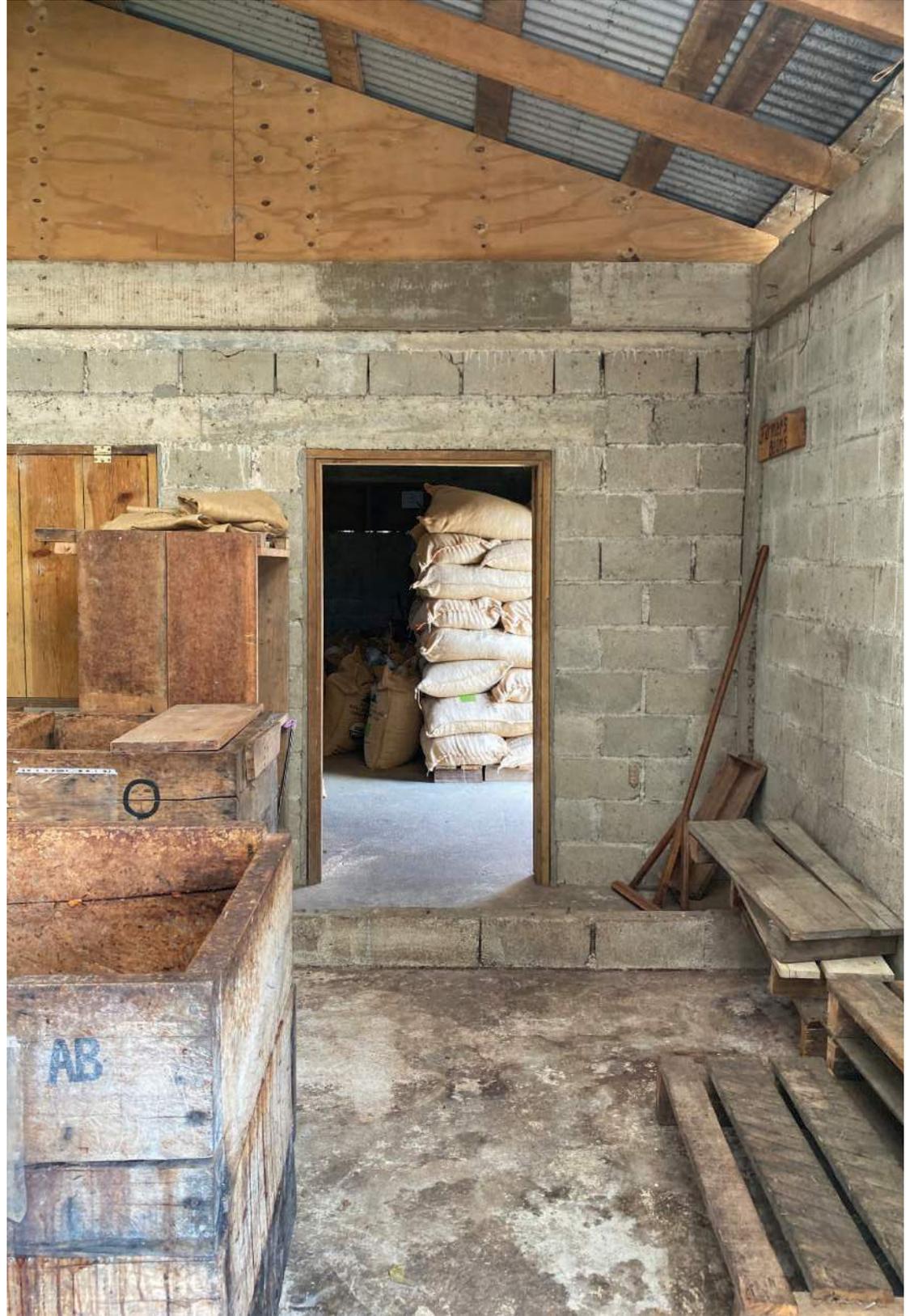

MAYA MOUNTAIN CACAO BUYS,
FERMENTS, & DRIES BEANS


EXPORT BY
MAYA MOUNTAIN CACAO, LTD.


IMPORT BY
UNCOMMON CACAO

Percentage of total beans purchased from all producers over 2021 & 2022

16.6%



MILILANI, HAWAI'I, U.S.A.

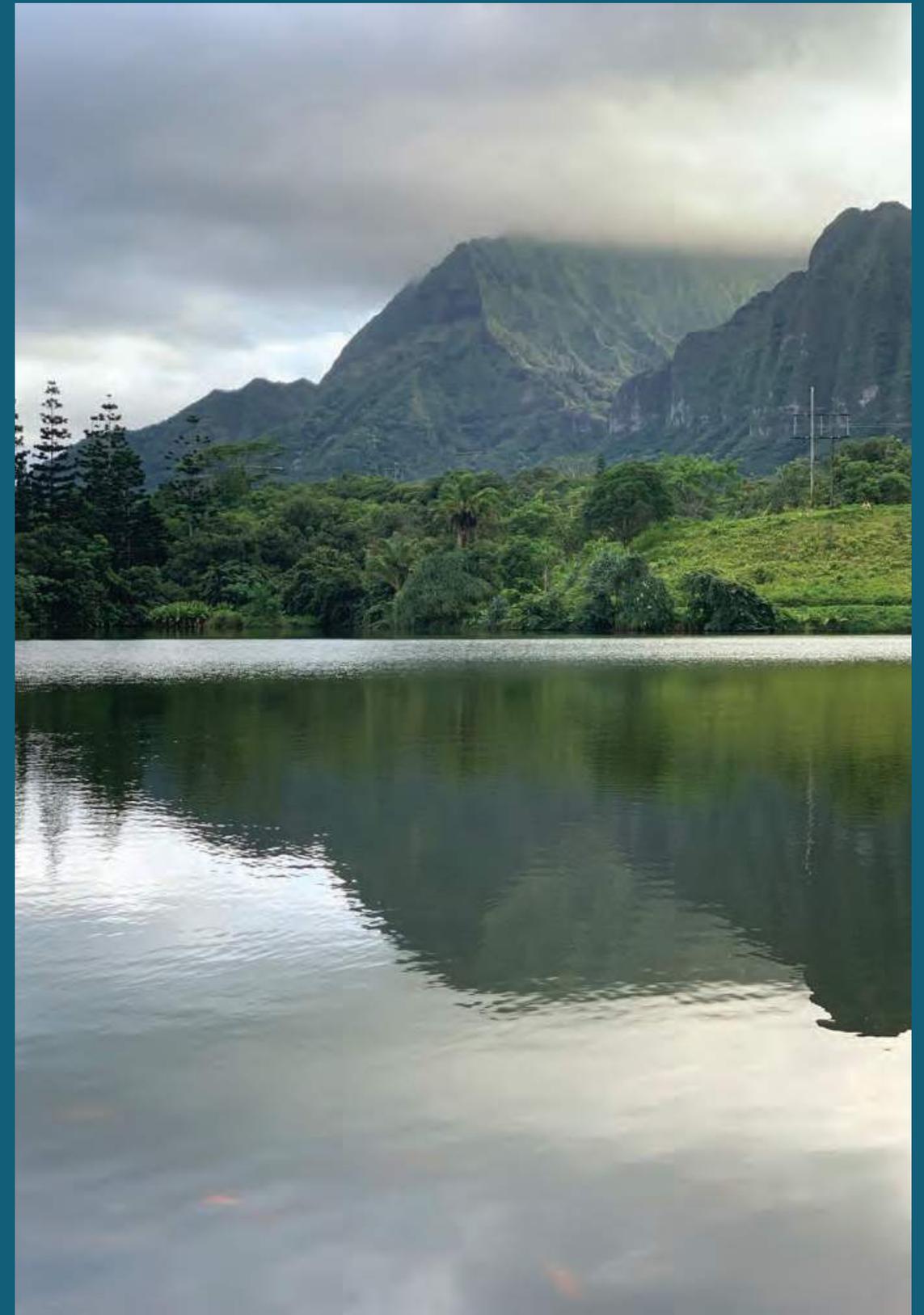
While cacao first came to Hawai'i in the 1830s via agriculturists who saw potential in the Islands' soil and climate, it wasn't cultivated commercially until the late 20th century. Dole Plantations was the first operation to start growing cacao at any sort of scale. Hawai'i is the only U.S. state currently producing cocoa commercially (there are some trees grown mostly for research in a number of other states, including Pennsylvania, Florida, and our very own California).

Greg first visited Hawai'i in 2013 to attend the Hawaii Chocolate and Cacao Association's annual meeting. It was then that he first connected with Dylan Butterbaugh of Mānoa Chocolate, Dan O'Doherty of Cacao Services, and Will Lydgate of Lydgate Farms. The goal was to keep our finger on the pulse of American cocoa and, well, it worked!

Since that first visit, the Hawai'ian cocoa industry has grown significantly. Ten years ago, most of the cacao was grown in small amounts and fermented in small quantities, leading to a roller coaster of flavors (which is not always a good thing). The industry is now large enough that there is a centralized fermentary on O'ahu, run by Ben Fields. What used to be small farms, such as Lydgate Farms, are now fermenting many tonnes per year. There are hundreds of farms spread across Maui, O'ahu, Kaua'i, and of course the Big Island. While it's hard to know exactly how much cocoa is produced in Hawai'i (there is an annual survey, but it relies on people providing information), it is likely in the neighborhood of 100 tonnes per year. That is bigger than the exports from all of Belize. As you might imagine, Hawai'ian cocoa has always been expensive, as the land and labor prices are high, but now the quality has caught up with the price. There are multiple chocolate makers throughout the Islands

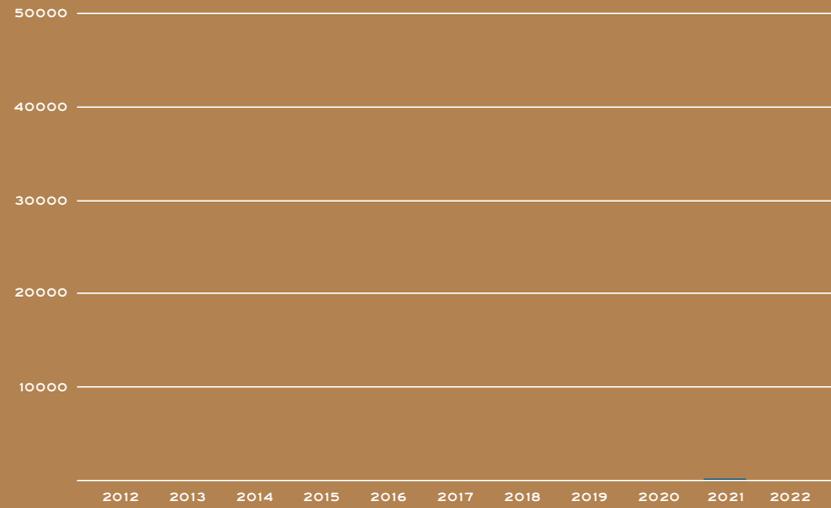
making single-origin bars and winning awards for them!

We first learned of the beans produced by Danny Green in Mililani, in central O'ahu, when trying Mānoa Chocolate's Mililani bar. Danny runs an agriculture business that creates many products, and he's especially keen on cocoa. He's been working with Mānoa Chocolate for years, and 2020 was the first year that he produced more cocoa than Mānoa had the capacity to buy. This is where relationships come in; Dylan knew whom to get in touch with to help Danny sell the rest of his harvest. We were grateful and honored that Danny would work with us. His farm, in central O'ahu, is perfectly laid out with precise attention to detail. His trees have only been productive for a few years, but he's already produced some incredibly interesting beans that have made some terrifically tasty chocolate. While we don't know if Danny will always have enough beans to sell us, we're happy to be able to try our hand with this 2020 harvest, and are interested to see what comes next!

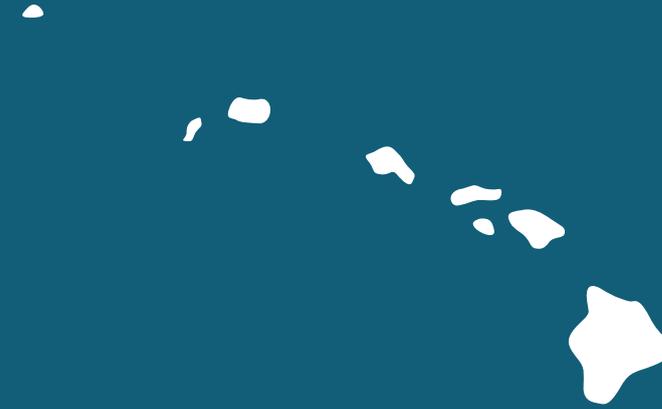
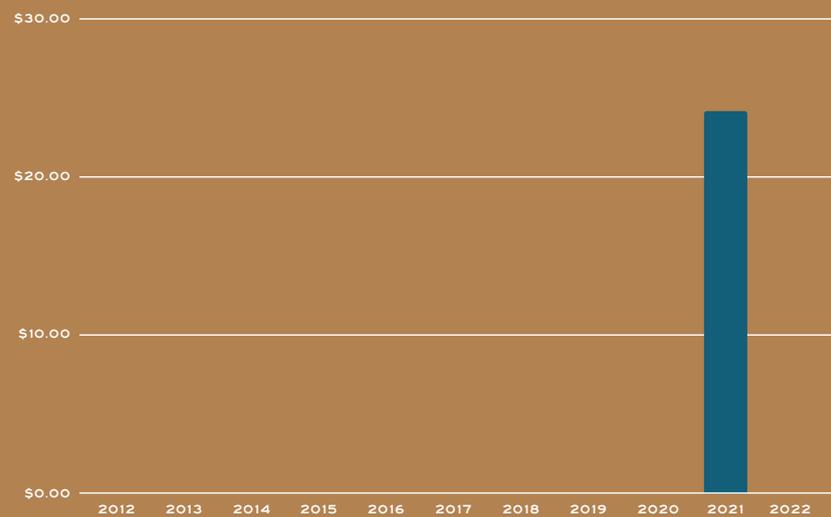


MILILANI, HAWAI'I, U.S.A.

Quantity Purchased (in Kilograms)



Average Price per Kilogram



21.4513°N 158.0153°W

FERMENTATION STYLE | LINEAR BOXES

DRYING STYLE | RAISED MESH BEDS, GREENHOUSE

PROFILE BY | NATE

FLAVOR NOTES | LILIKOI, VANILLA, MILK BREAD

GREEN FARMS HAWAII ESTATE
GROWS, FERMENTS & DRIES BEANS

EXPORT BY
GREEN FARMS HAWAII

IMPORT BY
DANDELION CHOCOLATE

Percentage of total beans purchased from all producers over 2021 & 2022

0.1%



RANSIKI, INDONESIA

Located on the eastern side of West Papua near the town of Manokwari, Ransiki is a small village with an interesting history. What started as a massive corporate farm has transformed into an independent project, driving income and entrepreneurship in the surrounding community.

West Papua is a province on the western, Indonesian half of New Guinea, the second-largest island in the world. (The island's eastern half, and its smaller offshore islands, comprise the separate country of Papua New Guinea).

Indonesia is an incredibly diverse country both in terms of its people and culture, and its nature. In March 2019, the Indonesian government established West Papua as Indonesia's first Conservation Province. Legislation protects the marine and terrestrial ecosystems, promotes sustainable jobs, and recognizes the rights of the region's indigenous people. The village of Ransiki lies in the area of the Arfak mountain range, home of a bird newly identified in 2018 as a unique species — the Vogelkop superb bird-of-paradise.

In the late 1970s and early '80s, a number of remote but massive commercial cacao farms were established around the world. One example, in Belize, was Hummingbird Hershey — now an independent operation known as Xibun River Estate. For a number of reasons, Hershey was unable to make the farm work, and it was eventually purchased by a Malaysian business. That business then went bankrupt, and the 1,668-hectare farm lay fallow for years, until the local community began to harvest cacao from trees that were untended but productive.

A similar progression occurred in Indonesia. In 1979, the British Commonwealth Development Corporation (CDC) created a farm of almost 1800

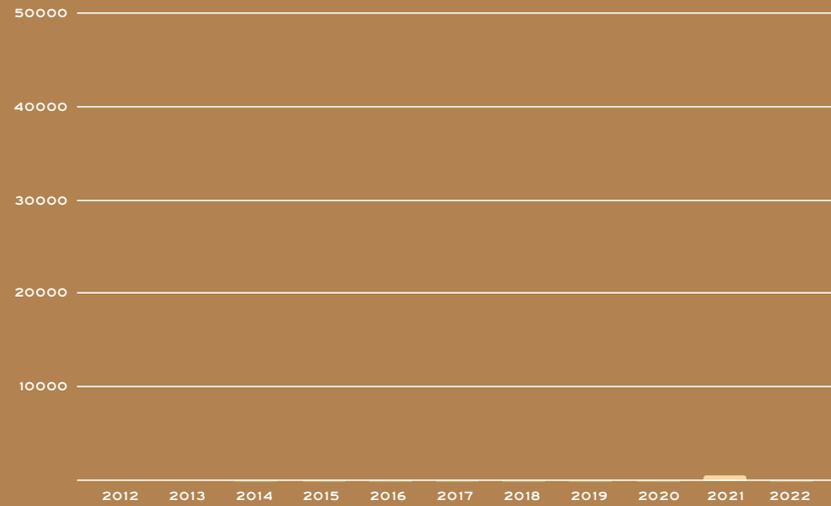
hectares in Ransiki. At its peak, the farm covered around 1,785 hectares of land and produced over 2,000 tonnes of cocoa. However, after a series of ownership changes and lack of investment, the farm was significantly downsized. In 2017 the cocoa cooperative Eiber Suth — which translates to “Unity to Arise” — was established, and currently employs around 200 local Papuans. They've rehabilitated approximately 200 of the original farm's 1,785 hectares, and plan to tackle another 1000 hectares as resources are available. In 2019 a collaboration was formed between the cooperative members, the West Papua Provincial Government, the South Manokwari District Government, and Pipiltin Cocoa, to show how cocoa can empower the local community.

We were first introduced to Ransiki by Dejan Borisavljevic of Biji Kakao Trading. Dejan works with Indonesian cocoa producers to bring their beans to makers around the globe, and Greg visited Ransiki in 2022 to meet the team and begin building a connection. Indonesia is known as one of the largest cocoa producers in the world; we are privileged to work with this tiny corner of the country, where Eiber Suth are focused on rehabilitating land, bringing income to the community, and making some tasty cocoa.

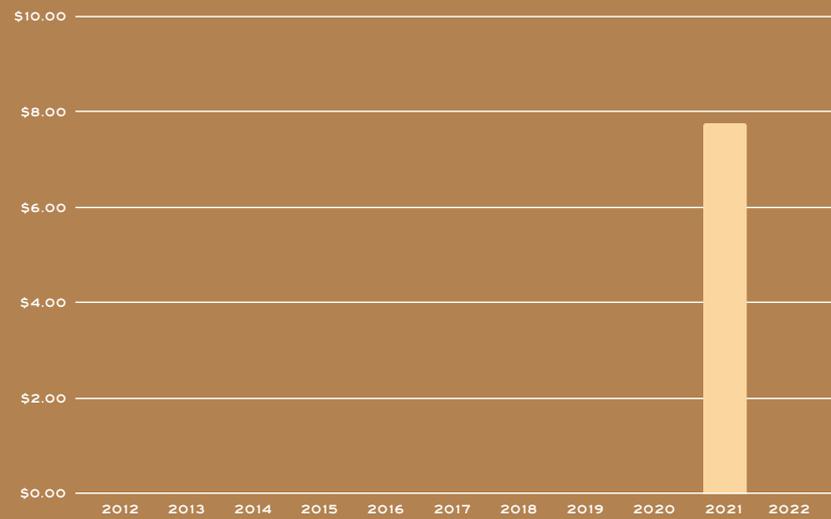


RANSIKI, INDONESIA

Quantity Purchased (in Kilograms)



Average Price per Kilogram



1°30'20.4"S 134°10'36.3"E

FERMENTATION STYLE | LINEAR BOXES

DRYING STYLE | RAISED MESH BEDS, GREENHOUSE

PROFILE BY | N/A

FLAVOR NOTES | N/A



Percentage of total beans purchased from all producers over 2021 & 2022

0.2%

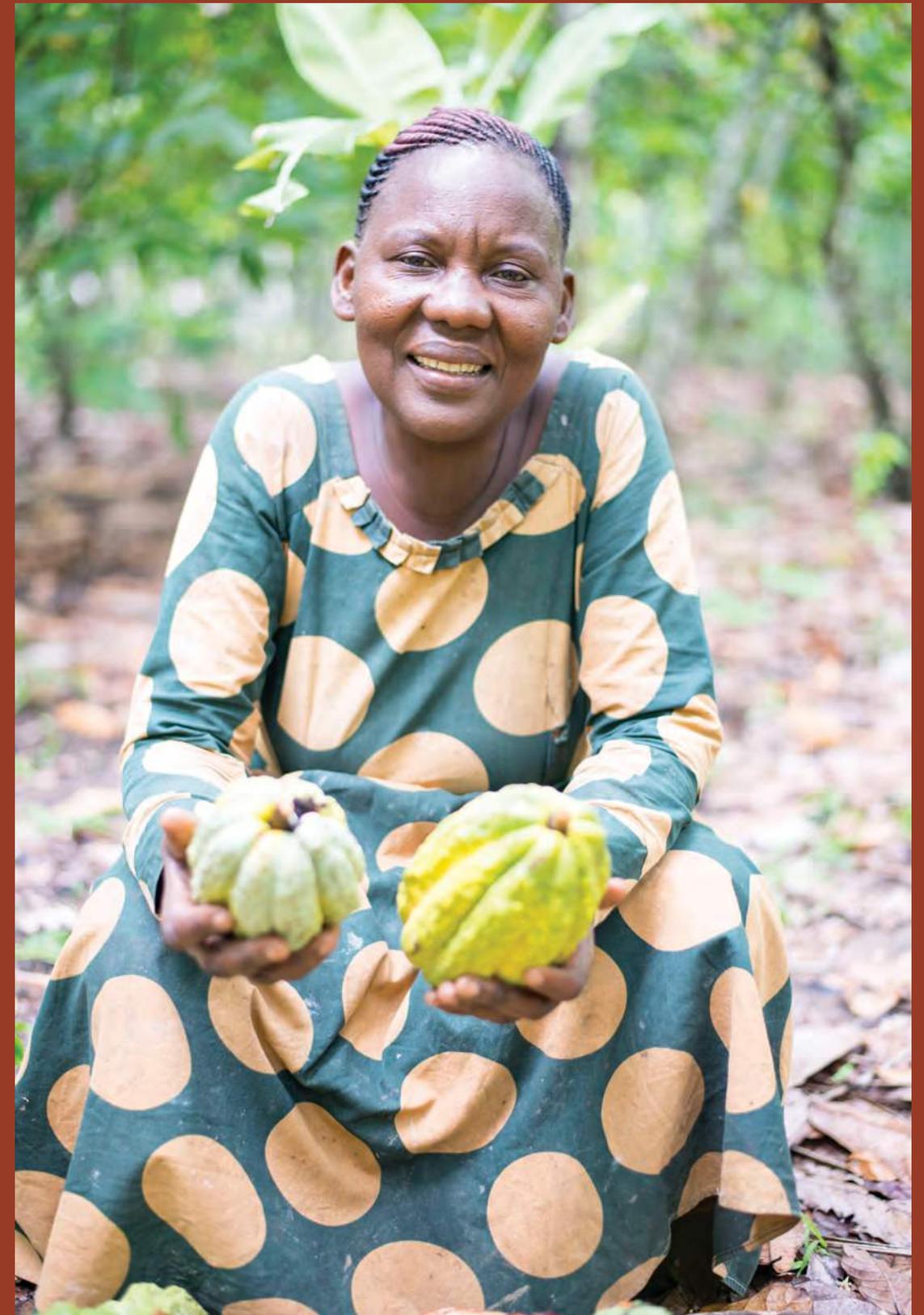


SEMULIKI FOREST, UGANDA

We first met Jeff Steinberg in 2017 when he visited our factory on Valencia Street looking to understand more about specialty cocoa. He had just launched Latitude Trade Company (LTC) as a social enterprise and certified B corporation, collaborating with Ugandan smallholder cocoa producers to bring local products to market, and he wanted to learn more about our industry. Flash forward seven years, and now LTC works with over 4,500 smallholder farmers across Uganda, providing training, microfinancing, and insurance, and pays a premium price for the farmers' cocoa. LTC also offers training to farming households, on topics ranging from organic agronomy to financial literacy.

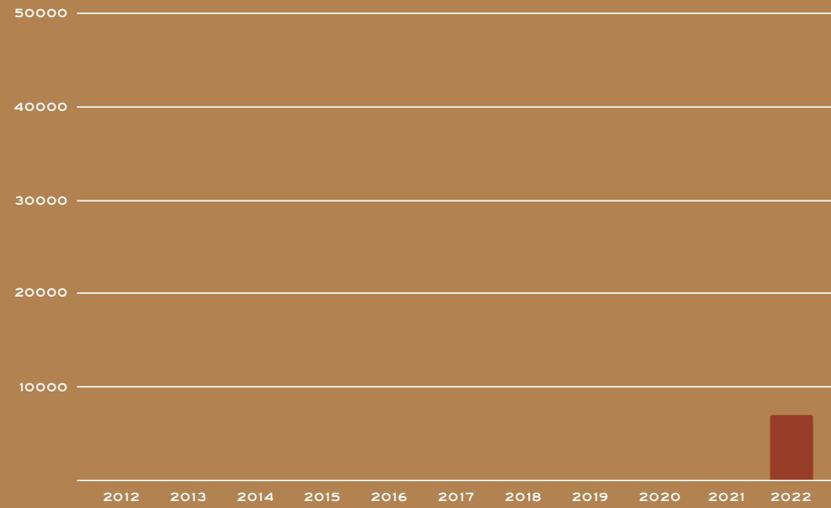
The specific beans we use are cultivated near the town of Bundibugyo in Semuliki Forest, western Uganda, where cacao is grown by roughly 1,000 organically certified regional farmers, of whom 52 percent are women. LTC built a centralized fermentation facility in the village of Bumate, about 4.5 kilometers southeast of Bundibugyo, at the base of the hills leading up into the mountains. This provides the right environment for post-harvest processing, while being in convenient proximity to the farms.

Latitude Trade and their cocoa from Uganda have become a mainstay in the craft-chocolate industry. The beans are used by a number of makers throughout the world, including favorites such as Soma Chocolate Makers in Toronto; Fjak out of Eidfjord, Norway; and Monsoon from Tucson, Arizona. But even once they had good-tasting cocoa, there was one more thing to do: LTC set up their own bean-to-bar chocolate factory and café. The small operation not only brings in additional income, but allows immediate feedback on the flavor and quality of their beans. If you're in Kampala, you should swing by and tell Jeff we said hi!

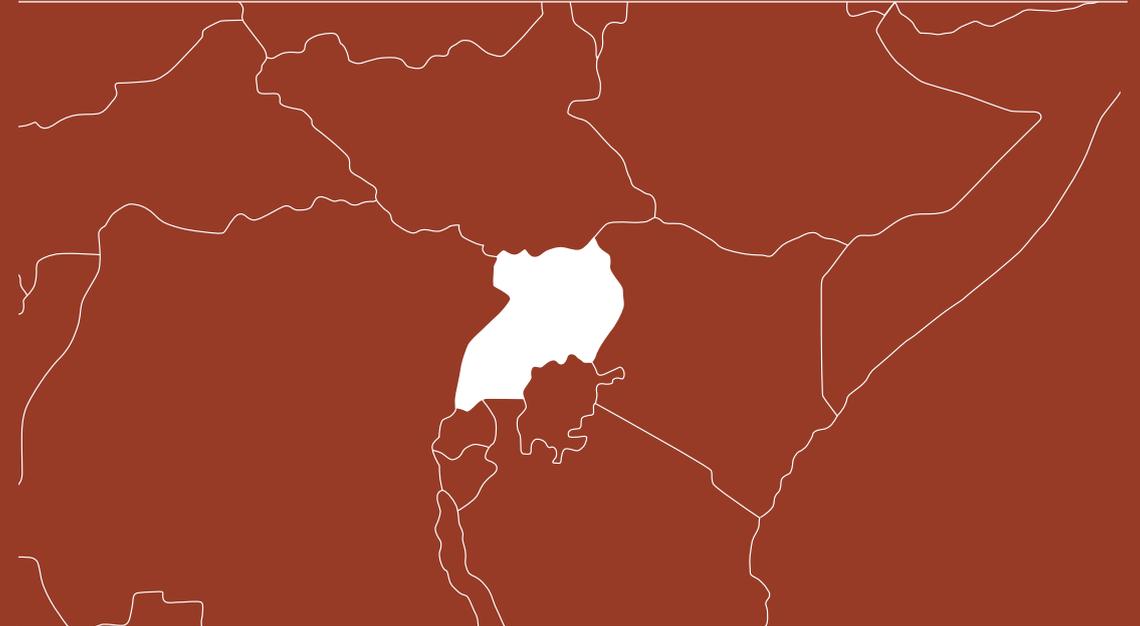
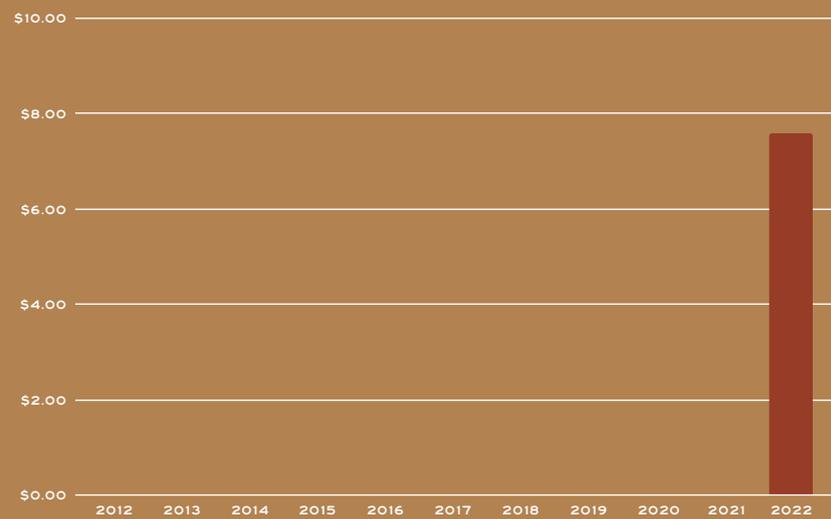


SEMULIKI FOREST, UGANDA

Quantity Purchased (in Kilograms)



Average Price per Kilogram



0° 20' 21.7"N 32° 35' 14.8"E

FERMENTATION STYLE | LINEAR BOXES

DRYING STYLE | RAISED WOODEN BEDS, CEMENT PATIOS, GREENHOUSE

PROFILE BY | TREVOR

FLAVOR NOTES | HONEY MANGO, CRÈME FRAÎCHE, COCOA POWDER


SMALLHOLDER FARMERS
GROW BEANS


LATITUDE TRADE CO BUYS,
FERMENTS, & DRIES BEANS


EXPORT BY
LATITUDE TRADE CO.


IMPORT BY
CACAO LATITUDES FOR
DANDELION CHOCOLATE

Percentage of total beans purchased from all producers over 2021 & 2022

3.8%



TUMACO, COLOMBIA

Cacao Hunters is one of a few Colombian companies sourcing and producing chocolate within Colombia. They represent an ideal partner, as they are open to innovation and experimentation which allows them to produce the best cocoa possible. In Tumaco, Cacao Hunters works passionately with farmers who produce local cultivars in regions where income generation has been difficult due to recent conflict. Owners Carlos Ignacio Velasco and Mayumi Ogata (a former pastry chef) met in Japan in 2009, and have since been devoted to producing high-quality cocoa in challenging parts of Colombia.

One such region, Tumaco, is a lush area famous for coca production — and infamous for the issues accompanying that crop. Other than coca and cacao, regional sources of income are limited to avocado, açai, and chontaduro (a palm fruit).

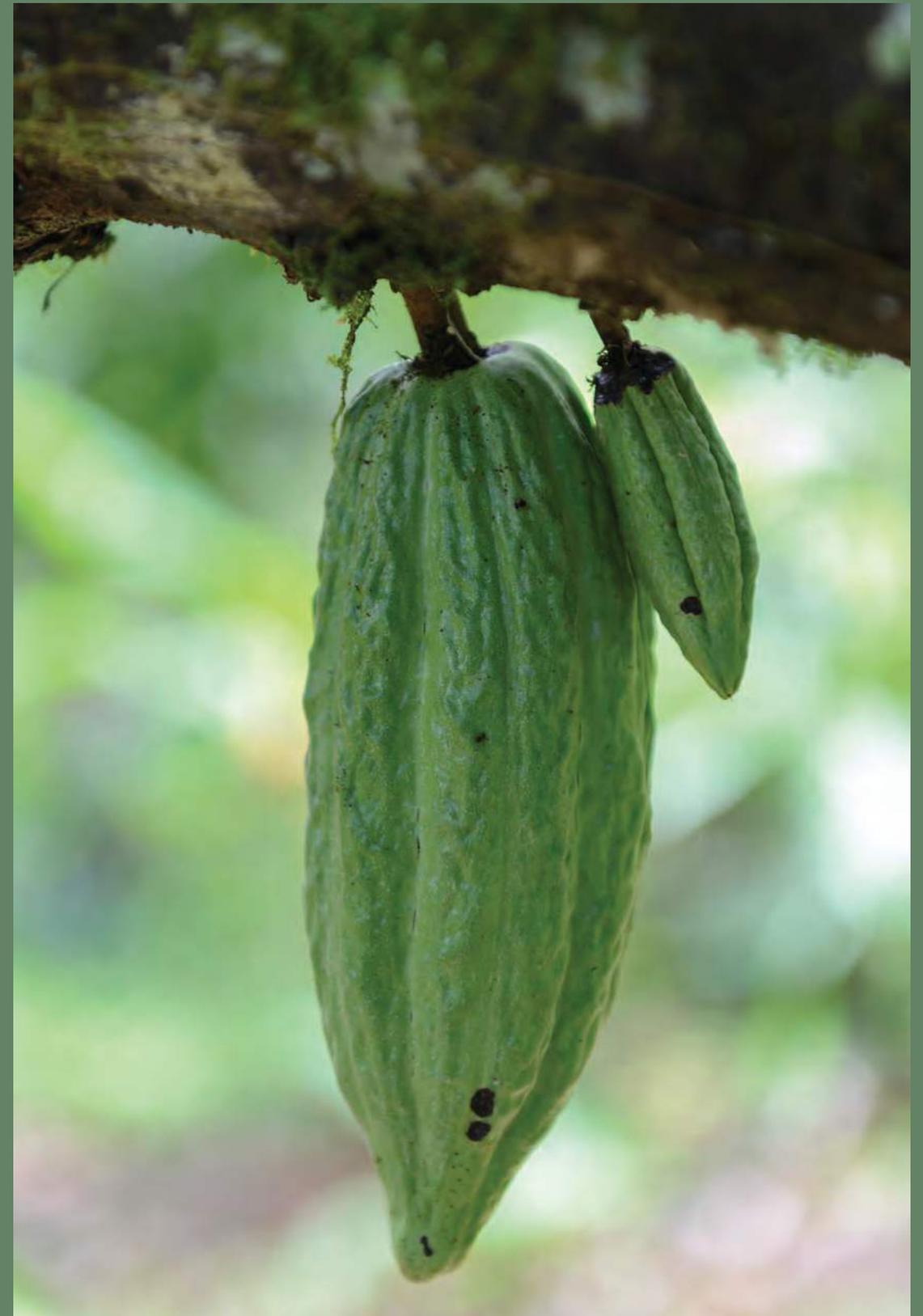
Carlos and Mayumi first traveled to Tumaco in 2011 to evaluate the region's potential for good-quality cocoa, and were shown around by contacts within the U.N. They immediately found that farmers wished to eliminate coca, and were interested in cultivating more cacao (due to this region's history with the species). Older cacao varieties domesticated through the past few centuries had been purchased primarily by Casa Luker at relatively low quality standards, and relatively low prices. Initiatives from various development groups existed, but as they focused on productivity rather than on quality, prices matched supply. Seeing this, Carlos and Mayumi decided to focus on improving post-harvest processing, with quality incentives that could greatly improve options for producers.

Tumaco generates more than 60 percent of the cocoa used by Cacao Hunters for their own chocolate brand, and the business has strong alliances with

local producers, supporting families through higher, more stable prices. Cacao Hunters collaborates with a variety of associations in Tumaco; each association ferments their own cacao, benefitted by help and advice from Cacao Hunters. Additionally, with technical assistance from Cacao Hunters, the State Secretariat for Economic Affairs (SECO), a Swiss aid organization, and the United States Agency for International Development (USAID) helped establish post-harvest infrastructure (fermentation and drying facilities), improving cocoa quality and allowing producers to receive a premium price. The quality improvements have paid off, and Cacao Hunters' products can now be found in the best chocolate shops in major Colombian cities.

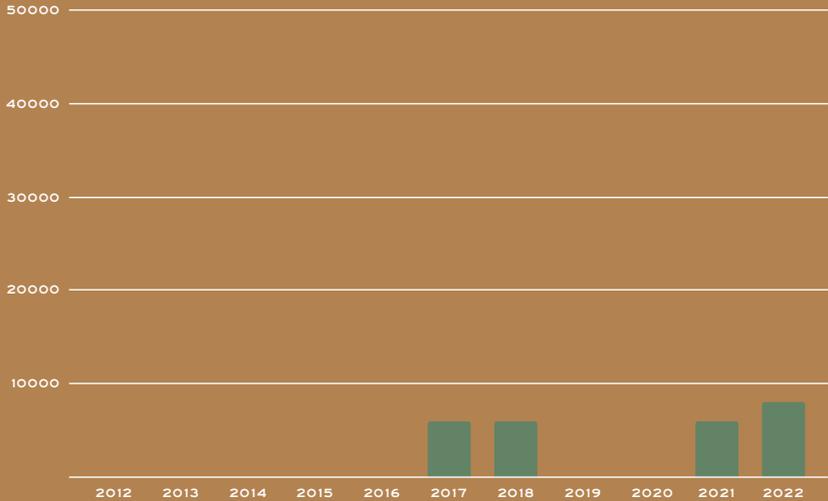
Cacao Hunters is currently seeking ways to invest in Tumaquian producer organizations — through post-harvest-facility investments, working-capital loans, capacity development, and leadership development. In Tumaco, Cacao Hunters' commercial partners are distributed across two Community Councils: Rescate las Varas, and Bajo Mira & Frontera. The councils' base of Afro-Colombian and other farmers have a unique understanding of “cacao baba” (cacao pulp), which is essential for standardizing centralized processing. In 2021, Cacao Hunters added to their supplier network an association called Afromuvaras — 460 women cocoa producers who have made significant investments in improving their cocoa-processing center, and have benefited from various cooperation projects.

Cacao Hunters do not compromise on quality in favor of quantity, and their contributing producers are equally committed to producing excellent cocoa. Our sincere hope is that sustainable production of high-quality cocoa will succeed in this region for many years to come.

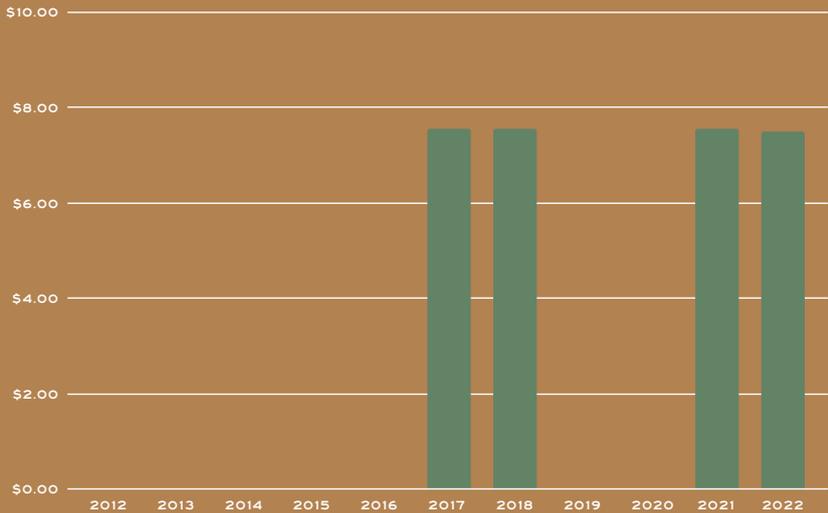


TUMACO, COLOMBIA

Quantity Purchased (in Kilograms)



Average Price per Kilogram



1°40'47.2"N 78°41'03.4"W

FERMENTATION STYLE | LINEAR BOXES

DRYING STYLE | RAISED WOODEN BEDS, GREENHOUSE

PROFILE BY | PABLO

FLAVOR NOTES | DULCE DE LECHE, CHOCOLATE WAFER, ALMOND

SMALLHOLDER FARMERS
GROW BEANS

MULTIPLE CO-OPS FERMENT
& DRY BEANS & CACAO HUNTERS
BLENDS BEANS

EXPORT BY
CACAO HUNTERS

IMPORT BY
UNCOMMON CACAO

Percentage of total beans purchased from all producers over 2021 & 2022

7.6%



WAMPU, HONDURAS

UNESCO recognizes 686 biosphere reserves in 122 countries, including 130 sites in 21 countries in Latin America and the Caribbean. Just across the Patuca River from the village of Wampusirpi (also known as Wampu), the Río Plátano Biosphere Reserve in Gracias a Dios, Honduras measures 832,032 hectares, and is part of the largest remaining Latin American tropical rainforest outside the Amazon. It harbors 130 species of mammals, as well as 36 percent of reptile species, 57 percent of bird species, and 70 percent of the fish species found in Honduras. Ethnic Garifuna, Miskito, Tawahka, and Pech groups live and share in the Reserve; the region is home to approximately 2,000 families who depend upon natural resources for their livelihoods, and for whom local economic opportunities are critically limited.

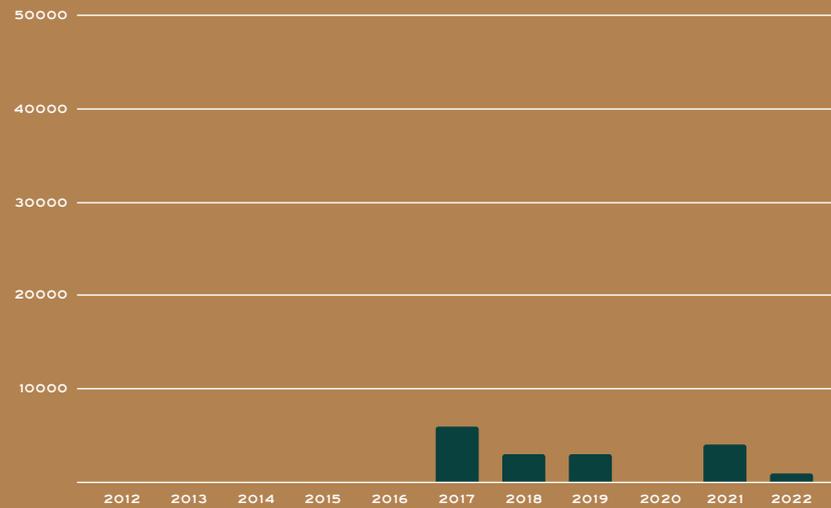
Today, the Reserve faces constant pressure from the threat of illegal logging and subsequent conversion of land to cattle-ranching pasture. Cacao can help. Historical and archeological evidence indicates that cacao has been cultivated in this part of Honduras for hundreds, maybe thousands, of years. In order to produce cocoa suitable for making outstanding chocolate, producers here must overcome substantial challenges. The region is so hot, humid, and remote that not only fermentation and drying, but even transportation, are extremely difficult. To reach Wampusirpi, travelers must either take a tiny, private, four-person plane or drive to Palestina, in Olancho, and spend two days on the Patuca River in a pipante (a kind of hollowed-out log canoe). In this remote place, the team at Cacao Direct have been working since 2014 with approximately 200 Miskito families, providing them with technical assistance, training, information, and tools at cost for planting and maintaining their cacao trees.

The cacao is cultivated organically by individual farmers and families, then fermented and dried at a centralized facility Cacao Direct built in 2015 to ensure consistent quality. Their efforts have paid off: Cacao Direct won the Honduras Cocoa of Excellence Competition in 2016 and 2017, enabling them to use the award's prize money to provide a new roof and windows for the local school. Cacao Direct's success producing award-winning cocoa in Wampusirpi is no small feat. Other international organizations have repeatedly tried to accomplish the same over the years, but none lasted long enough to make a difference in the community.

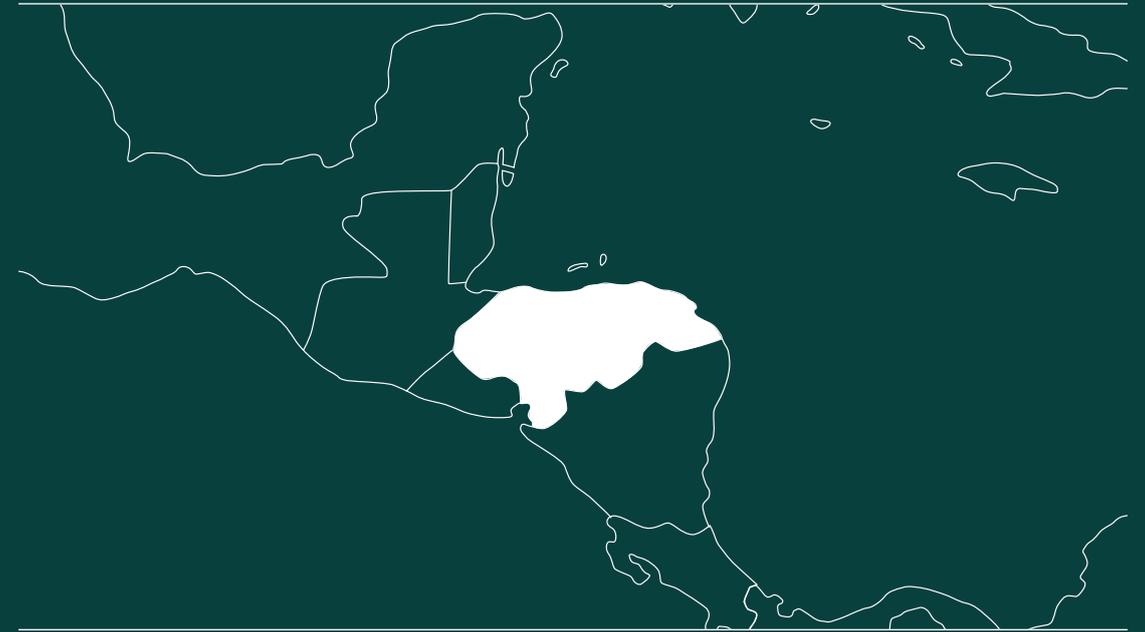
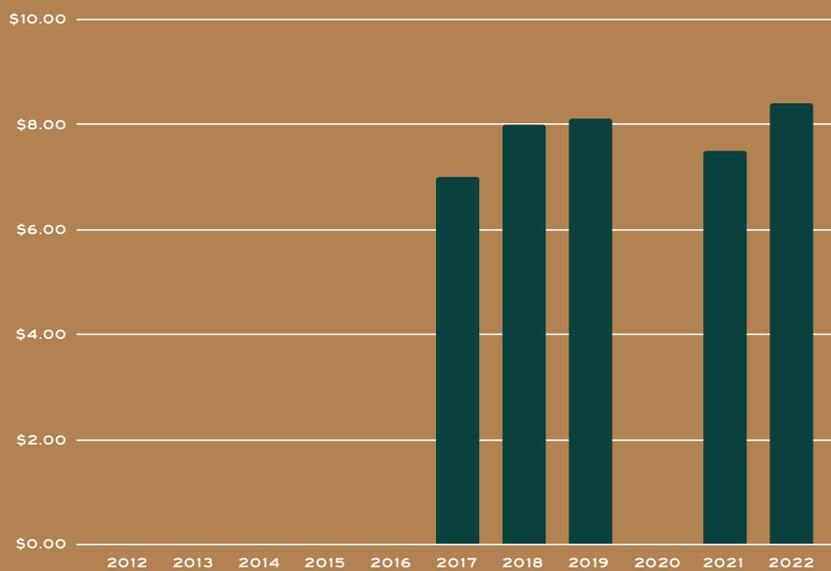


WAMPU, HONDURAS

Quantity Purchased (in Kilograms)



Average Price per Kilogram



15°08'55.7"N 84°37'18.2"W

FERMENTATION STYLE | LINEAR BOXES

DRYING STYLE | RAISED WOODEN BEDS, GREENHOUSE

PROFILE BY | RICHARD (U.S.A.) & SENNA (JAPAN)

FLAVOR NOTES | HOT FUDGE, HAZELNUT, BROWN BUTTER



SMALLHOLDER FARMERS
GROW BEANS



CACAO DIRECT BUYS, FERMENTS,
& DRIES BEANS



EXPORT BY
CACAO DIRECT



IMPORT BY
CACAO DIRECT

Percentage of total beans purchased from all producers over 2021 & 2022

2.7%



ZORZAL CACAO, DOMINICAN REPUBLIC

Dr. Charles (Chuck) Kerchner co-founded Reserva Zorzal and Zorzal Cacao in 2012, hoping to prove that a for-profit business could be a viable, economically sustainable driver of environmental conservation. Chuck and his co-founders (Jamie Phillips, Jesus Moreno, Jaimie Moreno, Angelica Moreno, and Sesar Rodriguez) bought a relatively undeveloped 412-hectare piece of land in the mountains of Duarte Province, Dominican Republic. They divided it into Reserva Zorzal (a bird sanctuary) and Zorzal Estate (a farm) to protect critical habitat while simultaneously growing high-quality cacao. Zorzal Cacao processes and sells Estate-grown cocoa under the name “Zorzal Estate,” and the company also buys and ferments freshly harvested beans from neighboring farms, selling them under the title “Zorzal Comunitario.”

Zorzal Cacao has grown substantially since Chuck first walked into Dandelion’s Valencia Street factory and café in 2013. In Zorzal Cacao’s early days, Chuck used local fermentary Öko Caribe’s infrastructure to ferment Zorzal Estate-grown beans. Then in 2016, Zorzal Cacao built their first post-harvest facility, which allowed them to ferment Zorzal Estate cacao and cacao from surrounding farms on site. In 2018, with an enormous amount of experimentation under their belt, Zorzal Cacao moved their post-harvest processing facilities to a new piece of land better situated for temperature and moisture control during bean drying, and where improved road access makes transport easier. The “fermentorium” is located in Los Arroyos, approximately 10 minutes from San Francisco de Macorís, the bustling epicenter of Dominican Republic’s cocoa production. Also in 2018, Zorzal and Dandelion co-developed an app to

capture Zorzal’s bean-collection, fermentation, and drying data. This information has strengthened their understanding of post-harvest processing variables’ impact on flavor.

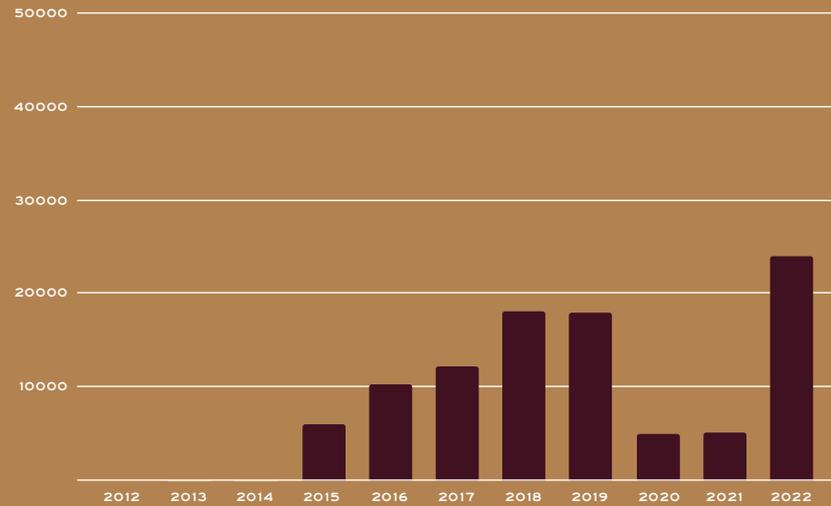
While Zorzal Cacao’s efforts are focused primarily on land preservation and cocoa production, they also address reforestation of the Dominican Republic. Reforestation is implemented through a carbon-offset program, which pays farmers annually to set aside a portion of their land to grow local trees. To fund the program, chocolate makers who buy from Zorzal Cacao are able to purchase \$200 worth of carbon credits for each tonne of cocoa. To date, a total of 80 hectares of trees have been planted through the carbon incentive program, including a portion of land within Reserva Zorzal itself. In total, Zorzal Cacao and partnering organizations have protected 1,238 hectares of threatened rainforest in the northeast Dominican Republic since 2012.

Unlike many of the places we source beans, the Dominican Republic has a thriving national cocoa industry, and Chuck has been able to support staff retention through continual education. Dandelion runs annual customer trips to Zorzal; on these trips, we visit several different cocoa producers, explore Reserva Zorzal, and spend time with the Zorzal team. The best part of working with people around the globe is getting to meet in person, learn from each other, and gain new appreciation and understanding of our shared world.

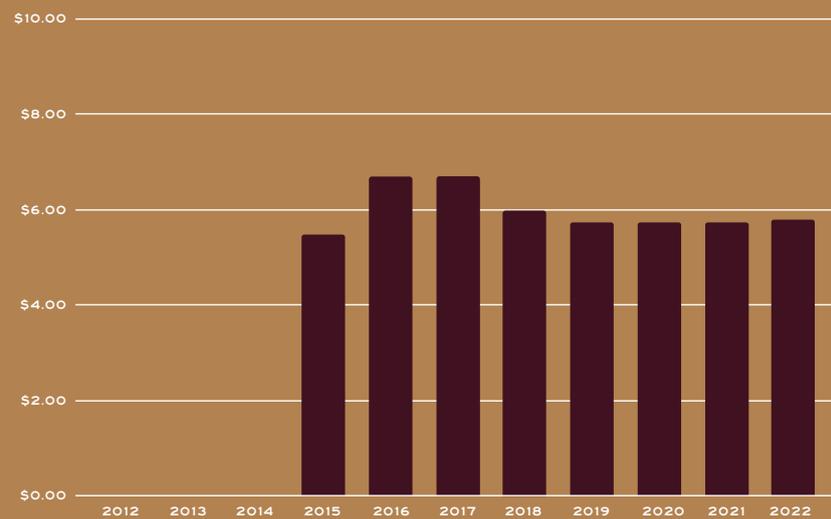


ZORZAL CACAO, DOMINICAN REPUBLIC

Quantity Purchased (in Kilograms)



Average Price per Kilogram



19°21'20.4"N 70°15'53.7"W

FERMENTATION STYLE | 4-TIER BOXES

DRYING STYLE | RAISED MESH BEDS, CEMENT PATIOS, GREENHOUSE

PROFILES BY | TREVOR & RON (U.S.A.)
MARI & MARIKO (JAPAN)

FLAVOR NOTES | CHOCOLATE-COVERED CHERRIES, FRESH MILK, BLACK TEA



ZORZAL CACAO & SMALLHOLDER FARMERS GROW BEANS



ZORZAL CACAO FERMENTS & DRIES BEANS



EXPORT BY CACAO DEL BOSQUE



IMPORT BY DANDELION CHOCOLATE

Percentage of total beans purchased from all producers over 2021 & 2022

15.8%



GLOSSARY

CACAO | COCOA

According to most dictionaries, cacao and cocoa are interchangeable. People often use the word cacao when referring to botany or agriculture; and cocoa for cocoa powder (fermented, dried, roasted, finely crushed beans, with most of the natural fat [cocoa butter] removed); or beans (usually after fermentation and roasting).

We use *cacao* to refer to trees, leaves, pods, and raw (unfermented) seeds; and *cocoa* to refer to fermented seeds, which are a product. The transformation takes place during fermentation, which kills the beans' cotyledons.

CACAO FARMER | PRODUCER

We use the term "cacao farmer" to refer to someone who is involved in the agricultural production of cacao, including planting, growing, and harvesting. Cacao farmers often ferment and dry their own beans, but we would not refer to someone as a cacao farmer if he or she solely *processed* (fermented and dried) beans procured from someone else; we'd call that person a producer.

CENTRALIZED FERMENTARY

A processing facility that collects wet cacao beans from multiple farmers to ferment in one location.

COCOA BEAN | CACAO BEAN

The bitter, purplish seed of the *Theobroma cacao* tree. To make chocolate, the seeds are extracted from the cacao pod after harvest, then fermented and dried before they undergo a chocolate-making process. We call the wet, unfermented seeds *cacao beans*; and the fermented, dried seeds — before and after roasting — *cocoa beans*.

COCOA NIB

Small piece of a cacao seed cotyledon, *after* the seed is fermented, dried, roasted, cracked, and winnowed; the primary ingredient in chocolate.

COOPERATIVE OR CO-OP

An enterprise that is collectively owned and democratically controlled by its members.

The structure is designed to meet the common economic, social, political, and cultural needs of the member population, and often involves sharing resources, materials, and skills.

DRY BEANS

Cocoa beans that have been fermented and dried.

DRY WEIGHT EQUIVALENT (DWE)

A term used to refer to prices of wet beans for what they will eventually be worth as dry beans. Wet beans tend to weigh approximately three times more than dry beans. For instance, if farmers are getting paid \$3/kg DWE, that would mean they are actually getting paid \$1/kg of wet beans, as once a kilogram of beans dries, it will weigh only approximately 0.33 kg.

FERMENTATION

In reference to cocoa beans, fermentation is the process of transforming the compounds within the seeds — usually accomplished by gathering freshly harvested seeds together, typically in a wooden box that may be lined or covered with banana leaves for about three to seven days. During this time, bacteria and yeast transform the sugars in the pulp surrounding the seeds into acids that change the compounds inside the seeds, establishing the precursors to chocolate flavor as we know it. Fermentation has a substantial impact on the final flavor of a cocoa bean.

GRAFT

A small branch of a mother tree that is inserted onto an established seedling or mature tree. It allows clones of a tree to be used to create identical genetics across a farm.

HECTARE

One hectare is approximately 2.5 acres.

HUSK

The fibrous outer shell of the cocoa bean that protects the nib inside. To make chocolate, the husk is removed from the nib before the nibs are ground.

LINEAR BOXES

Fermentation boxes arranged side-by-side at ground level. Beans are shoveled from one box to the other every day or two until fermentation is complete.

METRIC TONNE

1,000 kilograms or 2205 pounds.

ORGANIC

While standards for organic certification differ from country to country, the word generally indicates cultivation practices that are free of pesticides and chemical fertilizers, and usually adhere to high standards of animal husbandry, biodiversity preservation, and minimal waste.

TIERED BOXES

Fermentation boxes arranged vertically, like steps. Beans are rotated from step to step every couple of days.

WET BEANS

Cacao beans, still covered in pulp, that have been harvested and separated from the cocoa pod in preparation for fermentation.



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