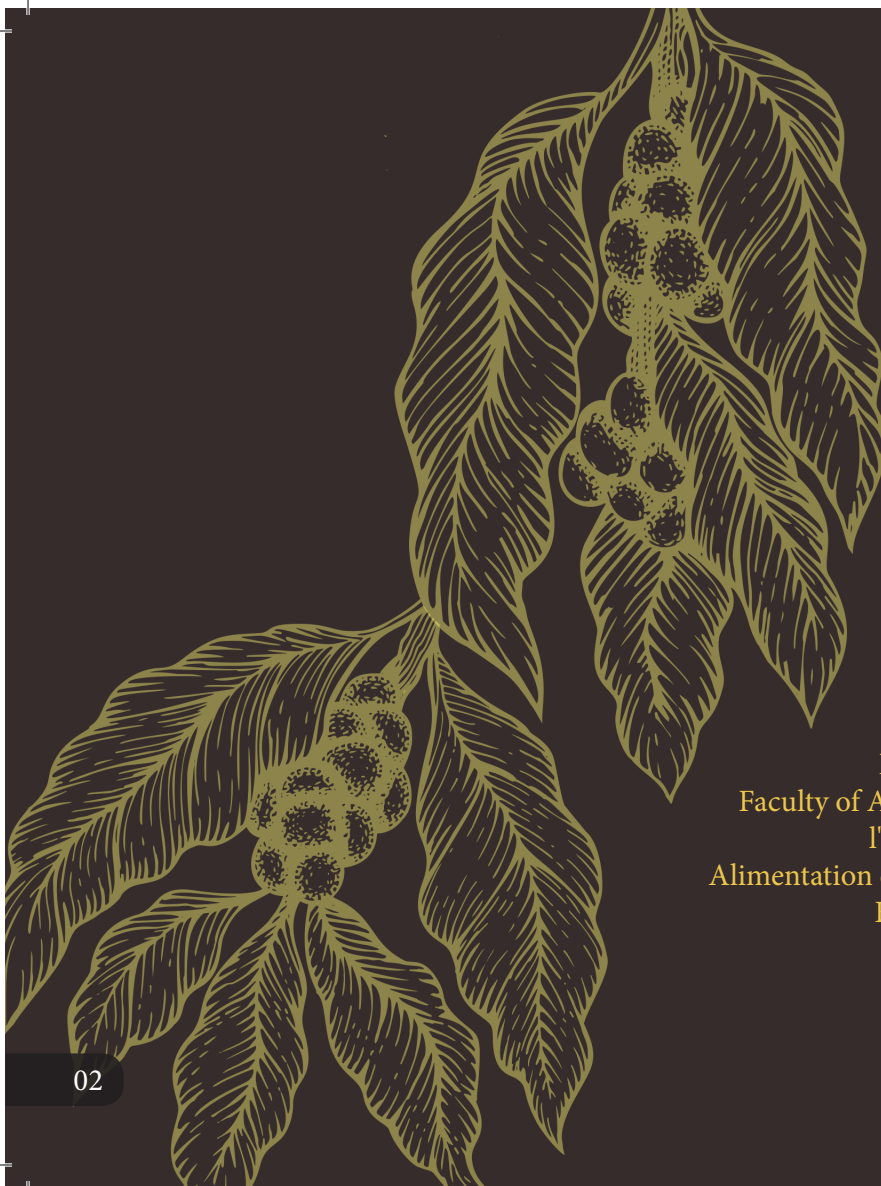




KOPI

a cup of greatness





Adi Nugraha
Abdulrahman Al-Fraih
Raphael Paut
Kasdi Subagyo
Antarjo Dikin
Deden Indra Teja Maya
Agnes Verawaty Silalahi

Published by:
General Directorate of Estate Crops
Indonesian Ministry of Agriculture
in Collaboration with
Department of Agricultural Social Economics,
Faculty of Agriculture, Universitas Padjadjaran, Indonesia
l'Institut National de Recherche en Agriculture,
Alimentation et Environnement, Ecodeveloppement, France
Burgan Agriculture and Food Industry, Kuwait

First ed., March, 2020

coffea sp.

etymology

The word of coffee has many stories behind it.

*It was believed to be firstly known as kaffa, which was based on the place name where coffee was cultivated, Kaffa region of Ethiopia. However, the word 'coffee' itself entered English language in the late 15th century via the Dutch word of 'koffie', borrowed from the Ottoman Turkish word of 'kahve', which was also borrowed from the Arabic 'qahwah'.
in Indonesia, we simply called it 'kopi'.*



FOREWORD

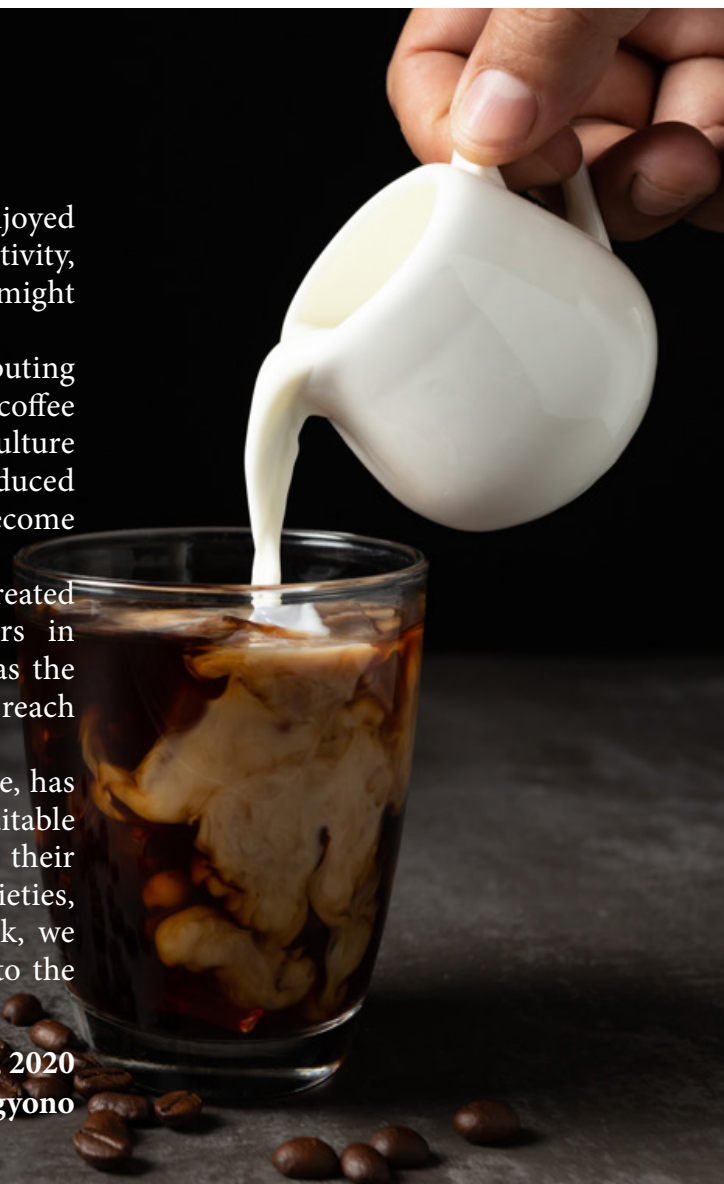
There are many stories behind every cup that we enjoyed every morning, the cup that boosts not only our productivity, but also our mood, brightening our day. The stories that might never been heard by most of us.

The bean has traveled the globe for centuries, contributing to the advancement of human civilization. In Indonesia, coffee has shaped our history in various ways. Enriching our culture and society since the colonial era when it was first introduced to our country, until the present day, where coffee has become indispensable to our daily life.

International and domestic market growth has created opportunities and challenges for all involved actors in Indonesia's coffee agribusiness system. It is our duty as the government to help our coffee community to grow and reach their potential.

Locating in the ring of fire along the equatorial line, has blessed Indonesia with rich mountain areas which are suitable for coffee growing. Each area is producing coffees with their own characteristics, enriching Indonesian coffee varieties, bringing its own uniqueness to each cup. In this book, we would like to share some stories of Indonesian coffee to the world.

Jakarta, 2020
Dr. Kasdi Subagyo



CONTENT



1

Coffee 101

2

Coffee: **the Motor of Civilization**

3

Indonesia & Coffee

4

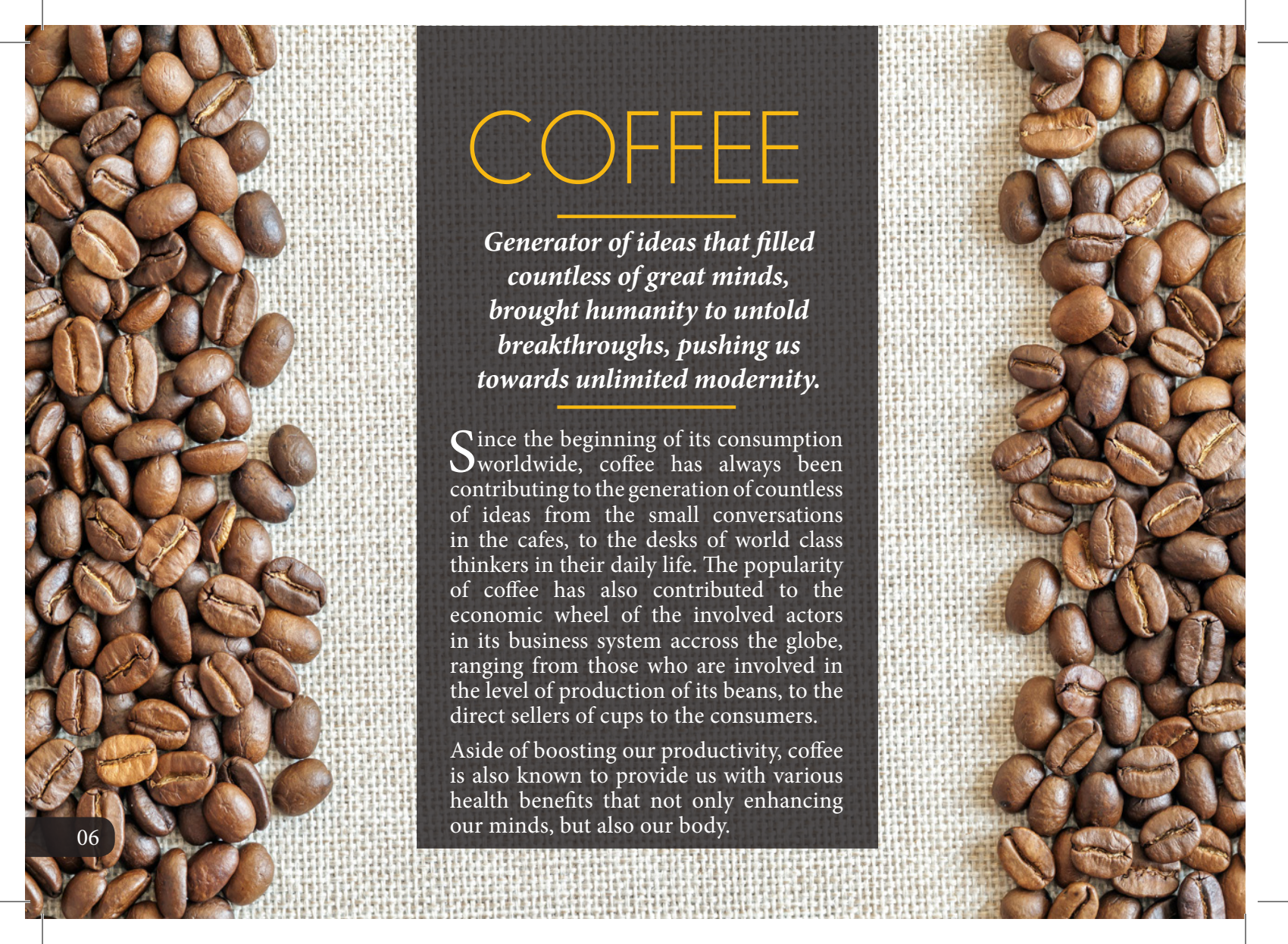
Indonesian Coffee: **Undisputed Authenticity**

5

From Seeds to Cup

6

Brew Your Own



COFFEE

*Generator of ideas that filled
countless of great minds,
brought humanity to untold
breakthroughs, pushing us
towards unlimited modernity.*

Since the beginning of its consumption worldwide, coffee has always been contributing to the generation of countless of ideas from the small conversations in the cafes, to the desks of world class thinkers in their daily life. The popularity of coffee has also contributed to the economic wheel of the involved actors in its business system across the globe, ranging from those who are involved in the level of production of its beans, to the direct sellers of cups to the consumers.

Aside of boosting our productivity, coffee is also known to provide us with various health benefits that not only enhancing our minds, but also our body.

01

Coffee 101

07

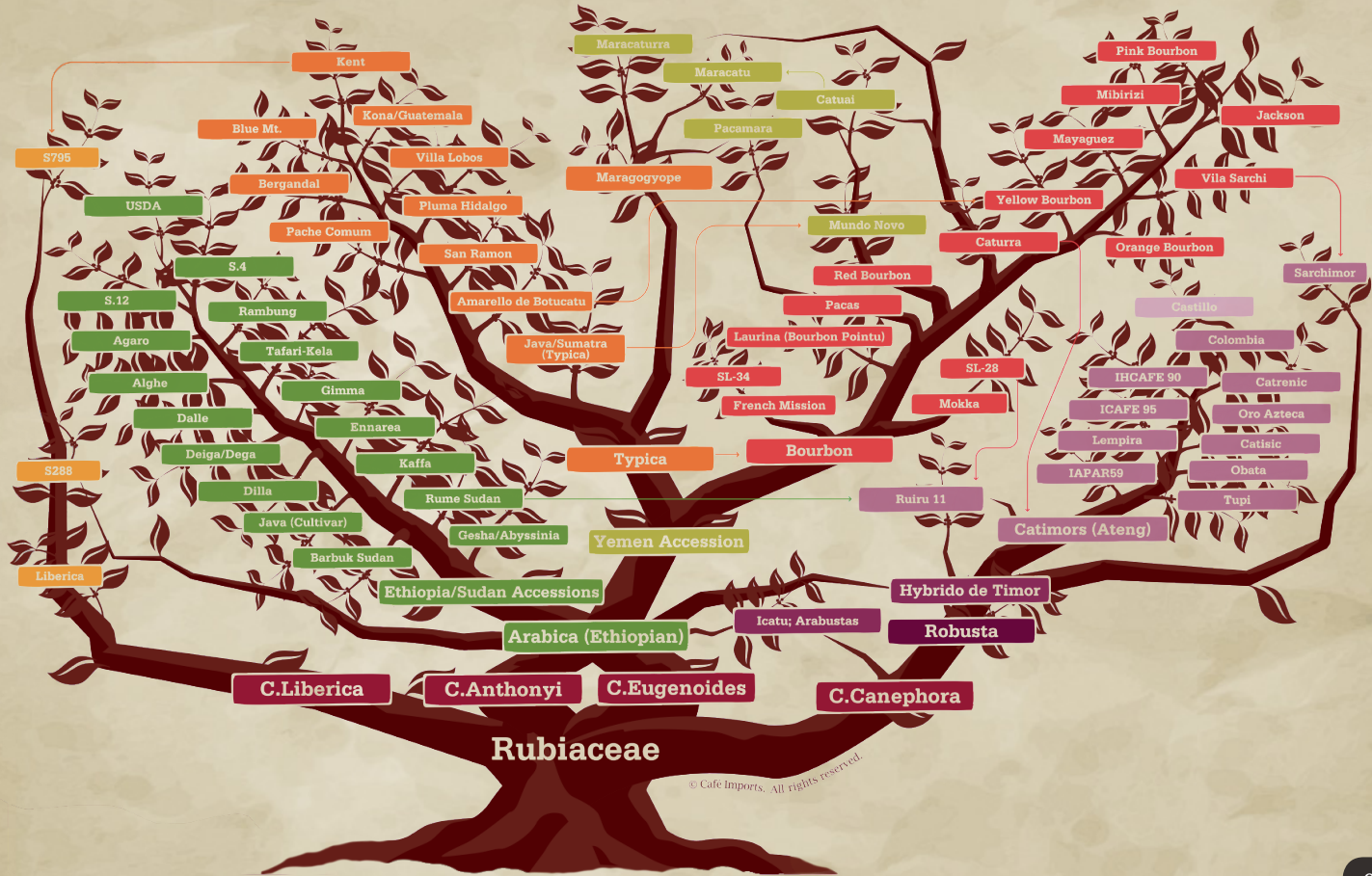


classification | *coffea sp.*

Coffee is one of the *Rubiaceae* family, one of the largest plant family in the world, which consists of more than 500 genera and 6,500 species. *Coffea sp.* is one of the genus which consists of 25 species. This genus is physically characterized by medium sized dark green leaves, producing white flowers that turned to yellow or red ripe cherries. The number of seeds produced are mostly dycotyl (90%), only 10% are monocotyl. This monocotyl seed is known as peaberry coffee.

Coffee plant is originated from Kaffa region of Ethiopia, Africa. Today, this plant is globally planted in many equatorial regions such as Central America, South America, Africa, South East Asia. The plantation covers more than 70 countries worldwide.

Species Tree of Coffee





species

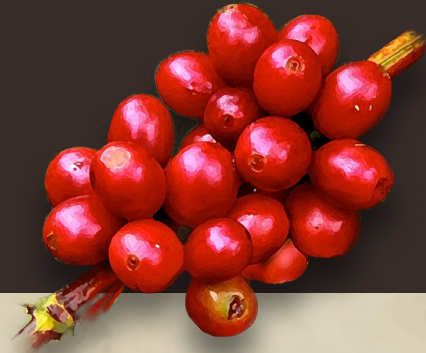
There are around 120 species of coffee worldwide, but only 3 that are popular enough to be commercially grown today: Arabica, Robusta, and Liberica. All of them have distinct characteristics, which comprise its plant morphology, environmental suitability to grow, which also determines their fruits and beans characteristics. These also leads to different productivity and even their capacity to resist some pests and disease.

These species also have different environmental requirements to be grown optimally. Today, the most resistant disease and productive species is Robusta, with Liberica in the second place, followed by Arabica. However, Arabica has its own uniqueness that made it more suitable for a premium market.



- Native Area: Tropical
- Ideal Temperature: 14°- 24° C
- Light Intensity: Bright, indirect light
- Humidity: High
- Soil pH: 5.5-6.5
- Altitude: 800-2000+ m asl
- Soil Type: Rich and moist
- First Productive Age: 2-3 Years
- Economic Life Span: 25-30 Years
- Known Diseases: Leaf rust, pink disease, leaf spot, stem canker
- Known Pests: Nematodes, green and brown scales, mealybugs, berry borer, twig borer

ARABICA (*coffea arabica*)



Arabica is the first known cultivated species in the world. It is recorded that the first arabica cultivation evidence is found in Yemen sometime around the 14th century. This species is more prone to pests and diseases. The tree can grow up to 9 meters tall in the wild. However, in the plantation the average height is 1.5 meters to make harvesting process easier. It produce white flower and the overall size of leaf is smaller compared to other varieties. Arabica is currently the most traded species globally, counting around 60% of the worlds coffee market. This species is known for its wide array of taste, flavour and aroma.

ROBUSTA (*coffea canephora*)



Robusta is the first wild species found in the world. It was found in the Kaffa region of Ethiopia, Africa. This species are known for its robustness against pests, diseases, and harsh environment. This species is also known for its high productivity. Taste wise, it is characterized by strong body and more bitterness due to its high caffeine content (around 40% more than arabica). Its strong flavour made Robusta as an excellent base for coffee based beverages. This variety covers 30% of coffee trade in the global market.



Native Area: Tropical

Ideal Temperature: 23°-30° C

Light Intensity: Light shading

Humidity: High

Soil pH: pH (5,5-6,5)

Altitude: 500 - 1000 m asl

Soil Type: Rich

First Productive Age: 3 Years

Economic Life Span: 25-30 Years

Known Diseases: Leaf rust, pink disease, leaf spot, stem canker

Known Pests: Nematodes, green and brown scales, mealybugs, berry borer, twig borer



Native Area: Tropical
Ideal Temperature: 18° - 28° C
Light Intensity: Light shading
Humidity: High
Soil pH: 4-6.5
Altitude: 600 - 1200 m asl
Soil Type: Sandy loam, clays
First Productive Age: 3 Years
Economic Life Span: 25-30 Years
Known Diseases: Leaf rust, leaf falling, pink disease
Known Pests: Beehawk moth, berry borer insects, nematodes.

LIBERICA *(coffea liberica)*



Liberica is originated from the Western and Central regions of Africa, as its name was adapted from its first discovery in Liberia. This variety has been naturalised in other regions worldwide such as Polynesia, Central America, and South East Asia. This species is also known to have resistance against pests, diseases and can survive in a harsh environment and even bad soil condition. Liberica is rarely traded globally, covering only around 2% of the world's coffee market. Most of Liberica is grown in Indonesia, Malaysia and The Philippines.

The taste and aroma of coffee are determined by its variety and its planting location. Robusta has more bitterness with full body; Liberica has more balanced bittersweetness. This makes both varieties excelent as a base in a mixed coffee drinks.

While Arabica has the most complex flavours and aroma, depending on where its grown. This makes it an excelent original coffee drink. Indonesia is blessed with geographical features that enrich the flavours of arabica coffees grown in each area.

Taste, Flavour *&* Aroma





ROBUSTA

Its name came from its attributes, which is renowned to be robust. Its robustness started from the plant itself, which have more resistance to pests and diseases. The high level of caffeine contained in robusta coffee is not only affecting its versatility, but also the harsh taste of the product. Robusta coffee contains approximately 40% higher caffeine than arabica coffee, which makes it to have more bitterness and acidity. Thus, robusta has an earthy flavour, with very strong body and bitterness with a slight of grain/peanuty aftertaste. However, the darkside of robusta sometimes lead to a burnt rubber like taste, which is rather unpleasant.

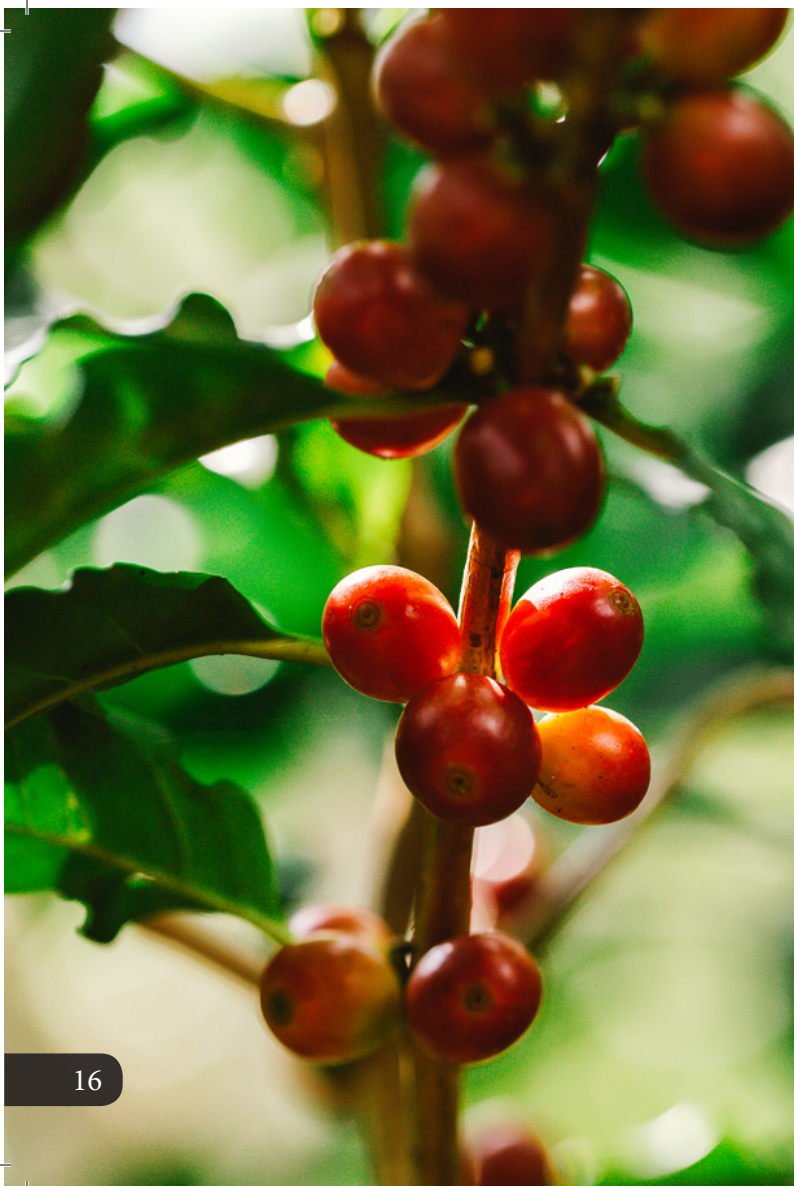
These characteristics made robusta suitable to be used in instant coffee and espresso blends. Its strength is said to add depth of flavor to an arabica/robusta blend, and a nice crema to espresso blends.



LIBERICA

Liberica shared similar characteristics with both Robusta and Arabica. Its pests and diseases resistancy is comparable to Robusta, while having a slight complexity of Arabica flavor. However, it is known to have a metallic, smoky, woody taste, which most people find it unpleasant, and the bitterness is just slightly less than Robusta.

Liberica has the biggest bean among others and has an asymmetric long shape. The production of Liberica coffee is scarce, the varieties are limited and not well known amongst the wider coffee community. In the cup, Liberica is usually used as an espresso blend along with Arabica to add more strength while maintaining more complexities. This species has the highest caffeine levels among other coffee bean varieties.



ARABICA

Arabica is the star among the others, flavour wise. Its sensitivity to the environment where it planted, created a wide array of attributes. This is what makes Arabica famous for the premium market of speciality coffees. Generally, Arabica has a smoother, sweeter, less bitter, cleaner, and more delicate flavours compared to Robusta and Liberica, thus, making it suitable to enjoy it in single origin form.

Arabica's flavor is determined by not only where its grown, but also how the farmers were growing it in the production level. Each region of plantation has the potential to produce its own unique taste and aroma. The Specialty Coffee Association even created the Arabica flavour wheel in order to help consumers in tasting the true flavour of a cup that comes from a certain area of plantation. Some flavour notes includes floral, fruits, nutty/cacao, spices, sweet, sour, vegetative, and others.

Arabica Flavour Wheel



Specialty Coffee Association



Varieties & Cultivars

VARIETIES

Varieties are the derivation of subspecies, which occurred through natural selection, both for wild and cultivated plants. In other words, this mainly generated from the interaction of the plant with its local environment. Some of the varieties are commercially important due to the characteristics ranging from disease resistance, yields, to the unique flavours. Due to its natural process, coffee varieties can be found in the wild. However, its given characteristics made it less popular for commercial purposes.

CULTIVARS

Cultivars are the subspecies derived through selective breeding done intentionally by breeders in order to produce unique traits. Some might breed special cultivar to attain higher yield in a shorter period, some others might pursue for unique taste. It is pure experimental, giving flexibility for breeders to produce a cultivar according to their own desired characteristics. Cultivars are not to be normally found in the natural population. Most of the known subspecies of coffee are cultivars.

Arabica

the Periodic Table of

COFFEE

Varieties & Cultivars

Robusta

COFFEE															Varieties & Cultivars																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Gesha ²		Typica ³		Bourbon ³																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

1: Interspecific Hybrid
2: Original Variety
3: Subvariety
4: Intraspecific Hybrid
5: Mutation

World's Well Known *Varieties & Cultivars*

<i>Arusha</i>	Tanzania, Papua New Guinea
<i>Benguet</i>	Philippines
<i>Sidikalang</i>	Indonesia
<i>Bernardina</i>	El Savador
<i>Blue Mountain</i>	Jamaica, Kenya, Cameroon
<i>Bourbon</i>	Rwanda, Latin America
<i>Catuai</i>	Latin America
<i>Catimor</i>	Indonesia, India, China
<i>Caturra</i>	Latin America
<i>Charrier</i>	Cameroon
<i>Ethiopian Harar</i>	Ethiopia
<i>Ethiopian Sidamo</i>	Ethiopia
<i>Ethiopian Yirgacheffe</i>	Ethiopia
<i>French Mission</i>	Africa
<i>Geisha</i>	Eithiopia, Panama, Colombia
<i>Guadelupe Bonifieur</i>	Guadelupe
<i>Hawaiian Kona</i>	Hawaii
<i>Java</i>	Indonesia
<i>K7</i>	Africa
<i>Maragogigpe</i>	Latin America





<i>Maragaturra</i>	Latin America
<i>Mayaguez</i>	Africa
<i>Mocha</i>	Yemen
<i>Mundo Novo</i>	Latin America
<i>Orange/Yellow Bourbon</i>	Latin America
<i>Pacamara</i>	Latin America
<i>Pacas</i>	Latin America
<i>Pache Colis</i>	Latin America
<i>Pache Comum</i>	Latin America
<i>Ruiru 11</i>	Kenya
<i>S795</i>	India, Indonesia
<i>Sagada</i>	Philippines
<i>Santos</i>	Brazil
<i>Sarchimor</i>	Costa Rica, India
<i>Selection 9</i>	India
<i>SL28</i>	Kenya
<i>SL34</i>	Kenya
<i>Sulawesi Toraja Kalossi</i>	Indonesia
<i>Sumatera Lintong</i>	Indonesia
<i>Sumatera Mandheling</i>	Indonesia
<i>Timor, Arabusta</i>	Indonesia
<i>Typica</i>	Worldwide
<i>Uganda</i>	Uganda
<i>Brutte</i>	India

A top-down view of a dark, textured surface, possibly slate, covered with coffee beans, chocolate pieces, and a cup of coffee. A small burlap sack is filled with coffee beans, and a spoon is also filled with them. A cup of coffee with a wooden handle sits in the bottom right corner. The overall mood is warm and inviting.

02

Coffee

the Motor of Civilization

Coffee plant is native to Kaffa region of Ethiopia, Africa. Arabica is believed to be the first cultivated coffee species in Yemen in the 14th century.

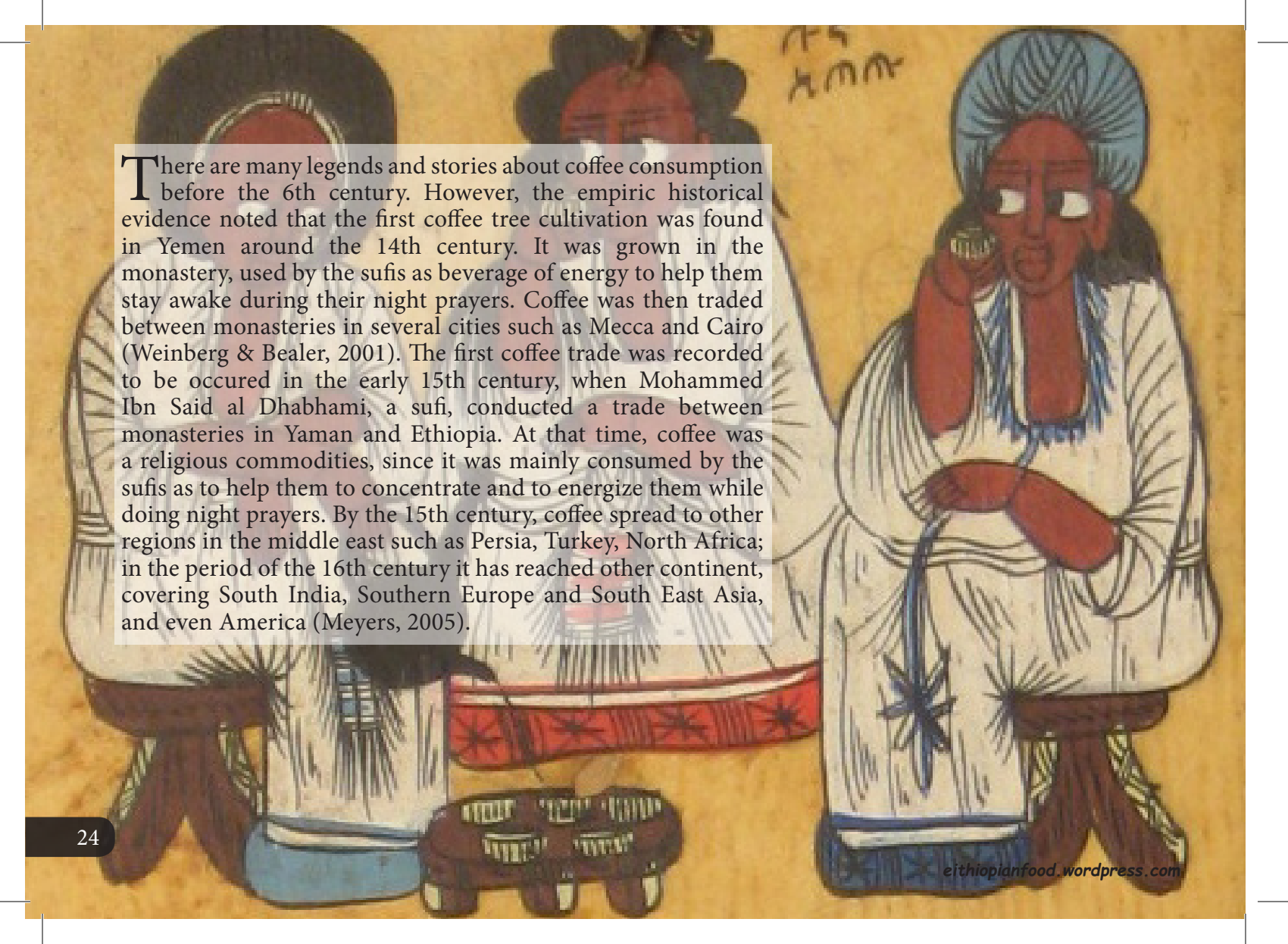


Where did it come from?

As many other things, the invention of coffee came from accidental event.

There are two major legends that surround the story of how humanity invented coffee as one of our drinks. The first one is the tale of the famous Kaldi with his goats, which originated from Eithiopian lore. It was said that Kaldi watched his goats got energized as they ate the fruit from a plant which then known as the source of coffee.

The second tale came from Yemen. The story tells about Omar, a well known shaman in the city of Mocha, who were banished by its ruler at that time. On his travel, he was foraging and ate cherries from a tree. He even stored the beans as a food supply, and later he roasted and ate the beans but they are inedible due to its bitterness. He then ground the roasted beans and made a drink out of it. Unexpectedly, the drink gave him energy. He reached the next city of Mocha, he spread the story at the monastery, then coffee drinking became famous. At that time, this dark thick beverage was named Mocha.



There are many legends and stories about coffee consumption before the 6th century. However, the empiric historical evidence noted that the first coffee tree cultivation was found in Yemen around the 14th century. It was grown in the monastery, used by the sufis as beverage of energy to help them stay awake during their night prayers. Coffee was then traded between monasteries in several cities such as Mecca and Cairo (Weinberg & Bealer, 2001). The first coffee trade was recorded to be occurred in the early 15th century, when Mohammed Ibn Said al Dhabhami, a sufi, conducted a trade between monasteries in Yaman and Ethiopia. At that time, coffee was a religious commodities, since it was mainly consumed by the sufis as to help them to concentrate and to energize them while doing night prayers. By the 15th century, coffee spread to other regions in the middle east such as Persia, Turkey, North Africa; in the period of the 16th century it has reached other continent, covering South India, Southern Europe and South East Asia, and even America (Meyers, 2005).

The Vertue of the *COFFEE* Drink.

First publickly made and sold in England, by *Pasqua Rosee*.

THE Grain or Berry called *Coffee*, groweth upon little Trees, only in the *Deserts of Arabia*.

It is brought from thence, and drunk generally throughout all the Grand Seigniors Dominions.

It is a simple innocent thing, compos'd into a Drink, by being dryed in an Oven, and ground to Powder, and boiled up with Spring water, and about half a pint of it to be drunk, fasting an hour before, and not Eating an hour after, and to be taken as hot as possibly can be endured; the which will never fetch the skin off the mouth, or raise any Blisters, by reason of that Heat.

The Turks drink at meals and other times, is usually *Water*, and their Dyets consist much of *Fruit*; the *Crudities* whereof are very much corrected by this Drink.

The quality of this Drink is cold and Dry; and though it be a Dryer, yet it neither heats, nor inflames more then hot *Poffet*.

It doth cloath the Orifice of the Stomack, and fortifies the heat with-its very good to help digestion; and therefore of great use to be bout 3 or 4 a Clock afternoon, as well as in the morning.

It quickens the Spirits, and makes the Heart *Lightsome*. It is good against sore Eys, and the better if you hold your Head over it, and take in the Steem that way.

It suppresseth Fumes exceedingly, and therefore good against the Head-ach, and will very much stop any *Defluxion* of *Rheum*, that distill from the Head upon the Stomack, and so prevent and help *Consumptions*; and the Cough of the Lungs.

It is excellent to prevent and cure the *Dropsy*, *Gout*, and *Scurvy*.

It is known by experience to be better then any other Drying Drink for People in years, or Children that have any running humors upon them, as the *Kings Evil*. &c.

It is very good to prevent *Mis-carriages* in *Chill-bearing Women*.

It is a most excellent Remedy against the Spleen, *Hypocondriack Winds*, or the like.

It will prevent *Drowsiness*, and make one fit for business, if one have occasion to Watch, and therefore you are not to Drink of it after Supper, unless you intend to be watchful, for it will hinder sleep for 3 or 4 hours.

It is observed that in Turkey, where this is generally drunk, that they are not troubled with the Stone, Gout, Dropsie, or Scurvey, and that their Skins are exceeding cleer and white.

It is neither Laxative nor Restraining.



Made and sold in *St. Michaels Alley* in *Cornhill*, by *Pasqua Rosee*, at the Signe of his own Head.

Coffee reached Europe for the first time through the dark age of slavery. It entered Europe through Malta, which was the centre of slave trading activity in the late 14th century. Leonhard Rauwolf (1583) recorded that coffee entered England in the early 16th century, brought by Levant trading company. In the following century, coffee has turned to a lucrative commodity, traded by the British India Company and the Dutch East India Company all over Europe. By the 18th century, coffee shops were proliferating in the big cities of Europe, especially in England, which at that time became the place for commoners to discuss about religious and political matters. Some of these discussion surely lead to the following events of revolutions accross Europe.

Coffee always brought changes in each era of mankind history. Gustav Sommerfeldt (1663) wrote in his note that 'coffee brought the ability and industriousness with which the Turkish earn some money, especially by preparing coffee, a powder resembling snuff tobacco, with water and sugar'.

Coffee entered the North America by the late 17th century. Along with some European countries, the US then became the place where transnational coffee industries were born, further enhancing the global trade of coffee. By the 20th century, coffee becomes a part of people's daily life in the world.



14th

History records showed that the activity of coffee cultivation was present in Yemen. This is the evidence of the first coffee cultivation ever done in the world.



15th

Coffee became a traded commodity from the Eastern and Northern African to the Middle East regions. At this time, coffee was a luxurious beverage, consumed by high classes.

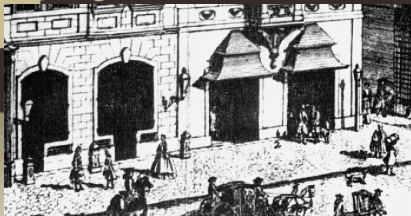


17th

Coffee reached England, and spread to other European countries by the end of the centuries. Coffee was still a high class consumption.

Coffee

Throughout Centuries



18th

Coffee plantations were opened in the third world regions. It was one of the high value commodities traded globally by the colonial countries.



19th

Coffee workers started to enjoy off-grade coffees left over. Coffee started to become a commodity of the commons. This significantly increased the global demand for coffee.



20th+

Coffee became indispensable from people's daily life. Many coffee industries grown globally, covering most of the countries, creating constant demand for the commodity.

TOP 5 COFFEE EXPORTERS (2018)

Brazil 4,4 Billion USD 14,1 %	1	
Vietnam 3,3 Billion USD 10,5 %	2	
Germany 2,5 Billion USD 8,2 %	3	
Swiss 2,4 Billion USD 7,6 %	4	
Colombia 2,3 Billion USD 7,5 %	5	



COFFEE IMPORTERS (2018)

TOP 5



1 USA
5,7 Billion USD
18,5 %



2 Germany
3,5 Billion USD
11,2 %



3 France
2,8 Billion USD
9,1 %



4 Italy
1,7 Billion USD
5,6 %



5 The Netherlands
1,3 Billion USD
4,2 %

Faostat (2020)

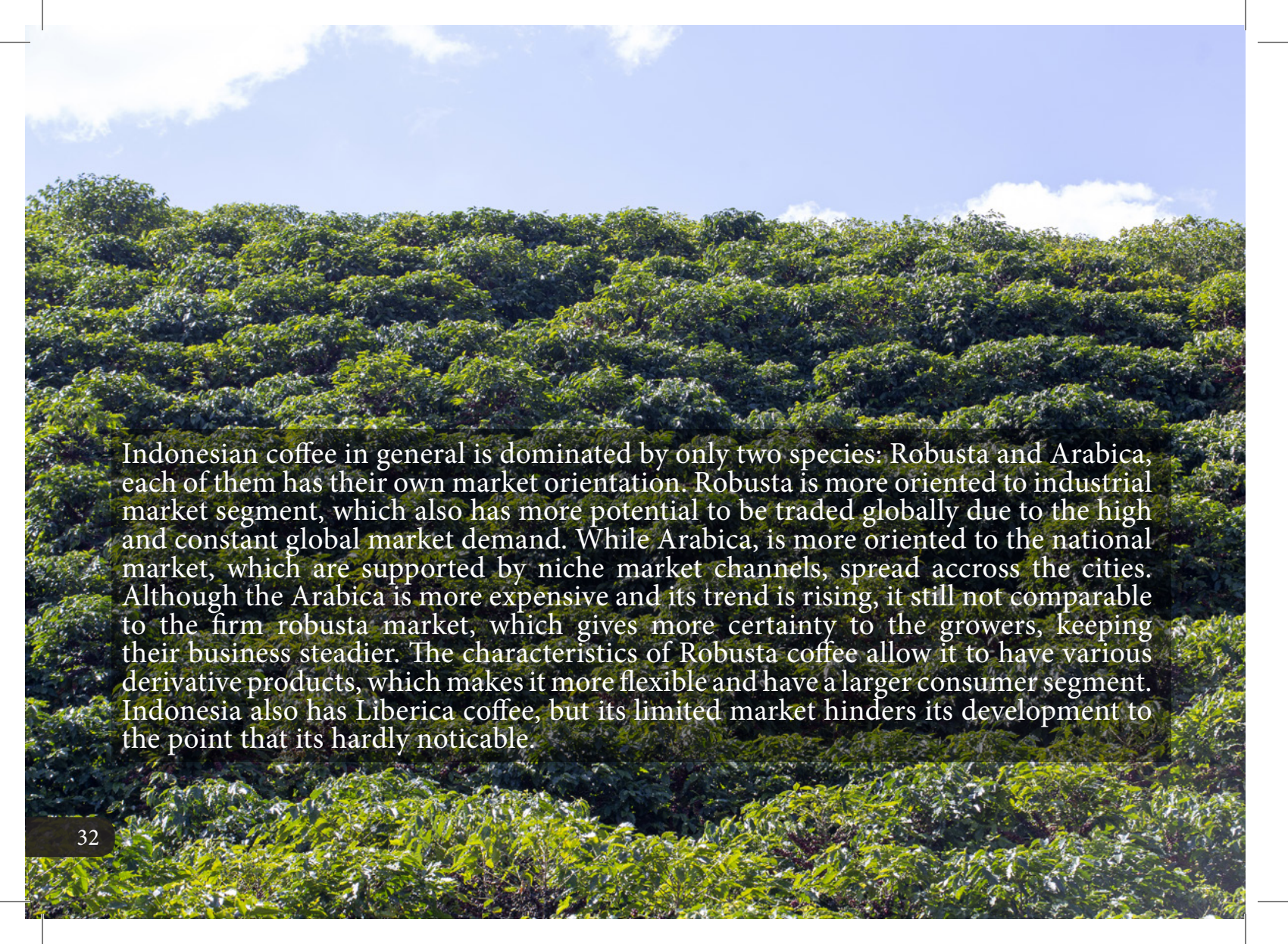


03 INDONESIA & COFFEE

Coffee is one of the main estate commodities in Indonesia. Coffee was introduced to the country by a Dutch trading company, the *Vereenigde Oost-indische Compagnie* (VOC) in the late 17th century to be domesticated in several areas in the island of Java. The VOC expanded the coffee plantation areas to other part of Indonesia such as Sumatera, Sulawesi, and Bali in order to boost its production to meet the global market demand, especially from the European countries at that time, competing with other suppliers mainly from the Middle East.

By the end of the 18th century, rust leaf disease struck Indonesian coffee plantation. Most of the Arabica plantations were wiped out by the disease, decreasing the production to almost zero. In the early 19th century, the Robusta and Liberica species was introduced to Indonesia to replace the nearly extinct Arabica, which turned in to a success. Both of the species are resistant to the disease, and have bigger beans size and faster production cycle, thus, producing more yields than arabica. Robusta was then became the new backbone for Indonesia coffee production until this very day.

Aside from its robustness againsts the disease, robusta yields better and faster than arabica, allowing Indonesian coffee production to skyrocket within a relatively short period. This variety is also suitable to be planted in low altitude areas, which brought other advantages at that time since its plantations are located nearby the ports, cutting off the transportation costs by a considerable amount.

A photograph of a vast coffee plantation on a hillside. The trees are dense and green, covering the entire slope. The sky is blue with some white clouds. A semi-transparent text box is overlaid on the lower half of the image.

Indonesian coffee in general is dominated by only two species: Robusta and Arabica, each of them has their own market orientation. Robusta is more oriented to industrial market segment, which also has more potential to be traded globally due to the high and constant global market demand. While Arabica, is more oriented to the national market, which are supported by niche market channels, spread accross the cities. Although the Arabica is more expensive and its trend is rising, it still not comparable to the firm robusta market, which gives more certainty to the growers, keeping their business steadier. The characteristics of Robusta coffee allow it to have various derivative products, which makes it more flexible and have a larger consumer segment. Indonesia also has Liberica coffee, but its limited market hinders its development to the point that its hardly noticable.



COFFEE HISTORY in INDONESIA



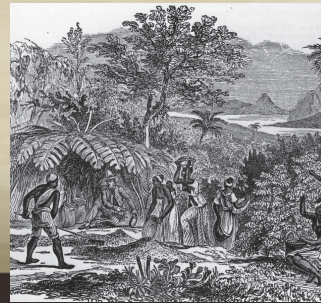
1696-1699

Coffee was first introduced in Indonesia through Batavia by the Vereenigde Oost-indische Compagnie (VOC)



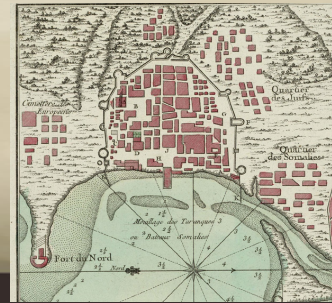
1717

The first export activity for coffee was conducted from Indonesia to Europe. The exported amount was approximately 1 ton



1725-1820

Indonesian coffee was superior in the global market, traded mainly by the Dutch company, VOC



1840

Spain started to open coffee plantation in Brazil, its production started to compete Indonesian coffee in the global market



1876

Rust leaf disease struck Indonesia coffee plantation, wiping out nearly all of the arabica coffee plants. Indonesian coffee production plummeted



1915

Robusta and Liberica coffee was introduced as substitute for the diseased arabica in Kerinci. Due to its robustness against the disease, Robusta became the main Indonesian coffee variety.



1950

Following its independence, the Indonesian government started to naturalize most of coffee plantations which were owned by the Dutch under the PTPN



2000+

Coffee became one of the main cash crops in Indonesia. Coffee became lifestyle for Indonesian, increasing local demand for Arabica and Robusta, which also increases the production.



Today, Indonesia is the fourth largest coffee producer in the world following Brazil, Vietnam and Colombia. Coffee traded globally is usually a combination of roasted beans and green beans, both for Arabica and Robusta varieties.

Most of Indonesia's coffee production constitutes the lower quality Robusta type. However, this trend is shifting. In response to the rise of global and local market for Arabica coffee, Indonesian coffee growers started to change their variety from Robusta to Arabica. Although the Robusta is constantly traded, there are more speciality Arabica coffees are being discovered and traded globally today, and the number keeps growing.

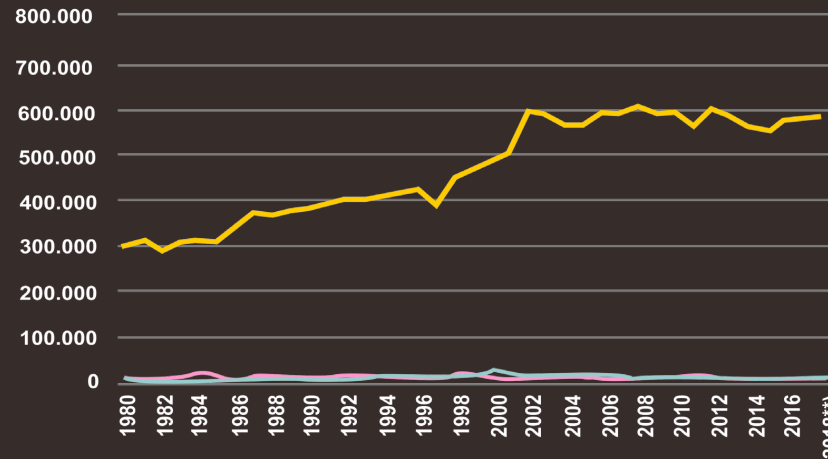
The subtropical and equatorial regions of Indonesia provide good conditions for coffee to be grown, which is also enhanced with islands that have rich mountain areas adding an almost unlimited potentials for specialty coffee growing.





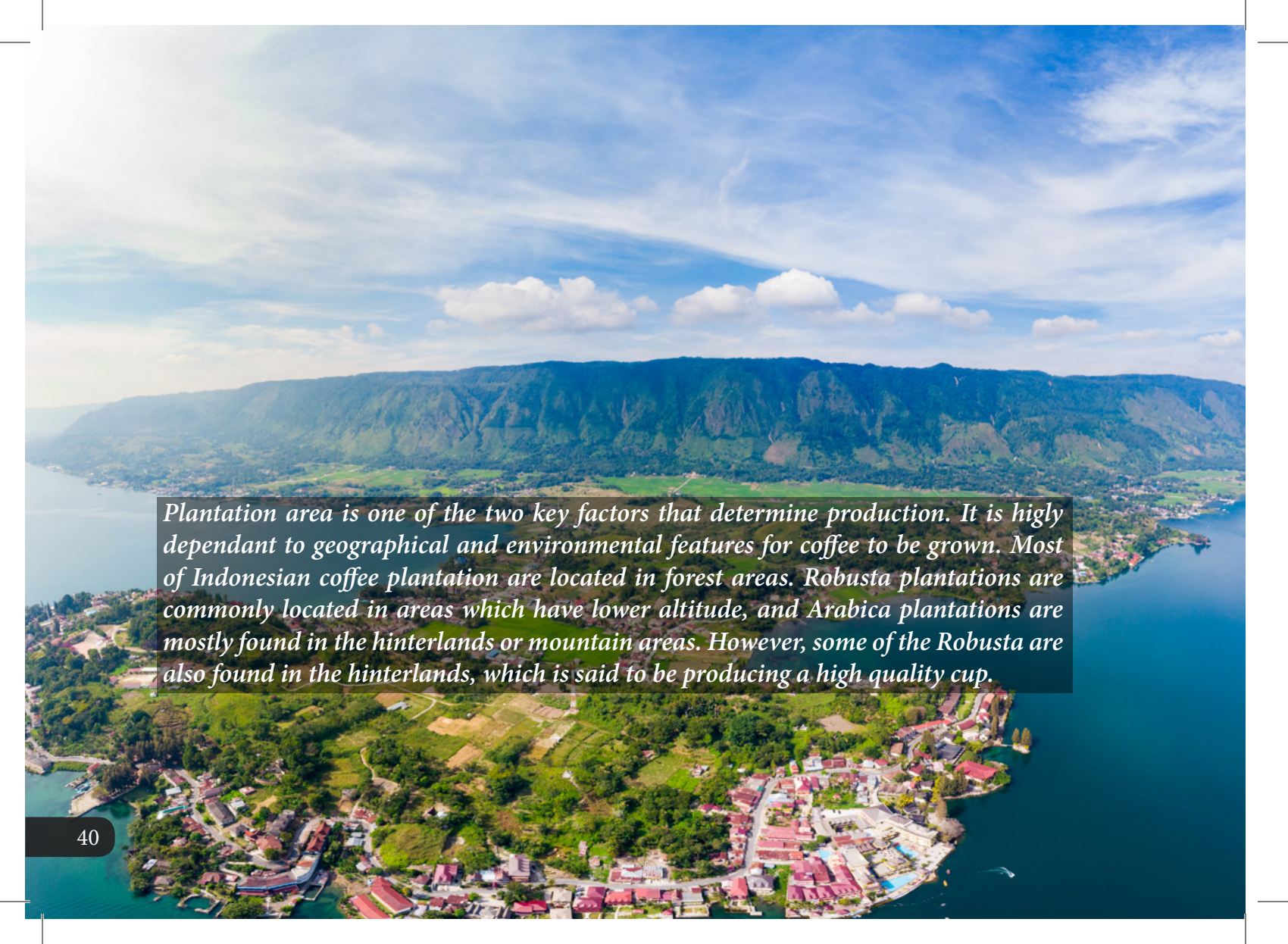
INDONESIAN COFFEE PRODUCTION

Indonesian coffee production is determined by numerous factors from the environmental condition to socio-economics condition of the farmers. In general, the production is driven by the market. Low grade Robusta is still dominating the demand at both local and global coffee market. It is primarily used in the coffee industry to create instant coffees and in the cafes where most of people prefer to drink milk based coffee beverages. In the last decade however, the market for arabica specialty coffee is growing fast, especially in the national level. The culture of enjoying single origin coffee is spreading among the population, especially in the cities. Cafes start to proliferate, rising the demand for both robusta and arabica coffee. In response to this situation, many farmers in the hinterlands started to plant coffee to meet the demand. As the result, Indonesian coffee production is rising constantly within the past few years.

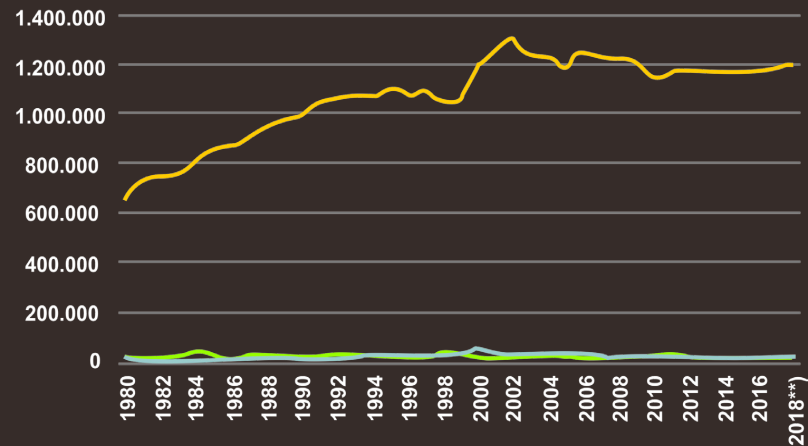


Most of Indonesian coffee plantation is owned by the commons. They plant coffee in the forest area of nearby mountain. However, there are many problems that limit the growth of coffee production. For example, the Good Agricultural Practice (GAP) is not disseminated yet to the most of Indonesian coffee growers. Low access to informal education and information still limiting their knowledge. Low quality or unavailability of required infrastructures such as road, warehouses, irrigation, post harvest facilities, etc. created inefficiencies in the business. Moreover, the low incentives caused by the long market chain created more hindrance for the growers to apply a high capital GAP. Considering all of the problems, the production is continuously increasing since 1980, albeit, it is still far from its potentials.

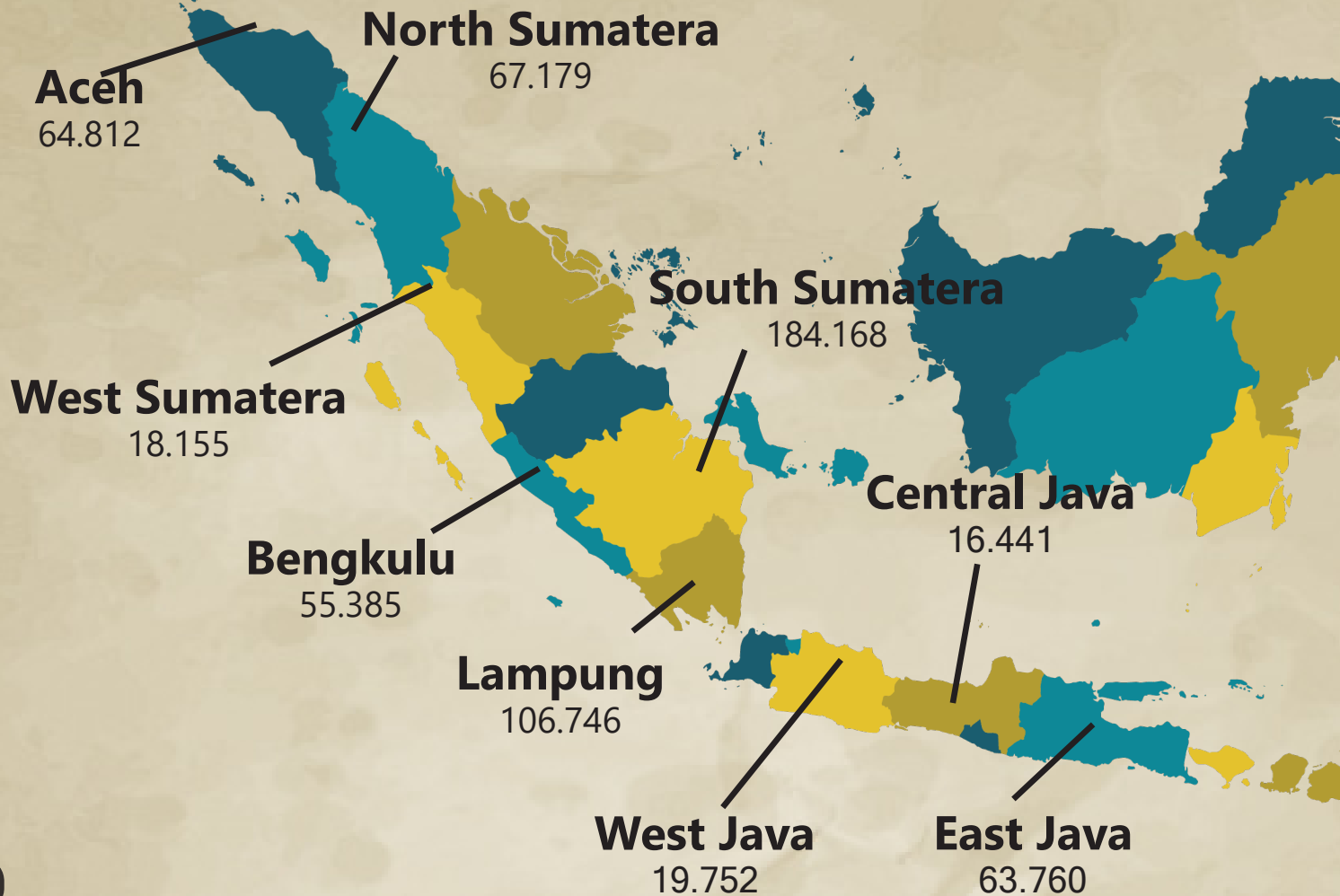
There is no way that the growers are able to handle all of those problems on their own. The government is continuously On the other perspective, this provides promising opportunities for investors to jump in and help out, with some form of partnerships that can build reciprocal relationships.

An aerial photograph showing a coastal town with red-roofed buildings and a large, forested mountain range in the background. The town is situated on a peninsula or near a bay, with a body of water visible on the right. The mountain range is expansive and covered in green vegetation. The sky is blue with scattered white clouds.

Plantation area is one of the two key factors that determine production. It is highly dependant to geographical and environmental features for coffee to be grown. Most of Indonesian coffee plantation are located in forest areas. Robusta plantations are commonly located in areas which have lower altitude, and Arabica plantations are mostly found in the hinterlands or mountain areas. However, some of the Robusta are also found in the hinterlands, which is said to be producing a high quality cup.



The graphic shows that since 1980, Indonesian coffee plantation area is growing with some fluctuation during 1996 to 2008. It was believed that the sharp decline in 2002 was the effect of 1998's economic recession that followed the chaotic political situation at that time. Agriculture is one of the main sectors that saved Indonesia from collapsing in the time of global economic recession. Estate crops, such as coffee, are able to provide income for the growers without being affected too much by the global situation in its production costs. As a result, by 2010, the coffee plantation area started to rise again, even after the second recession in 2008. This proved the role of agriculture, especially coffee as one of the estate crops, is important in the social economic condition of Indonesian population.



Top Coffee Producers in Indonesia

(in Tonnes), 2019

**South
Sulawesi**
32.907

East Nusa Tenggara
22.099

04

Indonesian Coffee

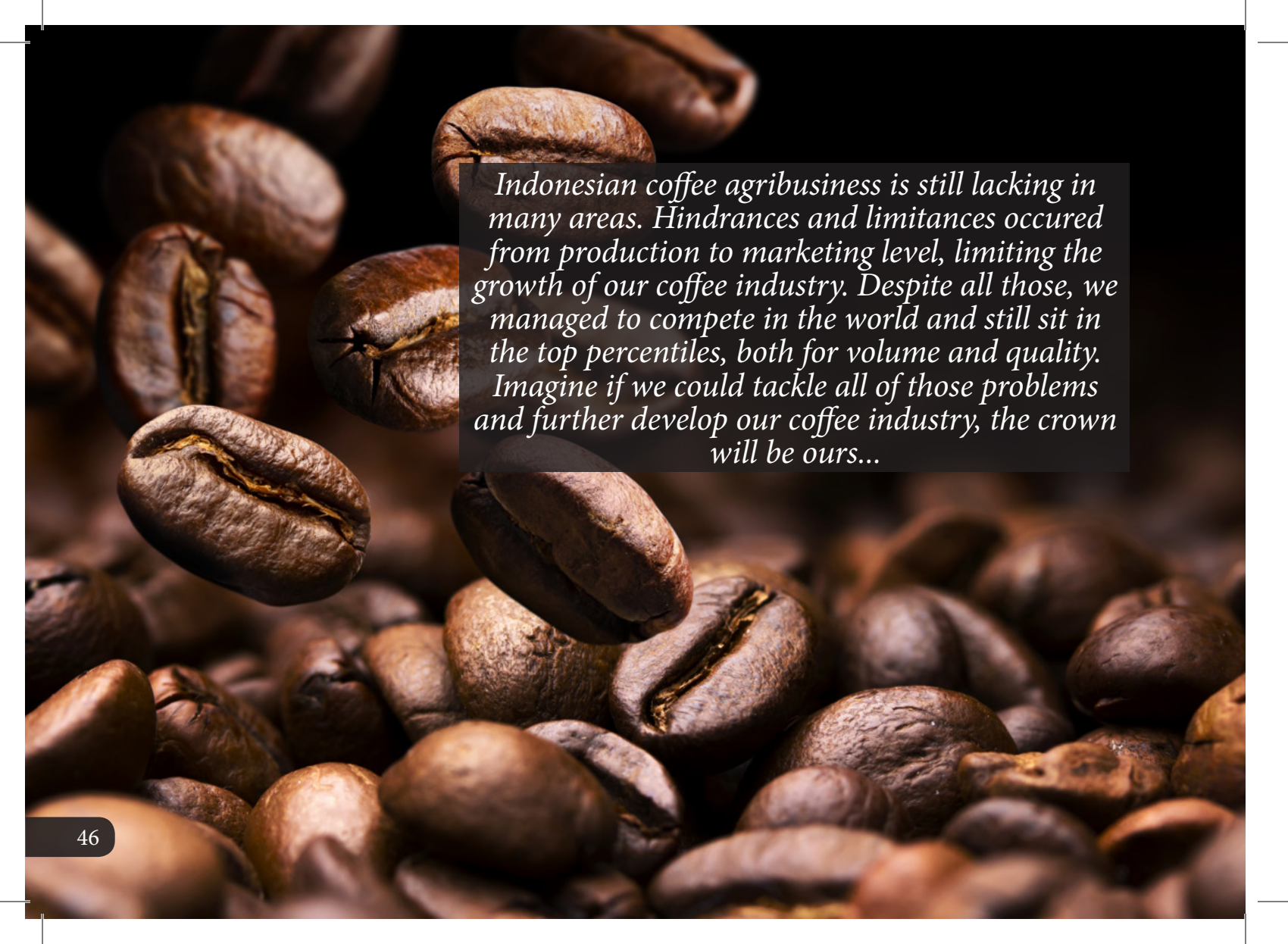
Undisputed Authenticity

Indonesia produces some of the world's favourite coffees. Most of the coffee drinkers enjoy Indonesian coffee due to its typically strong body, low acidity and complex flavour, making them ideal to be roasted around the medium to dark profile. Especially for robusta, which makes it preferable to be used as a great espresso and all of its derivations. However, in the past decade, Indonesian Arabica started to gain its reputation in the single origin market.

Located in the ring of fire, Indonesia is blessed with vast and varied mountainous areas, combined with its archipelago feature, bringing pockets of coffee growing areas, each with its own distinct characteristics of aroma, flavour and taste. Indonesia has many coffee varieties known today, with the potential of much more yet to be discovered. The country has thousands of islands, each with the potential to produce a unique cup.

The full potentials itself is, however, yet to be discovered. As many of Indonesian coffee plantations are still unexplored.





Indonesian coffee agribusiness is still lacking in many areas. Hindrances and limitances occurred from production to marketing level, limiting the growth of our coffee industry. Despite all those, we managed to compete in the world and still sit in the top percentiles, both for volume and quality. Imagine if we could tackle all of those problems and further develop our coffee industry, the crown will be ours...

Stretching from the island of Sumatra to the island of Papua, Indonesia is filled with thousands of islands. Most of them have the potential to produce a high quality cup. Thanks to its geographical condition and climate, naturally, Indonesian coffees have a high standard of quality that are preferred by the global consumers.

Some well known coffee producing areas are Sumatra, Java, Sulawesi, Bali, Flores, and Papua. Each island has their own characteristics, producing their own unique cup of coffee. Going deeper, each island is also having various areas which also produce coffees with their own specific attributes. Some of the areas are even the home to their own coffee cultivars as the result of centuries of interaction between the plant and its environment.

Indonesia has a really huge potential to be the leader of the global coffee industry. With the right and consistent interventions, this dream is not that impossible to reach.





SUMATRA

Sumatra is located in the northwestern Indonesia, it has the earliest harvest season. The harvest season is usually occurs around November - March, so any buyers should expect most of product should be ready to be shipped by April. There are several speciality grade coffee produced in this island, including Mandheling, Lintong, and Aceh Gayo.

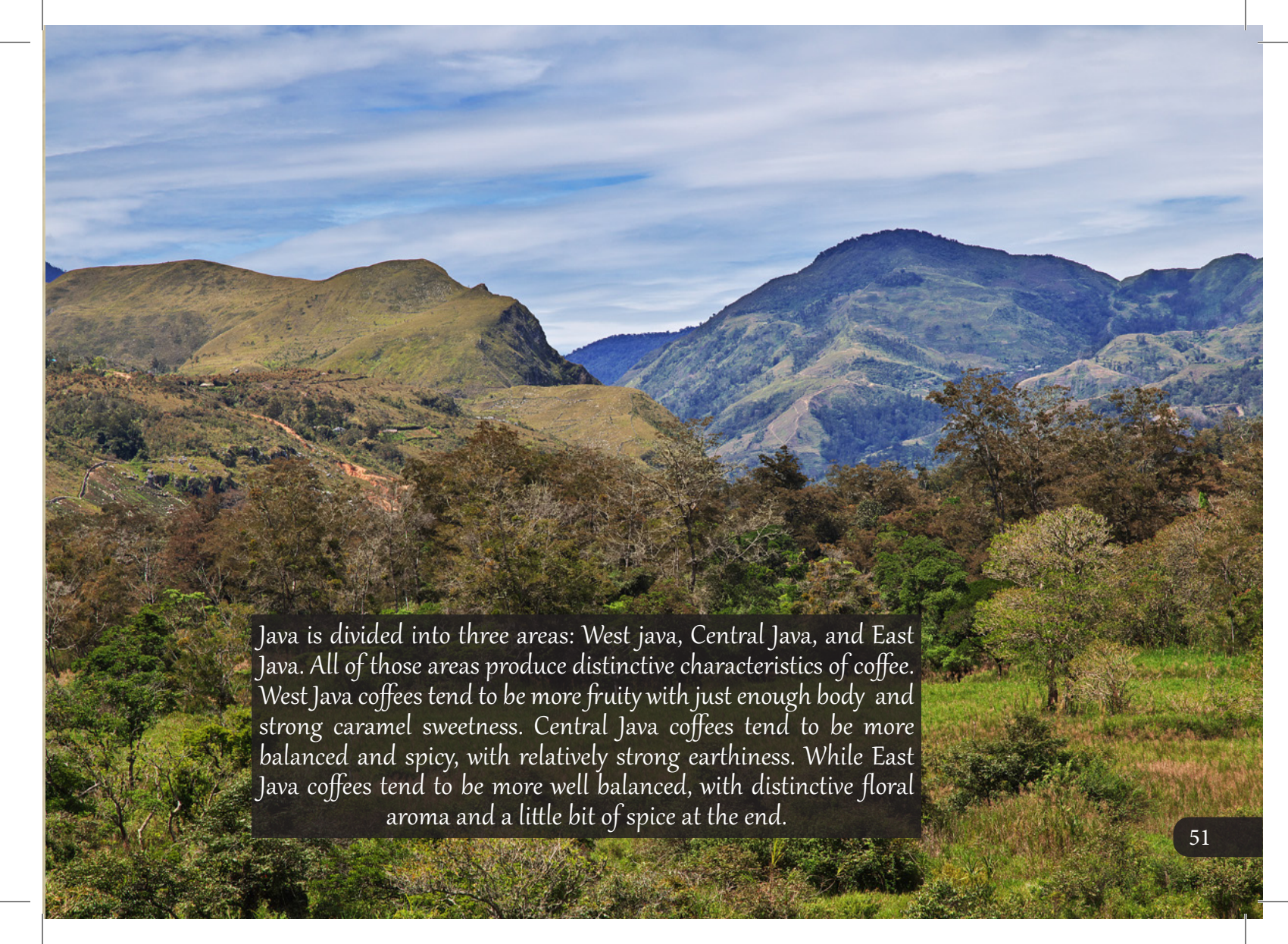


Sumatran coffee has a unique flavour characteristics, it is strong and balanced. Making it suitable to be made as a base for wide array of coffee drinks ranging from espresso and all of its mixed beverages, to the speciality single origin coffee. These feats had boosted its popularity among the world's population, making it one of the most popular coffee accross the globe.

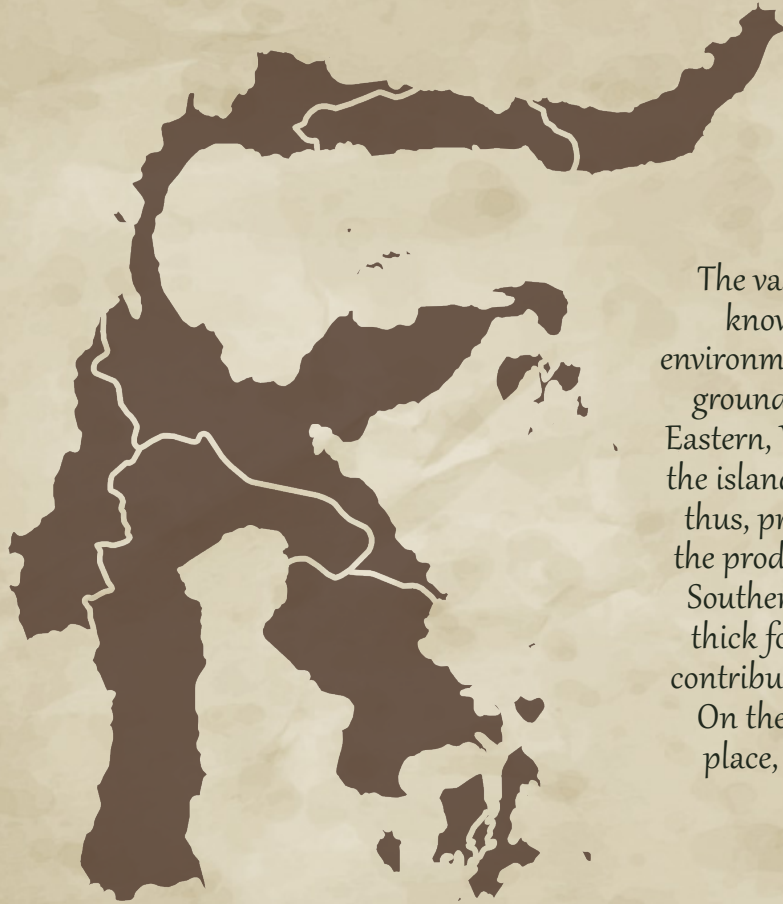


JAVA

Java, is an island well known for its coffee since the colonial era, making it the oldest coffee producer in Indonesia. Its popularity is well preserved so that people used to use the word java to refer as coffee. It is the island where all it started, where the Dutch introduced arabica coffee for the first time in Indonesia, where its then devastated by the rust leaf disease, where people were used to be enslaved in the plantation, and now, where most of Indonesian coffee inspirations came from. Java is the most populated island in the country, thus, creating a potential market, which since the last decade has been moving Indonesian coffee growth to the point that it has never been before.



Java is divided into three areas: West java, Central Java, and East Java. All of those areas produce distinctive characteristics of coffee. West Java coffees tend to be more fruity with just enough body and strong caramel sweetness. Central Java coffees tend to be more balanced and spicy, with relatively strong earthiness. While East Java coffees tend to be more well balanced, with distinctive floral aroma and a little bit of spice at the end.



SULAWESI

The vast and mountain rich area of the once known as Celebes, an area known for its environmental diversity, home to the most highest ground coffee plantations in the country. The Eastern, Western, Northern and Southern part of the island have a quite distinctive characteristics, thus, producing varied unique coffees. Most of the production came from Toraja, an area in the Southern part of the island. On one hand, the thick forest and high slopes in the plantation contribute to the cleanliness of the environment. On the other hand, it limits the access to the place, boosting up the transportation costs.



Sulawesi coffees are characterized with its fruity undertone, which is mixed with strong chocolatey flavour. Toraja Kalosi is the cultivar that is famous for its distinctive features of the strong body and low acidity, which is similar to those coming from Sumatra, but with less complex earthiness, and offers more cleanliness and freshness, creating a well balanced cup. It is also unique due to its feature that can maintain its original characteristics even when its roasted with dark profile.



EAST NUSA TENGGARA

This region produces unique cup of coffee which shared much similarities with those grown in Java. The first coffee planted in this region is Bourbon cultivar, which was introduced by the Dutch around four centuries ago, and still producing coffee with its own uniqueness as the result of centuries of interaction with the island's environment. The coffee produced in this area is famous for its single origin complexness, which makes it a little bit unsuitable to be roasted with dark profile, since the original taste tend to fade away. It is known for its cleaner after taste, despite the full body characteristics and its complexity.



East Nusa Tenggara coffees are characterised with sweet, fruity, complex acidity, and hint of flowers. The coffee also tend to have not so thick body, making it very suitable to be manually brewed. The islands grown various cultivars from Yellow Bourbon, Yellow Cattura, Timor, Arabusta, and Cattimor, which is a hybrid from Yellow Cattura with Timor Coffee. This rich varieties is however, are still not well documented. Most of the times, one plantation produces various coffees, making it hard to distinguish.

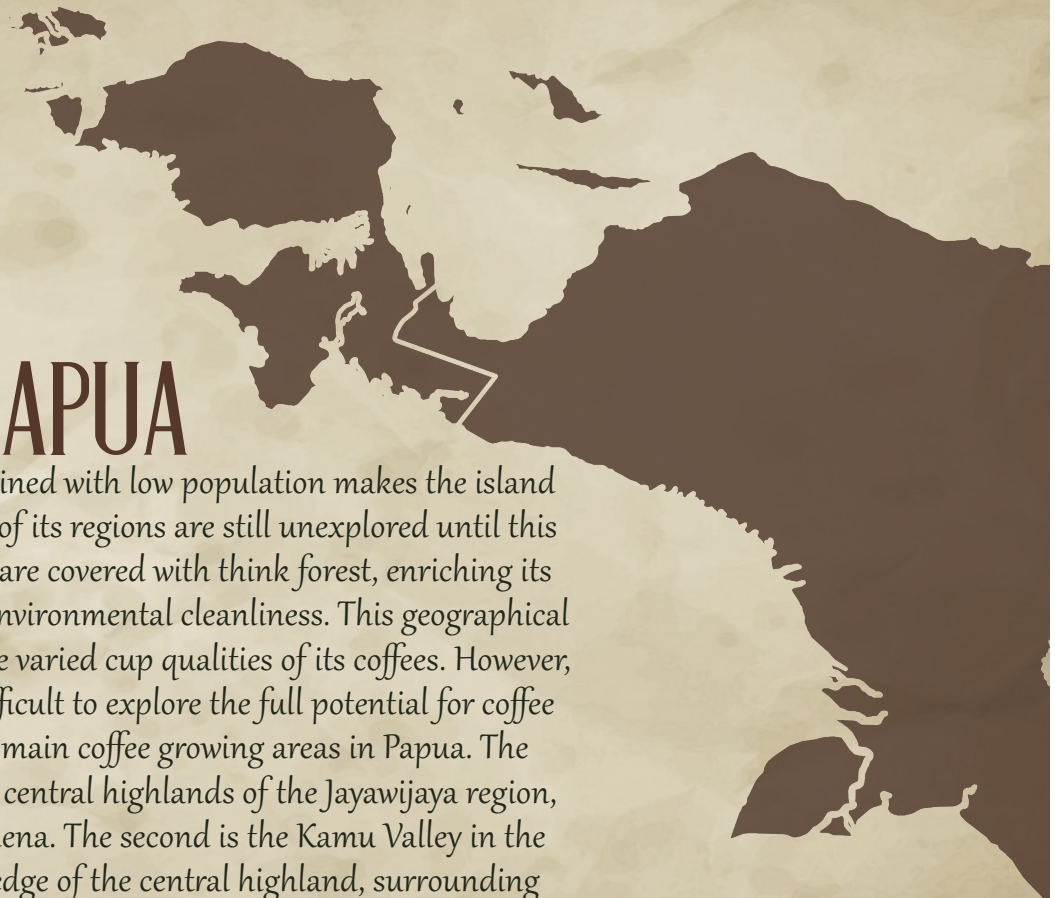
BALI

The home to the famous Mount Agung, one of the most challenging active volcanoes in the country, which also hosts the coffee plantation in this island of the goddess. Coffee is produced in the Kintamani region, which located between the Batukaru and Mount Agung. Bali coffee is known for its fruitiness, which tend to have orange and sweet citrus flavour, combined with strong chocolate flavour that will not go unnoticed.





Bali coffee is known as Kintamani. It is known for its rich taste and delicious aroma. Its considered as a delicacy in most parts of the world. Arabica Kintamani has less acidic content and has a huge demand globally. In practice, most of coffee plantations in Bali has some orange trees, which contributed to the authentic orange aftertaste of Kintamani coffee. On top of that, the well-balanced body and earthy flavour are the features that can be found in Bali coffee.



PAPUA

The vastness of its region combined with low population makes the island of Papua full of mystery. Many of its regions are still unexplored until this day. Many areas of mountains are covered with thick forest, enriching its biodiversity and preserving its environmental cleanliness. This geographical features are also determining the varied cup qualities of its coffees. However, its remoteness still makes it difficult to explore the full potential for coffee growing areas. There are two main coffee growing areas in Papua. The first is the Baliem Valley, in the central highlands of the Jayawijaya region, surrounding the town of Wamena. The second is the Kamu Valley in the Nabire region, at the eastern edge of the central highland, surrounding the town of Moanemani. Both areas lie at altitudes between 1400 and 2000 meters, creating ideal conditions for Arabica production.



Papua produces high quality arabica. Its unique flavor and delightful aroma has its origins in the Jamaican Blue Mountain cultivar, which are known to yield the world's most celebrated coffee. The traditional flavors were embellished with floral and fruity hints from the clean environment of Papua, giving rise to a trully wonderful coffee. The only downside of this region is its limited infrastructures and access to good processing practices due to its remoteness. Still, the coffees are really good.



LUWAK COFFEE

Luwak is Civet (*Paradoxurus hermaphroditus*) in Bahasa. Its originated from Indonesia, and being produced mainly in islands of Sumatra, Java, Bali, Sulawesi and East Nusa Tenggara. It is a coffee that sourced from partially digested coffee cherries, which have been eaten and defecated by the Luwak. The cherries are fermented as they pass through a civet's intestines, and after being defecated with other fecal matter, they are collected (Mahendradatta & Tawali, 2002). This is why coffee luwak is a form of processing rather than a variety of coffee. Its invention took place in the colonial era, where the growers had no access to the beans they produced so they collected beans from the feces of wild luwak in the plantation and started to process and brew it.

Luwak coffee was used to be collected from the wild, which makes sure its optimal quality. However, when the producers knew how much it can sell, they started to put the civets in captivity, some even do this by ignoring their welfare, continuously feeding them with any coffee cherries, producing 'fake' civet coffees.





It is known to produce the most unique flavour, enhancing the original taste of any coffee varieties, while lowering its acidity to the level which is impossible to be found naturally. The secret lies in the 'post harvest handling' done by the civet. The civet will instinctively pick only the fruits with the right ripeness to be eaten, then the process is done in his belly along with other food that entered. During digestion, digestive enzymes and gastric liquids permeate through the cherries and break down storage proteins, yielding shorter peptides. This alters the composition of amino acids and impacts the aroma of the coffee. In the roasting process, the proteins undergo a non-enzymatic Maillard reaction (Marcone, 2004). The beans begin to germinate by malting, which reduces their bitterness (Marcone, 2007).

It might be unappealing knowing that this unique delicacy, which creates the most expensive coffee in the world, came from the feces of a civet. However, the processes after that made sure the hygienicity of this coffee. The beans go through washing and drying process before it get milled. Then, the high temperatures involved in the roasting process can surely remove most of the unwanted germs.





Indonesian Coffee

from seeds to cups

It probably will not take any longer than 5 minutes to brew a standard cup of coffee. However, it took years for the beans to be ready, along with all the complexities that follows each stages. The quality of a cup is determined by at least five major stages in coffee production: planting and plant maintenance, harvesting, post harvest handling, processing, and brewing. Each stage has a different system and is done by different set of actors. The consistency in quality control in all stages is very important to bring out the best cup to the table. Yet, the geographical characteristics and diverse culture covering the nation provide its own opportunities and challenges in producing the best quality coffee.

This part will provide short yet resourceful descriptions to help the readers understand what it really takes to get their daily caffeine intakes.





It takes at least 2.5 - 6 months for a seed to germinate into a plant. It then takes about 3 - 4 years for a coffee plant to begin bearing fruit that can be harvested for quality coffee. The plant produce flowers that develop into coffee cherries over a period of 30 - 35 weeks.

Planting



Coffee quality is already determined as early as choosing the location of the plantation and choosing the seeds to grow. In general, it takes 3-4 years for coffee plant to reach its early productive stage. Done wrongly, and the grower will waste years of growing unoptimal coffee plant. The next phase will be the maintenance, to ensure that the plants grow to its full potential by protecting them from unwanted pests and disease and also giving them needed nutrients (highly recommended to use organic fertilizers for specialty coffees) during their maturation phase. Once the plants reached 3 years old, it will start to learn producing the fruits. The trees will keep producing the fruits annually with the productive life span of 25-30 years. Growing coffee inorganically will ruin its taste, leading to low quality of cup, making it impossible to be processed as a specialty coffee. For industry oriented coffees such as Robusta, which prioritizes volume over quality, however, the use of chemicals is tolerated under a certain limits.



Harvesting

Harvesting coffee is a labour intensive process, due to the characteristics of terrain which makes it too difficult for machinery to operate on. The growers will know the cherries are ready to be harvested when they turn red. They are either stripped from the branch or selectively picked.

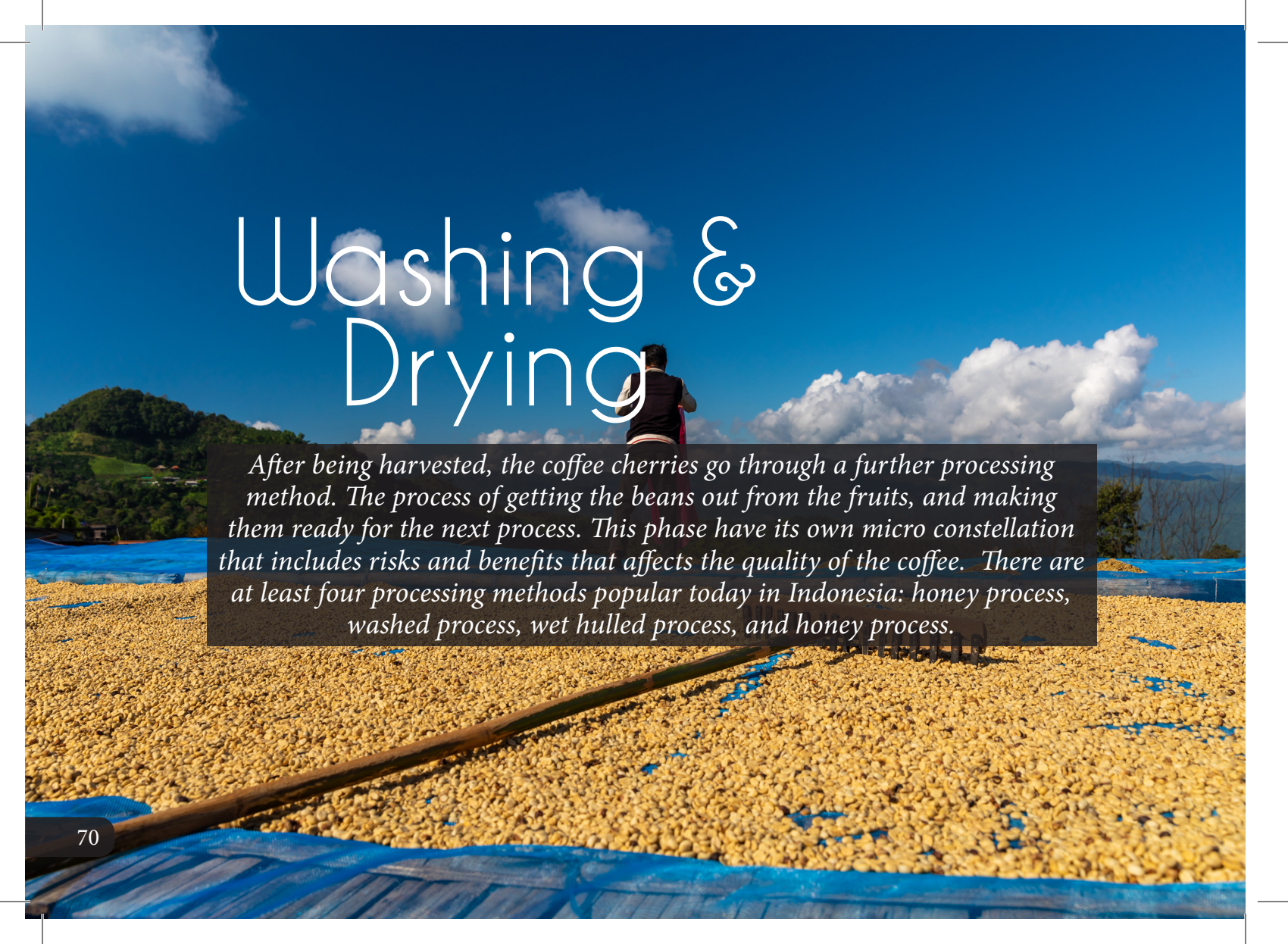


When the coffee plant reached its productive age, it begins to bear fruit in clusters along its branches, referred to as cherries, which are initially green and turn red when they are ready for harvesting. Traditionally, coffee is harvested by hand in one or two ways: strip picking or selective picking.

Strip picking is when the harvester strips all the cherries, ripe and unripe, off the branches at once. Generally, this method is only applied to harvest Robusta coffee. Along with modernization, a mechanical way of picking Robusta was invented in order to make harvesting activity more efficient.

Selective picking, as its name, it involves making numerous passes over coffee trees, selecting only the ripe cherries, then returning to the tree several times over a few weeks to pick remaining cherries as they ripen. Selective picking is usually used in Arabica specialty coffee.

Washing & Drying

A person is standing on a large pile of yellow coffee cherries, which are spread out on a blue tarp. The person is wearing a dark vest and a red shirt. The background shows a blue sky with white clouds and a green hillside in the distance.

After being harvested, the coffee cherries go through a further processing method. The process of getting the beans out from the fruits, and making them ready for the next process. This phase have its own micro constellation that includes risks and benefits that affects the quality of the coffee. There are at least four processing methods popular today in Indonesia: honey process, washed process, wet hulled process, and honey process.



The oldest and original form of coffee processing is the **natural process**. This process is widely used due to the low costs and the limited additional resources that are required. In natural process, the coffee cherries will be laid out in the sun to dry. The place to dry the cherries will impact the taste of produced beans. Many producers dried their cherries on raised beds in thin layers to reduce the risk of mold growth while the cherries dry. This method will lead to the most flavorful coffee, due to the exposure of the beans to many natural variables during the drying process.



Another commonly used coffee processing method is the **washed method**. This method includes sending the cherries to a wet mill to be loaded and pass through a milling machine to remove of its outer layer. The machine forces the coffee beans out of the cherries, leaving the beans covered only with its pulp, which contains substance that determine the flavor of the coffee. The beans will then be placed in a fermentation tank for 12-24 hours depending on the temperature. The longer the beans got fermented, the more sugar absorbed, making a sweeter coffee. However, there is the risk of developing high acidity which resembles vinegar if the beans are over fermented. The final step of this method is to dry the beans for 10-20 days with occasional flips to minimize the chance of mold growing. Slowing drying time will lead to more balanced and complex taste. This process often produces coffees with strong individual/origin flavours.



The third method is the **wet-hulled method**, or also known as semi-washed process. This process is very common in Indonesia. It is similar to the washed method up until the point where the cherries were being pulped. From there, the beans will be sun dried until it reached around 30-40% moisture. The moist beans will then be hulled, removing the outer layer of the bean until they are turned into green beans, which are still partly wet. Then the completion of its drying process is continued, until the color of the beans turned to dark green/blue color.

The fourth method is the **honey process**, which involves the removal of the outer layer of the cherries and then straightly drying it under the sun. This process is believed to provide better clarity to the flavor of the coffee, while enhancing its sweetness due to the amount of sugar absorbed by the beans from its mucilage during the drying process.

Roasting

A close-up photograph of a large, polished brass roasting pan filled with dark brown coffee beans. A person's hand, wearing a black watch, rests on the rim of the pan. A brass roasting arm with a central cone-shaped vent is visible inside the pan. The background is blurred, showing a workshop or roastery environment.



Roasting is the next step in producing a fine cup of coffee. This step is as important as the previous ones. Different coffees have different roasting profile requirements in order to bring out its full potentials. In general, roasting means transforming raw coffee beans which are usually greenish to roast beans which are usually dark brown in color. Roasting brings out the aroma and flavour that is locked inside the green beans. It causes chemical reactions to take place as the beans are rapidly brought to high temperatures. When they reach the peak of perfection, they are quickly cooled to stop the process. In general, there are three phases in roasting:

Drying phase: This is the first phase of processing green coffee beans. Green beans are normally contain 8-12% water, which still needs to be lowered down. The drying phase usually takes 5-7 minutes starting with medium temperature and ends with 160 °C. This phase is important to 'ready' the beans for the next phase.



Browning phase: The continuation of the drying phase. At this phase, the aroma precursors of the beans will start to convert to aroma compounds. The Maillard reaction process will take place, reducing sugars, amino acids reacting to make different aroma, melanoids are generated which turn the beans color to brown. This phase is important in flavour development, thus, it is suggested to reduce the temperature in order to slow down the process, ensuring more flavors get developed. In the end of browning phase, the coffee starts to pop, this is called the first crack.

Developing phase: This final phase determines the desired aroma compounds to be developed. It is highly recommended to slow down the process in order to avoid the beans to be over roasted. Over roasted beans will have a very sharp flavor with smoky burnt taste, ruining any special traits of the coffee.

**Light**

Very light brown color. Underdeveloped sweetness, grassy, hint of peanut, and high acidity.

**Medium Dark**

Medium shade of brown. Balanced body, noticeable acidity, character of coffee is slightly present

**Medium Light**

Moderate light brown color. Retains original characteristics of beans and complex acidity.

**Dark**

Moderate dark brown. Slightly oily surface, bittersweet flavor, low acidity, characteristic of bean is muted.

**Medium**

Medium brown color. Character of the bean is still preserved, sweeter, full body with acidic notes.

**Vienna Roast**

Dark brown. oily surface, strong bitterness, low acidity, its hard to notice the characteristic of bean.





Grinding is the process where roasted coffee beans are turned into ground. This process is no less important from others. Grind size will influence the physical processes taking place during brewing. Certain brew methods require specific grind size of the coffee for the flavours to be optimally extracted into the cup. Coffee grinders in general are divided into two categories, blade grinders and burr grinders.

Blade grinders work similiary with a blender, using spinning blades to cut the beans into smaller pieces, thus, grind size is determined by how long the beans get ground.

Burr grinders works by pressing two serrated discs usually made of ceramics or steel, and spinning them to crush the beans. The grind size is determined by the distance between the burrs.

Brewing





The world of coffee brewing has undergone through at least three stages. The first refers to the traditional methods used in many countries, which are different depending on the culture. The second is the invention of coffee machines to brew espresso. And the third movement is the manual brewing methods. This methods aim to bring out the full experience of flavour, aroma, and taste of a coffee. Traditional methods are usually used only to get the effect of the caffeine, most of them involved adding other Aside from the type of coffee, the extraction result depends on many aspects that are involved in its process, such as grind size of beans, water temperature, water flow, air flow, pressures, and water quality. Here we are going to explore the richness of all the three stages of brewing methods developed through times.



Most of Indonesian traditional brewing methods are closely related to the history of coffee production, which as we know, is not so beautiful for the country. Many of Indonesian unique brewing methods came from the fact that in the colonial era, the growers wanted to drink some coffees but were not allowed, since the coffee had to be exported. Some of other brewing methods came from the diverse cultures and traditions that are practiced by various tribes in different regions of the country. It is a result of a long period of interaction between coffee and our diverse societies.

A high-speed photograph of a yellow ceramic mug filled with coffee. The coffee is splashing out of the top, creating a dynamic, starburst-like shape with many droplets suspended in the air. In the foreground, a pile of dark, roasted coffee beans sits on a dark, textured wooden surface. The background is dark and out of focus. The text 'How We Brew It' is written in a yellow, cursive script across the middle of the image, partially overlapping the mug and the beans.

How We Brew It

Kopi Joss

– Yogyakarta –



Ingredients:
Robusta/Arabica/Liberica
Hot Charcoal

Yogyakarta is a special region located in the middle south of Central Java. It is a city known for its street cafe called 'angkringan', a place where people from all level of society gather during the night. Many of these angkringans provide local delicacies, one of them is kopi joss. The name came from the hissing sound when the burning charcoal is put into a glass of coffee, in Bahasa we call that sound as 'joss..'. This cup of coffee has been around since 1960 in Yogyakarta. The strong robusta flavour is enriched with charcoal aroma, bringing a unique ashy taste and dryness to the coffee. Sugar is usually added to balance the bitterness.

Kopi Kawa Daun

– Tanah Datar –

Ingredients:
Coffee Leaves
Herbs & Spices



Tanah Datar is a region located in West Sumatra, populated by the Minang people. It is believed that Kawa Daun was invented during the colonial era, when local people were not allowed to drink coffee, since it was only for the elites and the Dutch. Thus, the local people who were forced to work in the plantation came with the idea to dry fry the coffee leaves and brew it. The name 'Kawa' came straight from the Arabic word of 'Qahwah', and 'Daun' means leaf. Kawa daun is known to have a unique leaves flavour that brings freshness and earthiness altogether. Some people added herbs, spices, and sugar to enhance its taste.

Kopi Manggar

– Belitung –



Ingredients:
Robusta/Arabica/Liberica
Condensed Milk

Belitung, an island in the east of Sumatra, which is known for its beautiful beaches. Like many other places in Indonesia, coffee entered their culture since the colonial era. Manggar coffee is named after the district where it is invented. It simply contains coffee, with some added condensed milk. The coffee came from Lampung, which is known for its full body and strong flavor attributes.

Kopi Takar

– Mandailing –

Ingredients:
Robusta/Arabica/Liberica
Brown Sugar
Cinnamon



Mandailing, home to the globally famous Mandailing coffee variety. Takar means a cup made from coconut shell in the local language. The unique taste of takar coffee came from the combination of strong coffee flavor with the aromatic and slight spiciness of cinnamon, which is also smoothened and sweetened by palm based brown sugar. This mixture resulted in a sweet, smooth yet strong coffee, enhanced with the aromatic blend of the coffee and cinnamon.

Kopi Tabalek

– Aceh –



Ingredients:
Robusta/Arabica/Liberica

Aceh, the home to the famous Gayo coffee, which is known for its strong yet balanced flavour. Here, the people drink coffee in a unique way, with flipped glass on top of a small plate. This method is known as Kopi Tabalek, which literary translate to 'flipped coffee'. The coffee used is usually Robusta, mixed with condensed milk, or milk with added sugar, or just sugar. The uniqueness came from the flipping part, where the drained coffee gets cooler faster than the one in the glass, maintaining the temperature so its always at its best to be sipped.

Kopi Durian

- Lampung -

Ingredients:
Robusta/Arabica/Liberica
Durian



Definitely not for everyone. But for coffee and durian lovers, this beverage will give a unique experience of the chaotic aroma and flavor blend in your mouth. Just like its name, kopi durian is made from adding durian fruit to the coffee. The combination of strong robusta flavor with the also strong aroma of durian will hit your sense of smell, bringing a delightful experience to those who love durian. The sweetness and creamy texture of durian will also give its impact to the texture and taste of the coffee.

Kopi Talua

– Padang –



Ingredients:
Robusta/Arabica/Liberica
Egg Yolk
Condensed Milk
Cinnamon

Kopi Talua is a local language of Minang, which translates to egg coffee. It is made by mixing egg yolk with condensed milk and cinnamon powder, which is then whisked with bamboo whisker till the texture is creamy and foamy. Then, a hot coffee mixture is added. The temperature from the coffee mixture has to be hot enough in order to cook the egg yolk. The produced taste is unique, its coffee flavour is intact, sweet, savory, spicy, and creamy with layer of smooth foam on the top.

Kopi Rarobang

– Maluku –

Ingredients:
Robusta/Arabica/Liberica
Walnut
Lemongrass
Ginger
Cloves
Cinnamon



Maluku, a region without coffee plantation, but the home of various spices since the colonial time. Kopi Rarobang was invented by the native with a contrast purpose from the coffee effect. It's intended as a soothing beverage, that is why, the Rarobang coffee contains a lot of spices. It's made by boiling the coffee with ginger, lemongrass, cloves and cinnamon, and sugar. After that, walnuts are added to add some texture and nutty flavor. It is hard to describe its complex taste, however, it surely manages to reach its aim. Although it might be a little bit weird to experience a soothing effect while drinking coffee.

Kopi Bening

– Jakarta –



Ingredients:
Robusta/Arabica/Liberica

Kopi bening means transparent coffee. It's a coffee with most of its original aroma and flavour, only with slight body. It is made by storing brewed coffee for a period of time, then it gets filtered till it gets as transparent as drinking water. With less body, the aroma and flavor of the coffee stand out. This coffee is only available in Jakarta, the busiest city in the country, where inventions are made.

Kopi Ijo

– Tulungagung –

Ingredients:
Robusta/Arabica/Liberica
(Unripe)



Kopi Ijo is originated in Tulung Agung region of East Java. Kopi ijo translates to green coffee. Unlike most coffees, kopi ijo turns to dark green when brewed. The beans came from unripe coffee cherries, which are roasted in a certain way. It used a special pan made of clay on top of burnt firewood. It is important to maintain the low temperature and constantly stirring the beans while being roasted to keep the them slightly cooked. It is then brewed by mixing it with milk and sugar, or just sugar. The texture and flavor is very nutty and grassy.

Espresso





Esspresso is originated from Italy. It is a type of coffee made by forcing a small amount of nearly boiling water under high pressure through finely ground coffee beans. It has a higher concentration of suspended and dissolved solids which makes it thicker and much stronger. It is made with espresso machine which was patented by Angelo Moriondo from Turin in 1884. It held a name of 'New steam machinery for the economic and instantaneous confection of coffee beverage, method A. Moriondo'. In 1901, Luigi Bezzera from Milano, patented an improved espresso machine which had a boiler and four groups that held varying sized filters that contained the coffee and was called 'Tipo Gigante'. From then, espresso machines are still improved to make it more efficient.



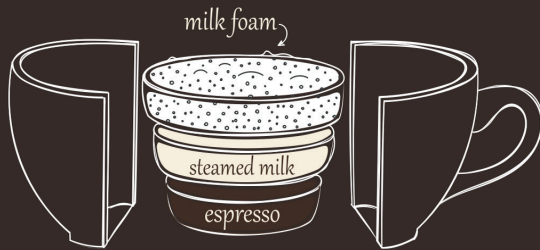
Espresso Based Drinks

Flat White



Flat white is said to be originated from Australia or New Zealand, and it has been around since 1980. A cup of flat white contains 45% of a double shot espresso, 45% of steamed milk, and 10% of a thin milk foam, and the drink itself would normally come in small size. The taste itself is characterized by strong espresso flavour, which is smoothened by the velvety texture created by the milks.

Cappuccino



Cappuccino is originated in Italy. Its name comes from the Capuchin friars, referring to the colour of the beverage when the milk is added in small portion to dark, brewed coffee. A cup of cappuccino contains 33% of espresso, 33% of steamed milk, and 33% of foamed milk.

Caffè latte is an Italian word which translated to 'coffee and milk', which has been around since the 17th century. A cup of caffè latte contains 40% espresso, 40% of steamed milk, and 20% of foamed milk. The drink is usually come in a medium to large size of cup.

Americano is a type of coffee prepared by diluting an espresso with hot water, giving it a similar strength to, but different flavor from, traditionally brewed coffee. The water dilutes the espresso, giving the volume of a drip, but with an espresso taste. This coffee is also known as 'long black' in Australasian term. A cup of americano contains 40% of espresso with 60% of hot water.

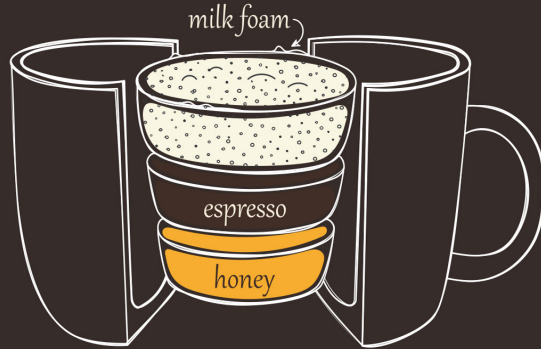
Café Latté



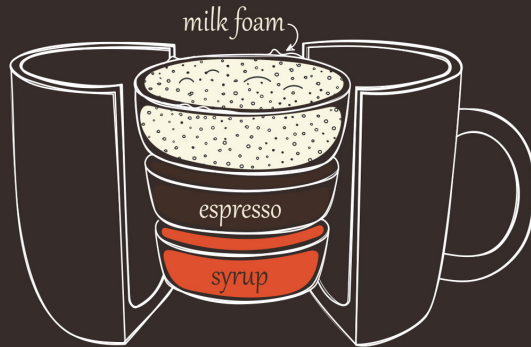
Americano



Mead Raf



Raf Coffee



Mead raf is originated in Russia. Its famous for the creamy and sweet taste. Usually made by mixing a shot of espresso with cream and honey. Nowadays, foamed milk is more used to replace the cream to add more smooth and milky flavor to the drink. A cup of mead raf contains 30% of espresso, 20% of honey, and 40% of foamed milk/cream.

Similar to mead raf, the raf coffee came from Russia. The only different is that the raf coffee use syrup or simply plain sugar instead of honey. This gives the flexibility for brewers to specify its taste accordingly to their desired flavour. A cup of raf coffee contains 30% of espresso, 20% of syrup/sugar, and 40% of foamed milk/cream.

Irish coffee is originated from Vienna, the name itself came from one of its ingredients: Irish whiskey. The combination of caffeine with the alcohol is proved to be preferred by some consumers, especially in the cold area. The bitterness of espresso is enhanced with the aroma of whiskey adding a degree of depth into the flavor. A cup of irish coffee contains 40% of espresso/americano (usually mixed with sugar), 20% of whipped cream, and 40% of whiskey.

Vienna coffee is a traditional creamed based coffee beverage. The taste of strong double shot espresso is subdued by the full creamy experience from the whipped cream. Some might consider adding some cacao to enhance its flavor. A cup of vienna coffee contains 50% of double shot espresso and 50% of whipped cream.

Irish Coffee



Vienna Coffee



Dark Eye



Dark eye coffee also known as double shot in the dark, is a coffee drink that is combining the complex taste of drip coffee with the strong features of espresso, which creates a drink with high intensity of flavor, and of course, extra caffeine. A cup of dark eye coffee contains 40% of espresso and 60% of any other brewed coffee.

Affogato



Affogato is originated in Italy. It is made by putting a scoop of vanilla ice cream into a shot of espresso. The creamy, sweet and vanilla taste really match the strong flavor of espresso. This gives a unique delicacy that brings pleasant to anyone who drink it. A cup of affogato contains 50% of espresso and 50% of vanilla ice cream.

A barista in a white shirt and dark apron is pouring water from a shiny, silver manual coffee pot. The pot has a green handle and a spout. The water is captured mid-pour, creating a small stream. In the foreground, on a wooden surface, are several glass carafes, some containing dark coffee, and a metal mesh filter. The background is slightly blurred, showing a kitchen or cafe setting.

Manual Brewing

Manual brewing is the third movement of the stages in the history of coffee brewing. The method aims to create a bright, clean and flavourful cup of coffee. It is normally used for Arabica coffee to bring out its full potential. Manual brewing opens a wide room for experiments, resulting in numerous brewing tools. In general, it involves letting the water flows through the ground coffee beans in a certain way with the application of paper/metal filters in order to reduce the amount of bitter oils in a cup. There are many methods of manual brewing. In general, it can be classified into four methods: the Pour Over, the Press/Plunger, the Cold Brew, the Percolate and Vacuum.

**Pour Over**

This method is basically pouring over water on the coffee beans, with certain techniques, for a period of time, which involves several stages of pouring

Press/Plunger

This method involves basking the grounds in the water for a period of time, and adding some light to medium pressure at the end to extract the rest of desired flavor.

Cold Brew

This method involves the extraction of flavor in low temperature for a long period of time. It aims to get the cleanest flavor from a coffee, minimizing the extraction amount of oil and carbon from the coffee.

Percolate and Vacuum

These methods aim to create the strongest body and flavor comparing to the other methods. High pressure brings out the most of the coffee in a relatively short period of time.

Coffee Brewing Tools:

POUR OVER



V60



Chemex



Kalita Wave

Our universal recommended V60 method is The 4-6 method invented by 2016 World Brewers Cup champion Tetsu Kasuya. This method makes the coffee super clean, bright, sweet and powerful.

The method uses medium coarse ground coffee

The method begins by dividing the total water into 40% and 60%. The first 40% is then divided in two pours, then decide how many pours you want to make for the last 60%.

The first two pours decide the balance of the acidity and sweetness. The less water used in the first pour, the sweeter the coffee will be.

The remaining pours will decide the strength of the coffee.

The recipe uses 20 grams of coffee with 300 ml (1:15 ratio) of 92 °C water.

45 sec blooming (50-60 ml)

0:45 60-70 ml pour

1:30 60 ml pour

2:15 60 ml pour

3:00 60 ml pour

3:30 lift the dripper



Chemex



In 1941, a German chemist Peter J. Schlumbohm created the chemex, which one of many inventions he created in his lifetime. Using a pour over method, the chemex works by passing water through a bed of coffee and a paper filter. As the filters are usually 20-30% heavier than typical filters, they retain more suspended oils during brewing and keep out more solids, resulting in a cleaner cup of coffee.

The method is known for its ability to produce a standard minimum quality of cup. It is used to produce a clean, sweet and balanced coffee. The method uses medium coarse ground coffee about the size of sea salt.

It is recommended to use about 30 grams of coffee with 450 (1:15 ratio) ml of 88 - 92 °C water.

The pouring should be done in a circular pattern starting in the centre, spiral out toward the edge before spiraling back toward the middle.

50 sec blooming (50 ml)

0:50 200 ml pour

2:15 200 ml pour

3:45 lift the filter

Kalita Co. is the name of a Japanese company who created the Kalita Wave series in 2010. The Kalita Wave has a flat bottom with three extraction holes, which eliminates any channelling of water in the coffee bed and slows down the water flow, for a crisp cup of coffee due to evenly extracted flavour.

It is recommended to use George Howell method which uses about 27 grams of coffee with 390 ml (1:14 ratio) of 95 °C water. The method uses medium coarse ground coffee about the size of sea salt.

The pouring should be done in a circular pattern starting in the centre, spiral out toward the edge before spiraling back toward the middle.

0:00-0:15 65 ml pour
0:30-0:45 65 ml pour
1:00-1:15 65 ml pour
1:30-1:45 65 ml pour
2:00-2:15 65 ml pour
2:30-2:45 65 ml pour
3:00 lift the dripper



Coffee Brewing Tools:

PLUNGER/ PRESS



108



Aeropress



Frenchpress

In 2005, an engineer from the US created the Aeropress in order to brew a less bitter coffee in a shorter time. Its closed chamber creates the pressure required during brewing, which also resulted a much faster brewing time.

It is recommended to use about 17 grams of coffee with 220 ml (1:13 ratio) of 96 °C water. The method uses medium fine ground coffee about the size of table salt.

Put and level the ground coffee in the filtered basket that can be fixed to the bottom of the brew chamber and place it on top of the mug.

Start the timer when the water is added, saturate all the grounds within 10 seconds and pour the rest of the water.

Stirr the mixture for few seconds, place the plunger, pull it up slightly to creat a pressure seal, and wait.

At 1:15, remove the pressure seal and give the mixture another stir for a few seconds. Then put the plunger back and gently press down with steady pressure, stopping as soon as hissing sound is heard.



French Press

The Press was patented by Milanese designer Attilio Calimani in 1929. It underwent several design modifications through Faliero Bonadanini, who patented his own in 1958 and began manufacturing it in a French clarinet factory called Martin SA. It is known to produce a dense, heavy, yet elegant cup.

It is recommended to use George Howell method which uses about 30 grams of coffee with 350 ml (1:12 ratio) of 95 °C water. The method uses coarse ground coffee.

Gently pour twice the amount of water than ground coffee (60 ml), give a gentle stir and allow the coffee to bloom for 30 seconds.

Pour the remaining water, place the lid, and let the coffee steep for about four minutes.

Press the filter down gently to the bottom, and immediately serve the coffee. Do not let it sit, as it will cause over extraction.



Coffee Brewing Tools:

COLD COFFEE



Cold Drip

It is a coffee brewing technique using cold water to slowly drip through the ground coffee. The brewing process usually takes 12-24 hours depending on the flavour preferences. Low temperature and slow extraction retain the origin flavours of the beans and avoid the bitter oils to get into the cup. As the result, a really clean and bright cup, that is rich with aroma and flavours.

It is recommended to use medium to coarse grindsize, depending on flavour preferences.

Use 230 grams of coffee with 2660 ml of water in ice form (1:12 ratio).

Place and level the ground coffee on the filter in the middle part of the dripper, and bloom it with water for a minute, then place the ice-water mixture in the top part. This has to be done in a room temperature, letting the ice melt in its natural pace.

Set the drip rate to 40 drops/min. This method requires adjustment of the drip rate during brewing, check at least every 1.5 hours.

In approximately 12 hours, the process will be done.



Coffee Brewing Tools:

VACUUM



Syphon

The syphon coffee was invented in the 1840 in French, and has continuously been refined many times. It produces a delicate and strong coffee.

It is recommended to use 20 grams of coffee with 300 ml (1:15 ratio) of 95 °C water. The method uses medium ground coffee.

Wet the filter using hot water and place it into the upper chamber.

Place the bottom part of the syphone on the scale and fill it with 300 ml of hot water.

Attach the top chamber, and put the syphon on the heat source and start heating up the water.

As the water boils, it will transfer to the top chamber. Stir it to reduce the bubbling and heat.

Add the 20 grams of coffee to the water and give it a good stir.

Start the timer and leave it undisturbed for a minute. Turn off the heat source and stir gently.

Allow the coffee to draw down completely, remove the top chamber and let the coffee to cool down.

Syphon



Coffee Brewing Tools:

PERCOLATE



Moka Pot

The Moka Pot is a classic brewing method which was patented in 1933 by Luigi de Ponti in Italy. This device uses steam pressure and an external heat source to create a strong cup of coffee. The strength of the coffee is close to espresso.

It is recommended to use about 20 grams of coffee in a 4-cup sized Mokapot. The method uses medium ground coffee.

Add 95 °C water to the bottom part of the brewer.

Insert the filter basket into the brewer bottom, and fill the basket with coffee, and level the surface.

Put the top part of the brewer on top of the bottom part, and screw it.

Place the brewer on the heat source. Turn it on with light heat. Wait until the coffee filled the top part of the brewer, and serve the coffee immediately.



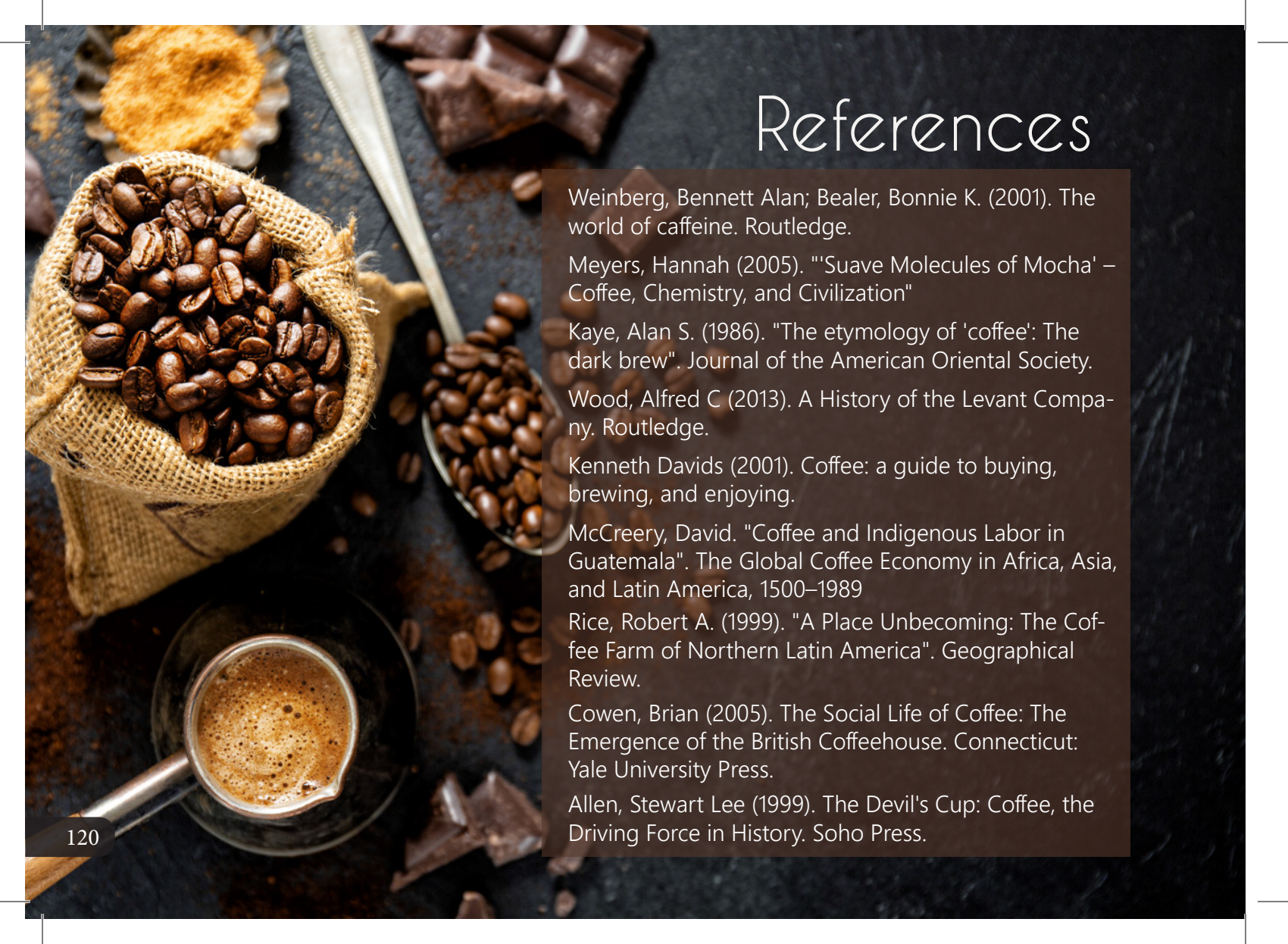


Through this book, we tried to deliver some illustrations of the complexities that lies in the world of coffee, in the simplest possible way, so that our readers will gain some useful information that will further enhance their curiosity about Indonesian coffee. We hope that this book will give sparks to the curious minds, inspiring them to do more studies, explore more of our coffee production areas, and even maybe interested to invest and contribute to the development of our coffee. This book is open for any critiques as we plan to continuously revising it in the future, adding more concise information with updated way of communicating it. As for now, let us enjoy our coffee...



Acknowledgements

We would like to thank the Ministry of Agriculture, Universitas Padjadjaran, INRAE, and Burgan Agriculture for their supports. We also send our most sincere gratitude to all of Indonesian coffee growers for giving us the inspiration to contribute in any way we can. Last but not least, we thank all who have been contributing in form of ideas, information, or as simple as giving company when we were writing this book.



References

Weinberg, Bennett Alan; Bealer, Bonnie K. (2001). The world of caffeine. Routledge.

Meyers, Hannah (2005). "'Suave Molecules of Mocha' – Coffee, Chemistry, and Civilization"

Kaye, Alan S. (1986). "The etymology of 'coffee': The dark brew". Journal of the American Oriental Society.

Wood, Alfred C (2013). A History of the Levant Company. Routledge.

Kenneth Davids (2001). Coffee: a guide to buying, brewing, and enjoying.

McCreery, David. "Coffee and Indigenous Labor in Guatemala". The Global Coffee Economy in Africa, Asia, and Latin America, 1500–1989

Rice, Robert A. (1999). "A Place Unbecoming: The Coffee Farm of Northern Latin America". Geographical Review.

Cowen, Brian (2005). The Social Life of Coffee: The Emergence of the British Coffeehouse. Connecticut: Yale University Press.

Allen, Stewart Lee (1999). The Devil's Cup: Coffee, the Driving Force in History. Soho Press.



Stamp, Jimmy (2012). The Long History of the Espresso Machine. Smithsonian Magazine.

Illy, Francesco; Illy, Ricardo (1992). The Book of Coffee: A Gourmet's Guide (1st American ed.). New York: Abbeville Press.

Bersten, Ian (1993). Coffee Floats Tea Sinks: Through History and Technology to a Complete Understanding. Helian Books.

Morris, Jonathan (2007). The Cappuccino Conquests. The Transnational History of Italian Coffee. University of Hertfordshire.

Davids, Kenneth (2013). Coffee: A Guide to Buying, Brewing, and Enjoying (5 ed.). St. Martin's Press.

Fumagalli, Ambrogio (1995). Coffee Makers. Chronicle Books.

Neilson, J. (2012). Coffee (Indonesia): 1900 to Present: East and Southeast Asia. In A. Stanton, E. Ramsamy, P. Seybolt & C. Elliot (eds.). Cultural Sociology of The Middle East, Asia, & Africa: An Encyclopedia. (pp. III240-III242). Thousand Oaks, CA: SAGE Publications.



