WORKING PAPER 1

THE GLOBAL COFFEE VALUE CHAIN

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FAKULTAS PERTANIAN
UNIVERSITAS LAMPUNG
2018

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A Brief History of Coffee

Coffee is mostly planted in lower areas of the tropical rain forest. It is a main genus of the family Rubiaceae which is mostly trees and shrubs. Although the genus has 400 genera and 500 species, Arabica and Robusta are two types of coffee known widely (de Graaf, 1986). Arabica coffee is mainly cultivated in Latin America while Robusta coffee is planted in West Africa and Southeast Asia (de Graaf, 1986; Clay, 2004). Coffee was originated from African continent where it grew wild in some African countries, such as Ethiopa (Arabica), Uganda and Zaire, (Robusta). The native of continents, the Africans, at that time only cultivated coffee in an insignificant size and much relied on collecting coffee beans from wild trees. After the Europeans arrived to Africa, coffee was planted with a larger scale and was progressively presented to other part of the world by merchants, missionaries, and government officers (de Graaf, 1986). However, it was Arabian traders who initially cultivated coffee, which they brought from Kafa province of Ethiopia in around 1000 AD, in the first coffee plantation in the world histories (Clay, 2004).

Colonialism has an important role in spreading coffee around the world. While the Europeans ruled some parts of the Asian continent, they found that coffee also grew well and seemed properly adapt to some places of the continent which have tropical-like environments. Srilanka, India and Indonesia were the first countries in which coffee was planted outside the Africa; and from these countries coffee was expanded globally in the 17th century (de Graaf, 1986). In numerous topical countries where the colonialism existed, coffee was planted and managed as a commodity having economic value, especially for export that could raise substantial tax revenues. The colonial administration in these countries constructed railways and roads to develop better connections between centrals and harbor towns. By having these means of transportation, coffee productions and marketing were developed intensively; and by 1850 coffee had become “a major beverage in the Western World” (de Graaf, 1986).

Coffee took advantage by the collapse of other commodities, such as indigo and tobacco, in the world market. In 1720, Dutch East India Company (Dutch: *Vereenigde Oost-Indische Compagnie/* VOC) commenced trading coffee internationally from Java, an island of Indonesia. Fifty years later (1770), some places of Asia and Brazil also began to export coffee. Two hundred years after Java started to trade the commodity, in 1920, Brazilians were able to supply two-thirds of the world coffee demands. However, it took 50 years longer until 1970, for Africans, for being able to supply 25 % of the world coffee consumptions (de Graaf, 1986).

In many countries, in the past, states normally involved in major crops production such coffee, tea and cottons. However, after slavery was abolished and a variety of “labor contracts” was introduced, estates no longer enhanced their roles in coffee production; in some countries, their powers to the plantations even have declined. Thereafter, peasants, who formerly worked on plantations and already possessed knowledge on coffee, steadily took

over the productions (de Graaf, 1986). This perhaps can explain one of possible reasons, from a historical perspective, why coffee in the producing countries until recently is grown mostly by small-scale producers farming less than 10 hectares; and some 70 % of the coffee supply are provided by family members possessing lands less than 5 hectares (de Graaf, 1986; Clay 2004; calo and wise, 2005; TCC, 2012). Only a few estate plantations remain in many countries; for example in Indonesia, merely in Java few estate-coffee plantations are still in functions (de Graaf, 1986; Wahyudi and Jati 2012)

Latterly, coffee is almost “exclusively” produced and exported by more than sixties developing countries supplying the demand of developed nations, predominantly the United States and Western Europe. Therefore, coffee is playing an important role economically for many producing countries in Africa, Asia and Latin America (de Graaf, 1986; Kaplinsky, 2004; TCC 2012). About 25 million farmers globally involve in coffee productions in which the coffee producers as well as the countries rely on the commodity trade as a source of their livelihoods and their foreign exchanges respectively (TCC, 2012). Although cultivation of coffee is not a difficult task for the farmers in the producing countries, it is the marketing-related systems that make the farmers hardly receive a fair reward for their efforts (de graaf, 1986). After waiting 5-6 years for the coffee plants to grow and bear fruits, the farmers have to face a reality that “the price elasticity of supply and demand is low” in the consuming countries (de Graaf, 1986). This means that the producers barely change their production pattern regardless the price in the market. The demand for the perennial beans is growing slowly in some importing countries, even stagnant in other consuming countries. The consumers in those countries hardly increase their consumptions for coffee although the coffee price is decline.

The coffee chain

A commodity chain involves a series of activities and organizations involved in moving materials from early suppliers to final consumers (waters, 2003). The chain describes total journey of materials as they move from upstream to downstream (Stadtler and Kilger, 2005). The chains have an important function of surmounting gaps, which are often quite wide, between suppliers and consumers (Waters, 2003). In the case of coffee, before the consumers can purchase, brew and drink the beverage, this agricultural product has undergone long and complex stages in so-called “a market chain”. The universal market chain for coffee starts with coffee beans growing on farms, then going through the steps of collecting (harvesting), main processing, sorting and grading, export, shipping, distribution, roasting, packaging, and finally redistribution to retail stores (Clay, 2004; TCC, 2012). The coffee chain can be seen in Figure 1.

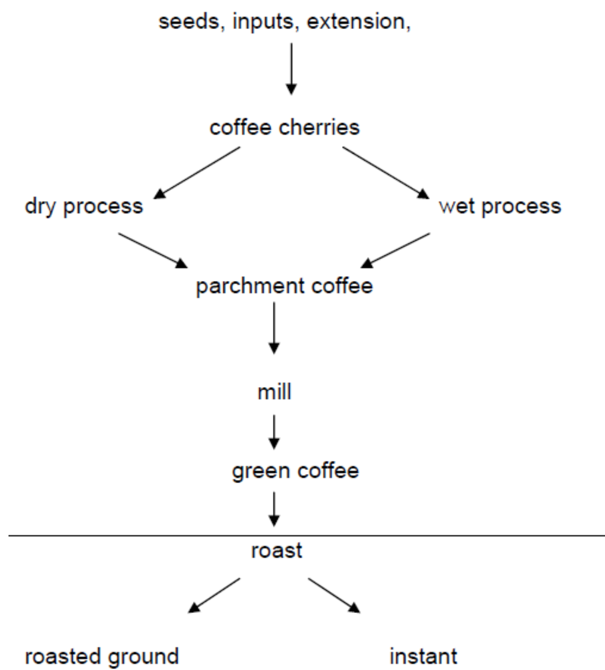

Figure 1. The coffee chain (Kaplinsky, 2004)

Historical and political aspects, differences in production management, and share of coffee in state economy might be contribute to broadly diverse of "organizational structure" of the coffee sector in the developing countries (de Graaf, 1986). In addition, the global coffee market is not a homogenous market (de Graaf, 1986). *C. arabica sp*. (in the trade is also referred as Arabica coffee) and *c. canephora* (in the trade is referred as Robusta coffee) are two species of coffee that make the commodity markets are more heterogeneous, because they are traded separately (TCC, 2012). While Arabica is commonly favored by the consumers because of its milder flavor and has lower caffeine content, Robusta is generally preferred by the producers because the species is sturdy and well growth, can keep the beans' minimum weight and resilience to diseases and pests (de Graaf, 1986; Coffeereview, 2013). Robusta normally receives lower prices than Arabica which dominate the global coffee market; Robusta largely used as a component, especially in instant coffees, in the low-priced American commercial coffees (Coffeereview, 2013). The share of Robusta coffee in the international market, however, has increased steadily from about 10 % in 1950 to more than 25 % in 1980 and reach at 40.3 % in 2010 (de Graaf, 1986; ITC, 2013)

In the coffee plantations, labors are needed because ripe coffee cherries are harvested manually (TCC, 2012). Before these cherries are traded, they are processed in the producing countries. The producers, in the preliminary step, detach the coffee bean from coatings and pulps of the cherry. These steps are called a primary processing. Based on the method of the primary processing, generally, the coffee production in the word is differentiated into three types: high-grown milds, Brazils and Robusta. Both high-grown milds and Brazils are come from Arabica species. The "mild" coffee is the product of the wet processing, whereas the unwashed processing results in "hard" coffee. While Arabica species can be processed by washed (wet) and unwashed (dry) methods, Robusta is usually processed by unwashed technique (de Graaf, 1986; Coffeereview, 2013). In the washed method, the collected suitable

cherries are pulped, fermented and washed, dried, peeled and refined (polished). In the dry technique, the ripe cherries are dehydrated and hulled. The final products of both processing procedures are the coffee beans which, in the markets, are referred to as “green coffee” (TCC, 2012). The distinction of the green-coffee types is important because mild Arabica, hard Arabica, and hard Robusta coffees are transacted separately (TCC, 2012; Coffeereview, 2013).

The coffee is also marketed in different phases of processing such as green beans, roasted beans and soluble coffee. However, more than 90 percent of the world production is traded, in high-income countries, as the green coffee. This coffee, commonly packed in 60 kg bags, can be reached by the consumers via the markets of the United Stated and Europe. The international purchasers latterly are getting more concern with the quality of the green coffee (e.g., homogeneity and consistency) and requiring more complete information regarding all aspects of the coffee such as the type of principal processing, the country of origin and the certified-grade standard (TCC, 2012; Coffeereview, 2013).

The coffee chain governance

Coffee has a long history. It has been cultivated in the plantations since around 1000 AD and has been traded internationally since 1720 (de Graaf, 1986). Latterly, the coffee becomes a global commodity in the global markets. It was traded globally for over 250 years; however, it does not (yet) face severe competition from direct substitutes made in the developed-main-consumer countries. Coffee is still one of the major beverages in the word and consumes by millions of people around the globe (TCC, 2012; Coffeereview, 2013).

As a globally traded commodity, coffee has a relation with the international commodity chains. Gereffi (1994) make a clear distinction between the meaning of globalization and of internalization. Gerrefi (1994) argues that while the term internationalization refers “simply to the geographical spread of economic activities across national boundaries”, the term of globalization implies “a degree of functional integration between these internationally dispersed activities”. According to Gereffi (1994, 1999), the meaning of the latter is more appropriate to explain phenomena of the word commodity chains than the former. Thus Gereffi (1994, 1999) advocates the use of the term “the global commodity chain” instead of the international commodity chain.

The global commodity chain refers as the entire series of activities involved in “the design, production, and marketing of a product” (Gereffi, 1994). However, the term “commodity” latterly is replaced by the term “value chain” which was initiated by Michael Porter in 1984. “The concept of value chain encompasses the issues of organization and coordination, the strategies and the power relationships of the different actors in the chain” (M4P, 2008). Scholars such as Ponte (2004), argues that the latter term capture a “wider variety of product” than the former. Thus, the Global Commodity Chain (GCG) method is recently well known as “the Global Value Chain (GVG)” analysis (Ponte, 2004).

The global value chains have three main dimensions: (1) an input-output structure, (2) a territoriality and (3) a governance structure (Gereffi, 1994). According to Gereffi (1994), an

input-output structure is "a set of products and services linked together in a sequence of value-adding economic activities"; a territoriality is "spatial dispersion or concentration of production and distribution networks, comprised of enterprises of different sizes and types"; and a governance structure is "authority and power relationships that determine how financial, material, and human resources are allocated and flow within a chain."

In the recent global commodity chains, there are emerging trends that portray inequality of power among the key actors in the chains (Kaplinsky, 2004). Gereffi (1994, 1999) argues that the trends are related to governance structure of the chains. Moreover, "the idea of value chain is associated with the concept of governance"; which is an importance key for value chain analysis (M4P, 2008). Therefore, it is important to distinguish between two important approaches while analyzing the chains. The first approach is "**producer-driven**", and the second is "**buyer-driven**" commodity chains (Gereffi, 1994, 1999). In producer-driven commodity chains, the producers play key roles of the production system by commanding core technologies to both backward and forward linkages; these producers are usually large multinational Corporations (Gereffi, 1994, 1999). Industries, with capital and technology intensive, such as automobiles, computers and aircrafts are among those in the category of the producer-driven commodity chains. The second governance chain structure, the buyer-driven commodity chains, refer to those industries in which the rein of powers are held by the important buyers at the end of the chains near to the customers. Actors, in the downstream of the marketing chain, such as large retailers and brand-named merchandisers are those in the category of the buyer-driven commodity chains.

The global coffee value chains are likely match with the stereotype of the buyer-driven commodity chains in which farmers, local traders and governments in producing countries are increasingly "marginalized" (Calo and Wise, 2005). Since World War II, the world coffee trade has become increasingly consolidated (Clay, 2004). In 1989, half of the global coffee traded is controlled by few giant multinational corporations acting as traders and roasters (de Graaf, 1986). These giant companies shape the structure of the chains by their abilities to govern the nature of producer's access to the final consumers (Kaplinsky, 2004). Latterly, the global coffee market is even more centralized as a greater portion of the international markets is controlled by fewer multinational actors (Clay, 2004; TCC, 2012).

Another characteristic of global value chains is the increasing requirement of standards (Kaplinsky, 2004). Essentially, producers involving in the coffee chains should conform to various standards. While some standards are set by international bodies (e.g., ISO9000 for quality, ISO 14000 for environment), the other standards are the requirements of "chain-governance" such as production standard (e.g., organic, Rainforest Alliance, Utz, 4C) and company standard (e.g., Starbucks, Nespresso AAA) (Kaplinsky, 2004; TCC, 2012). A requirement of good-environmental practices is perhaps one of the most familiar buyer-driven-standard examples by which key buyers have restructured the global chain in the coffee-producing countries (Arifin, 2010). However, it is important to note that, according to the global value chain approach, a "key barrier" of the producers to participate in global chain is their low competencies to fulfill these standards (M4P, 2008:11).

Further, Kaplinsky (2004) divides the governance in the coffee value chain into two phases: pre-structural adjustment and post-structural adjustment.

The Coffee Chain "Pre-Structural Adjustment"

Globally, the coffee production increases faster than the consumption, so prices decline (Clay, 2004). The over production of world coffee supply has long occurred since the 1800s when Brazil and Java expanded their production rapidly (ICO, 2013). Although oversupply could happened by many causes, a low barrier to access the markets is one of main rational reasons (van Tulder et al, 2004). Because the coffee was once considered as the main source of foreign exchange, until the mid-1990s, states took positions in the coffee sectors to control the production and the marketing mechanism. In most countries, where the coffee trade was controlled by states, national coffee organizations also played a significant role in regulating the domestic marketing and the export (Clay, 2004). In these functions, the coffee organizations can be divided into three types (de Graaf, 1986; Common fund commodities, 2000; Kaplinsy 2004):

- The marketing board. Located mostly in "English-speaking coffee-producing countries" of ex-British economies such as India and Kenya, but also existed in Angola, Ethiopia and Togo. Although it had a legal monopoly to purchase the whole coffee crop, the Ministry of Agriculture or the Ministry of Trade and Commerce managed this Marketing Board. The board had a main function of coordinating the heavily regulated production systems as well as mediating producers and global traders. The marketing board was responsible for grading and storing the coffee until the commodity is resold in national or international market. Additionally, it often became an organizer of the coffee auctions in which the board also frequently sold the coffee.
- The 'caisse de stabilization' type. It was set in many "French-speaking coffee-producing countries" of ex-French colonies such as Cameroon and Ivory Coast. It has many similar functions of the marketing Board, but contrasting to the Board, it rarely gave physical contact to manage the coffee. In other words, it played the governance role without directly involved in production processes.
- Intituto/ The quasigovernmental coffee producers' associations and 'institutes'. This board was located in Latin America countries such Brazil and Colombia. It had many of the governing functions of the marketing boards such as a dynamic role in quality assurance and price formation, but it played less in purchasing.

These various forms of marketing boards and their related cooperatives had both positives and negatives sides. On the valuable side, they significantly contributed to quality assurance as well as guaranteed the provision of funding and extension services to the coffee growers. The boards also played vital roles in maintaining the stocks and reaching various marketing agreements so that reducing price instability. However, on the minus side, their monopolistic behavior led to a situation in which organizational pitfall such as inefficiencies and corruptions frequently undermined them. Moreover, the payments of the coffee vended were not immediately paid to the farmers by the boards. Consequently, the coffee growers

usually had to wait for some time before receiving the rewards of their hard works. (Kaplinsky, 2004)

In the pre- structural adjustment period (Figure 2), global traders and roasters, unlike the marketing boards, rarely showed their influences in chain governance. They were closer to the global-market downstream than to the producers. The traders imported coffee from a variety of sources in different countries and sold it to the roasters. They often bought the beans from the local traders and the exporters as well as from commodity auctions in East Africa and India. In this adjustment period, the traders had no effort to dominate the roaster, and vice versa. They developed an adherent relationship based on mutual advantage in the business and seemed to have no disposition to subdue each other (Kaplinsky, 2004).

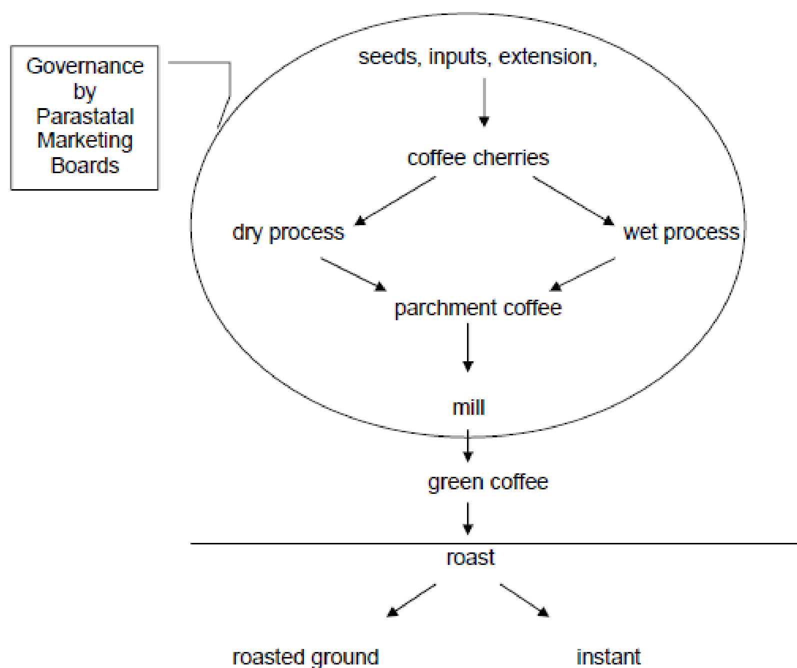

Figure 2. Governance in the coffee value chain pre-Structural Adjustment (<1992) (Kaplinsky, 2004)

The Coffee Chain "Post Structural Adjustment"

The liberalization of the coffee marketing is perhaps driven by a new harmony in economic thinking. The idea of focusing governmental controls with rigid regulations, in the production and marketing systems, has no longer possessed robust supporters in the word, especially in the west. On the other hand, the new way of economic philosophy argues that governments' regulation on macroeconomic, with mechanisms such as exchange and interest rates, would only create unsuitability of economy in long term. Instead, the new economic-concept strongly advocates that macroeconomic solidity should be achieved by allowing markets running independently without a high intervention of the governments, unless the markets are in a state of failure (Common Fund for Commodities, 2000).

Since the 1990s, a process of deregulation and liberalization of the coffee sector has begun. Consequently, the roles of the private sectors have gradually increased in the global coffee chain. The Common Fund for Commodities Report which involved a cooperation between the World Bank and the International Coffee Organization concluded that “the key benefits of liberalization is that increased competition throughout the marketing chain leads to a reduction in marketing costs and growers receiving a higher proportion of the export unit value” (Common Fund for Commodities, 2000: 10). In addition, Kumar et al (2011) argues that, although the liberalization is still raising a controversial issue regarding income inequality among actors, there are benefits for the farmers from the new global-supply-chains such as improving linkages between the farmers and the buyers.

The coffee chain is lively, and a new type of chain-governance is emerging quickly after the preceding one began to fade (see Figure 3). One of the raising phenomena following the liberalization is the concentration of powers, at the downstream of the value chain, on the hand of traders and roasters (Kaplinski, 2004; TCC, 2012). Since the 1990s, the majority of the global coffee trading is controlled by large traders such as Neumann and Volcafé (both based in Germany), Cargill, Decotrade and Taloca (the last two based in Switzerland). Latterly, these companies are still continuing their investments in the coffee-producing countries to fulfill the coffee demand of major roasters. Some roasting companies such as Nestle and Kraft have established direct connection to the coffee producing countries by which they buy the coffee directly from the growers and establish commercial operations in those countries. The big-five roasters (i.e., Nestlé, Philip Morris/Kraft, Tchibo, Proctor & Gamble, and Sara Lee/Douwe Egberts) purchase 45 percent of the global coffee harvested in the developing countries. These roasters produce a number of “end-products” such as “filter coffee, instant coffee, and the new coffee pads” (TCC, 2012). Figure 3 shows governance in the coffee production chain post-Structural Adjustment.

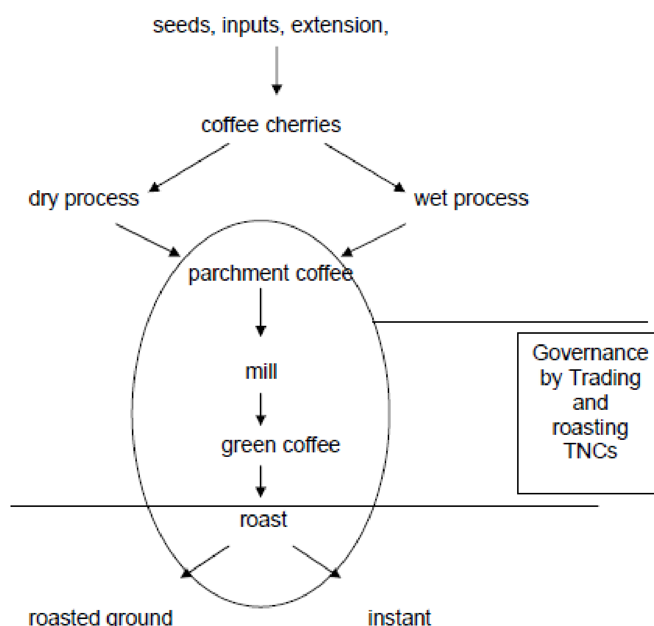

Figure 3. Governance in the coffee production chain post-Structural Adjustment (>2000) (Kaplinsky, 2004)

Globally, consumers seem to have growing influences on agri-food chains. Consumers are becoming aware of healthy life so that they are demanding food commodities which have good qualities and assurance of safeties (e.g., free of pesticides and other dangerous chemical contents). The implications are "the production, processing and distribution systems are adapting to such changes" (Kumar, 2011). The producers having low proficiencies would not able to adapt the changes; and all the market requirements are simply acting as a barrier to them. On the contrary, for the competent suppliers, their profits would grow as the barrier increase (van Tulder et al, 2004).

Coffee has been consumed by millions of people, and has become a part of their daily diets. Its global consumption steadily continues to grow, predominantly in new markets, by average annual growth rate of 2.4 % (ICO, 2013). However, the coffee growers at the same time face serious difficulty in their practices because of limited financial supports and investments, indigent techniques of productions, and hostile climates (TCC, 2012). Consequently, both coffee qualities and yields are low. The implication is "the exporters have had to bear more of the costs associated with quality control, drying, grading and sorting" (Common Fund for Commodities, 2000: 12). As the modern consumers are almost always seeking for a good-quality product, major coffee roasters have put their serious concern and commitments to improve the quality and sustainability of their coffee products (TCC, 2012). This means they should be more active in the chain governance. Some "the quality-oriented niche producers" (traders and roasters) attempt improve the quality by reaching the upstream-end parties in the coffee chains, that are the farmers (Kaplinsky, 2004).

To achieve their goals, these producers has steered some interventions by teaching and training fundamental of the coffee quality to the growers as well as being assiduous in buying suitable beans and ensure apposite quality control in grinding and in transportation (TCC, 2012). NGOs and governments also have taken more advance approach to promote "the upgrading of small producers" by teaching and training, certifying and setting standard, as well as stakeholder facilitation (Vellema et al., 2012). In addition, it is possible that corporations (roasters and traders) cooperate with NGOs or even with government in a framework so-called "partnership". Defined as "collaborative arrangements in which actors from two or more spheres of society (state, market and civil society) are involved in a non-hierarchical process through which these actors strive for a sustainability goal" (Glasbergen, 2007), a partnership would benefit all the value chain actors, especially the smallholder coffee producers. The partnership, between companies and NGOs, could help the farmers to comply with the market entry requirements and a diversity of standards (Vellema et al, 2012).

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