Fairness, Transparency and Traceability in the Coffee Value Chain through Blockchain Innovation

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Abstract

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Abstract:

Coffee is both one of the most widely consumed beverages in the world and one of the most important internationally traded commodities. However, the coffee value chain is opaque and unbalanced: less than 10% of the $200 billion industry value remains in producing countries. First, this article introduces the idea of a Commodity Fairness Index used to measure the inequality, or economic imbalance, in a commodity value chain, and calculates it in the case of Colombian coffee. Secondly, the paper describes the system architecture of a web app built upon Hyperledger Fabric that paves the way to improve coffee farmers' lives by bringing transparency and traceability into the entire value chain and improving its fairness as a result. The application of blockchain technology to the coffee industry enables inclusive business models that reward quality and hard work, and in turn translates into greater trust, confidence and fairness across the entire industry as well as among end consumers.

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I. Introduction

More than 2 billion cups of coffee are consumed around the world everyday; coffee is one of the most important commodities traded worldwide and the coffee industry generates around $200 billions yearly [1] . Coffee is one of the most widely consumed beverages in the world, and not only plays an important part in the daily routines of a significant share of the world population, but it also has a significant social and economic impact for the families that produce it, who are mostly smallholder farmers runnin

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ue to agroclimatic conditions, 90% of the world's coffee product ountries where it employs 25 million farmers and provides a livelihood for more than 100 million people [1] . The so called "bean belt" is highlighted in yellow in Figure 1 : this is the band around the middle/southern region of the world, roughly bounded by the Tropics of Capricorn and Cancer, that is ideal for

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