Transportation inefficiencies in the cocoa value chain in Ivory Coast: Is sustainability possible?

Introduction

Ivory Coast (also known as Côte d’Ivoire) is the world’s top exporter of cocoa beans by volume and sales. However, a living income remains out of reach for its cocoa farmers. Furthermore, current transport solutions (Photo 1) are incompatible with the future architecture of global value chains (Figure 1).

The future of sustainable cocoa is under threat. One possible solution is to invest in improved transport of cocoa beans from farm gate to export harbour.

Methodology

- Literature review: scientific databases, newspaper articles, scientific journals, and lectures at the Bern University of Applied Sciences (Figure 2).
- Data collection: questionnaires with farmers in three villages (n=138) and semi-structured interviews with five types of special function actors (n=15) (Photo 2).

Results

Transport types:
- On foot (30-60kg bags filled with cocoa beans)
- Bicycle (60-120kg)
- Motorcycle (130kg)
- Tricycle (200-300kg)
- Boat (100-500kg)
- Pick-up truck (300-500kg)
- Tractor (3-8 tonnes)
- Truck (3-40 tonnes)

According to the data, modern cocoa transport is:
- Unsafe
- Unaffordable
- Inaccessible
- Inefficient
- Not resilient
- Not minimizing carbon and other emissions

Recommendation

In order to increase Ivorian cocoa farmer income:
1. Build more village collection points at strategic locations.
2. Invest in higher quality roads.
3. Invest in improved vehicles.
4. Professionalize the “pisteur” workforce.
5. Open regional bank branches close to town collection points.
6. Develop a cocoa-friendly, sustainable national railway system.

Limitations:
- Avoid the loss of independence during data collection.
- Address gender and cultural deficits.

Future research:
- Include semi-processed products.
- Include the International Maritime Organization.
- Coordinate with CCC and CCDO leadership well in advance.

Table 1: The potential impact of improving transport efficiency with respect to society, costs, and greenhouse gas emissions:

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<tr>
<th>Farmers</th>
<th>Society</th>
<th>UN SOC d</th>
<th>Costs</th>
<th>UN SOC d</th>
<th>Greenhouse gas emissions UN SOC d</th>
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<tbody>
<tr>
<td>Village of Konédougou</td>
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<td>Reduced food costs 2</td>
<td>Improved public health 11</td>
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<td></td>
<td>Better employment rate 8</td>
<td>Reduced school access costs 4</td>
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<td></td>
<td>Increased production levels 8</td>
<td>Reduced health-related costs 8</td>
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<td></td>
<td>Reduced transport times 11</td>
<td>Reduced fuel consumption costs 12</td>
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<td>Reduced transport costs 11</td>
<td>Reduced reparations costs 12</td>
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<tr>
<td>Village of Dijimbo</td>
<td>Better health services access 3</td>
<td>Less frequent vehicle renewal 8</td>
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<td>Faster product evaluation 11</td>
<td>Reduced fuel costs 12</td>
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<td>Longer vehicle life 11</td>
<td>Reduced maintenance costs 12</td>
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<td>Village of Inatché</td>
<td>No fictitious cooperatives 1</td>
<td>Reduced reparations costs 12</td>
<td>Less emissions 13</td>
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</tbody>
</table>

Publication

Full Length Research Paper

Transportation inefficiencies in the cocoa value chains in Ivory Coast: Is sustainability possible?

Simeon Human and Ingrid Fromm1

Bern University of Applied Sciences, School of Agriculture, Forest and Food Sciences
Zollikofen, Switzerland

The purpose of this investigation is to examine transportation inefficiencies and the sustainability of cocoa value chains in Ivory Coast. Problems, addressed include underdeveloped market systems, types of transportation and how it is measured, and most importantly, improving efficiency in transportation with related to working, creating and guaranteeing green revenues. A key methodological is to define in which way transport can be made sustainable to the benefit of cocoa farmers in order to improve their living standards. The study identifies a number of steps that can be taken to improve efficiency: modernisation of transport systems, cooperative management, support, ports, chokolate and supermarkets. The first term of transportation on roads and sometimes by sea is measured using the United Nation criteria for emissions. However, with the current implementation of policy, financial and technological innovation, there is potential to improve the sustainability of cocoa transportation from farm gate to export harbour.

Key words: Cocoa value chain, Ivory Coast, sustainability, transport.

Mr. Simeon Human1 and Dr. Ingrid Fromm2

1Master’s Graduate of the HAFL and PhD candidate at the Royal Agricultural University, Cirencester, United Kingdom. Email address: 10418130@rau.ac.uk

2Bern University of Applied Sciences, School of Agriculture, Forest and Food Sciences (HAFL), Zollikofen, Switzerland. Email address: ingrid.fromm@bfh.ch