United Nations Conference on Trade and Development

Multi-Year Expert Meeting on Commodities and Development

8-9 February 2021, Geneva

Using commodity exchanges for transparency in producer's price bargaining

By

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Economic Development (CAREED),
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Background

- Eradication of Marketing Boards (MBs) & Parastatal Agencies

- Lack of formal institution to facilitate trading

- Direct exposure of smallholder farmers to markets

- Dominance of traders with substantial market power in the agricultural supply chains

- Difficult for disorganised and dispersed smallholder farmer to exercise countervailing power.

- Fragmentation of processing activities due to vertical and horizontal integrations.

Transparency issues
in a post- reformed agricultural commodity markets

❖ Information failure (increases costs & reduces efficiency)

- Information asymmetries within trading relationships
- Opportunity for opportunistic behaviour
- Weak bargaining power for smallholder farmers who are often illiterate
- Smallholder farmers are forced to make decision that are pareto-efficient
- High transaction costs
- Low smallholder farmers' incomes
- Lost of value addition in producing countries

How can a commodity exchange improve transparency in price bargaining?

➤ **Reduce information failure**

- Disseminates price and market data to all market actors

- Provides grading standards

- Provides accurate information on quality and quantity of products

➤ **Reduce transaction costs**

- Coordinates the markets

- Reduce the number of intermediaries involved in trading

Ethiopian smallholder farmers' views & experiences of the ECX success

Ordered logit analysis technique applied to 100 questionnaires from Ethiopian smallholder farmers.

1. The ECX has reduced transaction costs and increase farmers' incomes

$$ReducedTrdctcstincreaseincome_i* = \beta0 + \beta1 farmersorgan_i + \beta2\ Easytofindbuyer_i + \beta3\ EasyaccessTF_i + \beta4\ Reducedmiddlemen_i + \varepsilon_i$$

2. The ECX grading standards have improved farmers incomes

$$Quantityqualityinfo_i* = \beta0 + \beta1\ Improvedquality_i + \beta2\ Improvedpricing_i + \beta3\ Facilitatingtr_i + \beta4\ Reducedgradin\ i + \varepsilon_i$$

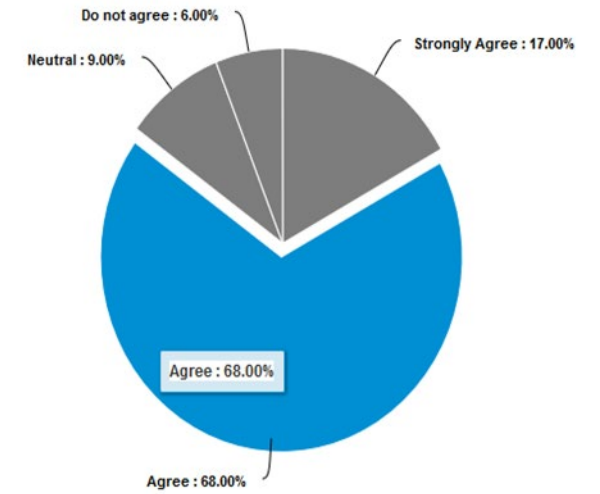**3. Market and price data dissemination has improved transparency in the trading system.**

$$Moreinformed_i* = \beta0 + \beta1\ Improvedtranspar_i + \beta2\ Improvedpricing_i + \beta3\ Facilitatingtr_i + \beta4\ Moreconfident\ i + \beta5\ Powertosetprice_i + \varepsilon_i$$

The ECX reference price has facilitated industry transactions

Do not agree : 7.00%
Strongly Agree : 12.00%
Neutral : 15.00%
Agree : 66.00%
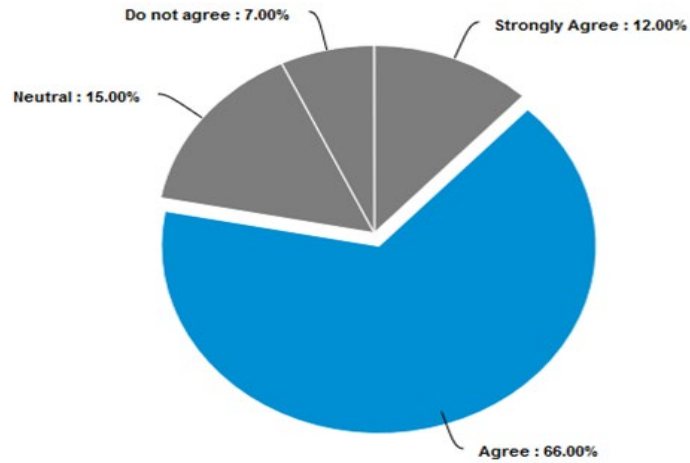
The ECX helps you become more informed about market and pricing.

Do not agree : 6.00%
Neutral : 9.00%
Strongly Agree : 17.00%
Agree : 68.00%
Agree : 68.00%

5. The ECX has reduced the number of middlemen thereby reducing the costs and increasing your income.

strongly disagree : 2.00%
Do not agree : 2.00%
Neutral : 16.00%
Strongly agree : 29.00%
agree : 51.00%
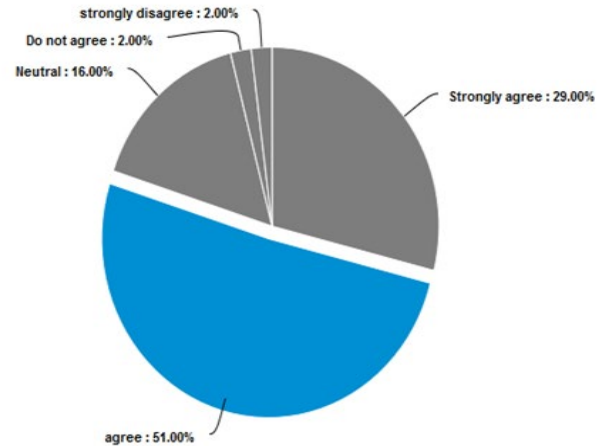
7. You feel more confident to trade your crops through the ECX Primary Trading centres

Do not agree : 3.00%
Neutral : 5.00%
Agree : 45.00%
Strongly Agree : 47.00%
Agree : 45.00%
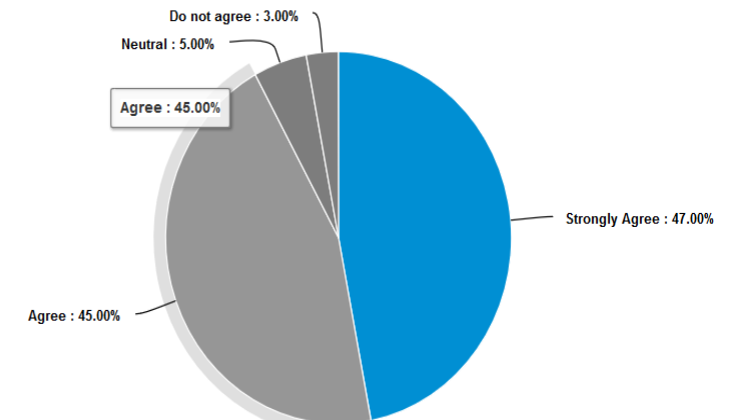
Results

Transaction costs

Variables	coefficient	Odds Ratio
Farmerorgan	0.51*[31] [0.26][32]	1.67
Easytofindbuyer	0.64 [0.45]	1.91
EasyaccessTF	0.70** [0.34]	2.01
Middlemenreduced	2.38*** [0.75]	10.90
Number of cases correctly predicted	75 (75%)	
Likelihood ratio test: chi-square	114.217 [0.0000]	

Grading

Variables	Coefficients	Odds ratio
Improvedquality	0.45*** [0.17]	1.57
Improvedpricing	0.89** [0.42]	2.44
Facilitatingtr	1.27 *** [0.42]	3.59
Reducedgrading	0.31 [0.22]	1.36
Number of cases 'correctly predicted'	65 (65.0%)	
Likelihood ratio test: Chi-square(4)	78.3321 [0.0000]	

Transparency

Variables	Coefficients	Odds ratio
Improvedtranspar	-0.48** [0.244725]	.61
Powertosetprice	0.83** [0.336065]	2.29
Improvedpricing	0.77** [0.309394]	2.17
Facilitatingtr	1.99*** [0.436383]	7.35
Number of cases 'correctly predicted'	75 (75.0%)	
Likelihood ratio test: Chi-square (4)	78.5842 [0.0000]	

Results of the Regression (Producer price- dependent variable)

	Coefficient	Std. Error	t-ratio	p-value	
Const	6.02745	0.616297	9.780	0.0001	***
d_Pdct	0.0243664	0.00393207	6.197	0.0001	***
d_TrdVol	−0.0168573	0.00842015	−2.002	0.0584	*
d_IntPr	0.177880	0.0595523	2.987	0.0070	***
d_Trsctests	−0.264048	0.138350	−1.909	0.0701	*

Using Percentage Change Analysis (PCA) to compare transaction costs in Ethiopia & CIV

Ethiopia, the maximum figure was 226.67 and the minimum 109.39.

$$\Delta_{TC} = \frac{(226.67 - 109.39)}{226.67} = \frac{117.28}{226.67} \text{ x } 100 = 51.74 \text{ \%} \qquad \textbf{(Equation 2)}$$

The percentage change in transaction costs in Ethiopia is **52 per cent** (rounded up).

CIV

$$\Delta_{TC} = \frac{(1.08 - 0.40)}{1.08} = \frac{0.68}{1.08} \text{ x } 100 = 62.96 \text{ \%} \qquad \textbf{(Equation 3)}$$

The percentage change in transaction costs in CIV is **63 percent** (rounded up).

Results of the PCA, show an increase in transaction costs in CIV (63 per cent) whereas the increase in Ethiopia is only 52 per cent over the period (November 2007- January 2017). Thus, transaction costs have increased by 11 per cent more in CIV than Ethiopia.

Using a commodity exchange to reduce transaction costs.

Search and information costs:

- Provides a trading platform for buyers & sellers
- Weighs products
- Coordinates the market

Bargaining and decision costs:

- Provides grading standards
- Disseminates all relevant market and price data to all market actors

Supervision and enforcement costs:

- Provides warehouses for storage and warehouse receipt
- Works with partner banks for deposits of funds
- Zero default policy

Benefits associated with a commodity exchange
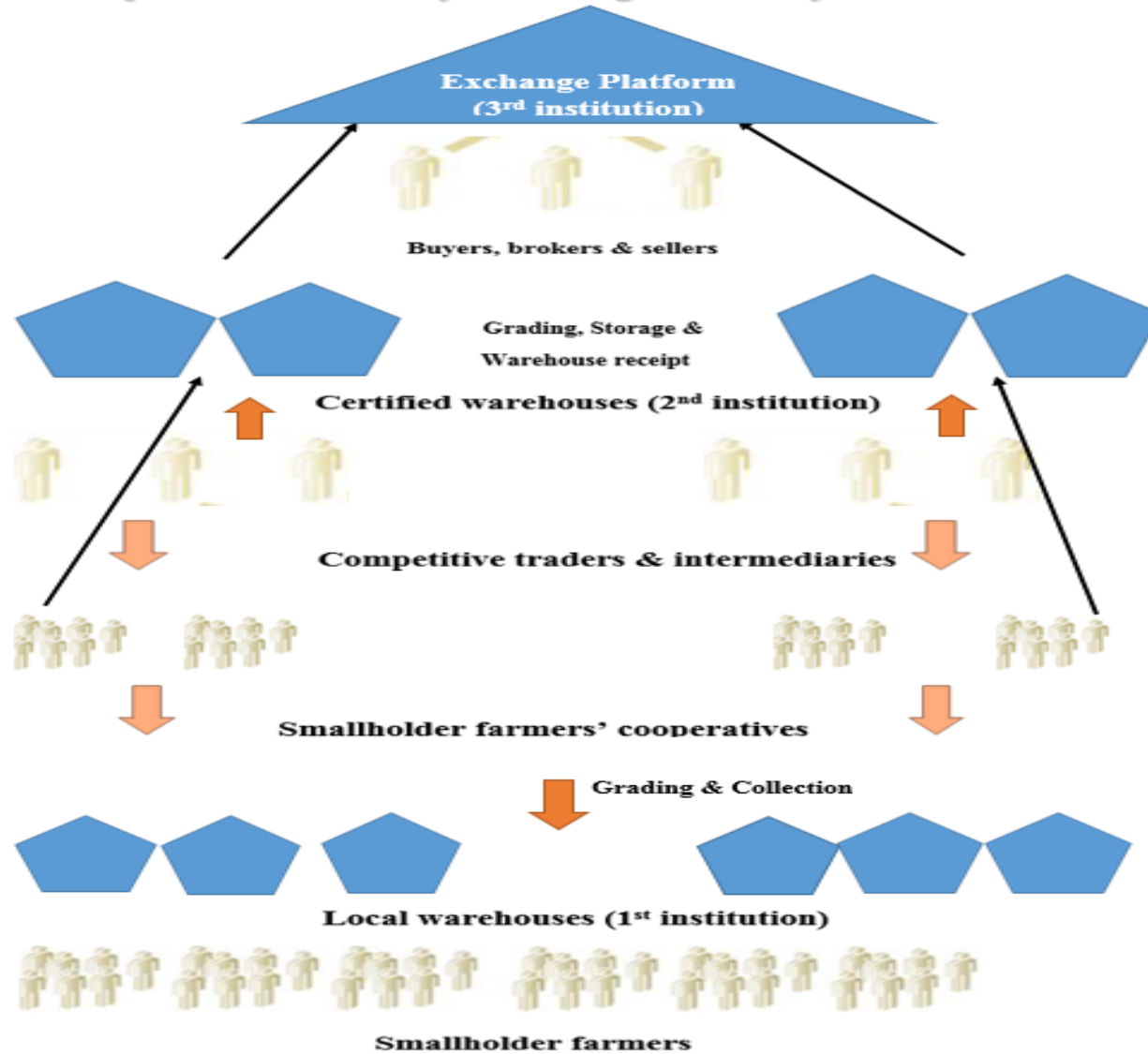
A well organised commodity exchange can:

- Yield significant benefits to all market actors and enhance trade.

- Can prevent the exercise of market power

- Can help mitigate the impact of commodity price volatility through the use of forward contracting and futures trading.

- Can manage risks involve in trading (default risk).

- A commodity exchange can be an efficient solution to the problem of coordination and transparency in agriculture commodity market.

A Proposed Commodity Exchange for Ivory Coast

Exchange Platform (3rd institution)

Buyers, brokers & sellers

Grading, Storage & Warehouse receipt

Certified warehouses (2nd institution)

Competitive traders & intermediaries

Smallholder farmers' cooperatives

Grading & Collection

Local warehouses (1st institution)

Smallholder farmers

Adapted from Robins, (2011)

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Recommendations

- Commodity exchanges can yield significant benefits to low-income agrarian economies.

- Commodity dependent countries should therefore, consider commodity exchanges to enhance trade and increase smallholder farmers incomes.

- There is "no one size fits all" commodity exchange. Thus, research before establishing a commodity exchange is essential. This will help countries to establish one that meets the needs of smallholder farmers and other service users.

- Best practice can be shared across countries. For example, zero default policy in Ethiopia can be replicated in other countries.