Contract farming in Africa: Opportunities and Challenges

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Contract farming (definition)

- Agricultural production carried out according to a prior agreement in which the farmer commits to producing a given product in a given manner and the buyer commits to purchasing it.
- Variability in contract farming
  - Formal (written) vs informal (oral) contracts
  - Some provide inputs on credit, others don't
  - Some provide technical assistance & monitoring, others don't
  - Price may be fixed, set by formula, or unspecified

Why so much interest in contract farming?

Constraints on small farmers
Lack of info about production methods reduce productivity
Lack of information about prices and markets make commercialization risky
Lack of liquidity or credit to purchase inputs
Volatile prices discourage commercialization
Poor infrastructure raises cost of inputs and lowers revenue from crop sales

Why so much interest in contract farming?

Constraints on small farmers	Contract farming as solution
Lack of info about production methods reduce productivity	Buyer can provide extension information to farmers
Lack of information about prices and markets make commercialization risky	Buyer can guide farmer to meet market demand
Lack of liquidity or credit to purchase inputs	Buyer often provides inputs on credit
Volatile prices discourage commercialization	Buyer sometimes guarantees price before planting
Poor infrastructure raises cost of inputs and lowers revenue from crop sales	Buyer sometimes delivers inputs and collects harvest

But there are some concerns:

- Some criticism of contract farming
  - …that contract farming exploits small farmers because of unequal relationship between farmers and large agribusiness firm.
  - …that additional income from contract farming creates inequality, friction within community, and disputes within household
  - …that contract farming excludes small farmers because buyers prefer to work with medium and large farmers

Outline

- Why does contract farming exist?
- When does contract farming make sense?
- What is the experience with contract farming in sub-Saharan Africa?
- What is the impact of contract farming on small farmers?
- What policies and programs promote contract farming while protecting farmer interests?

Why does contract farming exist?

- *Vertical coordination* refers to the matching of supply and demand (with respect to quantity, quality, timing, etc) between different stages of a supply chain e.g. producers, trader, processors, and retailers.
- *Transaction costs* are the costs associated with completing a sale or purchase.
  - Examples: cost of finding a buyer, negotiating price, inspecting product, & risk of being cheated
  - Transaction costs increased by imperfect information, opportunistic behavior, and asset-specific investments

Why does contract farming exist?

Problems of vertical coordination	
Tea	Tea factory wants to expand and buy from small farmers, but farmers cannot afford to wait for tea to mature.
Green beans	Green bean exporter want to expand, but farmers not familiar with production methods, need training & inputs.
Sugar cane	Sugar mill wants to buy cane from farmers, but need to spread delivery of cane over the season.
Cotton	Cotton gin wants to ensure sufficient raw material and increase quality
Coffee	Coffee exporter want to meet European demand for organic coffee, but how to get farmers to avoid chemicals.

Why does contract farming exist?

- If there were no transaction costs:
  - Farmers would know what and when to produce
  - Credit would be available for inputs
  - Farmers and buyers would trust each other
- But in real world, processor/buyer has two choices to influence supply to match demand
  - Buyer makes agreement with farmer so that buyer provides inputs & technical assistance on credit, while farmer agrees to sell to buyer and repay at harvest
  - Buyer purchases or leases farmland and grows on large-scale farm ("estate" or "plantation")

Why does contract farming exist?

Types of vertical coordination	Description
Spot markets	Sale transaction without relationship or prior agreement. Price is only “signal” for coordination.
Contract farming	Sale transaction based on prior agreement with may include technical assistance, inputs on credit, and/or guaranteed price.
Vertical integration	Two stages of market channel are merged into one company, e.g. sugar mill & cane plantation.

Why does contract farming exist?

Types of vertical coordination	Advantages	Disadvantages
Spot markets	No coordination cost	Difficult to coordinate quantity, quality, and timing of supply & demand
Contract farming	Coordination of supply & demand, efficiency of small farmers	Higher cost than spot markets, looser coordination than vertical integration
Vertical integration	Very tight coordination	Wage labor less motivated & more costly than family labor

When does contract farming make sense?

- Characteristics of commodity
  - High-value crop - easier to justify costs of coordination
  - Large quality variation – need to match quality to demand
  - Perishable – need to coordinate timing of delivery
  - High initial cost or input costs – potential for buyer to assist
  - Crop is difficult to grow or new to farmers
- Characteristics of buyer
  - Buyers are much larger than farmers
    - Examples: processor, exporter, or retail chain
    - Gives buyer advantage in access to credit, info, & inputs
    - Easier to cover fixed cost of establishing & enforcing contracts
- Characteristics of destination market
  - Willing to pay premium for higher quality, high income

When does contract farming make sense?

- Horticulture for processing or export
- Tea
- Tobacco
- Cotton
- Others: seed, dairy, poultry, rubber, and oil palm

When does contract farming make economic sense? Horticulture

- Contract production mainly for export or processing
- Unstable over time, problem of side-selling
- Examples:
  - Kenya – Vast experience with horticultural exports and contracting, particularly green beans
  - Madagascar – 10,000+ farmers grow vegetables for export to Europe, inputs on credit, close supervision
  - Senegal – contract production of vegetables shifted to exporter-owned estates, estates have larger poverty-reducing impact

When does contract farming make economic sense? Tea

- Kenya Tea Development Agency
  - Started as parastatal, but now privatized
  - 562,000 contract growers, one of largest schemes in world
  - KTDA provides inputs and technical assistance
  - Average tea area 0.2 ha/farm
- Malawi
  - Smallholder Tea Authority (STA) contracts 5000 small farmers
  - Provides technical assistance & inputs on credit
  - But most tea production on estates

When does contract farming make economic sense? Tobacco

- Malawi
  - Traditionally, tobacco grown by estates and marketed through auctions
  - Since liberalization, 300 thousand small farmers grow burley tobacco with significant income effects
  - Auction systems prevents contracting, but now up to 33% can be direct marketed
  - Two companies contract small tobacco growers at pre-arranged price, but few farmers get inputs
- Uganda
  - British American Tobacco (BAT) purchases from 65,000 contract growers, provides inputs and close monitoring

When does contract farming make economic sense? Cotton

- Varied experience (Tschirley et al, 2009)
  - Mali, Cameroon, Senegal, and Chad retain state-owned cotton marketing company, provides TA and inputs on credit, state-managed contract farming
  - Mozambique, Cote d'Ivoire, Ghana, and Burkina Faso have liberalized cotton markets, but regional monopolies allow input credit to continue
  - Tanzania and Uganda have very competitive cotton sectors with many gins, good prices but no credit
- Side-selling is major problem
  - Creates trade-off between a) competition & good prices vs b) regional or national monopoly & input credit

When does contract farming make economic sense? Sugarcane

- Characteristics of sugarcane
  - Sugarcane can be grown on large or small scale
  - Sugarcane mills are typically very large, need to spread deliveries over the season to maximize throughput
  - Sugarcane is bulky and perishable
- Sugarcane grown on estates and by contract farmers
  - Kenya – Mumias Sugar Company contracts farmers
  - Malawi – One company has two estates & contract farmers, average size 3 hectares
  - Swaziland – Sugar is 60% of ag GDP, small-scale growers have lower production costs, but higher marketing costs, compared to estates

When does contract farming make economic sense? Coffee

- Coffee is generally not produced on contract
  - Coffee cooperatives in Uganda, Tanzania, Rwanda, & Ethiopia, among others
  - But most coffee marketed by traders in spot market
- Why not?
  - Coffee processing can be done on small scale
  - Coffee does not require large quantities of inputs
  - After processing, beans are non-perishable

What is impact of contract farming?

Study	Country	Finding
Little & Watts (1994)	Several African countries	Highlights social tensions and imbalance of power, but incomes increased for most farmers
Warning & Key (2002)	Senegal	32,000 contract growers of groundnuts, income 55% higher than other similar farmers
Bowlig (2007)	Uganda	4000 contract growers of organic coffee have higher income than others
Minten et al (2009)	Madagascar	10,000 contract growers of vegetables for export, higher & more stable income than similar farmers
Studies outside Africa also find positive impact: Birthal et al (2005), Simmons et al (2005), Ramaswami et al (2006), Miyata et al (2009)		

Are small farmers excluded from contract farming?

- Comparison studies
  - Guo et al 2005 – contract farmers in China larger than average, but all were small by international standards
  - Key and Rungsten 1999 – tomato processors in Mexico prefer smaller farmers
  - Warning & Key 2005 – groundnut contract farmers in Senegal had same level of assets as other farmers
  - Simmons et al 2005 – contract seed growers in Indonesia larger than other grain producers, but contract poultry growers smaller than independent poultry growers
- Summary: No clear pattern
  - Small farmers have higher transaction costs but may have lower production costs

When does contract farming NOT make economic sense?

- Staple grains
  - Exceptions: seed, for brewery, state-run irrigation schemes
- Staple roots and tubers
- Pulses
  - Exceptions: for export or for processing
- Horticulture for local consumption

Conclusions

- Contract farming usually raises farm income
  - Higher productivity due to access to inputs and TA
  - Higher prices due to quality & access to new markets
- But several challenges
  - Side-selling by farmers
  - Cheating on quality standards by buyers
  - High cost of dealing with many small farmers
- And only suitable in specific situations
  - High-value, perishable crops bought by large buyers
  - Not suitable for mass of staple crop producers
  - Probably less than 5% of farmers have contracts
- But will expand over time

Policy implications

- Contract farming should be promoted
  - Particularly when it works with small-scale farmers
- Role of government in promoting contract farming:
  - Improve investment climate
  - Legalize direct buyer-farmer transactions
  - Promote development of grades and standards
  - Strengthen farmer organizations and other intermediaries
  - Promote PPP in extension services
  - Promote competition
  - Enforce contracts

Thank you.

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