



RESAKSS SIDE EVENT



# Agricultural Intensification, Technology Adoption, and Institutions in Ghana

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# Outline

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- **Agricultural intensification in Ghana**
- **Adoption of improved technologies**
  - **Seeds**
  - **Fertilizer**
  - **Mechanization**
  - **Irrigation**
- **Exceptions: Cocoa, irrigated rice, high value crops**
- **Institutional factors**
- **Concluding remarks**

# Agricultural intensification in Ghana

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- Intensification entails:
  - more frequent use of land and
  - increasing use of yield-enhancing inputs
- Previous attempts to intensify Ghanaian agriculture
  - provision of private goods by government - i.e. fertilizer, seed, agricultural machines, etc.
- Marginal increase in yields
- Progress is limited and supply of inputs and public goods not enough
- **But**, farming systems have been dynamic
- Farmer's response did not involve significant intensification

# Adoption of improved seeds

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- Shift from use of long to short-maturing varieties
- Introduction of new crops: soybean, cotton
- But, replacement of old varieties not rapid enough
- Low adoption of certified maize seed (5% hybrid seeds)
- Obatanpa (23 years) popular, performs better than local hybrids
- Imported varieties (Pioneer, Pannar) now being made available
- Accessibility issues (cumbersome regulations and procedures delay imports)

# Adoption of fertilizer

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- Fertilizer use is widespread, but use is below recommended rates
- Only to maintain previous yields
- Public efforts: Focus on fertilizer subsidies only
- Production has increased, but there is more to increasing financial returns to fertilizer:
  - Recommendations not specific enough to match soil needs (low crop response)
  - Soil degradation from repeated application of fertilizer
  - Organic matter content
  - Good seeds
- Implementation challenges, sustainability, and poor targeting
- **Policy:** Integrated approach to soil fertilizer management

# Adoption of labor-saving technologies

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- Rising labor costs and urbanization: use of herbicides and tractors
- Increase in farm size
- Mechanization is limited to primary tillage
- Supply is still inadequate
- Public efforts:
  - Import tractors through bilateral agreements
  - Supply to farmers and mechanization centers at subsidized rates
  - But, viability is a challenge
- Rising private service provision by medium-scale farmers
- Recent importation of tractors with range of attachments has a potential

# Adoption of irrigation

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- Past investments in public irrigation, but no recent expansion
- Existing irrigation capacity is not fully used
- Only Kpong irrigation scheme is successful
- Flood recession agriculture (maize, rice, cowpea, leafy vegetables, onion, tomato and pepper) is an opportunity, but constrained by:
  - Investment in development of flood-compatible crop varieties
  - Improved access to irrigation equipment and kits for small-scale farmers
  - Improved access to other inputs (fertilizers and pesticides) and markets

# Exceptions: Cocoa, irrigated rice, high value crops

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- Cocoa yields doubled in the 2000s
  - Rising producer prices
  - Improved technologies
  - Fertilizer subsidies
  - Public pest and disease control programs
- High level of intensification (Kpong scheme):
  - Rice yields: 4-6 tons
  - Irrigation
  - Improved rice varieties
  - Challenge is to replicate this success on other underutilized public schemes

# Institutional factors

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- Access to farmland:
  - The tenure system (customary or statutory) does not provide enough security
  - But, tenure is not a constraint to increasing productivity and investments
  - Women's access not constrained by individualization of land rights
- CAADP Commitments: 10% budgetary allocation to agriculture
  - But, there is no room for further spending on agriculture
  - Fiscal expansion only by reducing the public sector wage
- Concerns: recent decentralization may lead to less emphasis on agriculture
- Farmers' organizations not that effective in raising resources for members

# Concluding remarks

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- Agricultural intensification has taken off only to a limited extent
- Low adoption of land productivity-enhancing technologies
- But, increasing adoption of labor-saving technologies
- Policy needs to support private supply chains of services to farmers
- Approach to deal with soil fertility issues needs to be holistic
- How to mobilize resources to support agriculture development?

Thank you