

MSU Research on Agricultural Inputs: Implications for USAID Ag. Strategy

Eric Crawford, Valerie Kelly, and Julie Howard

Department of Agricultural Economics
Michigan State University

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Outline of Presentation

- MSU research and focal areas 1 (technology), 2 (farmer organizations), and 3 (markets)
- Conceptual framework for studying agricultural intensification--determinants and impacts
- Major findings
- Major challenges
- Specific comments on USAID agriculture strategy, organized by the six focal areas

Focal Area 1 (Technology)

- Returns to ag. research and technology transfer
 - Highlighted possibilities for good rates of return
 - Importance of inputs and complementary investment
- Determinants of agricultural productivity
 - Need sharp rise in use of improved inputs
 - Farm/nonfarm/environment links
- Seed, fertilizer and soil fertility literature reviews
- Profitability and risk of fertilizer/seed use
- Sustainable intensification
 - Adoption depends on incentives, capacity, knowledge
 - Sustainable methods of reducing input costs

Focal Area 2 (Farmer Organizations)

- Improving access to inputs
- Reducing input costs through bargaining power and lower transactions costs
- Importance of human capacity building

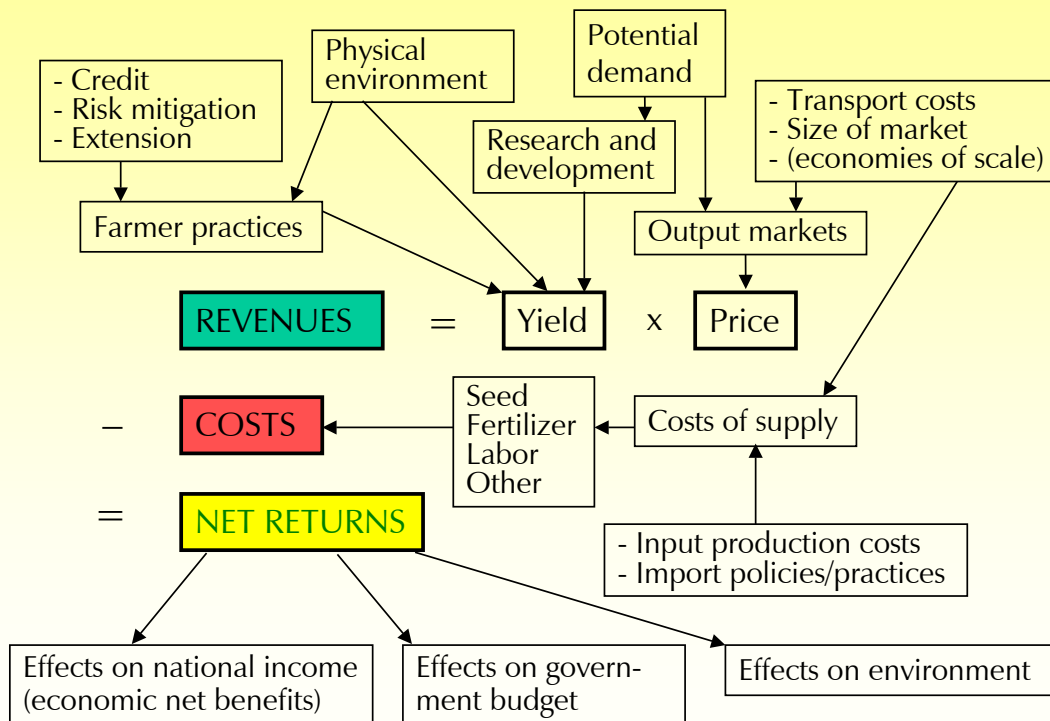
Focal Area 3 (Markets)

- Integrated input/output marketing framework
 - Analysis of input/output marketing channels
 - Ways to improve marketing systems:
 - look for potential cost savings throughout system
 - vertical integration and linked credit and output markets
 - market information systems
 - Synergy between cash crops and food crops
- Market reform--questions addressed:
 - Impact of liberalization and privatization
 - Pathways for increasing private sector involvement

Expanded Conceptual Framework

- Identifying leverage points for promoting agricultural intensification:
 - Broad range of key determinants and impacts
 - Recognizing links between input and output markets

Agricultural Intensification: Determinants and Impacts



Recent/Current Research

- Profitability of fertilizer use (Rwanda, Zambia)
- Fertilizer marketing costs (Ethiopia, Kenya, Zambia, Rwanda; West Africa)
- Fertilizer distribution and credit (Zambia)
- Constraints and strategies for input sector development (Mozambique)
- Analyzing risks of improved input use and ways to reduce farmer/trader risk (Ethiopia, Mali)

Recent/Current Research (2)

- Aggregate benefit-cost analysis of input promotion programs
 - Guidelines and Mali case study
 - Benefits of harmonizing regional trade in seed
- Analysis of farm income and land holdings to identify viable target groups for intensification

Major Findings (1)

- Adoption of improved technology requires:
 - Incentives to adopt (absolute & relative profitability, and low risk compared to other investments)
 - Capacity to adopt (human and financial resources)
 - Information about technology communicated to farmers and traders
- Sustained use of improved technology requires:
 - Well-functioning input and output markets
 - High-quality extension services
 - Financially sound credit systems (farmers & traders)
 - Protection against financial risks (farmers & traders)

Major Findings (2)

- Structural reforms have left input markets in a low-demand, low-volume, high-input-cost trap
- Private sector input traders are put off by high costs, policy uncertainty/risk, and competition from free input giveaway programs
- Input and output markets work best when:
 - Functions are vertically coordinated
 - Credit and output markets are interlinked, allowing input loans to be recovered from sales of output
 - But how to get vertical coordination without the costs of monopoly (e.g., low prices to farmers)?

Major Findings (3)

- Types of farmer associations differ, as do the development roles they play
- Impacts of farmer associations include:
 - Improved commodity marketing and access to inputs
 - Associations act as brokers for public, private, NGO services
 - Leaders gain confidence in ability to solve village problems
- Organizational issues:
 - Need for significant investment in human capital over long run
 - Create village-based adaptive process allowing villagers to diagnose and respond to specific needs
 - Approach must also foster village-based problem-solving capacity to deal with new or changing problems.

Major Findings (4)

- Smallholder access to improved seed varieties has worsened following reforms
- Seed systems for different commodities follow distinct development paths
- Strategies for seed sector development should include:
 - Linking formal and informal organizations to meet both market and non-market demand for improved varieties.
 - Improving the regulatory environment to increase seed quality and availability (e.g., through expanded trade)
 - Increase demand for seed by reducing costs or by using small packs, input vouchers, etc., to overcome cash constraints

Major Challenges (1)

- How to bring down the real costs of input supply?
 - Economies of scale to reduce unit costs
 - Cash crop schemes to facilitate coordination of marketing, credit, and extension
 - Collaboration between farmer associations, NGOs, and for-profit firms
 - Targeting of better-off smallholders where substantial effective demand exists

Major Challenges (2)

- How to boost demand for improved inputs?
 - Support “demand-driven” input and output markets
 - I.e., support shifts in cropping patterns in line with post-reform economic institutions and price relations
 - Experiment further with “small-pack” input supply
- Examples:
 - Sorghum vs. maize in remote areas of Zambia
 - “Nontraditional” crops for which there is strong commercial demand in domestic or export markets

Major Challenges (3)

- How to reduce risks?
 - Crop combinations and conservation technologies appropriate for riskier environments
 - Institutions and organizations to spread risk among farmers and input suppliers
 - More stable and transparent government policies
 - Fewer subsidized input supply programs that undercut private sector commitment to input marketing
 - Find solutions to problems of late fertilizer delivery
 - Explore potential for area or rainfall insurance

Identifying Initiatives for USAID

- Caveats and questions
 - Different approaches will be needed for “priority” vs. “vulnerable” countries; this leads to difficult questions about prioritizing potential interventions.
 - What are the implications for countries in between?
 - Need to keep in mind “big picture” issues of linking interventions in six focal areas together.

Technology Systems Interventions

- Assist African partners to identify technology research and transfer priorities and to build the institutional capacity and linkages necessary to efficiently address them at national, regional, and continent-wide levels.
- Improve efforts to review and disseminate what is currently known about profitability incentives for farmers to use “on the shelf” technologies (e.g., Rwanda).
- May need to rethink criteria used for evaluating incentives in light of HIV/AIDS (e.g., relative importance of returns to land vs. returns to labor).

Farmer Organizations

- Need to be flexible concerning guiding principles for organizing farmers (community, crop, watershed, etc.); community-based organizing is not always the most appropriate.
- Farmer organizations need to be viewed as a tool for accomplishing a wide range of objectives, not as an end in themselves (e.g., many associations are formed simply as a vehicle to access aid).
- Recent experience shows training to support empowerment is crucial (CLUSA model); shortcut approaches do not lead to sustainable organizations (e.g., Rwanda, Mali, Zambia).

Market Efficiency and Equity

- Need to improve access to world markets by reducing barriers (EU/US subsidies, tariffs, etc.)
- Dealing with vertical linkages between input, credit, and output markets
 - Reforming existing monopolies (e.g., cotton)
 - Developing new institutions to support emerging niche crops and traditional cereals
- Promoting investment in complementary public goods (e.g., infrastructure, contract enforcement mechanisms) will be critical to promoting domestic market development and spillover effects.

Building Human Capacity

- Farmers need to be literate if they are to operate cooperatives as effective businesses
 - Short-run programs need to focus on local languages
 - Long-run focus needs to be on universal primary education
- Governments and private sector need university graduates for technology development and transfer, policy analysis, and business development; the drying-up of donor funding for higher education is a serious constraint.

Access for Vulnerable Groups

- The input market challenge is how to provide for vulnerable groups without compromising the growth of private sector input markets.
- Impartial analyses of alternate approaches are needed (e.g., small packs, vouchers, starter packs); programs must take both market development and poverty reduction objectives into account.

Environmental Sustainability

- Past research shows clearly that technology promotion efforts need to include both “high”- and “low”-tech approaches to soil and pest problems. Neither approach alone is adequate.
- Sustainability issues will soon become critical, as resource demands fueled by population and income growth will stretch the environment and natural resources to the limit.
- USAID will need to develop a broad analytical framework for treating these issues, since environmental impacts can be local, national, regional, and global.