Technology Adoption: Learning from PICS Bag Commercialization

- Media efforts with Radio and TV
- PICS consultant

Manufacturers → Distributors/wholesalers → Semi-wholesalers → Vendors → Retailers and roaming vendors

Over 1000 PICS vendors in West and Central Africa

Work with local manufacturers and entrepreneurs
Cowpea storage in triple layer plastic bags was developed by a team of Purdue and Cameroonian researchers led by Prof. Larry Murdock in the late 1990s.
PICS is a registered trademark in the US and:

- OAPI countries
- Madrid International Trademark System African countries
- Nigeria
- Ethiopia
- Uganda
- Tanzania
- Malawi

When this registration is completed plans are to register in additional African and South Asian countries as needed.
Increased Cowpea Production in Niger Facilitated by Better Storage

Many factors contribute to cowpea yield (e.g. seed, soil, water, pest control), but farmers identified storage as a key issue in their production decisions.

PICS Bags Introduced 2007
Questions & Discussion:

• Clarification needed about the PICS experience?
• What do you think the lessons are that should be learned from the PICS experience?
  • Lessons learned by African business?
  • By multinational business?
  • By universities and research institutions?
  • By donors/
Questions about University Strategy:

• How should Purdue insure that good quality PICS bags continue to be available to African farmers? Purdue, like most universities and research organizations, depends largely on grants to support research and engagement in developing countries. For most donors PICS is a commercial success and no longer needs grant support.

• Should the thickness of PICS bags and the plastic composition be determined by what the market will pay for? Or by imposing quality standards based on science?

• Should universities seek to protect the IP in agricultural innovations intended for the developing world? If they do protect IP, should they:
  • Patent technologies?
  • Register trademarks and create branded products?
  • Use “trade secrets” to make replication of their technology difficult?
Strategy Questions for African Entrepreneurs:

• Experience has varied from country to country, but in the past the majority of African entrepreneurship has been “survival entrepreneurship” in relatively routine businesses like small shops selling consumer products, tailoring, hairdressing, etc. Should more African entrepreneurs start looking to creating new markets for new products and services?

• What skills, support and services do entrepreneurs developing new markets and new products need?

• How much does weak legal structure of many African nations inhibit entrepreneurship? What strategies are used to do business in places where contracts are not legal enforceable and debts are difficult to collect?
Questions for Manufacturers in Africa:

• Until very recently most African manufacturing was about import substitution. What would African manufacturers need to do gear to create new products and new markets?

• At Stanford University and MIT, venture capitalists prowl the hallways looking for faculty members and students with the next “big idea.” Should African technology entrepreneurs cultivate contacts in universities, the CGIAR centers and government research institutes?

• Many African manufacturers would like to run a “cash and carry” business where their responsibility ends at the loading dock. Consequently, because supply chains to rural areas are often weak, their products do not reach many potential customers. Should African manufacturers get more involved in distribution? What strategies should they use to make their distribution activities profitable?
Questions for multinational business:

• How should multinational business see market opportunities in the developing world? A common multinational business approach to developing country markets has been to:
  1) market first world products to the elites and
  2) attempt to “dumb down” and cheapen those same products for the mass market.

The second strategy seldom works because developing country consumers often have different needs than those in the industrialized world.

• Should multinational business look to universities and research institutes to help them identify and develop products that fit developing country markets? Should the look to their home country institutions or African universities and research institutes?
Questions for international donors:

• What should be the role of international donors in agricultural technology development in the 21\textsuperscript{st} Century?
• What portion of the traditional donor role in promoting agricultural technology in Africa is being replaced by venture capital?
• What advice would you give to governmental donors (i.e. USAID, DIFD, JICA) about supporting agricultural technology and innovation in Africa?
• What advice would you give to private donors (i.e. Gates Foundation, Rockefeller Foundation, Dangote Foundation) about supporting agricultural technology and innovation in Africa?
Questions for Everyone:

• How does rural entrepreneurship in most of Africa differ from urban entrepreneurship?

• How does agricultural technology entrepreneurship differ from technology entrepreneurship focused on consumer products or urban business?

• What is the best training for an entrepreneur in Africa? In West Africa there is a saying about education that goes something like: “French (or English or Portuguese) education creates civil servants and Koranic schools train entrepreneurs.” How much truth is there to that saying?