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KNOWLEDGE & LEARNING BRIEF

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Increasing Smallholder Access, Availability, and Utilization of Agro-Inputs in Cambodia

Expanded uptake of modern agro-inputs by smallholder farmers is inarguably a key to improving agricultural productivity and competitiveness. Challenges often include rural supply of inputs (availability), farmer ability to purchase inputs (access), and farmer capacity to appropriately apply inputs to optimize their benefits (utilization). In Cambodia, these challenges are particularly acute given the rudimentary nature of local input markets and the limited technical capacity of the smallholder farming sector.

This paper briefly presents the literature suggesting the challenges and solutions in the context of Cambodia, then examines the Fintrac-implemented approach to stimulate private sector input supply and demand at the smallholder level. Supported by field-based data, the paper then concludes with a set of lessons learned for stimulating commercially sustainable input markets in Cambodia.

From 1993-2012, Cambodian agricultural production increased by 4 percent annually and yields more than doubled[1]. These impressive gains have been attributed to the expanded use of improved farm inputs[2]. Nonetheless, continued intensification is needed to meet anticipated demand, and this can only be achieved by increasing the appropriate application of inputs[3]. The constraints to fertilizer uptake in Cambodia, which logically can be extended to include other critical farm inputs, have been identified as price, quality, extension, and credit[1]. Additionally, the lack of agricultural input extension has been identified as a major challenge for farmers to respond to market demand[4].

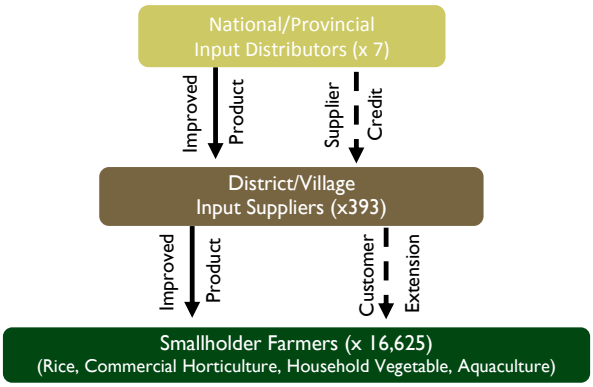
Through the US Agency for International Development (USAID) Helping Address Rural Vulnerabilities and Ecosystem Stability (HARVEST) project, Fintrac is working with local partners to alleviate these constraints. The Fintrac approach employs a co-investment model both at the farm and enterprise levels to demonstrate success, reduce perceive risks of upgrading, and stimulate demand in the private market.

The project currently works directly with 16,625 smallholder clients in rice, horticulture, and aquaculture. Initial co-investments of ~50 percent focus on key inputs, weekly visits by agronomists, and specialized training sessions in improved practices over at least three successful crop cycles. Following this intensive technical assistance, a smallholder "graduates" from support.

Additionally, the project works directly with 393 rural input suppliers/retailers. Initial inventory co-investment and technical assistance is provided to retail suppliers focused on understanding new products, managing inventory, targeting the smallholder customer base, embedding farmer extension in product offerings (including on-site demonstration plots), and expanding relationships with reputable wholesalers.

At the national/provincial distributor level, the project facilitates the expansion of rural distribution networks and delivery of supplier credit. Outreach at both the supply and demand sides of the input market is illustrated in Figure 1.

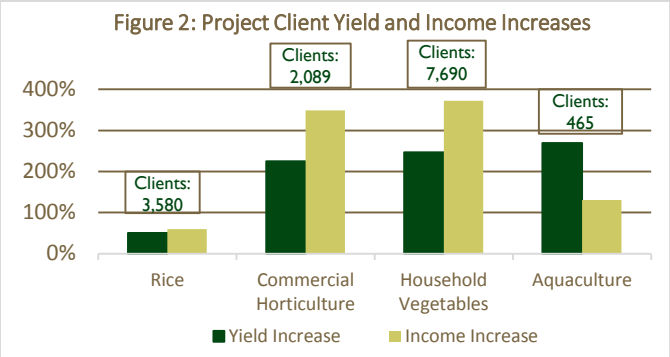
Figure 1: Supply and Demand Sides of HARVEST Activities



Observations from previous studies support the notion that poor farmers in Cambodia need longer term financial and technical support if rural services are to be sustained[4]. If farmers do not possess the knowledge to utilize improved farm inputs to maximize their potential, they are unlikely to invest scarce financial resources on a continual basis, thereby dampening potential demand.

Yield and income gains from project-supported smallholders demonstrate the effectiveness of applying an appropriate package of improved inputs along with good agricultural practices (see Figure 2). The aggregate total of incremental output market sales from demonstration clients is estimated to have exceeded $13.95 million in the past year alone, thereby boosting demand for key inputs.

Further evidence collected thus far suggests that following technical knowledge transfer and co-investment, district/village retail suppliers are investing their own resources in upgrading their offerings to smallholder customers, and their revenues are expanding rapidly.



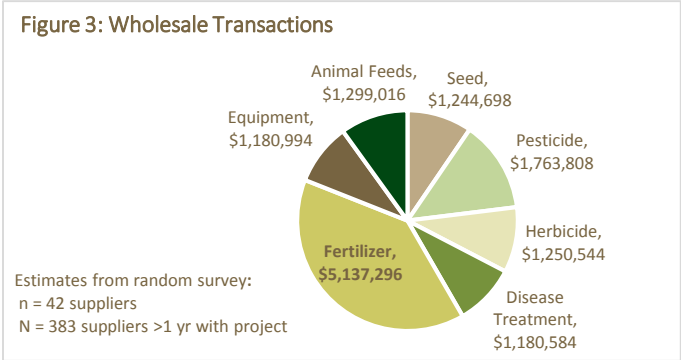
Currently, 271 input supplier clients (68 percent) have invested in improved product presentation (including segregating agricultural products from non-agricultural products and chemicals from feeds); inventory management including stocking farm equipment (such as plastic mulch, seed trays, safety equipment, sprayers, irrigation equipment), improved seed varieties, fertilizer formulations, and recommended agrochemicals; and provision of information and knowledge to customers on farm chemical safety practices, optimal fertilization programs, and pest/disease control.

Input suppliers are also investing in new upstream and downstream market-based relationships that did not previously exist in the project's Zone of Influence (ZOI). Most recent data reports that 126 retail input suppliers have invested in installing demonstration plots to deliver embedded extension training to their smallholder clientele. So far, 25,207 farmers have received extension from input suppliers, indicating that early adopter input suppliers are recognizing the value of building customer loyalty by disseminating the knowledge necessary for farmers to realize the potential returns from the products they offer. Input supplier sales support this view, as $8 million in incremental retail sales have been recorded by input suppliers, a 70 percent increase vs. baseline.

To estimate the value of upstream relationships between input suppliers and national-provincial distributors, and to understand how the rural input supply chain is transforming, a rapid random survey of 42 input supplier clients across four provinces (Battambang, Kampong Thom, Pursat and Siem Reap) and 31 different communes was undertaken. While this sample size is relatively small, it allows the project team to identify trends and momentum, adapt activities as necessary, and formulate a more rigorous survey going forward.

Overall, the survey results support the notion that new or expanded relationships with reputable national-provincial distributors have resulted in rural input suppliers investing in improved quality and quantity of input product offerings. Each input supplier serves approximately 190 small farm customers, and sources from a primary, preferred wholesaler. Over 90 percent of input suppliers surveyed now purchase new inventory from national or provincial distributors on a weekly or monthly basis – validating a more consistent rural supply availability for small farmers than initially observed at project start-up. Figure 3 estimates aggregate wholesale transactions by product type. Inventory purchases referenced in this survey were not part of any project co-investment agreement: transactions reflect 100 percent investment from input suppliers through private market channels; suggesting that initial co-investment stimulated rather than distorted market demand.

As 100 percent of survey respondents reported "higher" year-over-year retail sales, these aggregate wholesale estimates suggest not only robust upstream market activity, but also that input suppliers are responding to market signals (consistently stocking improved inputs in response to rising smallholder customer demand).



Additionally, the survey results provide qualitative indicators of increased competition that may be beginning to transform rural input markets in the ZOI. Nearly 80 percent of survey respondents reported higher retail supplier competition, and downward pressure on prices is reflected by 67 percent of respondents reporting cheaper inventory costs over the past three years.

Finally, the survey reveals that while only 29 percent of retail input stores are able to access formal credit, 81 percent of retailers obtain supplier credit from their distributors, with an average loan size exceeding $6,000. This points to an additional constraint (access to finance) being addressed through embedded market arrangements.

Lessons Learned

- Farmers as well as input suppliers are risk averse and often require initial intensive technical and financial support to demonstrate success from upgrading practices.
- The initial farm and enterprise co-investment model is stimulating rural input access, availability, and utilization; validated by quantitative and qualitative data estimates.
- Demand for inputs creates commercial incentives for agribusinesses to embed services in their offerings, including extension, and credit that build customer loyalty.
- Tangible financial returns at the enterprise level increase competition and supply, driving rural input prices down.

References:

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Key Terms:

Demonstration Client: The Cambodia HARVEST project defines demonstration clients as those farmers or individuals who demonstrate good agricultural practices and technologies to nearby farmers under a co-investment agreement with the project.

Demonstration Plots: Field-based production sites that are owned, operated, and managed by local smallholder farmers (demonstration clients) on a commercial basis to illustrate best practices to surrounding farmers.

Zone of Influence (ZOI): The Cambodia HARVEST ZOI includes the following provinces: Battambang, Pursat, Kampong Thom, and Siem Reap.

About the Fintrac University Knowledge & Learning Brief Series:

Fintrac University is an e-learning platform designed to build Fintrac's global staff capacity in agricultural development practices, strategies, and processes. The Knowledge & Learning Brief Series was created for Fintrac University as a set of evidence-based analyses examining the efficacy and local sustainability of the Fintrac methodology across various development contexts. Each paper highlights a particular project component or approach within or across countries, and examines whether the data validates our goal of sustainable impact for smallholder farming families. As part of our commitment to external as well as internal learning, we are making these papers available to the wider international agricultural development community to share lessons learned from our field programs and contribute to the vital discussion around how best to achieve the goal of locally-led poverty reduction.

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