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SCALING UP INPUT TECHNOLOGY AND INPUT ACCESS: CLUES FROM ZAMBIA

ADDITIONAL POST-SEMINAR Q&A

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PRESENTERS

Daniel White, ACDI/VOCA

Richard Kohl, Center for Large Scale Social Change LLC

CONTRIBUTORS

Kristin O'Planick, USAID (Moderator)

Mark Huisenga, USAID (Moderator)

Audience Question: **How is the data that farmers prefer hybrid supported?**

Richard Kohl:

We conducted around 7 focus groups with roughly 45 farmers in the Southern province. This finding was 100% consistent across the groups. In fact, when they receive OPVs from the FISP program, they complain about them. The only organizations doing OPVs are NGOs and WFP. This was also confirmed in our discussions with the GOZ national research labs, and with all the private seed companies. Most don't even produce OPVs, the OPVs that are available are given directly from CIMMYT to some small domestic companies.

Audience Question: **Why do the farmers NOT want OPVs?**

Richard Kohl:

They believe and have experience that the yields on hybrids are significantly higher, and that they are more resilient to various pests and diseases.

Audience Question: **Was the crop duration of the hybrid seeds substantially different than traditional?**

Richard Kohl:

Can't generalize, as there are long, medium and short maturity hybrids. The short maturity, many of which are 90-100 days, are definitely shorter.

Audience Question: **Where does the USAID Drought Tolerant Maize for Africa Seed Scaling project -- working in Zambia -- fit in?**

Richard Kohl:

DTMA has been operating in Zambia for several years. According to their figures, which are hard to get consistent ones on, Zambia is the largest producer of DTMA. However until summer 2015 it has worked exclusively by:

1. providing germplasm to major private seed companies;
2. providing breeder seed of DTMA varieties to a few small domestic companies who have tiny market share; and
3. providing testing of drought tolerance to private seed companies that develop their own DTM varieties. DTMA has not been involved in actual commercialization or widespread scaling/dissemination; summer 2015 they began a very small effort.

Audience Question: **How about quality of inputs, is this a big problem in Zambia? There is widespread sale of fake inputs in several countries, e.g., Kenya and Tanzania.**

Richard Kohl:

Not that I'm aware of. Most farmers get at least minimal inputs (seed and fertilizer) from FISP, which is done on direct contracting out to private seed companies and distributed through government depots. The Zambian Seed

Certification is considered pretty good. Meetings with seed companies suggest that the fake problem exists, but is relatively minor.

Audience Question: **If risk is more critical than return for small maize producers of Zambia, how could we understand their preference for Hybrid varieties in the climatic conditions you described?**

Richard Kohl:

Excellent and insightful question. We didn't have time to get into this in the workshop, but for most farmers, they plant 2-3 different varieties of maize. They plant a medium-maturity, very high yielding variety that has huge upside if there is good rainfall and weather. They also plant a short-maturity, often DTMA variety, that will guarantee them a reasonable yield in most adverse weather conditions. Some farmers also plant some traditional varieties in addition to these two types because they like the taste and durability. This portfolio approach allows them to have upside risk in good weather and hedge against downside risk in bad weather. This is facilitated by the very large number of varieties and seed companies available, well over 100.

Finally, the fact that the GOZ FRA program guarantees that they can sell at a good price, even if they live in a remote area, plays a significant role in minimizing or eliminating market and price risk. Thus they are able to protect against weather, price and market access.

Audience Question: **When I worked in Zambia in the 90's, farmers were very focused on fertilizer. They only used hybrid maize if they had access to fertilizer. Fertilizer used on maize isn't specific to maize - can be used on other crops. We have heard a lot about seed, but not much about fertilizer here. What can the presenters say about impacts of this approach on fertilizer availability and use in Zambia?**

Richard Kohl:

Subsidized fertilizer is made available to more or less half of the farming population as part of the FISP package and bundled with hybrid maize seed. The amount provided is enough to fully fertilize, I believe, ½ or 1 hectare.

Audience Question: **Also, what are the alternatives to an expensive input subsidy program?**

Richard Kohl:

I think the key is to provide some forms of subsidy or promotion at small scale, but as adoption picks up to phase out the subsidy, i.e. from 50-40-30-20% etc. over time. Clearly easier said than done politically, as the problem with subsidies, especially to small farmers, is that they create their own political constituency and are hard to get rid of.

Audience Question: **Other than government subsidies for hybrid maize seed and grain purchase program, what were success factors of best input suppliers? Did they use**

local demo farms to show improvements in yield and resilience? Did suppliers provide simple marketing materials? Were there special business support programs for suppliers?

Richard Kohl:

Yes, the primary marketing tool has been demo plots, and often the larger companies grow their own varieties vs. competitors to show farmers the advantages. Surprisingly, at least to me, is that the companies use large amounts of fertilizer and other inputs to achieve maximum yields and height, etc. even when the farmers know that there is no way they could afford, nor would it be profitable, for them to use comparable levels of inputs. In recent years more and more companies are shifting to marketing by giving away T-shirts, cell phone talk time, hats and caps, a trial size bag of seed of a new variety with a large bag of existing varieties etc. and these seem to have an effect on farmer's decisions despite the low real value of these freebies compared to the value of higher yields or resistance. Smaller seed companies have been successful in carving out niche markets by serving farmers who are further away from main roads and town centers, by willing to absorb the transaction costs, i.e. delivering seeds to village centers or farm gates.

Audience Question:

If the poorest have the options of rural employment or migrating out per the presenters, then what employment creation efforts should donors support for the poorest in the rural areas?

Richard Kohl:

An important and very broad question that is well beyond the scope of this presentation. However one thought that is clearly happening in Zambia and in many other maize producing countries is moving downstream into animal feed production. Arguments about animal rights, carbon footprint etc. aside (and that is not to dismiss their importance) in almost every country I know as incomes and urbanization increases, so does meat consumption and a shift from a few chickens, pigs, goats and a cow in the backyard to more organized livestock production. The increased demand for maize is usually huge, and this can create significant employment in maize processing, animal feed, and various other activities associated with livestock, e.g. selling animal health products and health services.

Audience Question:

Targeting farmers as individuals in the adoption of technology is not enough. What is the role of farmer's organizations in this process? Farmer's organizations play a key role in information assess, inputs and outputs markets. Individuals may not have all the resources to assess markets.

Richard Kohl:

Good point, but a complicated one. The quality and viability of farmer's organizations is highly variable within and across countries, often despite years of donor investments in capacity building. There are often fundamental governance problem(s) in that often the leadership is not accountable to the membership either because the leadership is drawn from traditional local elites and the social relationship trumps the organizational one, or the membership is

not literate or numerate enough to understand and demand to see regular financial statements and enforce procedures and by-laws. That said donors favor delivery through these organizations because of the economies of scale and opportunities for leverage. In Zambia, by and large farmer associations play no role in the maize sector. This despite the fact that to apply for FISP subsidized seed/fertilizer packages, you have to be a member of an association. The overwhelming number of such associations exist only for the purpose of accessing subsidies and disappear or go dormant the rest of the year. By contrast, in the Senegal River Valley, FAs are important, well-functioning and successful. My hypothesis is that FAs tend to be present and have better governance where they are associated with cash crops rather than subsistence staple cereals.

Audience Question: Was the crop duration of the hybrid seeds substantially different than traditional?

Dan White:

As a short answer, though, I've incidentally found very little empirical research on 'local' variety characteristics in Zambia; most side by side trials are meant to demonstrate the superiority of improved varieties, and will often just compare against an imprecise and sometimes intentionally poor quality local seed. Though I also haven't actively looked into this question, so if anyone out there can point me in the direction of indigenous seed research I would be very grateful.

But what I've seen anecdotally is that crop duration in farmer saved seed fields can vary significantly within the same field. In theory, crop duration variance from the same seed stock will increase as that seed is 'degraded' through the kinds of poor phenotypic selection Richard described during the webinar and less than careful varietal differentiation by farmers season after season. Eventually 'local' seed tends to be a grab bag of different varieties after several seasons of careless saving, allowing the persistence of undesirable traits, or, in the case of duration, just widening ranges of maturity dates. So we can reasonably say, I think, that improved seed varieties marketed as short, medium, or long duration will have a much more consistent germination and harvest timelines throughout the field than locally saved seed, which will have greater intra-field variance in harvest times.

But if there is anyone out in the discussion with a more informed answer I would be interested as well!