

**Lesson learning study of the Farm Inputs Promotions (FIPS)  
project in Kenya (with a special emphasis on public-private  
partnerships for input provision and possibilities for  
regional upscaling)**

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## Background

Fertiliser technology is one of the oldest and best researched areas of agricultural science. The science of inorganic fertiliser management is well established. In the developed world, farmers have reached a high degree of sophistication, guided by excellent science, in their use of fertiliser. In Africa, however, fertiliser recommendations all too often ignore soil and climatic variations found in smallholder farming areas, are incompatible with available farmer resources, or are simply inefficient. Rarely is rainfall taken into account and even more rarely the economics of fertiliser use. The farmer ends up using more fertiliser than is necessary (with resulting cost and environmental implications) and fails to extract the full benefit from its use.

FIPS Africa (Farm Input Promotions - Africa) is a further development of an effort which began in Western Kenya in 1990. SCODP<sup>1</sup>, a Kenyan NGO, was established to make the fertiliser readily available in small packages (in an appropriate formulation) to farmers who previously were unable to use this costly, but potentially productive, technology in an economically efficient manner<sup>2</sup>. The area of focus initially was Siaya district in western Kenya which was home to some 100,000 farm families. While the area was potentially highly productive, few families produced enough food for their annual needs (Berg, 1999). SCODP set out to show that fertiliser use (and consequent food security) could be stimulated amongst very poor farmers without resorting to free handouts or setting up expensive credit operations. The objective was to create a self sustaining farm input supply system which would serve smallholders effectively and at a cost that the poorest could afford.

Information from other parts of Kenya showed a demand for fertiliser in small quantities<sup>3</sup>. SCODP set up several shops which it stocked and managed itself. The SCODP hypothesis was that a major obstacle to smallholders using fertiliser was simply that farmers were unable, or unwilling (or both), to invest in a whole 50kg bag. Commercially available fertilisers were purchased by SCODP in the standard 50 kilogram bags and then sold on to farmers in small amounts according to farmer demand. The selling price was not subsidised and the shops operated on a commercial basis.

### ***SCODP impact and sustainability***

Data from sales in SCODP shops supported the initial hypothesis, with most farmers buying fertilisers in 1–2kg packets. Within five years of the start of the initiative, SCODP shops were selling some 10 tonnes of fertiliser annually, mostly in 1–2kg

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<sup>1</sup> The Sustainable Community-Orientated Development Programme.

<sup>2</sup> In 1998, 50kg of monoammonium phosphate fertiliser (which was the minimum purchase through the formal marketing channels) represented the equivalent of 18 days labour at the official minimum wage or the selling price of a 90kg bag of maize in the market. By contrast, 10 kg represented the selling price of a single chicken, and 1 kg the cost of 500ml bottle of beer (Seward and Okello, 1998).

<sup>3</sup> Initial SCODP sales showed that the very small packs (1kg and less) attracted most buyers. As confidence in the technology grew, so farmers proved more willing to buy larger amounts. A survey of 139 retailers in 74 market centres in 6 provinces of Kenya showed that some 79% were repackaging fertiliser in smaller quantities (Mwaura and Woome, 1998). A study of Kisii district showed a greater demand for 10kg bags of fertiliser than the standard 50kg bag (Smaling, 1993).

bags. By 1998, some three years later, SCODP's shop at Ugunja was alone selling over 10 tonnes of fertiliser a month to nearly 2000 customers. The comprehensive network of existing small independent shops and local stockists was encouraged to participate in the programme; these then becoming stockists of SCODP derived inputs.

Demand for fertiliser rose sharply as farmers became more familiar with, and confident of, the returns from fertiliser. By 1998, sales of 5–10kg bags made up at least a quarter of all sales in many outlets (Seward and Okello, 1998). Some 40% of fertiliser sales were to women and most customers were 20 years old or over. The main use of the fertiliser was for use on maize and sorghum.

The emphasis moved to improving farmers' understanding of different fertiliser blends. Shopkeepers were trained, not only in book-keeping and stock management, but also in advising customers on which fertilisers best met their needs. SCODP used focused farmer participatory methods to identify the appropriate fertiliser types and management practices for the areas in which it was working. Careful research protocols, which could be understood by farmers and extension workers, were developed to:

- identify the nutrients limiting crop productivity in any one area,
- raise awareness of the potential from using fertiliser amongst local farmers, and,
- ensure that SCODP would be stocking the correct fertiliser for the area.

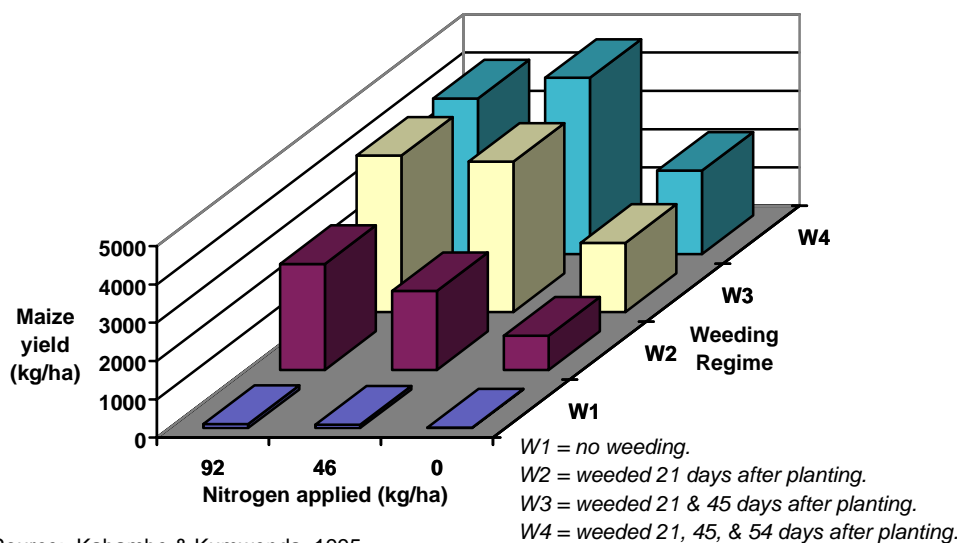
The trials were quite simple in design, the data were analysed statistically and recommendations were linked to the economics of production. In addition, SCODP encouraged farmers to experiment with fertiliser for themselves through the promotion of 'minipacks' (small packages of 100g or 200g of the appropriate fertiliser). These were available for sale at all SCODP shops and at SCODP stockists. The minipack allows farmers to buy very small amounts of fertiliser to test out on their own farms. Links with Ministry of Agriculture extension workers, combined with leaflets and colour posters at stockists, helped farmers understand how to use the minipacks. An associated Raising Awareness programme targeted at schools, churches and church groups provided a further source of support and information for the experimental use of minipacks.

An evaluation of SCODP's impact in 1999 was impressive (Berg, 1999). Nearly 70% of minipack purchasers were women, mainly aged 30–50 years old. Most farmers purchased more than one type of minipack and over 70% of buyers were first time fertiliser users. 37% of packs were used on maize and some 31% on vegetables. Over 80% of the users reported either an excellent, very good, or good result from their experiment and 94% planned to buy more fertiliser in the coming season. Almost all farmers in the area surveyed in detail<sup>4</sup> had bought some fertiliser from SCODP, and over 90% of farmers reported an increase in their daily consumption of their staple food (maize, sorghum, or cassava). The average increase was some 47% from 292g to 431g daily. SCODP had been remarkably successful at reaching the

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<sup>4</sup> The evaluation was undertaken in the area SCODP had been working longest

**Figure 1: Weeding by fertiliser management in maize**



poor. Food insecurity had fallen from around two thirds of the sample interviewed to less than a fifth as a result of the SCODP activities. Families were now eating a more varied and diversified diet and food stocks (a useful measure of food production stability over time) were increased. The amount of food stored after harvest in a SCODP area was almost four times that in a comparable area not served by SCODP.

Nationally, the economy was going through a difficult period with inflation high and government services declining in quality and availability. Even in these unpromising circumstances, poor farm households showed themselves willing and able to raise modest amounts of cash to invest in improving their own food security within the context of a well designed programme of technical change. The programme was designed to bring a fertility enhancement package within the reach of the poorest farmers. The results from Siaya suggest the initiative was successful in meeting its objective.

## The FIPS partnership paradigm

Longer term success, and, importantly, impact beyond the immediate SCODP area, required a different institutional structure. The focus needed to be broadened beyond fertiliser to encompass other constraining factors on crop productivity. New varieties of higher-yielding, drought-tolerant or disease or pest-resistant maize and other crops (beans, cowpeas, for example) had been released but few farmers knew about them or had the information necessary to make the best choice of seed. Herbicides, a valuable labour saving intervention, were not accessible to poor farmers, especially women who carry the main burden of household and farming activities (Overfield 2000)<sup>5</sup>. In Figure 1, the interaction between fertiliser use efficiency and the conventionally

<sup>5</sup> In addition to the well documented shortages of labour at planting and weeding, many families face the additional debilitating effects of HIV/AIDS, malaria, tuberculosis and amoeboid infections. Children are also silent victims since the need for them to help with farm labour often curtails their chances for attending school.

labour intensive practice of weeding is well illustrated. With no weeding, even with heavy use of fertiliser, yields are negligible. More frequent weeding markedly improves fertiliser use efficiency, allowing higher yields with less fertiliser. But weeding coincides with other important tasks such as planting. In addition, the planting rains often result in sickness (especially malaria and diarrhoea) which make the hard labour of weeding difficult. This last is compounded if family members are also affected by other diseases such as HIV/AIDS. Overfield's survey in Kenya and Uganda (2000) suggested that just over 3 per cent of households interviewed (n=240) were using herbicides as a means of controlling weeds in their maize plots. The small number of farmers who were using herbicides were generally found to be better educated, cultivating more land, producing and selling more maize and sending a greater proportion of their children to school than farmers who did not.

The scaling up effort, therefore, needed to address the major constraint of labour on crop productivity. FIPS, based on results from improved weed management technologies, decided to introduce conservation tillage methods<sup>6</sup> and improved seeds as complementary technologies (Muthamia, 2001). The minipack concept was, therefore, extended to other technologies such as herbicides and crop seeds. Most importantly, a much greater emphasis had to be placed to ensure that the necessary links in the market chain were in place and working smoothly. An independent offshoot of SCODP, Farm Input Promotions Africa (FIPS) was formed as a not-for-profit company in 2003 to facilitate the scaling up of the programme to the high potential maize areas of Kenya. As a commercial entity, FIPS was able to deal more effectively with input suppliers. Funding for FIPS' activities is currently provided by the UK Department for International Development's Crop Protection Programme, USAID and the Rockefeller Foundation.

### ***Partnerships with farmers***

The central focus of the FIPS programme is building partnerships with farmers. The methodology is simple but highly effective. Using available information from key informants (researchers, extension workers, NGOs, and others), a picture of the major limiting constraints to agricultural productivity in the area is established. Then sources of potential improved technologies are investigated. Farmers, using minipacks and simple experimental protocols, are encouraged to test for themselves the most promising options.

For example, maize streak virus is a serious problem to many smallholders. There are new streak tolerant varieties available on the market but often these are not found in small packages or outside major centres. Few farmers know of the potential of these new varieties and the cost of trying out a new variety, even when it is available locally, is high. The minimum size of maize seed package is 2kg which sells for around KSh270–300 ( $\cong$  US\$3.50–3.90)<sup>7</sup>. Seed companies are reluctant to supply seed in smaller packages as this has traditionally been felt not to be economically viable.

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<sup>6</sup> Conservation tillage includes a range of tillage techniques which facilitate creating a weed-free environment for growing crops without the need for soil disturbing (and labour intensive) ploughing, hoeing, and weeding. Herbicides to control weeds are an important component of many conservation tillage methods.

<sup>7</sup> US\$1= KSh77.0200 (Feb 2005)



It is illegal in Kenya to sell repackaged seed<sup>8</sup> (but not repackaged fertiliser) in Kenya. FIPS promotes experimentation with new seed by promoting a small pack as a gift<sup>9</sup> with another item which is sold (typically fertiliser). If the farmer buys a small 1kg bag of fertiliser (approx. KSh30, (≅US\$0.39) or the price of a bottle of commercial soft drink), he or she receives a free 150g minipack of a new variety of seed to test. Farmers will often chose to buy several bags of fertiliser and test more than one variety. A small team of FIPS promoters, operating on market days, can stimulate significant interest in such experimentation and thus build demand for inputs in future seasons. The promoters tour the market with a megaphone, telling farmers of the promotion and where they can purchase the inputs.

There are no systematic data on uptake following such promotions. However, the available information suggests that this is a highly effective way of introducing a new technology. A promotion of streak resistant maize varieties in Kisii district just ahead of the 2004 short rains reached 1000 farmers in four days, supported by a 3-person FIPS promotional team. In another market near Kisii town, a promotion campaign resulted in 207 individual sales (48% to women) of fertiliser minipacks costing KSh10 within five hours.

Farmers use these minipacks as a low-risk means of assessing new technologies<sup>10</sup>. The promotion of minipacks in local markets (with megaphones and posters, including one with an easy pictorial guide to maize cobs demonstrating different soil nutrient deficiencies and appropriate mitigating measures) is a key step generating more intensive use of farm inputs (including traditional and improved seed varieties) by a wider component of the farming community and in catalysing future demand.

FIPS staff also work directly with farmers to establish farmer field schools and demonstrations. FIPS has a very effective set of experimental protocols which allow farmers to investigate a range of technologies (such as crop responses to different fertiliser formulations). This empowers farmers with the information they need to select the best technology combinations for their conditions. A further enhancement has been the introduction of a 'food security' protocol aimed at food deficit farmers. This includes, for example, the introduction of new varieties of rapidly maturing '60 day' beans in drought-prone areas, as an intercrop with maize to help the farm family close the 'hungry season' food gap and to help ensure food security<sup>11</sup>.

## ***Public sector partnerships***

FIPS is integrated into the Kenya Maize Development Programme (KMDP), a major national initiative supported by USAID to improve maize productivity in Kenya. This programme currently concentrates on high-potential areas, but under the DFID

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<sup>8</sup> In an attempt to reduce adulteration – a problem with all improved farm inputs. The counterfeiting of packaging of agricultural chemicals and seeds is a major problem for suppliers in Kenya.

<sup>9</sup> Because the seed is given away free, this does not infringe the law.

<sup>10</sup> Which can range from trying new crops, to assessing crop responses to different fertiliser formulations, to testing new farming methods such as conservation tillage.

<sup>11</sup> One interesting approach has been to give each farmer a tiny bag containing 30 seeds of the new bean variety. The farmer agrees to repay 60 seeds back when the crop is harvested, thus directly helping in the seed bulking up process. At conservative estimates, this still leaves each farmer with some 400 seeds to expand production on his or her plot in a subsequent season.

component, FIPS has also expanded its operations into more food-deficit areas such as Embu and Kirinyaga Districts, where maize is a major crop. While these have a high potential for maize, few families produce sufficient food to take them reliably through to the next harvest. Two thirds of the maize grown is subsistence production by women farmers. Inadequate access to improved seeds, and fertilisers, combined with severe labour constraints for the key operations of land preparation and crop weeding, were identified as the major limiting factors in maize production (Muthamia *et al.* 1997).

FIPS staff have clearly worked hard to build and extend the necessary relationships. Both national extension and research staff, based at regional and district centres, are working directly with FIPS. FIPS have contributed to the content of public sector run farmer field schools<sup>12</sup>. The Kenya national research and extension staff were fully familiar with the FIPS demonstrations and farmer field schools being run in the same areas. As these demonstrations cover a wider and different range of options (plus introducing simple, effective experimental protocols for implementation of the options), there is every opportunity to expand and enhance the existing public sector partnership.

### ***Private sector partnerships***

The range of private sector partnerships built by FIPS is impressive. The private sector, comprising agricultural input suppliers, has a clear vision of considerable potential market growth in the smallholder sector of Kenya (80% of entire market in Kenya lies with smallholders). Relationships with larger scale farmers are well established and there are limited opportunities for expanding market share in that subsector. But reaching and servicing the diverse and dispersed smallholder subsector is problematic for private sector firms<sup>13</sup>. Several have made efforts to set up their own extension and promotion programmes but have found it difficult to justify the costs. For each company to provide the necessary support to stimulate the market involves duplication of effort, creates the potential for confusing (rather than informing) smallholders, and is costly. If only one does it, it risks either others freeloading on its efforts or else the absence of the needed complementary inputs makes the one being promoted become less effective.

FIPS plays a unique 'honest broker' role in breaking out of this constraint. Based on evidence from several sources (not just the company interested in sales of its product), it puts together (using these same well designed protocols) farmer field schools or works with collaborating farmers to lay out demonstrations of options. For example, a seed/fertiliser/herbicide trial protocol has 10 plots. Farmers can evaluate how

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<sup>12</sup> One school visited during the assignment was using some FIPS promoted seed but, for reasons that were unclear, did not explore other FIPS innovations. The layout of the school plots was unnecessarily complex in contrast to the FIPS protocols. The FIPS seed and fertiliser application methods were not being used. Clearly more work needs to be done to encourage a wider range of treatments at these field schools but it will be difficult for FIPS staff to achieve this on their own. There is a review planned by USAID for the Kenya Maize Development Programme in 2005 and it would be useful if consideration of this factor could be included within that review

<sup>13</sup> Although one interviewee commented that once reached, smallholder farmers tended to remain more brand-loyal than large-scale farmers. This gave a further advantage to building early market share in the smallholder subsector.

improved seed compares against conventional seed alone, with fertiliser, and with fertiliser and stover incorporation. The last option can be expanded to include herbicides to control weeds. Neighbouring schools can test out different improved seed varieties and compare experiences, thus encouraging farmer-to-farmer extension.

All private sector stakeholders interviewed commented on the cost-effectiveness and value of the FIPS approach compared to investing further in promotion themselves. The fact that FIPS was not 'loyal' to any one company was not seen as a problem. The firms concerned were confident that, with the well designed and fair demonstration protocols adopted by FIPS, their products were capable of standing up to open competition. The majority fully endorsed the minipack concept and were systematically adopting it within their own business practices.

FIPS is currently working with Monsanto, Western Seed Company, and Kenya Seed Company to allow farmers to evaluate a range of different maize varieties. These companies are providing, free of charge, 150g minipacks of their varieties to FIPS for promotions. In 2004, 10,000 minipacks were provided and there are plans to scale up to 30,000 in the coming year.

Linked directly to the distribution of seed minipacks is the promotion of fertiliser. After reviewing the available information on crop nutrient needs, FIPS came to the conclusion that conventionally available fertilisers in Kenya (DAP, 23-23-0, CAN, and urea) did not provide sufficient potassium or sulphur (other minor nutrients were also needed). After extensive discussions with a number of fertiliser suppliers, FIPS eventually collaborated with a Kenyan firm, Athi River Mining (ARM), to produce a revised blend of fertiliser called Mavuno. This was packaged in attractive 1 kg bags which sell at KSh30–35 ( $\cong$  US\$0.39–0.45) each. A farmer buying a 1 kg bag of Mavuno fertiliser receives a free 150g bag of improved maize seed, thus ensuring that seed and fertiliser are tested together.

ARM today is working directly with FIPS to widen the range of fertiliser available to smallholders. The company has invested US\$6m in local blending capacity so as to be able to expand production to meet additional national demand for its products. Four field staff positions within FIPS are funded by ARM<sup>14</sup>, and the company provides significant amounts of fertiliser to FIPS for demonstration purposes. The interest of ARM in diversifying into fertiliser production was a commercial one. ARM already produced dolomitic lime and gypsum for agricultural use but sales were declining so the company invested in a granulator to make the lime easier to apply. This granulator was also used to produce Mavuno with a potential eventual production of around 30,000 tonnes per year. The composition of Mavuno was designed to make it suitable for use on both maize and vegetables, thus widening its market.

ARM now offers three major products to smallholders. Dolmax, a dolomitic lime product, is available in 5 kg bags at a price of around Ksh 30 ( $\cong$ US\$0.39), thus encouraging smallholders to use this important soil conditioner. But most importantly,

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<sup>14</sup> There is a potential conflict with the 'honest broker' role of FIPS in accepting such funds. This needs to be explicitly recognised by both FIPS and its funders (in the private and public sectors). As the scale of the programme widens, so the need to strengthen and enhance the validity of the 'honest broker' role becomes increasingly important.

the revised composition Mavuno planting fertiliser and a higher nitrogen Mavuno topdressing fertiliser were produced and are proving highly popular with farmers.

Monsanto is another important private sector partner. The company provides 150g minipacks of seed for promotions but has also become involved in the encouragement of conservation tillage technologies. Its own “Conservation tillage” Combi-pack is designed for a large plot and, at a cost of over Ksh 2500 ( $\cong$  US\$32), is too expensive for experimentation by most smallholders. FIPS has designed a mini-combi promotional pack, suitable for a 5 m x 10 m plot, based around ARM’s 1 kg Mavuno fertilizer, and a 150g DK8071 maize hybrid seed mini-pack from Monsanto. The mini-combi-pack contains a 10g sachet of Monsanto’s Round-Up Max granular herbicide, a 1 litre hand-sprayer, and an instruction leaflet. The overall cost will be around Ksh80 ( $\cong$  US\$1). Monsanto also now makes Roundup available in 100g sachets and is investigating ways of improving the visibility of this product at stockists.

Lachlan Agriculture (a Kenya based agent for Dow Chemicals) also collaborates actively with FIPS. The current focus is on the control of the Larger Grain Borer, a storage pest of maize introduced with food aid shipments in the 1980s and now ubiquitous throughout east and southern Africa. The currently available control technologies are unable adequately to halt the depredations of this devastating insect which is capable of completely wiping out the value of stored maize within three months of infestation. Dow (through Lachlan) are marketing a new product, Spintor dust, launched in Kenya in September 2004, which is very effective but was previously only available in 1kg tins<sup>15</sup>. Registration for Tanzania was finalised in December 2004 and the product will be launched there in 2005.

Through collaborations with FIPS, 50g tins are now being promoted at KSh150 a tin ( $\cong$ US\$2) and there are plans to sell the product in still smaller quantities and using cheaper packaging if an appropriate alternative can be found. However, as noted previously, issues of fake (copycat) packaging and potential product deterioration remain major concerns in achieving this.

### ***FIPS impact and sustainability***

The data available to assess impact are mainly of seed and fertiliser sales. In Embu and Kirinyaga districts, prior to the start of the FIPS programme, sales of maize streak tolerant varieties of maize seed and of Mavuno fertiliser were insignificant. There are no reliable available data on sales of seeds of other varieties or of other fertilisers. However, the baseline data collected at the start of the programme suggest that few smallholders were using fertiliser at all<sup>16</sup>.

In June 2003, in western Kenya, ARM sold 0.5 tonnes of Mavuno fertiliser; a year later, in the same month and after the FIPS programme had started, 86 tonnes were

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<sup>15</sup> The product, as well as being costly, deteriorates rapidly once the sealed container is opened and thus storage for future seasons is not an option.

<sup>16</sup> The baseline data are deficient in socio-economic analysis but there is a comprehensive source of information on the technical aspects of farming in the survey areas. The baseline survey remains to be fully analysed and interpreted.

sold. Total sales from June 2003 to August 2004 were nearly 800 tonnes. A similar pattern of growth in Embu and Kirinyaga is shown. Mavuno sales also grew from almost nothing to a total from between June 2003 to August 2004 of about 200 tonnes. Western Seed company sales of improved maize seed in Embu and Kirinyaga rose from less than 5 tonnes in September 2003 to 30 tonnes in the same period 2004 and they are predicting sales of 100 tonnes for next season.

The private sector stakeholders interviewed had a very clear perspective on the impact achieved by the FIPS programme. They, without exception, regarded smallholder agriculture as a huge potential growth area for agribusiness in Kenya. FIPS is playing a critical role in providing smallholders with the information they require to investigate the potential of new technologies. In recognition of the contribution of FIPS in opening up new markets, the programme receives some direct funding from private firms for its operations, as well as significant support in terms of minipack options to test out and promote.

The data are not available at this stage to enable a profile of FIPS beneficiaries to be accurately determined, although it is hoped this information will be available later in 2005. Based on the Siaya evidence, it is reasonable (but not sufficient) to assume that the programme is reaching the rural poor. Informal interviews with stockists in Kirinyaga district seemed to indicate that farmers do indeed return to the shop to purchase larger bags of the product once they have tried the minipacks, but more systematic monitoring is necessary. With some basic participatory research tools, FIPS staff should be able to develop a more comprehensive picture of farm families reached by the FIPS programme and the effects on food security and livelihoods.

The absence of these data contributes to the major limitation in the current implementation of FIPS. FIPS has been remarkably successful in stimulating demand; it has been less successful in interpreting that demand into information that can be used for forward planning by agricultural input supply firms. Whilst admittedly difficult to predict, such information is essential if reliable supplies of seeds, fertilisers, and other inputs are to be made available in a timely fashion. FIPS has a unique opportunity here. It has staff on the ground who know local conditions well. They regularly visit local markets and can review market prices for farm outputs. They also can, using participatory methods, monitor local food security trends. With imagination and skill, such data could be used to predict potential demand for new technologies. This information could be made available to commercial firms in return for payment and might provide a further source of income for the programme. It would also help retain the essential 'honest broker' nature of FIPS – which could easily be compromised (or be perceived to be compromised, which has much the same result) if FIPS was funded entirely, or in large part, by powerful private sector firms.

Another critical gap in the FIPS programme is support to local stockists. There is a major problem with payments for goods supplied. Suppliers want cash up front and to deliver goods in bulk (the minimum order may be a tonne or more of product). Few stockists have either the cash or the storage to work within this system. Several donor supported initiatives exist in Kenya to encourage improved business practices by stockists, including providing loan guarantees and training in stock management – Rockefeller Foundation fund the Citizens Network for Africa (CNFA) and the

Agmark Scheme, and DFID have a Business Development Partnerships Fund. FIPS has struggled to build collaboration with these clearly complementary exercises but with little immediate success. This is probably a donor created issue with different donors not pushing their contractors to look more broadly for partnerships – but is also an example of the difficulties a small, focused programme such as FIPS faces once it begins to scale up its efforts.

## **Recommendations for immediate implementation**

**RECOMMENDATION: FIPS needs to retain its ‘honest broker’ focus.** This is a service desperately needed by poor, disadvantaged smallholders who have been given second rate technology for far too long. FIPS has provided a valuable and trusted market friendly model for refining and adapting technology to local circumstances. The programme’s ability to fulfil this role in a cost-effective and farmer friendly manner underlies many of its considerable achievements.

**RECOMMENDATION: FIPS develop a partnership with other players to help develop new institutional models for scaling up.** There are two aspects to this recommendation. Immediately, there is an evident need to improve access to trade credit by stockists. This will enhance the reach of the current efforts within its focus areas through building a sustainable and profitable local private sector stockist network. In the slightly longer term, FIPS needs to work with partners to scale up the effort to broaden and deepen the overall access to improved technologies by smallholders in Kenya. It is unrealistic (and inappropriate if the ‘honest broker’ role is accepted) to undertake this last task alone. Possible partners include CNFA (Rockefeller) and the DFID Business Development Partnership Fund. FIPS, with its various well thought out protocols has been very innovative in helping farmers gain access to the information needed to make the best choices for their needs. There has been good ‘buy in’ at the field level to FIPS recommendations by both public and private sectors, reflecting the strong (and entirely correct) field orientation of the programme. Effort is now needed at the national level through building partnerships with other groups such as CNFA, so that FIPS is not a solo player. However, it is also evident that FIPS management already carries a substantial workload. Support needs to be provided to help FIPS management with this task of liaison with key donors and potential additional partners to develop a coordinated programme across the market chain.

**RECOMMENDATION: FIPS staff implement simple participatory survey methodologies systematically to monitor and analyse information on the characteristics of participating farmers.** Data should be entered into simple spreadsheets and analysed using histograms and other straightforward techniques. These data are essential to further improving the focus and impact of the programme. The extra commitment is reasonable and can be incorporated, with some training, within the work programmes of existing field staff. Strengthening the impact monitoring and M&E component of the FIPS programme is of direct concern to all three of its current donors and is vital to increase chances of continued funding in the future.

**RECOMMENDATION: FIPS examine options for more formally developing an understanding of potential demand for inputs.** Initially this could be a modest add-

on to the proposed informal surveys but, in the medium term, should be developed into a more sophisticated process of market analysis. This is a further development of the 'honest broker' role with the information being available in the public domain. Ideally private sector partners would either contribute part of the cost or agree to purchase the data.

**RECOMMENDATION: FIPS to seek funding for a staff development person on a short term contract (say 3 years) to work with the existing managing director and to oversee (under his guidance) some of the key recommendations** (for example, developing and implementing the informal surveys and market information components; drafting concept notes for joint collaboration, strengthening policy linkages). The workload to implement the recommendations in this report is considerable. Sustainability is enhanced by having greater depth at the senior management/policy level.

## Further scaling up

Two immediate (and not necessarily exclusive) options for scaling up are apparent. Firstly, the effort within Kenya can be extended to new areas and the range of technologies expanded. That is entirely consistent with the current focus of the programme and is a natural progression based on continued successful implementation of the FIPS methodologies.

But the basic principles upon which the FIPS initiative is built are not specific to Kenya. The evident impacts in Kenya should, therefore, be replicable in other comparable countries. There have been some evident expressions of interest in neighbouring territories to introduce a FIPS-style programme but, to date, little action has resulted. In Malawi, for example, while the country in recent years has moved towards a more conventionally democratic political system, an important casualty of political change has been farmer credit clubs. These clubs delivered subsidised seed and fertiliser to a minority of larger smallholders and were the source of what growth there was in the smallholder sector in the 1970s and 1980s.

With political change, the credit programme in reality became a large free inputs programme<sup>17</sup>. Malawi in the late 1990s faced an almost impossible dilemma. Without subsidies, the economic basis of the maize seed and fertiliser technology was undermined. The poor (the majority of smallholders) were seriously food-deficit already but improved seed and fertiliser was just too expensive for them. But these same households could not afford to buy the food necessary to fill the hungry season gap between their inadequate harvests from one year to the next and had to resort to selling their labour (known locally as ganyu labour). Typically this meant working on wealthier neighbours' lands during the critical farming periods of planting and weeding – which meant that their own crops were planted and weeded late. The national harvest fell; routine food deficit, and all its consequent inflationary effects, became the norm. Malnutrition, already at unacceptably high levels, rose further. The end point was, at best, a steady decline in already unsatisfactory nutrition and living standards, and, at worst, widespread starvation.

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<sup>17</sup> Whereas before 1990, the quantity of fertiliser not paid for did not exceed 5 percent in any one year of the total used by smallholders, by 1996 this had risen to over 50 percent (Whiteside and Carr, 1997).

In 1997, a group of concerned individuals in Malawi – scientists, economists, policy makers – determined to pool their skills and efforts to make a coordinated and focused effort to address the country’s increasingly severe and chronic food crisis. The maize productivity task force (MPTF), as it came to be known, was drawn from across the public and private sectors. It liaised with key donor agencies and drew on external expertise and advice as appropriate. Their recommendation was to break away from the free inputs programmes (which have since been resumed as emergency input distributions of seed and fertiliser) and which caused – and continue to cause major disruption to commercial markets. Instead they proposed a free demonstration pack<sup>18</sup> programme linked directly to a FIPS-style market development programme.

In the first year, the free demonstration pack component of the programme was introduced, based on well documented ‘best bets’ recommendations (which is exactly what FIPS does). Subsequently, however, the initiative has been changed to a ‘safety nets’ focus and the link to high quality, economically viable technology has been lost. Had a FIPS exercise been introduced as part of the starter pack exercise from the outset as recommended, the link to production viability would have had a greater chance of being sustained. As presently implemented, the Malawi starter pack provides no guidance to smallholders in the use of improved technologies and serves to disrupt both markets and the promotion of household food security.

### ***The potential for FIPS in Tanzania***

This story has direct relevance to the possible extension of FIPS into Tanzania. As elsewhere in the region, fertiliser prices in Tanzania are a sensitive political issue. The easy response is to introduce subsidies, even though the ineffectiveness of subsidies is well proven. Tanzania and other countries in southern and eastern Africa face a common problem of developing a reliable and efficient market chain for farm inputs and products. Distances are huge and transport links poor in many regions.

Seed in Tanzania is dominated by farmer saved and locally traded seed of varying quality. Efforts are being made to improve quality through the development of what is termed ‘quality declared seed’<sup>19</sup>. The use of conventional certified seed, never widespread, has declined with the removal of input and output subsidies in recent years. A very similar decline in demand for fertiliser is evident. For both seed and fertiliser, the major evident reasons behind the decline in use include high costs relative to the value of the crop, concerns regarding quality, inappropriate recommendations, and lack of availability. FIPS has shown it can address the first three of these through improving efficiency of use (and thus reducing the cost to the farmer) and the last through its innovative approaches to linking demand and supply.

Importantly, Tanzania has embarked on a major programme of agricultural reforms which have, at their core, exactly the kind of demand-led, farmer friendly service that FIPS has been so adept at developing in Kenya. Tanzanian researchers are in the

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<sup>18</sup> Sufficient improved seed and fertiliser (of the most appropriate type) to plant 0.1ha and to put an extra bag of grain in everyone’s granary. This would be sufficient to take most families through the hungry season. In the year it was introduced, the actual results were substantially better than planned.

<sup>19</sup> Which is derived from improved parental seed material and bulked up by local producers with a modest degree of formal regulation.



forefront regionally in the development of improved crop varieties (particularly maize and phaseolus beans). Both ARM in Kenya and Minjingu Mines in Tanzania have expressed interest in developing locally appropriate fertiliser blends. Mavuno fertiliser is being sold in some areas of the Northern Highlands already. There are several seed companies in Tanzania who have expressed a clear interest in working with minipacks and have already started marketing some varieties in small quantities.

The obvious entry point is Arusha, which is relatively easily served in the first instance from Nairobi. Arusha, with well established cash cropping and a busy tourist industry, has the markets and expertise to attempt a FIPS pilot. A well focused FIPS effort, closely linked to proven and economically viable 'best bets' (following the Kenya and Malawi examples), would provide a significant boost to the ambitious plans developed under the Tanzania Agricultural Sector Development Programme (ASDP). The demand for improved seeds and fertiliser at the household level is well established; what is lacking is the ability to access these critical inputs. Controversial (and unhelpful) moves towards the reintroduction of input subsidies are under consideration by the Tanzania Government. These potentially conflict with the fundamental assumptions underlying the ASDP.

FIPS has the track record necessary to implement a demand led input supply development programme that is consistent with the objectives of the ASDP. By linking the pilot explicitly to the ASDP, the basis for a scaled up national programme could readily be established, and could prove a powerful tool to address the poverty alleviation focus of the ASDP. This implies that the exercise would need have the status and profile necessary to allow a rapid national scaling up once the basic programme had been adapted to conditions in Tanzania. Clear indicators of success need to be developed and agreed with senior policy makers so that there are high quality data on impact, and that can be used directly to modify the programme as it is scaled up. The same approach, using participatory survey methods, that is recommended for the Kenya programme will need to be implemented as an integral and central part of the Tanzania scaling up exercise.

### ***Recommendations for Tanzania expansion***

**RECOMMENDATION: FIPS should consider expansion into Tanzania, but only as an integral component of ASDP.** FIPS has the track record and competence to mount an effective pilot programme based around Arusha. There is a clear demand and need for an 'honest broker' FIPS programme in Tanzania. Although the private sector is more dispersed and smaller overall than Kenya, this is not necessarily a major constraint. Tanzania is attracting substantial inward investment (much from South Africa) and the commercial climate is promising for a FIPS exercise in that country. The experience from Kenya is directly relevant to many of the problems faced in improving smallholder productivity and reducing poverty in Tanzania.

**RECOMMENDATION: a FIPS Tanzania programme needs to introduce and implement, from the outset, well designed survey methodologies systematically to monitor and analyse information on the characteristics of participating farmers.** Unless this is done, the potential impact on national policy may be lost. A critical emphasis of the programme will need to demonstrate that, through efficient and timely use, costly inputs are affordable and profitable. The programme will have to

show that it reaches the poor effectively and that, through the market access provided, poverty can be directly alleviated and the disadvantaged can significantly improve their livelihoods.

## **Risks and opportunities**

FIPS runs on very tight margins, with a very slim management structure. Expansion beyond its present focus areas will add significantly to the workload of FIPS management. Central to the success of the programme is a clear focus on the delivery of highly productive and economically viable improved technologies to smallholders in amounts they can afford to purchase. The ‘honest broker’ role played by FIPS is unique and provides valuable experience in the process of technology transfer. If that role becomes compromised (or is perceived to be compromised) then the programme could rapidly deteriorate into an ineffective agricultural extension exercise little different from many others which already exist.

A major risk to the programme, therefore, is that management becomes overstretched and is not able to provide the detailed oversight that has characterised the work to date. Another risk is that, pushed by commercial or donor emphases on becoming ‘sustainable’, FIPS changes focus to prioritise technologies that offer earning opportunities to the programme rather than those of best value to poor smallholders. A recommendation is made in this report to strengthen the capacity of FIPS management while, at the same time, providing a learning opportunity for new management recruits. This recommendation is important to both the immediate and the longer term future effectiveness of the programme. The further recommendation made in this report that FIPS prioritise its ‘honest broker’ role is essential to avoiding the risk of appearing to promote an agenda other than that needed to provide high quality, reliable information on profitable technology options to poor and disadvantaged smallholders. Donors, particularly, will need to be sensitive to the commitment needed to allow the programme to fulfil its potential in this way.

FIPS does have a management board which has also contributed well to addressing both these risks. As the scaling up process evolves, the roles and composition of this board may need revision to allow improved oversight of the expanded programme. Importantly, however, there is an urgent need to expand the management capacity of FIPS to facilitate enhanced interaction and collaboration with complementary programmes. Particularly as FIPS develops its pilot in Tanzania, a significant amount of management time will need to be devoted to ensuring that the effort is properly and effectively linked to the ASDP.

A surprising risk to FIPS, as currently implemented in Kenya, lies in its donor base. While all three funders of the programme (USAID, Rockefeller Foundation, and the Crop Protection Programme supported by DFID) are enthusiastic about FIPS’ achievements, all face changing internal funding issues of their own. It is entirely possible that funding from all three sources could cease in the medium to near term due to factors completely outside the control of FIPS. Therefore, while the expansion to Tanzania does involve extra work for FIPS management, it also provides an opportunity to link into a more stable support base and avoid losing the very considerable momentum that has been built up to date. An effective pilot programme

in the northern highlands of Tanzania, closely linked to ASDP, could provide a useful hedge against exogenously driven donor policy changes in Kenya.

The move to Tanzania, combined with careful and effective monitoring of impacts in both countries, offers an important opportunity to FIPS to demonstrate that the model has broad application across farming systems, policy environments, and technology choices. Well implemented, this can be a direct and effective contribution to the complementary reforms being introduced into research and extension programmes in the region. The programme fits ideally into the decentralised, farmer managed model which is becoming the dominant type in so much of the region.

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