

# DRUMNET Case Study

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## **Executive Summary**

DrumNet, a project of the NGO Pride Africa, is as an emerging network of rurally situated farm business support centers delivering agricultural extension, credit, and marketing services to smallholder farmers with the aim of increasing their farm productivity, their access to markets, and the efficiency with which they conduct business.

DrumNet encourages the production of export oriented crops by providing extension services and by linking commercial banks, smallholder farmers, retail providers and exporters through a cashless micro-credit program. Farmers access inputs (seeds, fertilizers, pesticides, etc) at local input providers through an established line of credit from DrumNet. At harvest time, DrumNet deducts the loan repayment and a 15 percent service charge from the gross proceeds of every marketing transaction prior to disbursing

the net funds back to the farmer. DrumNet then sells the produce to an exporter at a pre-specified price.

## **Context**

Kenya's horticultural sector<sup>1</sup> has received a great deal of attention over the past decade (Jaffee 1994,1995, Dolan et al., 2001 Minot and Ngigi, 2002, Muendo and Tschirley, 2004) due to the rapid and sustained growth of its exports to Europe. This impressive growth has undoubtedly contributed to increased rural incomes and reduced rural poverty. Yet despite this growth, exports remain a small fraction of Kenya's overall horticultural sector.

For the past decade, over 90 percent of all fruit and vegetable production was consumed domestically, and the domestic market accounted for over 95 percent of the total growth in quantity of fruit and vegetable production. While over 90 percent of smallholder farmers in all but the arid regions of Kenya produce horticultural products, fewer than 2 percent do so directly for export (Bawden et al., 2002).

The few Kenyan smallholders who have succeeded in producing for the export market face a new set of challenges since January 2005 under the EUROPGAP requirements. These requirements are driven by increasing consumer demand for quality and food safety in the UK and continental Europe, and by an increased emphasis on the traceability of horticultural production. Exporters want to be able to trace production back to the

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<sup>1</sup> Horticulture sector is defined here to include fruit and vegetable production and marketing, but not flowers

specific farm from which it came in order to ensure quality and safe production and handling procedures.

Evidence that it has become increasingly difficult for smallholders to maintain their participation in the export sector can be seen in the steady decline in the share of exports by smallholders, from about 75 percent in the early 1990s to current less than 50 percent (Minot and Ngigi 2002, Jaffee 1995, Muendo and Tschirley, 2004).

More generally, the lack of information flows among producers, financial institutions, and marketers of agricultural produce is a major hurdle for economic development. The lack of means of transportation among smallholders and poor road infrastructure are two factors that prevent markets from functioning properly (Freeman and Silim, 2002). Banks and MFIs have experimented with crop financing and farm input loans and have experienced poor repayment rates, and high transaction costs. Exporters have ventured into smallholder group extension activity and out-grower credit schemes to ensure reliable supplies of produce for their business with mixed results. Rural, mostly independent, small-scale agro-supply vendors often sell their seeds and agro-chemicals on credit to increase farmer demand, but in the process they reduce their ability to maintain stocks. Finally, smallholder self-help groups and cooperatives – powerful organizations for information sharing and produce aggregation – have proven to be unreliable vehicles for basic financial services such as credit provision, payment distribution, or savings mobilization.

DrumNet tries to overcome the lack of information flows by directly linking commercial banks, smallholder farmers, and retail providers of farm inputs through a cashless micro-credit program. While encouraging production of export oriented crops, DrumNet ensures that farmers meet the safety standards. DrumNet members, organized into co-guaranteed solidarity groups, are able to access required farm inputs (seeds, fertilizers, pesticides, etc) at local participating stockists (input suppliers) through an established line of credit using their DrumNet transaction card<sup>2</sup>. The stockists, trained in basic DrumNet record keeping, submit receipts to DrumNet and are paid in two-week cycles from a credit account maintained by DrumNet. DrumNet clients are required to sell their produce to DrumNet at harvest time. DrumNet organizes the pick-up of the produce and deducts principal and interest payments from farmer net returns, as well as a 15 percent commission. In case the value of the produce does not cover the loan repayment, DrumNet enforces a group guarantee by subtracting the required amount from a group of peers.

In addition to micro-credit services, the DrumNet platform links large-scale buyers, farmers, transporters, and field agents through an integrated marketing and payment system. Before farmers plant crops, DrumNet negotiates contractual arrangements between buyers and farmers, and at harvest time coordinates produce aggregation, grading, and transportation through agreements with local field agents and transporters. Immediately following a successful transaction, data is entered into DrumNet systems, and a set of bank account transfers are triggered to pay the participating farmers, agents,

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<sup>2</sup> The DrumNet transaction card is a plastic card with a barcode, a name, picture and the ID number of the client. Although currently the electronic barcode is not being used, there are plans to use it as a debit card in the future. The outstanding balance would deplete with purchases and accrue with sales of produce.

and (if necessary) transporters. Market data and transaction details are made available to participating farmers. Later, generally at monthly intervals, funds from the buyer are transferred into DrumNet accounts to complete the transaction.

The integration of these two processes contributes to both risk and cost reduction and is the real value of DrumNet. Farmers reduce transaction costs by accessing both credit and markets through their interactions with DrumNet, paying off loans with their farm produce proceeds. Large-scale buyers are also freed from the requirement of managing cumbersome transaction intensive credit programs to ensure reliable supplies of produce. Instead they write a single check to DrumNet every month, thereby reducing costs. Stockists can access new customers without the requirement of selling products on short-term credit. Banks are able to tap into a currently inaccessible market for savings and credit while avoiding high transaction costs. In addition, by providing credit to farmers in the context of negotiated contracts for specific crops with large-scale buyers, participating banks mitigate risks as they become more confident that loans will not default due to the lower quality of crops resulting from little investment in inputs or inability to source appropriate markets on the part of the farmer.

From an institutional standpoint, DrumNet works closely with the district government. The Ministry of Agriculture organizes farmers into self help groups (SHG) in the Kirinyaga district through the program SIDA-NALEP. Government extension agents have set up “Field Farmers’ Schools” that provide technical assistance in certain crops chosen by the members of the newly created SHG. This method consists of a

demonstration plot which is visited several times a month over the course of the cropping season. The SIDA-NALEP program, however, does not provide credit in the form of inputs nor marketing contacts. In this sense, the government work and DrumNet can be seen as complementary.

In addition, DrumNet staff actively participates in NGO meetings organized by the local government. In these meetings, the government learns about the involvement of the different NGOs in the region. In the case of DrumNet, the targeted export crops are discussed so that government extension agents can later focus their efforts in creating SHGs whose members are interested in DrumNet crops.

### **Nature of Innovation**

The typical DrumNet client operates is the household head of a family of 5 members, from the kikuyu tribe (predominant in the Central province), and Christian. Most households live in a wooden homes although 27 percent of respondents in a survey of 750 farmers reported living in mud-walled homes as well.<sup>3</sup> In the survey, only 2 percent of farmers had access to electricity, with 86 percent relying on kerosene lamps for lighting and 11 percent have installed solar panels for lighting and power. Water was available nearby for 62 percent of respondents, while 38 percent are accessing water from distant rivers and streams.

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<sup>3</sup> As part of an evaluation of DrumNet, a survey of 750 farmers from 36 SHGs was conducted in May 2004 in the Gichugu division of the Kirinyaga district were interviewed. At the time of the baseline survey, none of the 36 SHGs had any contact with DrumNet.

About 61 percent of the household income of these farmers came from farm activities, while the rest came from employment (both formal and informal), remittances, or government support. The farmers reported a median income of Ksh 15,000 annually from the sale of crops, and the median of total household income from all sources (including sale of crops) was Ksh 33,000 annually.

Most farmers own the land they cultivate. Landholdings tend to be small as 81 percent of the farmers surveyed operate farms less than three acres in size, while 63 percent operate farms less than two acres. The median farm size of those surveyed was one acre. On these plots, farmers were growing local subsistence crops — such as beans, maize, potatoes, and kale — 51 percent of the time, and were growing cash crops such as coffee, bananas, or tomatoes 34 percent of the time. Interestingly a full 12 percent of the farmers were already growing French beans before contacting DrumNet.

Farm operations are low-tech and so is farm investment as most farmers reported using only manual human labor, with only less than 5 percent utilizing animal labor or machinery to boost productivity. This is not surprising given the small size of the farms. As well, three quarters of those surveyed rely solely on family labor, not requiring hired labor to plant or harvest crops. When asked about the use of agro-chemicals, two-thirds reported either not using fertilizers at all or only using manure to boost yields. And, only 48 percent of farmers in the survey are using pesticides of any kind to improve farm productivity.

Regarding the marketing of their produce, nearly all of the respondents indicated that they use the traditional networks of brokers, resellers, and other intermediaries. A small portion of farmers marketed produce directly to consumers locally, and none of the farmers reported marketing their produce in regional market centers or directly to large-scale end-buyers.<sup>4</sup> Only 6 percent of the farmers reported access to motorized transport (public transport, car, or truck) for hauling their produce; nearly all are forced to transport by foot, bicycle, or animal drawn cart. Most farmers exercise little choice in which intermediaries they work with – three-quarters reported having relationships with three or fewer brokers and a full 45 percent reported working exclusively with a single broker. Most produce transactions are cash-on-delivery, and most occur at the farm gate. Although these traditional arrangements are convenient for the farmer, they erode any advantages of price comparison, competition among traders, and informed decision making, generally placing the farmer at a disadvantage in the value chain.<sup>5</sup>

The results from the survey underscore key assumptions within the DrumNet model – there are large opportunities for farmers in this region to boost the productivity of their farms through more informed choices about crop mix, farming techniques, and access to markets.

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<sup>4</sup> The prime exception was coffee, which in this region is almost exclusively marketed through cooperatives.

<sup>5</sup> Contract farming is not common for little landowners. Only 18 percent of farmers reported having any type of contract for their crops. Export buyers and brokers that engage in contact farming for larger landowners believe that it is too costly to enforce contracts with smaller landholders.

While DrumNet helps farmers market all the crops they grow, they particularly encourage farmers to grow passion fruit, French beans and baby corn, three very profitable export crops. With DrumNet's assistance, smallholder farmers grow and harvest produce that meets the EUROPGAP requirements. In practice, EUROPGAP entails using only pre-approved pesticides and building a shelter with running water and a toilet in its vicinity. The cashless line of credit that farmers have with the stockist only uses inputs certified by EUROPGAP. The shed, to be used to store the produce overnight, should have a door, cemented floor, tin roof and timber or meshed wire walls. The toilet and water tank are to be used for hygiene purposes. DrumNet is actively working with SHGs ensuring that collection points are equipped with this infrastructure as many smallholders without the proper infrastructure will be forced to sell their produce to the local markets obtaining a lower price.

As a result of these new regulations, fresh horticultural produce exporters in Kenya are generally finding it difficult to meet their quotas, and are eager to encourage new growers/producers such as DrumNet's member farmers.

A farmer that wants to be a member of DrumNet has to satisfy the following requirements: (i) be a member of a registered SHG with the Department of Social Services, (ii) express an interest, through the SHG, in growing crops marketed by DrumNet, namely French beans, baby corn or passion fruit, (iii) have irrigated land where to plant DrumNet's produce and (iv) be able to meet the first Transaction Insurance Fund (TIF) commitment (roughly USD 10 or the equivalent of a week's laborer wages).

DrumNet works with already established SHGs because they facilitate information dissemination. Potential clients must have irrigated land because the horticulture crops promoted by DrumNet require irrigation. From the baseline survey conducted, roughly 70 percent of farmers interviewed had some irrigated land.<sup>6</sup>

Members of a SHG that will work with DrumNet first receive a 4 week orientation course in which the DrumNet model is explained. Farmers learn about the need to employ good agricultural practices on their farms to ensure the quality and safety of their produce that will meet EUROGAP requirements, they open a personal savings account with a local commercial bank (Equity Building Society) and they make the first cash contribution to the Transaction Insurance Fund (TIF), that will serve as collateral for their initial line of credit. They also decide on the TIF percentage that DrumNet will automatically deduct from each future marketing transaction. By contributing to the TIF, a farmer gets a loan from DrumNet of up to four times that amount to purchase inputs (seeds and fertilizer) with a local stockist.<sup>7</sup> Thus, in the first years the client default risk is born by DrumNet. However, by conducting all transactions using a commercial bank, it is expected that the bank will get to know the clients, assess their profitability and decide to open a line of credit to DrumNet.<sup>8</sup> Although farmers cannot access the TIF funds, exceptions have been made in cases of emergency.

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<sup>6</sup> Currently the line of credit offered by DrumNet only covers the inputs to grow the crop. As farmers build a relationship with DrumNet, the loan sizes will increase to allow for investments such as water pumps, etc.

<sup>7</sup> DrumNet has established a partnership with one agro-supply vendor in Kerugoya to supply farmers with program inputs. Thanks to DrumNet, the retailer can reduce the informal credit to his customers, thereby reducing his risk and increasing his ability to keep his shop fully stocked. The retailer also makes sure to stock the inputs for the crops that exporters are requesting. In fact, sometimes the exporters themselves will supply any special seeds or fertilizer to the retailer directly. The retailer also adds value added by re-packaging the seeds or supplies in smaller quantities and by chemically treating seeds before packaging.

<sup>8</sup> As this chapter goes to press, DrumNet and Equity Building Society were in negotiations.

The initial TIF amount depends on the specific crop the farmer wants to grow and the area under cultivation. For example, growing passion fruit in one quarter of an acre requires an investment of Ksh 5,000 (USD 67) but does not bear fruits for 6 months. The initial TIF for passion fruit is thus Ksh 1,250. French beans and baby corn only require an investment of Ksh 3,000 per one quarter of an acre and harvesting can happen after 3 months only for a period of 3 weeks. In Kirinyaga, both French beans and baby corn can be grown and harvested all year around.

To ensure repayment, DrumNet organizes farmers into FETs (Farmer Enterprise Teams) of 5 members each.<sup>9</sup> Members of a FET are jointly liable for the loans taken out. With the guidance of DrumNet staff, farmers develop a schedule of planting and harvest collection. When harvest time comes, DrumNet negotiates with the exporter a price and will arrange for the produce pick-up at pre-specified collection points. Usually, there is a collection point for every 4 or 5 SHGs. In each collection point, a transaction agent (TA) is appointed among the members to serve as liaison between DrumNet and the farmers.<sup>10</sup> At these collection points, farmers grade their produce and package it, although the exporter has the final word on the grading.

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<sup>9</sup>A SHG has on average between 20 to 30 members. Thus, a SHG may have more than one FET, depending on how many SHG members signed up with DrumNet.

<sup>10</sup> Transaction agents (TAs) are responsible for coordinating activities within farmer groups. The number of these agents has expanded from approximately 10 in early 2004 to 35 in January 2005. One member of each new farmer group is nominated as the transaction agent, receives additional training, and serves as the main point of contact for DrumNet, facilitating the market transactions. These farmers communicate frequently with the DrumNet staff, both in person in the office and via mobile phones. They have become an important conduit of information about pickup schedules, market prices, approved field practices, and shifting grading standards.

Once the produce is delivered to the exporter at the collection points, the exporter pays DrumNet who in turn will deduct any loan repayment, pre-specified TIF percentage and will credit the rest to individual bank accounts that each farmer opened when they registered.<sup>11</sup>

### **Performance Analysis**

The greatest potential for DrumNet's economic impact is in horticultural produce with export potential. For traditional subsistence crops with only domestic market potential, DrumNet services seem to have only minimal impact when compared to traditional broker and reseller networks.

Since commencement in October 2003, DrumNet has facilitated over 7,000 marketing transactions on behalf of the now currently 647 member farmers and has generated over Kshs1.3M (US\$16,705) in gross revenue, corresponding to US\$2.3 per transaction. Transactions take place on a weekly basis, In total, this represents over 75 metric tons of produce moved between smallholder farms and advantageous markets.<sup>12</sup> This Initially, DrumNet focused on passion fruit, a profitable but challenging crop sold both in export and local markets. The favorable climate and small farms in Kirinyaga favors this fruit crop, and DrumNet farmers have seen strong results. Beginning in 2004, the DrumNet

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<sup>11</sup> In the beginning, the relationship between DrumNet and export buyers suffered from wholesale rejection of produce, missed pickup agreements, poor communications, poor contractual arrangements, and in some cases outright corruption at the loading dock. However, over the months, by working consistently with the management of the export buyers, and by building trusted relationships with local traders, the flow of produce, payment, and information has now been streamlined. The increased capacity of the buyers has led to more coordination, more efficiency, and higher returns for both the buyer and the farmer.

<sup>12</sup> Besides the sale of produce to exporters directly, depending on the price DrumNet sells to the Nairobi's central Wakulima market, Nairobi's Export Processing Zone near JKIA, and Karatina's central produce market.

team began to also support the production of two other crops in high demand with Kenyan exporters, French Beans and Baby Corn. These crops have additional advantages over Passion Fruit — they are less capital intensive, simpler to grow, and have shorter growing periods leading to faster economic returns. Beginning in March 2004, approximately 75 farmers from 3 self-help groups were recruited to begin growing Baby Corn, after a set of discussions with a leading exporter. Contracts were signed, seeds and agro-chemicals were purchased on credit by the farmers, who dedicated on average one quarter acre to the crop, and the produce was harvested and delivered to the exporter during the months of May, June, and July. During those three months, the DrumNet staff facilitated 510 individual transactions between farmer and exporter, resulting in over 24 metric tons of produce worth Ksh 430,000, an average harvest yield of 314 Kg worth Ksh 5,625 per farmer.

DrumNet believes in “beating the brokers” simply by dis-intermediating traditional agricultural resale networks, i.e. coordinating the sale of farm produce directly from farmer to wholesale buyer. DrumNet is consistently returning higher net prices to its member farmers than are available through local farm-gate brokers operating in the region. These net prices are typically 5-10 percent higher than brokers, suggesting that scale, efficiency, and transparency can return better net prices to farmers.

DrumNet has also had an impact through the provision of several micro-finance services. While the typical farmer in Kirinyaga has access to formal and informal financial services, access to credit is still very limited. Two thirds of the farmers that participated in the baseline survey, reported being members informal savings arrangements such as

local ROSCAs, or “merry-go-rounds”<sup>13</sup> and a full 70 percent reported having a savings account with a formal banking institution. With regards to loans and credit services, only 16 percent reported having applied for any kind of credit in the past 12 months and of those only 14 percent had applied for loans at a commercial bank. The remainder applied for credit with a mix of friends, local co-ops, or informal money lenders.

By opening a personal savings account with a local bank, those DrumNet members without one can now save in a reliable institution while at the same time they start building a financial history. In addition, thanks to the TIF contributions, not only build up their stock of savings but also are able to access larger loans. At this point, DrumNet is holding a total of just over Ksh 400,000 in member contributions. Interestingly, about 65 percent of these contributions have come from the automatic deductions taken from marketing transactions (ongoing TIF contributions), as opposed to cash contributions made when members register (initial TIF contributions). In other words, the program seems to have broken through the traditional problem of collecting cash contributions from members to guarantee credit — in essence, the farmers are guaranteeing future credit through passive, deferred payments on produce marketing.

DrumNet has provided credit for 485 individual farmers (Ksh 1.3M or US\$16,250) over the past year.<sup>14</sup> Thus far, repayment rates have been strong, given the model’s ability to collect repayments directly from the net proceeds of marketing transactions.

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<sup>13</sup> A ROSCA or a “merry-go-round” can be defined as ‘a voluntary grouping of individuals who agree to contribute financially at given dates towards the a pot, which will then be allotted in accordance with some prearranged principle to each member of the group in turn. Once a member has received the pot, she is excluded from the allotment of future pots until the ROSCA ends.

<sup>14</sup> Recall that these credit funds were not disbursed directly to member farmers as cash, but were used to reimburse local agro-supply vendors that had distributed seeds and fertilizers to our farmers.

Perhaps the most convincing evidence of the impact of DrumNet credit services comes from the on-going evaluation of DrumNet. In June 2004, the 36 SHGs that participated in the baseline survey were divided into 3 groups: a control group, that to date was never approached by DrumNet, a full service treatment group, that received all services provided by DrumNet and another treatment group that received all DrumNet services except credit, that is, TIF contributions were encouraged but only that same amount could be withdrawn from the stockist. While 10 out of 12 SHGs in the full services treatment group are now actively working with DrumNet, only 5 out of 12 signed up from the treatment group without credit. Since SHGs were allocated randomly into the treatment groups, one can conclude that credit is important in encouraging farmers to start growing new crops.

The baseline survey also focused on how farmers accessed information related to the business operation of their farms. An overwhelming number of farmers reported that face-to-face conversations with local government extension agents and friends was the primary mode of information transfer. Twelve percent reported using that radio primarily and only 3 percent relied on the newspaper material. Finally, less than 1 percent used the phone, either fixed line or mobile as a major means of information access.

In fact, although 15 percent of farmers own a mobile phone, and 60 percent report using a mobile phone at least once a month, it is mostly used for social purposes, as a tool for

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<sup>15</sup> Two thirds of the farmers surveyed who obtained credit had loan sizes of over Ksh 10,000, while DrumNet's initial loan is between Ksh 3,000 and Ksh 5,000.

staying in touch with family and friends.<sup>16,17</sup> All in all, mobile phone usage is still low in rural areas, and the main reason is its cost. Besides the phone itself and the connectivity kit, recharging the phone is costly as very few households have access to. DrumNet office in Kerugoya does engage mobile phone communication with those Transaction Agents (TAs) who own mobile phones. Through phone calls or SMSs, these TAs learn about market prices, collection days, and grading standards and communicate them to farmers during their normal interactions in their farm communities.

Otherwise, to obtain market information farmers have to rely on informal networks, but they are based on rumor and often times the information is provided by the brokers themselves, who have no interest in revealing the true price prevailing in the local or district market. Besides interactions with TAs, DrumNet also provides accurate, real-time pricing data through a whiteboard installed at the entrance of the office in Kerugoya. Originally intended as a reference tool for the staff, this whiteboard has become a central meeting place for farmers. On average, about 25 farmers per day visit the DrumNet office to check in on current marketing trends such as prices paid by exporters or local markets, transportation charges, rejection rates, and net prices.<sup>18</sup> For DrumNet, this is an opportunity to address concerns of farmers, distribute other materials, or encourage the participation of farmers in other crop programs. As well, this whiteboard has played a role in trust-building with farmers, as it ensures complete transparency with DrumNet

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<sup>16</sup> In every rural community in Kenya there are “community phones” for hire at the cost of Ksh 20 per minute.

<sup>17</sup> In Kirinyaga, the typical family is scattered, with husbands often working in Nairobi, children attending school or working jobs in other parts of the country.

<sup>18</sup> These personal visits to the DrumNet office are not special trips, but simply part of regular trips to Kerugoya town for banking, shopping, or other reasons.

transactions. In addition, DrumNet farmers can access specific account details from the computers in the Kerugoya office. Assisted by a DrumNet staff member, the database application can provide figures such as the net proceeds earned from a particular transaction, the total savings balance for a farmer, a price history on a particular crop, or the amount of produce credited to a farmer on a particular day.

## **Conclusion**

DrumNet's success results from its innovative program design that substantially reduces the risk involved in horticultural finance. By providing credit to farmers in the context of negotiated contracts for specific crops with large-scale buyers, participating banks are able to minimize loans defaults due to poor crop selection or inability of the farmer to market products. This integrated system also allows the lender access to any profits from the sale of the production before the borrower in order to pay down any outstanding loan balance. DrumNet provides training courses on quality and safety of produce and ensures through its cashless line of credit with selected input providers, that farmers only use inputs certified by EUROPGAP, thus enhancing the marketability of their products. The risk to banks is further reduced as participating farmers begin saving and building cash reserves with a reliable institution while building a credit history.

Despite the revenues, DrumNet is not yet breaking even. In Kerugoya, DrumNet is carrying out its activities with financial assistance from the Canadian International Development Research Centre (IDRC). By mid 2005, this single office in Kerugoya plans

on serving over 1,000 farmers, at which point the office will be covering its local costs.<sup>19</sup>

The office has monthly running costs, or overhead expenses of about Ksh 100,000 per month, and most (80 percent) of these come from payroll, communications, and transportation.<sup>20</sup>

In addition, to work in Kirinyaga, PRIDE AFRICA has been actively seeking partnerships to extend DrumNet's reach. Thanks to a grant from the International Fund for Agriculture Development (IFAD) Extended Cooperation Programme, DrumNet will be launching offices in two other communities in the Mount Kenya region and will begin to serve farmers in those regions during the first quarter of 2005. The prototype DrumNet office is designed as a customer service and data processing center, located in a rural community, staffed by two DrumNet employees operating an Internet-connected personal computer running proprietary DrumNet software. These offices respond to customer queries, manage customer data, facilitate credit and market transactions, and interface with the local banking partner. DrumNet is currently projecting that a start-up investment of US\$75,000 will support a single field office's start-up and operating expenses for the first two years, at which point the office will be producing a volume of business sufficient to generate profit.

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<sup>19</sup> During the three months of June, July, and August of 2004, the DrumNet office in Kerugoya had 500 transacting members and was able to generate revenues sufficient to match two thirds of the costs associated with that business unit. Thus, the assumption that a DrumNet office, actively serving 1000 farmers, could generate fee and commission income sufficient to cover local costs, seems to be confirmed.

<sup>20</sup> Communications expenses comprise a full 20 percent of office expenditures and include mobile phone usage, both calls and SMS, as well as the office landline for calls to exporters, partners, and dial-up Internet access. More than the volume of calls, the amount reflects the very high cost of communications in Kenya.

Indeed, the key to profit and long-term sustainability of DrumNet is found in the volume of farmers, volume of farm produce, and a successful portfolio of credit products.

The main challenge in the implementation and expansion is the need to establish a close relationship with farmers through transaction agents, to accomplish two objectives. First, that the produce is sold to DrumNet. If a pick-up appointment is missed, farmers are then forced to sell the perishable produce to the first trader that comes along, with the resulting loss in revenue to DrumNet, as less transactions take place and to the farmers as the perceived price will be lower. Second, that enough credit can be extended to farmers to ensure year-round production. If a new loan is only available when the previous credit is repaid, the frequency of planting and thus of harvesting will be lower than if credit was given at planting every two weeks. In the first case, farmers are idle for some weeks and may look for other ways to get the seeds and other inputs, usually from local traders. The end result is that the benefits from having trained farmers is reaped by brokers who have not invested anything.

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