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FOOD PRODUCTION, PROCESSING & MARKETING PROJECT (FPPM)

FINAL REPORT

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ACRONYMS and ABREVIATIONS

AAES	Agro-ecosystem analysis
ACDI-Lusekele	Actions Communautaires pour un Développement Intégré
AFRIKI	Association des Femmes Riziculteurs de Kingabwa
AIDAR	Agency for International Development Acquisition Regulations
AIPD	Appui aux Initiatives Paysannes pour le Développement
AP	FPPM Proximity Field Agent
APROCEC	Association pour la Promotion des Coopératives de l'Epargne et du Crédit
APTM	Association des Producteurs et Transformateurs de Manioc
ASCOVI	Association des Consommateurs des Produits Vivriers
BC	Bas Congo Province
BDD	Bandundu Province
BENI Food	Bas-Congo-Based NGO
BDD-Matadi	Bureau Diocésain pour le Développement - Matadi
BDS	Business Development Services
BIAC	Banque Internationale pour l'Afrique au Congo
BUCOPAK	Bureau de Coordination des Coopératives, Parkings et Agences Agricoles du Congo
C-1	FPPM Component 1 : Increasing Productivity
C-2	FPPM Component 2 : Improving Market Efficiencies
C-3	FPPM Component 3: Capacity to Respond to Market Opportunities Reinforced
CADIM	Centre d'Appui au Développement Integral/Mbankana
CARPE	Programme Régional de l'Afrique Centrale pour l'Environnement
CARG	Conseil Agricole Rural de Gestion (Rural Management Council for Agriculture)
CDS-Kisantu	Caritas Développement Santé – Diocèse de Kisantu
CIAT	International Centre for Tropical Agriculture
COOPEC	Coopérative de l'Epargne et du Crédit
COOPI	Italian NGO, intervening on the Plateau of Batéké
COP	Chief of Party
CORIDEK	Collectif des Organisations pour le Développement Intégré de la Rive Droit de Kwilu
COR	Contract Officer's Representative
COTR	Contracting Officer's Technical Representative
CTB	Cooperation Technique Belge

DCA	Development Credit Authority
DRC	Democratic Republic of the Congo
EMF	Environmental Management Form
EMMP	Environmental Mitigation, Management and Monitoring Plan
ERF	Environmental Review Form
EU	European Union
EVI	Extremely Vulnerable Individual
FAO	Food and Agricultural Organization of the United Nations
FI	Financial Institutions
FIDA	Fonds International de Développement Agricole
FIKIN	Foire Internationale de Kinshasa (Trade Fair)
FPPM	Food Production, Processing & Marketing Project
FAR	Federal Acquisition Regulations
FFS	Farmer Field School
GAP	Good Agronomic Practices
GIS	Geographical Information Systems
GODRC	Government of the Democratic Republic of Congo
ICRAF	World Agroforestry Centre
IFDC	International Fertilizer Development Center
IGA	Income Generating Activity
IITA	International Institute of Tropical Agriculture
INERA	Institut National pour l'Etude et la Récherche Agronomique
IP	Implementing Partner
IPM	Integrated Pest Management
IR	Intermediate Results
ISFM	Integrated Soil Fertility Management
LM	Linear meters
Matchem	Kinshasa-Based SME (involved in processing/marketing of cassava)
M&E	Monitoring and Evaluation
MFI	Micro-Finance Institution
MIS	Market Information System
MEO	Mission Environmental Officer
MOU	Memorandum of Understanding
mT	Metric Tons

NGO	Non-Governmental/Non-Profit Organization
ONGD	Non-Governmental Development Organization
OSFAC	Observatoire Satellite des Fôrets de l'Afrique Centrale
PAARSA	Projet d'Appui à la Réhabilitation et la Relance du Secteur Agricole
PERSUAP	Pesticide Evaluation Report and Safer Use Action Plan
PMP	Performance Monitoring Plan
PO	Producer Organization
PPP	Public/Private Partnership
QPM	Quality Protein Maize
R1	First generation seed multiplied from Foundation Seed
R2	Second generation seed multiplied from R1
R3	Third generation seed (three generations removed from foundation seed) multiplied from R2
RFA	Request for Application
RFQ	Request for Quotation
SAC	Sécurité Alimentaire des Cataracts (a local NGO)
SAPEF	Salon Agricole: Pêche, Eaux et Forêts (Annual Congolese Agricultural Fair)
SENASEM	Service National de Semences
SME	Small & Medium Enterprise
SNV	Service Neerlandais des Volontaires (Dutch Volunteer Service)
STTA	Short Term Technical Assistance
TAMIS	DAI proprietary Project Management Software Database
TIFIE	Teaching Individuals and Families Independence through Enterprise
TLA	Total Land Area
TMB	Trust Merchant Bank
ToR	Terms of Reference
ToT	Training of Trainers
TSBF-CIAT	Tropical Soil Biology and Fertility Institute of CIAT
UDK	Union pour le Développement de Kapia
UPAK	Unité de Production Alimentaire de Kinshasa
UPEK	Unité pour la Production et la Pérennité des Efforts et Capacités des Communautés à la Base
USAID	United States Agency for International Development
USG	United States Government
VSLA	Village Savings and Loan Association

Introduction

The Food Production, Processing and Marketing for the Kinshasa Marketshed Project began in May 2011. It was USAID/Congo's first major economic growth activity in the DRC since the end of the civil war. Originally scheduled to go five years, it was curtailed by USAID at the end of December 2014 after 3 ½ years. Located in Western DRC in the provinces of Bas Congo, Kinshasa and Bandundu, its goal was to increase food security in Kinshasa and reduce rural poverty in its project zone through broad based agriculture growth.

Recognizing the DRC is a challenging implementing environment and that the project zone covered an area of 364,716.04 km^2 stretching over 1200 km from Moanda to the border with the Kasai's, we were active in territories, districts, sectors and communes covering 123,358.3 km^2 or 33.8% of the entire Zone of Influence. During the lifespan of the project we worked with six different value chains- cassava, maize, peanuts, cowpea, soybeans and dry beans. At its height FPPM had a local staff of 67 located in three provincial offices and the main office in Kinshasa city. Over its 44 month lifespan FPPM worked through over 160 implementing partners. Originally financed as a 31.7 million dollar project, at closedown our ceiling was reduced to 22.83 million USD.

This is the project's final report written following the completion of our FY 14 Annual Report and a lessons learned assessment that occurred late October to early November 2014 to identify and understand key lessons learned in the design and implementation of FPPM; and look at the dynamic relationships between USAID, Chief of Party (COP) and an Implementing Partner with an eye to understanding how to implement better development. We have tried to make this report complementary to others which have preceded it. This report is destined to document FPPM's challenges, highlight key achievements, document lessons learned and offer some recommendations for others who may follow after us. It is said that those who do not learn, are condemned to repeat the errors of the past; we hope what is contained in the following pages will assist others in building on the foundational achievements of FPPM while avoiding the pitfalls we encountered.

Executive Summary

There are development projects that are born under a dark cloud and FPPM is one where the Feng Shui was bad from the beginning. Between the publication of the RFP and the awarding of FPPM's contract to DAI 13 months passed. During the start-up phase the COP was in and out of country and a very junior start-up team backstopped by experienced technical STTA was running the show. The 2011 elections delayed arrival of the Component 2 Lead until January 2012 and the DCOP Admin/Finance was mobilized in the same time frame. Vehicles were purchased but could not be registered until November 2012 unexpectedly increasing operational expenses due to the need to rent vehicles over an extended period of time. FPPM had a slow and arduous start-up phase, especially if one considers that the initial PMP was only submitted in draft in August 2011, accepted by USAID in October 2011 then revised by FPPM based on partial findings from a flawed baseline study in October 2012 and approved by USAID soon afterwards.

As noted by the lessons learned team of Johnson and Burruss in November 2014: *"The initial design of FPPM was based on solid and valid developmental principles; namely that by creating a more market-responsive and efficient agriculture sector with higher productivity, it would lead to higher profits, higher employment and incomes and increased competitiveness, where food security would be enhanced and chronic hunger and under-nutrition would be reduced…. The overall goal of FPPM was to increase food security and reduce poverty in the DRC… The project was designed to be implemented through three main components: 1) Increasing agricultural productivity, 2) Improving market efficiency, and 3) Developing the capacity to respond to market opportunities. By implementing these three interlinked components simultaneously as intended, the project would have been in a strong position to achieve the desired results of decreasing food insecurity and achieving broad based growth in the agriculture sector."* However, "*due to the Project Team's lack of leadership, critical relationships, vision and technical understanding, they were not able to operationalize the design that led to the failure in the implementation of the project from the very start."*

As a food security project using a value chain approach, FPPM should have started with the market, ended with the market and driven backwards to the highest potential and most accessible production basins for targeted speculations throughout the project zone; all the while remaining attentive to actors in the zone, their dynamic web of inter-relationships and the constraints limiting their abilities to produce, add value and market efficiently. The development model hinged on linking supply and demand interventions in production, processing and marketing; with market based problem solving and business based decision making driving creation of, and increases in smallholder productivity and organizational capacity.

Instead, FPPM began with a production push. Component 1 focused on the introduction of disease resistant cassava- a low margin, long cycle, and staple tuber. Little attention was paid to the short cycle cereal and grain legume value chains and they thus became almost an afterthought, principally because the agronomic team and the COR came from cassava centric backgrounds. In their previous career iterations they had been instrumental in the re-establishment of cassava after East African cassava mosaic virus almost wiped out DRC's crop in the first decade of the 21st century. Too, within six months of project start-up, the COR and Contracts Officer were pushing to bring cassava multiplication activities to scale. This delighted some staff, frustrated others and was a major distraction for project management just as the Program was leaving the starting gate.

Further complicating things, a determination was made that the post-harvest conditioning, value added processing and actions designed to improve market efficiencies (the market pull) should only be performed on production of improved varietals introduced by FPPM and grown by its

beneficiaries. In the first 18 months of the project, value chain actors, principally in cassava, were engaged in order to begin the process of linking critical nodes, product innovation was explored and outlets were sought for value added output. However, no true in-depth marketing analysis of upstream opportunities was performed and no market segmentation analysis occurred in either the principal up-country or key Kinshasa markets—nor the requisite follow-on market development initiatives. The value proposition for value added cassava products was never clearly delineated, the key determinants of quality and their relationship to pricing, and price elasticity in the consumer end markets was not defined and communicated to the principle production basins in the project zone. Further, there was a lack of effective leadership in the key Component 2 expatriate role and the related underdevelopment of component staff. While efforts were made and activities undertaken, no true strategic vision was put in place to guide the team in reaching its long term goals. In the last 18 months Project strategy was sharpened and focus was placed on the upstream side of the value chain that had been neglected during the first half of the project. Processing center activities were put squarely in the center of the Component 2 bull's-eye and the MIS infrastructure was put in place allowing it to gain palpable traction. Unfortunately, through all of this FPPM never got back to the market, never facilitated vertical linkages in any systemic fashion and only facilitated horizontal ones by accident.

The third project component –Capacity to respond to market opportunities reinforced did not effectively start its activities until April 2013, two full years after project inception and only 18 months before FPPM closed down. This component was the best articulated of the three. By initial design, it was intended to serve as a foundation for smallholders to operate their farms through an entrepreneurial lens, mastering costs, increasing production volumes and seeking opportunities for value addition. Material covered in the rural entrepreneurship curriculum provided value to actors in the production basins, intermediary and tertiary markets, and was inclusive of intermediary players across the value chains. On the productivity side, the Component took a stepwise but holistic approach with hands-on experiential demonstrations to the introduction of farming best practices for cassava, maize and peanuts. Using facilitators, embedded in the communities they served and working for FPPM's implementing partners, it proved to be the most "Forward" of our interventions. However, it was a resource sink needing to be constructed from the ground up, suffered from a lack of proximity oversight, discontinuous mentoring, and institutional instability among its "master" trainers. The IPs never truly bought into the foundational concept, proved unwilling or unable to front the money to ensure continuity of, and fluidity in, the training being offered and never convinced itself that training is something for which participants pay, rather than are paid to attend.

On the administrative side of project implementation, FPPM's systems were considered to be unwieldy, burdensome, lethargic and inefficient particularly for technical service providers. They were also misunderstood, mis-interpreted, and did not necessarily result in either timely execution of technical activities, nor responsiveness to our needs at reporting time, with a resultant consequence of under reporting on accomplishments. Further, the calendar for deliverables was not respected, the format for reporting was not used, and the requisite forms for monitoring and evaluation were not fully and consistently completed; or understood from a project accountability perspective. Paper handling and filing systems within our offices were mishandled, deliverables were misplaced, multi-tiered verification of deliverables was slow and payments for services lagged. In sum, transactional costs were high and did not necessarily result in better quality service delivery, but certainly raised levels of frustration and led to mutual feelings of disappointment and disillusionment.

From a management perspective, at the outset, the mission of the program was unreconciled in the COP's mind and thus, ill explained to CCN staff. Misunderstanding reigned concerning whether the program was to implement the proposal or the directives contained in Section C of the contract. Further, even if all of this had been crystal clear, the unfortunate realization arrived at much later is

that management did not know or understand how to operationalize the design to the field realities of the DRC. Staff comprehension of the goals, objectives and delivery of this economic growth, development assistance initiative was confused because of their previous history as humanitarian relief practitioners. Confusion reigned over the identity of FPPM's true beneficiaries, the difference between a farming household, a member of a producer organization and the distinction between Implementing partner, service provider, producer organization and informal working group…and disposition of goods and services. There was poor alignment of resources, including personnel, with activities to be undertaken, results to be achieved and impact to be accomplished. Poor communication, lack of timely proactive planning, and in-articulation among and between project components, the Kinshasa and Provincial offices, and the administrative/financial and technical staff created a perfect storm of inertia. Coupled with this was the fact that FPPM was envisioned to be a field project but the project staff, until very late in the game, rarely left their offices and the technical assistance team hunkered down in Kinshasa instead of frequenting the up-country intervention sites leaving FPPM partners present in an operating environment without proper oversight and follow-up.

Concurrent to this were poor communications between the project and the USAID COR that by month 6 had evolved into overt tension between the two. There was no one focal point of contact. Technical direction by the COR was being given both formally and informally to diverse members of the FPPM staff. Coupled with this was the fact that the COP often abstained from attending technical meetings and field visits where USAID was present and he and the DCOP were at loggerheads with both working behind closed doors. This toxic environment early on in project implementation was assisted by a poorly configured office/working environment, few staff meetings and a preference for electronic communications-in English, over other forms. This environment persisted for the first 23 months and led to a high level of staff disempowerment, disengagement and disillusionment.

In January 2013 DAI underwent a reorganization which resulted in the creation of an Africa Regional Team. A new Home Office Project Management Team was assigned to FPPM and held accountable for the performance of the project. With only one indicator out of 27 showing any results from the first 18 months of operations, coupled with an apparent lack of leadership and management systems, the project was greatly under-performing. A monitoring visit by the Project Team Director was organized. During this visit, in consultation with the Project COR and the Economic Growth Team it was decided that a management change was merited.

A turn-around began in late March/early April 2013 concurrent with a management change, new strategy, recruitment of proximity agents, refocusing and centering of activities and better articulation within and between project components. In addition CCN staff were offered capacity reinforcement in value chains, the value chain approach, value chain analysis and work planning. The indicator matrix was revised and a new causal model developed to better reflect the current state and assist in building the hierarchy of expected results, outcomes and impacts under the new strategic orientation framework. Indicators and PIRS were translated into French and reviewed with all technical staff. A more detailed M&E plan was instituted and reporting began to link activities with results and results to outcomes. Definitions were harmonized and a major effort was undertaken, using rotations of interns to capture backlogged and unexploited data. New systems were implemented, cost control measures instituted, regular planning and technical meetings instituted with regular field trips planned to the provincial offices (for admin and finance staff) and to field implementation sites (technical staff). Meetings were held with implementing partners to discuss constraints and difficulties, identify logjams and propose recommended "fixes". Unfortunately, these efforts were too little, too late. Inertia was difficult to overcome and our staff and partners found they had trouble adapting to the radical sea change and increased rigor that accompanied it.

Despite all of this FPPM did produce a number of notable results over the life of the project:

- We assisted 67,231 rural households and impacted either directly or indirectly 454,482 individuals.
- 487 producer organizations benefitted from our assistance, either through improved productivity, value addition or capacity reinforcement.
- 223 agriculturally related firms received assistance under the Program
- 55 new best practice technologies were introduced
- 11.491 individuals received short term agricultural sector productivity or food security training
- 94 new qualified agricultural extension agents are active in the project zone
- 124 qualified business development agents are active in the project zone
- 27 storage facilities were constructed by FPPM partners with a total volume of 2402 m^3
- 143 structures IP and OP benefitted from improved seed stock since project inception
- 48 small grants disbursed for the creation/renovation of farmgate agro-processing facilities for cassava, peanuts and maize. In one quarter, 99.67 mT of product was processed with 1.697 discrete individuals as registered users of the new processing facilities.
- 19.980 direct beneficiaries are regular listeners of project supported Market Information radio broadcasts
- 80% of these habitual listeners (10.384) have modified their commercial behavior because of information gleaned from these broadcasts
- 26,222.77 ha were brought under improved technologies or management practices as a result of FPPM interventions
- 14,025 members have used the services of 487 producer organizations that have received support and assistance from FPPM over the life of our program
- 60 FPPM partner organizations have opened bank accounts with 11 different financial institutions. 29 groups have opened accounts in Bandundu province, 23 in the Bas-Congo and 18 in the Batéké Plateau.
- 10 financial institutions have voiced their desire to engage in agribusiness lending practices in the FPPM project zone and one institution, Advansbank, extended a $10,000 loan to FPPM partner, l'Ets Anydan de Luozi, for the construction of cassava processing equipment. One IP partner PEDM was offered supplier credit from a second supplier of cassava processing equipment, enabling them to thus procure their own chipper for the processing of cassava micro-cossettes.

In the next sections we will explore our challenges, key achievements, lessons learned and recommendations for future implementers.

Project Management

Introduction

FPPM began in May 2011. When we close our doors at the end of December 2014, we will have been operationally active, implementing in the field for 44 months. Acknowledging that start-up takes a minimum of four months and closedown the same this means we had three years on the ground to provide technical assistance and produce results. Given the pioneering role attributed to FPPM- to be the first development assistance oriented economic growth program financed by USAID post-civil war; and acknowledging that DRC is a challenging implementing environment, this chapter undertakes an analysis of how the project was structured and managed and offers insights and recommendations to future implementers, our client USAID, and ourselves at DAI.

What follows is meant to be complementary to the joint lessons learned report prepared by Eric Johnson of USAID and Duke Burruss of DAI in early November 2014 which looked at the dynamic of how interactions between three key elements (USAID, the Chief of Party and the Contractors Home Office Backstopping team) either promote or impede success during project implementation. This is the field view from a COP brought in to effect a turn-around at the end of PY 2 and it treats more operational, project management issues from a down in the trenches perspective.

Start-Up

The first 120 to 180 days after contract signing are critical for project success. This is the crux period when mobilization occurs, staff are hired, offices and equipment are procured, baseline studies, initial workplans and Performance Monitoring Plans are put into place. It is the time when relationships are built, expectations are set, Mission and vision are defined, team values, and work ethic, are established. And it is a time when roles and responsibilities are articulated and operationalized, procedures are agreed upon, the causal model is refined and validated and the operationalization of the technical proposal begins. Hypotheses are validated, assumptions are corrected, and the road map to the future gets drawn. It is a crucible in which team building occurs, alignment happens and the foundation is laid. Decisions made on day 1 will come back to haunt the project later on. It is a period of intense, diverse and often seemingly unfocused, unrelated activity in which the COP must be conducting the orchestra. It is a project's defining moment. It requires constant discussion, communication and decision making with a combination of consultation, ground-truthing and negotiation between the USAID Mission, HQ, and the COP. This is coupled with needed learning, capacity reinforcement and aligning within the project team.

It is imperative that the COP be the focal point for daily communications with the local mission. It is capital that the COP and the COR develop a trusting and respectful relationship. The HQ team needs to ensure that the COP is present at the initial post-award conference with the Mission, the Contracts Officer and the COR. Where possible, this meeting should be attended by the Home Office Director responsible for the project and/or the HQ Project Manager. At this time a courtesy visit should be paid with the head of the Sector Team and the Front Office. At FPPM's post-award conference a member of the project design team and a home office procurement specialist attended. There were consultants on the ground in DRC, engaging with the Mission and hiring local staff while performing value chain studies and the COP was still in the US.

During the first 120 days of the contract the COP was in and out of country twice. This meant that during a critical period operations were being managed by a junior HQ project associate and a procurement specialist.

The Component 2 lead came for a STTA and then mobilized in early January 2012. The operations and finance manager declined the position after the project was awarded and months of negotiations. A new DCOP for admin/finance needed to be identified and mobilized and this did not occur before the beginning of 2012. Key positions were empty at critical times and this created a leadership void that had repercussions throughout the rest of the project.

In addition, the end of start-up found the project still without mission critical systems in place. Neither the technical and administrative management information system (TAMIS) nor the field accounting system (FAS) were operational. Personnel and policy manuals were not established, and the project was still bootstrapping procurement. The absence of the systems, procedures and protocols negatively impacted planning, and the implementation of activities.

Staffing

Long Term Cooperating Country Nationals

The proposal team identified and received exclusive letters of commitment from 10 Long Term Cooperating Country National staff candidates, all of whom eventually joined the FPPM staff after contract signing. All of these staff had previously worked for the South-East Consortium for International Development (SECID) on a USAID funded initiative for the re-establishment of cassava after East African cassava mosaic virus devastated Congo's production in the early years of the 21st century. This should have already been a cautionary light for the design team. Further due diligence would have shown that this project with which they were all associated ended under a cloud. In addition, the fact that every one of these staff members was not only immediately informed, but was immediately available after contract signing for on-boarding, should have raised some flags.

These original FPPM plank holders had a major influence on project strategy, project approach, the defining of project personnel policies, hiring of other staff and contracting. They all came from a Humanitarian Relief background and were much more comfortable working within the grants environment than on a contract mechanism with its higher level of accountability and oversight. Further, each and every one of these staff members had personal pre-existing relationships with FPPM's initial USAID COR.

The majority of these plank holders were mid-late career with excellent CV and prior work experience both within and outside of public service and so were very well connected with potential partners and beneficiaries. They were also, excepting the cadre identified to be provincial coordinators, heavily embedded (invested in) Kinshasa and had health problems, decreasing energy levels and were quite set in their ways.

What FPPM needed beginning in July 2011, were field agents capable of riding motorcycles and living/working in proximity in local language in the villages, sectors and districts of our project zone. What we recruited and hired however, were experienced "cadre" at impressive salaries who wanted to sit in an office and discuss development theory.

When we finally recruited and fielded 15 of these in Oct 2013, they made a huge difference in project visibility and the quality of interventions.

Immediately after contract signing, the CCN long term staff identified at proposal stage were put on short-term consultancy agreements, pending finalization of their employment agreements/collective negotiations on allowances and indemnities. These discussions continued from May through September 2011 and resulted in the signing of indeterminate length contracts for which the trial period was waived. Many of the initial terms of reference from these employees times as consultants were never upgraded, reviewed or renewed when their contracts were signed with the result being that a many of them never had clearly defined roles, responsibilities and performance

metrics against which they could be evaluated. It is recommended that all CCN staff contracts be one year renewable contracts with an initial three to six month trial period. All contracts should have "force majeur" out clauses and renewal should be based on performance metrics to ensure the installation of a culture of meritocracy.

This staff needed orientation to the program, orientation to DAI and our corporate values, procedures and systems as well as training in value chains they did not receive. They required leadership and vision from the COP who was unable to provide this.

n the first half of 2013 a number of resignations occurred in provincial offices with the departure of the Provincial Coordinator in Bandundu, the Bandundu Provincial M&E cadre, the provincial Finance and Administrative officer and the provincial agronomist. Two of these resignations were due to discrepancies in land area while two others were related to sketchy activity related to procurement of seed and transportation services. Two of these positions were replaced using internal promotion while two were filled using new hires.

In late 2013 the provincial coordinator from Bas Congo resigned and the Master Trainer for Farmer Field School activities was fired for cause. They were replaced by internal promotion/reconfiguration of responsibilities.

In January 2014, the Component 1 lead resigned and was not replaced. In February and April 2014 the Provincial agronomist and marketing specialists resigned and were not replaced.

Human Resources (HR)

FPPM needed an experienced HR manager on staff from the beginning and through the end of the Project. Instead it relied on outsourcing HR issues to a series of consultants and fiscal firms with the DCOP taking the point in managing these relationships. In 2013 one of the FPPM administrative assistants was promoted to HR assistant. Well intentioned though he was, his trial by fire and experiential on the job training were not sufficient to the needs of FPPM. Congolese labor law is complex, heavily nuanced, and constantly being modified by decrees, technical direction, and on-going judicial interpretation. In fact FPPM's fiscal firm and our contracted lawyer often disagreed on interpretations of the same texts, highlighting the complexity of remaining compliant in this operating environment.

Numerous minor errors in paperwork occurred which created exposure for the project as we went through close-down. A form letter used in notifying candidates for positions that they were our selected candidates for employment that was included in DAI's technical and administrative management information system (TAMIS) was not fully editable. It included language stating that the candidate was classified in the category of our "Cadre de Collaboration" the second highest classification in the Congolese Labor Code- Grade 10 and above), even if the candidate was being considered for the position of chauffeur. The letter then presented their Grade and Step, but the initial language was enough to create legal exposure for all staff in possession of this letter, even if most recognized the phrase was an error. Documents submitted to the Congolese *Office Nationale de l'Emploi* (ONEM) contained errors in the notification of the type of contract being issued, and, in certain cases, on the classification of the employee.

All of these issues were legacy issues from project start-up that came back to haunt us at the end of the Program, reinforcing the adage that decisions made on the first day will eventually come home to roost.

Recruiting transparency and creation of a meritocracy

Recruitment should be transparent and should follow best practices for transparency, objectivity and seeking the best candidates. Early on in FPPM there was a high level of nepotistic and affinity recruiting of family and friends. Provincial offices recruited without referring to Kinshasa and being

hired was more a matter of who you knew than what one was capable of. Criteria developed in recruiting announcements were not being followed and the exception often became the rule.

In the spring of 2013, FPPM instituted policy changes to incorporate recruitment commissions reviewing CVs, double blind written tests with weighted notation and interviews before ad hoc panels prior to making reference checks. The COP began to participate in the recruitment process and in the orientation of new employees, reinforcing the principle that staff are our most important resource and that quality brings in quality and leads to improved performance.

Expatriate LTTA

The replacement DCOP came from DAI's Home Office. She was a seasoned veteran well versed in both DAI policy and USAID rules and regulations, but she had three major faults. She was not a people person. She refused to communicate with staff in any language except English; and she felt that rules and policies, some of which she had been instrumental in designing, did not apply to her. Further, she was challenged by the DRC working environment and was unwilling/ unable to travel outside of Kinshasa to the provincial offices.

The Component 2 lead, actually liked the DRC and the Congolese people but was: a) high maintenance; b) disorganized in his personal and work habits, documentation, and vision of how the technical components and sub-components fit together; and c) preoccupied with his night job of providing innovative artwork to museum stores in the US.

The initial COP was replaced in March 2013 for non-performance. The Component 2 lead resigned from the project effective June 2013 and DAI was unable to find an available/qualified LTTA replacement who would accept to come to the DRC.. We backfilled using STTA, but this solution was not entirely satisfactory. The DCOP was let go for performance related reasons in October 2013. To compensate for this departure, we promoted the LTTA operations manager to our Director of Administration and Finance. This promotion opened space for the promotion of our Head Accountant to FPPM Finance Manager and our cashier to accountant while permitting the recruitment of a project intern as our new cashier.

DAI HQ is very light on francophone competency. When working in francophone countries it is essential that CCN field personnel be able to interface fluidly with the home office in French. FPPM LTTA field staff invested much time translating documents, memos, e-mails, etc.. . between French and English and visa –versa. It is imperative that fielded LTTA have French FSI (R, W,O) at a 3 to 3+ level.

Interns

From April 2013 through the end of the Program, FPPM engaged the services of a rotating crew of new college graduates for internships of three to six months. In sum 38 interns, 42% of whom were women contributed to our data capture and data analysis, with the improvement of our administrative and finance systems, with the market price studies, our procurement and grants management and with activities related to close down and disposition. The interns added youth, energy and passion to our team. They contributed with new ideas and skills and walked away with tangible work experience they could put on their resumes. Internships are important and it is a program that we highly recommend be integrated into every development program.

Procurement

Efficient procurement at start-up is imperative in getting administrative/financial/management systems, IT and logistics functional out the gate at contract signing. All procurement on FPPM at start up suffered from the COP's inability to make a decision on what equipment and software was necessary. Once the decision on equipment was made toward the end of CY 11, the project had

difficulty with customs clearance on items being imported meaning many items only arrived during the first semester of CY 2012.

Restricted list procurements have proven to be particularly sticky under FPPM. FPPM vehicles were procured and shipped to the DRC after having been declared excess to need on another project. First we imported the wrong mix of vehicles. FPPM is a field based agricultural value chain project. The project procured 5 land cruiser station wagons and only 2 double cab pick-up trucks. At a minimum it should have been the inverse. Given our project zone and the need to frequently move goods and material it would have been worthwhile to procure either a long-bed land cruiser pickup or a 2 ton, single cabin long bed carryall like the Mitsubishi Canter. The first twelve motorcycles procured were hybrid street/trail bikes for which spare parts were unavailable in country. Second, the Land cruiser station wagons suffered much the same fate as the first round of motorcycles procured as the model was new to the DRC and no inventory of spare parts existed for their routine maintenance and repairs resulting in much down-time for the project. Third, once in-country, the project waited almost a full year until November 2012 before registration was obtained for its vehicles because of a conflict between the US Embassy and the Ministry of Finance concerning IT (tax exonerated) plates. All of this seriously compromised project implementation as the program was forced to rent numerous vehicles from May 2011 start-up through November 2012. This was an unanticipated drain on project resources.

Concerning FPPM's ability to plan and execute agronomic activities in a timely manner, we, like most agricultural programs, experienced delays in receiving authorizations to procure improved seed and planting material and other agricultural inputs. In the initial months following contract signature, the COP actually procured $15,000 of seed "at risk" by charging his personal credit card so as not to lose the A-2011 agricultural season. FPPM's situation is somewhat aggravated by having the Contracting Office in Nairobi, but we are convinced there needs to be a better way of receiving requisite authorizations in a timely fashion. One recommendation is to include language authorizing initial input procurement for the first 6 months activities as set forth in the indicative workplan inside the contract at signing. A second recommendation is to include input requests inside the annual workplans so that once the workplan is approved the procurement of the inputs specified as necessary for the proper execution of the workplan is also approved.

Procurement of pesticides, insecticides, soil amendments and products necessary for post-harvest seed treatments are contingent upon having an approved PERSUAP. FPPM's PERSUAP did not receive its initial probationary approval until May 2013, two years after project inception and REO approval took an additional 6 months to come through. Non-concurrence of this document meant that FPPM could not procure requisite products to protect investments made in seed multiplication while they were being stored pending the start of rains for "A" season agricultural production. During this period in both B-2012 and B-2013 weevils infested our seed corn and rendered it unusable for productivity improvement initiatives.

A final word on procurement during start-up. During start-up there are literally thousands of decisions needing to be made, literally every minute. If decisions do not get made, all systems stop and momentum is lost. Having a COP in place, incapable of making decisions in a timely fashion was a huge implementation/performance risk. Often decisions related to startup procurement are poorly documented, based on incomplete information and suffer because systems, controls and oversight mechanisms are not yet in place. Frequently in-country procurement precedes the setting up of bank accounts and so takes place on a cash and carry basis. This stretches the system because certain procurement best practices and guidelines are flexed temporarily until the kinks are worked out. At startup there is a constant need to balance between the conflicting priorities of timely delivery and compliance and judgment calls must be made, all the while maintain absolute integrity in the use of project funds. Once systems are in place, bank accounts and authorities are worked through, the systems, approvals, cash controls, and oversight are expected to align with DAI policy

and best practices. FPPM continued to remain cash heavy in its processes and preferred sole source procurement to all other types. This created unnecessary risk and eventually resulted in the program expending great amounts of time and resources "walking the cat back" to justify the cost competitiveness and the transparency of procurement undertaken.

Partnership

True partnerships are as much about quality as they are about quantity. For a partnership to succeed there must be value added by both sides and the working relationship must be built on shared vision, mutual respect, transparency and trust. There must be fluid communication. Expectations must be clearly defined. The relationship must be win-win for all sides and terms, conditions, roles and responsibilities must be negotiated at the outset and re-visited constantly. This is facilitated when partners work in proximity, being engaged on the ground with client beneficiaries. Messaging must be clear and communication must be open for success to be engendered in a partnership relationship. True partnership is favored when there are clear controls and oversight ground rules are set in writing, in advance of the activity.

Collaboration with local Implementing Partners for the delivery of services to rural client beneficiaries under FPPM has been difficult, time consuming and expensive.

Potential partners come in all shapes and sizes and choosing the right partners to execute the Mission of FPPM in conformity with its vision requires that proper due diligence in the form of institutional and operational capacity, governance, financial and technical management assessments occur before MOUs are developed and contracts are negotiated. It requires attention to detail, clarity of message and true proximity. Partnerships need to be developed with a long term, mutually beneficial, perspective. Partnerships should start small, pilot activities, learn from implementation, before bringing to scale. In many ways FPPM's relationship with IP's can be defined as one of "outsourcing" for goods or services. To date there has been little if any IP capacity reinforcement offered and little timely technical or financial oversight offered.

Due Diligence of Implementing Partners (IP)

The necessary due diligence of potential implementing partners should include but not be limited to:

- Assessing the legal conformity of the organization- are they legally established with the statutes, licenses to operate and internal rules of order? Do they have a governance structure with clearly defined roles, responsibilities, and oversight? Is the governance structure operational or a paper tiger? Do they have a physical office with an address, a dedicated phone line? An operational business e-mail account?
- Assessing the management capacity- Is there a defined Mission and Vision? Is there a strategic plan? Is it updated with regular frequency and is the annual plan reflective of, and building towards, the goals and objectives set forth in the strategic plan Is there a business plan? Is there a marketing plan? Is there a budget? Are they followed? Is power concentrated or distributed? Is management style directive or inclusive? Is there true delegation of authority? Is an accounting system in place? Is it computerized? Does the system perform both general and analytical accounting? Does the Admin/Finance staff generate regular financial reports including cash balances, cash flow and annual profit/loss statements? Does the organization have a bank account? How are transactions authorized? What control mechanisms exist? Are there archives? Are documents organized and accessible? Are systems in place?
- Assessing the organization's infrastructure, capital assets, personnel and the core competencies of these personnel. Does the organization have internet? Is the office equipped? Does it have electricity?

- Assessing past and current activities, partnerships and results and
- Checking references carefully

Procurement in a Forward Context- Grants vs FPPO

One of the major unfulfilled mandates of FPPM was to strengthen the organizational/institutional and structural capacity of more established Community Based Organizations and local NGO to provide quality technical assistance services to FPPM beneficiaries while concurrently increasing their own capacity to receive and manage transparently direct transfers of funds from USAID.

FPPM's DCOP was not a fan of grants and actively resisted the development within FPPM of a well-articulated grants program until it was almost too late. Grants are cumbersome administratively, requiring a lot of paperwork , back and forth dialog, negotiation with potential grantee beneficiaries. Under grants, motivation comes from the grantee who introduces their well -reasoned request with associated targets, objectives and basic economic analyses of cash flow and the results to be obtained for consideration in a competition with other soliciting institutions. Grants can be made in cash or in kind and are highly flexible instruments in terms of what (and who) maybe financed. However Grants under Contracts (GUC) are carry with them a heavy paperwork burden for certifications and latent levels of risk to the prime contractor, while at the same time removing the responsible contractor from a position of control once the grant has been executed.

FPPM's DCOP was a fan of fixed price purchase orders (FPPO) with multiple delivery schedules, disaggregated for each activity and sub-activity area and with a period of performance that would extend no longer than 12 months. Neither project technicians nor our IP were familiar with this mechanism. The concept of regular deliverables needing approval before payment could be effected is foreign because the FPPO by its very nature contains elements of quality control and oversight. Further no contextual training was offered to either side to assist in their appreciation/ understanding of the mechanism. The FPPO is essentially a payment for services contract. It is based on defined milestones being accomplished in a negotiated timeframe at a budgeted price.

FPPM's experience with FPPO as a mechanism for contracting technical services has demonstrated that:

First, we needed to use greater finesse in our contracting language to avoid misunderstandings on terms and conditions. We needed to ensure that contractual language was straight-forward and clear, and that the document was well aerated. FPPM needed to pay attention to the structure of its contracts to ensure that the important technical specifications of the work to be accomplished was up front and central to the document;~~,~~ that the execution calendar was clearly defined in a special annex and that the first page of the document covered the highlights of the agreement, rather than hiding these back on pages three to five of the document and using the prime real estate on the first page to introduce the program and its objectives.

Second, it was our responsibility to ensure that our own staff had read and understood the contractual mechanisms being proposed and had looked at the language contained therein with a technical perspective rather than leaving the contracting to the administrative side of the organization.

Third, our staff needed to review the service agreements with the prospective service providers prior to signing in order to clarify the terms and conditions set forth in the agreements and resolve any misunderstanding/confusion/concerns up front before contract signing.

Fourth, our technical staff and management needed to be in proximity, in the field, during the season providing regular oversight on the multiplication activities. Further, FPPM needed to plan the harvest dates with the service provider so as to have a representative present at harvest and to

ensure that SENASEM inspectors were present, in order to verify weights and measures and to ensure that proper post-harvest conditioning, storage and labeling were occurring.

Fifth, FPPM needed to perform proper due diligence on partners/service providers BEFORE beginning negotiations and definitely before signing any agreements, to use the old carpenter's term "measure twice, cut once".

Sixth, FPPM needed to take the first steps, from the very beginning, to ensure proper hard copy documentation existed and a proper documents management protocol was in place to ensure proper traceability exists down the road.

To qualify for FPPO an organization must be formally structured, have a bank account and a demonstrated history of using and monitoring funds transparently with an active accounting system and minimal command and control separation.

In the early phases of the project these last criteria were ignored and FPPM was financing the realization of technical service provision with structures that were informal, immature, and sometimes unknown in their operating environments. With no bank accounts these structures were being paid in cash, often to individuals presenting no formal credentials attesting to their mandates. This opened the project up to a high level of risk. In latter phases FPPM selection criteria for IP included being formally registered with an active bank account and a documented history of success in providing services to communities.

With FPPO being issued for every activity, some of our IP found themselves managing up to five instruments concurrently, something for which none of them had the appropriate systems set up. With monthly deliverables needing to come in, both the IP and our provincial technical staff quickly became buried in paperwork, impeding their capacity to be in the field, doing things. Without a clear understanding of expectations and context IP were slackadaisical in their respect of deliverables deadlines. Our technical staff could have saved themselves major headaches later on by investing time up front to go through the agreement with the IP. IP tended to accumulate deliverables, then batch them up for submission and payment with attention being paid to the IP cash flow needs rather than to the project's need for timely technical information. Technicians reviewed conformity of deliverables but rarely mined the information contained therein, thus underselling achievements obtained under FPPM. FPPM overwhelmed itself with deliverables and pieces of deliverables got lost or became co-mingled. There was no dashboard for deliverables being managed either by the partners or by FPPM at the provincial or Kinshasa level. At one point FPPM had up to 400 FPPO running, each with a minimum of 4 deliverables and up to 160 partners benefitting. We could neither effectively monitor the execution of the activities, nor efficiently handle the review and payment process.

It is recommended that if the FPPO mechanism is to used that a yearly planning be accomplished with each partner for activities to be undertaken in the context of FPPM, an integrated SOW be developed with a quarterly deliverable schedule where one report per partner, organized by project component and sub-component is drafted and submitted. If the report format emulates the reporting requested of project cadre information can be lifted from these reports for on-reporting to the client.

Preparing qualified IP to receive direct financing from USAID while at the same time providing technical services requires a fully developed capacity reinforcement vision, approach and methodology. It may require assisting the IP in procuring equipment, software, or hiring labor or defining needs and recruiting for qualified STTA to implement systems, controls, strategic planning, financial reporting and M&E functions. This type of procurement and technical assistance is best managed under grants to the partners. Grants can have lengthy performance periods and may be managed in a number of different ways. Grant reporting schedules should be developed in a way

that they are not overly burdensome in terms of time or paperwork and are remitted in a timely fashion for incorporation into quarterly reporting requirements to USAID.

Walking the Talk

Once criteria for partnership have been defined and due diligence has been performed, they must be used, not ignored. The objective findings should not be thrown out in favor of existing relationships, family or ethnic ties, or other less tangible considerations. Once contracts have been negotiated and signed, they must be respected and the necessary oversight in delivery provided.

FPPM often did not "walk the talk" and was often not an example for local partners to aspire to. FPPM had difficulty differentiating between a supplier, a partner, an implementing partner and a true project beneficiary. Not understanding the distinctions internally made it difficult to explain the distinctions to partners, clients and collaborators. By not setting up clear criteria and guidelines and following through on these, FPPM left itself exposed on many fronts.

Partnership is hard. Implementing through partners, while building their capacities, is harder. Producing lasting impact for client/beneficiaries, while implementing through partners whose capacity needs to be built is hardest.

We, and our partners, had difficulty discerning between contract, protocol and grant mechanisms. FPPM and its partners had trouble with the concept of periods of performance, deliverables and deliverable acceptance, performing on an instrument, transparency and fiduciary responsibility.

Proper pre-planning, timing the agronomic and marketing calendars and aligning these with activities to be accomplished, interventions to be undertaken and payment schedules to provide the resources needed in the right place at the right time proved to be challenging.

In many areas of the DRC, use of a Mobile Money platform makes sense. They exist, but are fairly recent initiatives and the service providers are still working through the bugs. In a country where the majority of the population is un-banked (having neither access to or the will to use formal financial infrastructures) but where everyone seems to have access to a cell phone and communications infrastructure, Mobile Money makes sense for paying of implementing partners and suppliers in a timely, accessible fashion.

Our partners were not used to receiving oversight from FPPM and when we finally began providing it, they chafed and became frustrated.

Paperwork and administration were often our downfalls. There was too much of it, too often. Generally it was complex and time consuming. It clogged systems on all fronts and often fell with an immediacy (whether true or artificially constructed) that foretold poor planning. Our contracts and agreements needed out clauses and penalties for non-performance to be included. FPPM needed to be attentive to the need for forgiveness and transition time when instituting policies that would ultimately impact our partners.

Program Offices

Kinshasa

In a mis-guided effort to promote close collaboration with both IITA and IFPRI, FPPM rented office space in the IITA compound. The configuration of the offices like two forty-foot boxcars joined in the middle at a staircase and their placement in the middle of a dusty market was neither a conducive work environment nor advantageous to building a cohesive team. The administrative and finance offices were on one side of the staircase behind closed doors and the technical offices were on the opposite side of the staircase, also behind closed doors. The COP chose to place his office at the far end of the administrative wing, isolated up a staircase and around a corner from the rest of the

offices with the door shut to maintain a calm working environment. The DCOP's office was adjacent to the closed door leading to the stairway on the administrative side and was constantly kept shut because of disturbances due to visitors, people using the toilets which were opposite and to diminish the noise and dust from the market on the street outside. The configuration of the office was such that visitors, including the COR, came to confer with technical staff without management being aware they were in the office. The configuration of the initial offices created an opportunity for parallel communications between the COR and the technical team who received technical direction from the COR without the COP's knowledge. This undermined the COP's authority and created tension between the COP, COR and the technical team. Further, the example given by the COP and DCOP (to isolate themselves and work from behind closed doors) was emulated by everyone else to the point where colleagues were only communicating via telephone, e-mail, or instant messaging. In addition the conference room was on the technical side but was rarely used because the management team did not perceive the need for regular team meetings/consultations. It should that co-location does not necessarily lead to close collaboration which is much more about sharing a common vision, communicating frequently and fluidly and finding mutually advantageous initiatives to undertake. The unhealthy working environment depressed staff, kept morale low and led to prolonged absences and tardiness.

Upon the arrival of the new COP, orders were given to open doors, to circulate freely and to communicate openly. Regular check- in meetings were instituted and the COP moved his office to the technical wing. Within three months FPPM had found new, more congenial office space down near the river with an open configuration and lots of windows to let in light and air.

Provincial Offices

Provincial offices in Kikwit (Bandundu) and Mbanza Ngungu (Bas-Congo) were opened in September 2011. The Antenna office on the Plateau of Batéké was opened a year later in October 2012. Neither of the two provincial offices was located in proximity to provincial authorities and this created concern and because relationships with authorities remained distant and strained. The offices were, however, strategically placed in aggregation/ commercial centers through which product destined for Kinshasa habitually transits.

The Plateau liaison office, first opened in IBI plantation near Mbankana. It was 6 km off the paved road in the middle of a cassava plantation. The office was invisible and inaccessible. Communications were impossible except by internet. Members of the provincial team lived and worked in the same space, thus it became known as the "dormitory" and staff assigned there escaped as often as possible either on the weekends or on multi-day field trips. We moved the office to Menkao in July/August 2013 at the gateway to the Plateau. This was done at great cost, both financial and opportunity, only to close it down again one year later.

Before opening a provincial office, at start up, the project management team and USAID must define the objective in opening a satellite office and the siting of that office.

FPPM provincial offices were equipped in the image of FPPM's Kinshasa office and staffed so that each technical component was represented at the provincial level with a coordinator, admin/finance officer, chauffeur and vehicle as well as a fleet of motorcycles to provide mobility in effecting outreach to partners and beneficiaries. The vision developed of the provincial team was that they serve as regional technical advisors to IP through whom we would vector our assistance to beneficiaries.

One thing about offices though is if you have them, people will sit in them. The project truly needed proximity, but in the end analysis, these provincial offices did not provide enough of it. This said, if FPPM had built itself from the ground up rather than the top down, we should have invested in more agents in proximity with only a skeleton crew at the provincial level (and Kinshasa) to handle

coordination, representation, admin/finance and logistics. We should have had four times the number of field agents we did.

If doing things over, FPPM should have seeded the provincial offices with members of the expatriate TA team, rather than concentrating them in one central office. They should have been named as provincial coordinators with both technical and representational mandates. This would have given us better resource proximity and eyes on-TA out where it was needed most. Our motor pool and technicians should have been further decentralized to provide more resources in the provinces and fewer in Kinshasa. Each provincial office should set up a bank account with double signature and a petty cash box for small consumable purchases.

Under FPPM no bank accounts were opened for these provincial offices. They operated entirely on a cash basis and initially kept up at least $10,000 on hand, in their safe. While each safe was equipped with a two key system, in some instances one person maintained control of both keys. Opening Bank accounts and transitioning from a cash and carry system of doing business to a more secured method requires the recognition that bank fees in Congo are expensive and merely the cost of doing business to keep proper cash controls in place. Inter-bank transfers need to leave the country and come back in again, adding to the fees and the time necessary for any given transaction. Bank personnel appear to be better trained than the average Congolese worker, but often are merely better dressed and better spoken, not necessarily more efficient. Our Finance staff spent a lot of time reconciling transactions and making sure money gets to the people it is destined for.

It is necessary to think through the administrative and technical procedures, mechanics of reporting, frequency of visits/consultations (thresholds, procedure for requesting funds, timing of requests, forms, control measures and cross checks) as well as SOA before beginning operations and staffing up.

Logistics, procurement and communications with multiple branch offices was challenging. Keeping branch offices up and running with internet, servers, printers, scanners, copiers, toner, consumables and spare parts requires technical skill, organization, the establishment and monitoring of inventory management thresholds. It is a complex task and requires setting up and managing of systems. Staff need to be fully trained on these systems and why they exist.

The roles and responsibilities of the provincial offices were ill defined at startup and the articulation of the personnel with the Kinshasa based technical cadre was never clearly communicated. In many ways these offices operated as independent entities handling their own administration, procurement and staffing with little communication, coordination and oversight. Communications does not merely mean e-mail/sametime or skype. It means unification in messaging and harmonization in messaging, approaches and implementation strategies. It means aligning of hearts and minds in diverse operating environments which means dialog is key and continual from start up.

Meetings between the FPPM Technical Assistance Team and the Provincial staff were rare. Rarer still were consultations between the Provincial Coordinators and the COP. Rarest of all were face to face meetings between Regional Admin/Finance staff and the DCOP and her Kinshasa based Admin/Finance team. Face time reinforcement throughout the life of the project is capital. Communicate early, communicate widely, listen actively, share lessons across geographic and technical areas. This will need to be planned for and budgeted for.

In 2013 we instituted an all-staff meeting at the end of the fiscal year and a semester technical meeting in April. These activities which involved presentations by provincial offices and centrally staffed technical components with time set aside for discussion and questions were very useful in talking through challenges, sharing successes, discussing lessons learned and collectively looking for solutions to problems faced in implementation. Further time was set aside for administrative and policy issues as well as ethics refresher training.

Clustering activities vs wider geographic coverage

FPPM's zone was vast but included a major development corridor extending from Matadi to Kikwit, passing through Kinshasa. Our production basin activities extended our interventions into communities that were far off the beaten path in zones that were relatively inaccessible for larger commercial vehicles and where bulking and marketing opportunities were rare. We spread ourselves very thin ultimately because there was demand for FPPM's services, even if certain areas were not of the highest potential. Some of this push was demand driven, some was lobbied for by FPPM staff and some was "indicated" to us by USAID. In retrospect FPPM spread its resources very thinly through the project zone. We probably would have shown better impact had we focused initially on the draw zones around more entrepreneurial communities with true access to roads or navigable ports and concentrated our field agents in sectors of their draw zones. Concentrating agents in a zone would have allowed them to work more efficiently and complementarily. It would have promoted better coordination and planning and would have allowed us to truly know both out beneficiaries and the IP who provide these beneficiaries with technical services. The most entrepreneurial centers in our project zone are Kikwit, Masimanimba, Pont Kwango, Mbankana, Kisantu, Mbanza Ngungu and Kimpese/Songololo. Beyond Matadi, the zone of Kinzau Mvuete distinguished itself from other communities. Idiofa and Gungu are important production basins but their product transships via Kikwit. Kenge shows potential, but like Pont Kwango is more a way point between centers than a center itself. Kwango has an advantage over Kenge in the presence of its navigable river. In Masimanimba the economy is diversified with field crops, garden crops and fish ponds. In Mbankana there is diversification with livestock and field crops while KImpese is a major trade intersection for goods flowing East to Kinshasa and South towards Angola. Kimpese has thriving commerce coupled with garden vegetables and peanuts/maize,

Environmental Compliance

Becoming and remaining environmentally compliant under FPPM required an unanticipated investment of resources, including specialized STTA and documents, once submitted to USAID underwent a rigorous review process within the Mission and at the Regional Level before authorizations were remitted. The preparation of the EMMP took three months of staff time and spent an additional four months before receiving mission approval. The PERSUAP was six months in preparation and six months in review before approval was forthcoming. Given that both of these documents are pre-requisites before undertaking activities with potentially moderate capacity for environmental degradation, it is imperative that the development processes begin as early in the project cycle as possible, preferably during start up, with approvals being streamlined. Once approved, there is the need to develop ERR and ERF for each partner and for each activity and this is also time consuming. Further, regular monitoring of implementation of proposed mitigation measures must occur and be formally documented. One person doing this is insufficient, but mobilizing task force level resources on a regular basis, is unrealistic. One option is to train IP staff to perform the ERR and ERF and then use proximity agents, the Environmental Compliance Officer and the M&E team to monitor and mentor.

Monitoring and Evaluation

FPPM's M&E system suffered greatly from a faulty baseline. The baseline study, undertaken at great cost and concluded in the summer of 2012 was never completed. The report was never finalized and it was later found that the survey instrument's translation into French was faulty. The initial PMP was developed with target projections based on the faulty information generated by the baseline study. We note that the survey instrument and PMP were outsourced to an international consultant. His survey instruments and methodology did not incorporate CCN contributions. The PMP was

developed principally to reflect the indicators and targets set forth in the contract and a causal model was not developed. Further, the indicators and PIRS were never translated into French until December 2012. The translation performed using GOOGLE translate was faulty, for internal consumption only and created more confusion than it resolved. No training was ever accomplished for the indicators, their definition, methods of collection, hierarchy and relationship back to indicators with local staff prior to Spring/Summer of 2013. This should have occurred at project start-up or at the very least upon completion of the baseline and PMP. Also at start-up, a discussion was necessary on the roles and responsibilities of all staff to contribute to M&E. Technicians did not feel M&E was part and parcel of their SOW and were constantly finger pointing and dragging their feet rather than using the reporting and data collection sheets that were developed with their input.

The PMP is not an M&E system and FPPM suffered greatly from not having a fully functional M&E system from project inception. The project experienced great instability within the M&E staff. There were three directors in 44 months of operation, two different GIS assistants, and turnover at the M&E positions in two of three provincial offices. FPPM's last M&E director was promoted from within FPPM from his post as a GIS assistant and an assistant hired. Together they were tasked with integrating GIS into our M&E system. The new director was sent to training in M&E at project expense. The Director, and his assistant, invested of themselves to get our M&E system off the dime and it is because of their combined efforts, skill and dedication that FPPM has the validated results for our indicators that we reported on from Q3FY 13 through the end of the project. A number of data capture instruments were created, tested, used, modified, and adopted throughout the project. Use of tablets in data collection and integration with GIS was tested and abandoned. The tablets became telephones and cameras for recording of activities. The incorporated GPS in the tablets never communicated correctly with ARCVIEW and needed to be re-entered by hand in Excel upping the possibility of transcription error. The hierarchy, relationship and appropriateness of indicators was reviewed and revisited in 2013. A causal model was developed and translated into French. Training of project technical staff and eventually proximity field agents occurred on this third revision of the PMP.

Constant tension reigned between M&E and the technical components over data, data quality, data verification and the timeliness of reporting. Technicians continued to skirt any responsibility related to M&E. IP collected and reported data in their deliverables, but older school technicians had difficulty in organizing and archiving this data for exploitation at reporting time. The Project never truly mastered the development of success stories, and in the Spring of 2013 it was discovered we were sitting on a mother load of data that had never been entered into system. Because of this we first hired interns as data-entry clerks and began inputting data backlogged from 2011 and 2012 into TAMIS. Unfortunately, TAMIS is not a database but a databank and efforts to extract uploaded data for analysis and interpretation have proven to be unwieldy and not user friendly.

Well designed and well executed M&E is capital to the success of any development program. FPPM is a complex program covering vast geographic territory with a multitude of partners and reporting mechanisms all of which need to be mined, massaged, analyzed, interpreted and reported upon. Further, our Client is increasingly demanding, wants validated GIS data on project activities and wishes to see GIS fully integrated with M&E.

In the second half of FPPM we dedicated the resources necessary to M&E, improved our systems, refined our indicators, compiled and extracted our data and began linking activities to indicators, indicators to results, results to outcomes and outcomes to "impact". But in many ways the effort came too late. We found our provincial M&E staff were unfamiliar with SPSS and only passingly familiar with Excel. The increased emphasis on data quality, timeliness of reporting and complexity of analysis, coupled with the need to improve the capacity of and count on data from local implementing partners, suggests that we too need to up our game. A program like FPPM merits having a LTTA expert in M&E named as the Director of the component. They should be fully staffed

and supported with access to requisite technology and software and empowered to reinforce staff and partner capacity, when and where it is required. System design early in the program is essential with fine-tuning to occur throughout the program cycle. A program like FPPM needs the capacity to manage massive amounts of data in a record time frame in order to be able to report out with confidence in a timely manner.

Project M&E staff need to develop a close working relationship with USAID staff responsible for Data Quality Analysis in order to be responsive to their needs and requirements.

It is unfortunate too that a FPPM produced a number of very interesting and pertinent consultant reports, mostly in English, that for the longest time were not made available to CCN staff and from which recommendations were rarely extracted for incorporation into refining project strategies, approaches and activities.

Component 1: Improved Productivity

Introduction

The objective of this component was to increase productivity of participant farmers by 50% by building market driven, private sector support systems around two critical factors for agricultural productivity- improved seed and fertilizer through a combined program of Farmer Field Schools highlighting farming best practices for selected value chains complete with farmer field days and demonstration plots and an input voucher program.

Original Vision

As initially proposed, following primary multiplication of foundation seed under contract by pre-cleared seed multipliers, the Farmer Field Schools would carry the torch in multiplying and distributing R2 certified seed to FFS participants for use in their fields with the remainder being remitted to members of the producer organizations hosting the FFS. The FFS were also destined to house storage facilities for the reflux of seed remitted by the PO and the farmer participants for redistribution to new farmers, members of existing PO partners or newly identified producer organizations. Cassava and short cycle crops were anticipated to be co-located in the same FFS facilities with short-cycle crop FFS apprenticeship/demonstration fields and those for cassava in adjoining spaces. The beauty here was that while the cassava FFS was a 12 month cycle with potential expansion to 24 months with the instigation of a second coppicing, the short cycle cereals and legume cycles were 90- 120 days permitting them to start fast while waiting for the first coppicing of the foundational cassava material.

Execution of the Vision

In actuality, this is not what happened. A production push began with a heavy emphasis on cassava foundational planting material and a much lighter effort on the short cycle cereals and grain legumes. Parallel to this, a field visit by the Regional CO and COR six months after project inception that placed emphasis on component 1- production, production, production (note, already the notion of productivity has been lost) and pushed seed multiplication and diffusion of improved planting materials to the forefront with guidance to push multiplication from 50 to 1100 hectares immediately and to do so using “certified” (rather than foundational) planting material. This resulted in over 50% of FPPM’s budget being focused primarily on the production push by the end of year 2.

The Farmer Field School Coordinator was not hired until the last week of April 2012 (the end of PY 1). The FFS program took another eleven months to become fully operational, beginning its first farmer field schools –both rural enterprise and cassava, during the B-2013 rainy season(at the end of PY2)-by which time much had already changed with the program and FPPM was too heavily committed to an operational track to back out, shift gears and jump to an alternative one. *Further, the operational track taken in late 2011, and early 2012 was one that was familiar to the COR and the original plank holder CCN staff that had migrated to FPPM from SECID.*

Multiplying R1 from Foundation Seed

Because the Farmer Field Schools did not exist, the bulking up of the R1 product from the primary multiplication activities was consigned to a diverse group of local implementing partners to complete “secondary” multiplication, but with different rules, terms and conditions from those used

for the service contracts used for the initial primary multiplication efforts with foundation material. To further confuse things some of the initial service contractors were asked to continue to undertake primary multiplication, as a service provider, but also to "bulk up" the R1 through secondary multiplication using instruments with different agreement terms and conditions.

Cassava

Further, primacy was given, once again to cassava, as the DRC's primary staple food crop. This production push, using "certified" planting material of undocumented generational provenance, gave rise to a third wave of agreements for community multiplication/production (CMC) activities at the Producer Organization/Household level under similar terms to those used in secondary multiplication but with funds, and a bicycle, reserved for IP technical monitoring and a packet of basic hand tools (machetes, shovels, hanging scales, measuring tapes, etc…) for the farmer organizations. *This third wave of agreements, confused the IP, confused FPPM staff and was implemented differentially across the three provinces, depending on the interpretation given to the activity by each Provincial Coordinator and, where, existent, their provincial agronomist. Confusion reigned and the terms secondary multiplication and CMC were often used interchangeably*.

Ultimately, efforts to multiply and disseminate improved cassava planting material did not achieve the anticipated results for multiple reasons. These are :

First, there was no true effort made to identify and procure the appropriate foundation material for specific agro-ecological zones, instead the choice of improved material was based on availability.

Second, best farming practices for cassava were not practiced when multiplying the improved seed stock. Recommended planting densities for cassava are 1m x 80 cm using 15 cm coppiced pieces. However planting material is coppiced in 1 linear meter lengths and bundled. If it were cut at 105cm then there would be seven (7) 15 cm pieces per cutting, but at a 1 m length one is left with six 15 cm pieces plus 10 cm left over or five 20 cm pieces.

Third, while the team made an effort to contract with "known entities" with a previous history of seed multiplication activities with other USAID implementing partners- notably SECID and IITA, as well as other Development Partners (CTB, IFAD etc..) who had been identified at the proposal stage, the requisite technical protocols for the management of the multiplication activities were never truly established and were replaced by scopes of work focusing on the administrative minutiae rather than the technical specifications of what was being contracted.

Fourth, the FPPM agronomic team did not identify, integrate, nor monitor application of, the "best agronomic practices" contracted multipliers were supposed to follow, nor did the Program invest in inputs other than "improved" planting material.

Fifth, the contracts signed for seed multiplication activities, as well as the approach to be used was misunderstood by both project technical staff, including those at the highest levels, and the entities contracted for primary cassava multiplication.

Sixth, the roll out and build up plan for cassava multiplication and diffusion based on arithmetic projections did not have the project achieving the contractually mandated number of hectares until year 4 which was determined to be too slow by the visiting contracts officer, who, together with the COR instituted technical guidance to "ramp up" production as of early CY 2012 without thinking through either the financial implications of this direction nor the complexities inherent in the logistics involved and managing and maintaining production quality and material traceability during this planned push.

Seventh, one of the most productive and highly appreciated improved varieties (TME-419) which is resistant to cassava mosaic virus, proved to be susceptible to cassava brown streak virus (CBSV) if not subjected to rigorous management protocols. Unfortunately, 51% of the improved cassava

planting material procured by FPPM for its cassava multiplication push was TME-419. This meant that a majority of land area contracted with IP for a second year of coppicing needed to be harvested at the end of their first year's multiplication cycle and moved immediately into production, negatively impacting the projected "ramp up".

Even given all of what precedes, it must be noted that the introduction of improved varietals substantially increased overall productivity. This said, however, the application of best agronomic practices to local varieties also increased yields of these varieties substantially to where these varietals are producing close to or slightly above the national average of 10mT/ha. The combination of improved varietals with best farming practices elicited the best agronomic response across the project zone.

Short Cycle Crops (Maize, Peanuts, Cowpea, Soybeans, and to a lesser extent Dry Beans)

In late 2011 FPPM contracted for the multiplication of small quantities of foundation of maize and grain legumes almost as an afterthought. A total of 9 ha were planted and harvested comprising two varieties of maize, two of cowpeas, one of soybeans and one of peanuts.

In B-2012(Jan/Feb-May/June 2012), 181 ha were contracted for secondary multiplication, but only 111 ha were planted by IP and of the 16 mT of seed projected to recovered at harvest (two times the seed provided by FPPM for secondary multiplication, the project only received 4.8 mT (only 40% of the seed provided) and only 29.8% of the projected recovery. Reasons for this differ, but poor rainfall, poor choice of land, diseases and pests and poor management of the activity by the IP were all cited. It is unclear from FPPM records how, where, and if this seed from secondary multiplication was stored.

In A-2012 (mid-August- Dec 2012 with harvest carryover until Jan/Feb 2013), 36 ha were contracted for primary multiplication -17 ha of maize (including Mudishi 1, 7 ha of peanuts, 6 ha of soybeans and 6 ha of cowpeas. In addition 321.77 ha were placed under community multiplication using R2 and "certified select" seed of what later proved to be dubious and fraudulent provenance.

In late 2012, because of projected budgetary shortfalls the COP decided that FPPM would focus solely on cassava and would thus abandon all activities undertaken with short cycle cereals and grain legumes. Thus no short cycle crops using improved seed were officially multiplied or outcropped in B-2013 with project assistance.

However, as the harvest of A-2012 proceeded (in March/April of 2013) and IP began remitting their production to the project as stipulated in their agreements and the project found itself scrambling to find adequate storage space for the seed in both Kikwit and Mbanza-Ngungu. The seed was stored on pallets in labeled sacks listing the provenance, variety, weight, and benefitted from an Actyllite treatment to be used either in community multiplication activities or demonstration fields in A-2013.

Germination Tests

Germination tests run on warehoused seed in July 2013 prior to distribution to farmers was disastrous. SENASEM sets minimum certification standards for cereals at 80% and for legumes at 70%.

In Bandundu only four lots of cowpea seed and two lots of peanuts passed minimum certification standards for legumes (70%). No maize and no soybeans passed. In total of 26 lots tested only four(15.4%) passed minimum germination standards. Due to poor record keeping by the provincial team in past growing seasons and a lack of attention paid to true traceability, it is difficult in Bandundu to distinguish the generation of seed remitted to the warehouse in Kikwit. In Bas Congo three of 24 lots of foundation seed being multiplied under contract with the Program did not meet minimum certification standards for legumes. This represents 12.5% of the primary multiplication results. Of the 8 lots of R1 seed being multiplied by implementing partners for use in future seasons at the community level by clients, only two lots (25%) passed muster. Of the 25 lots of R2 seed

involved in multiplication, primarily at the IP level , nine (36%), all maize, failed to pass certification standards. Of the certified seed being multiplied for out seeding to OP members at the community level only one in 25 lots failed to meet minimum standards. On the Plateau of Batéké, two-thirds of the lots failed to meet minimum germination standards.

The failure of R1 seed to pass minimum certification standards was alarming and unfortunate. Maize across the project zone suffered heavy insect damage. Some of this was evident while the maize was still in the fields or recently harvested and could have been resolved by proper post-harvest conditioning. Few fields benefitted from any phytosanitary treatment during the growing cycle and the products applied in the warehouses were either ineffective or unable to constrain the infestation, either due to late application, or, more likely because of larvae infestation in the grains that hatched post- harvest leading to cross contamination due to mixing of good seed with bad. Bandundu province and the Batéké Plateau have anomalous germination results for product that has been remitted to the project. There is doubt as to the validity of the SENASEM documents presented by a number of implementing partners. Further, the project did not provide sufficient oversight of on-going field activities, opening the door for potential side selling or switching out of product for that of inferior quality.

Seed Multiplication-Lessons Learned

Seed multiplication (including vegetative propagation of improved planting material), if done right, is a highly specialized niche activity requiring an advanced level of technical skill, sufficient land area for multiplication and isolation, fertile soils, proper water management and pest control, the presence and application of management systems to ensure traceability and the respect of regulatory oversight governing the production of seed and its certification, commitment to frequent on-site monitoring, specialized harvesting procedures, post-harvest conditioning, specialized storage and marking and the requisite capital to pay for day labor, and for the different stages of the certification process. Seed multiplication unites business skills with agronomic knowledge and new, cutting edge technologies. This is one reason use of Farmer Field Schools and the FFS approach to out-multiply R1 to R2 seed for distribution to FFS participants and members of Producer Organizations in each FFS draw zone made sense, because not only do farmer participants leave with the improved skills for managing their farms, they have been exposed to improved technologies, have applied best practices and they, in turn, return home, incentivized, with improved material of an R2 agronomic vigor to out-plant to their own fields with the possibility of retained agronomic vigor for three to four succeeding seasons before the seed stock must be replaced. Further these fields become demonstration fields in proximity to their neighbors, leading to a ripple effect for adoption of new technologies and farming practices.

When FPPM transitioned its multiplication activities away from the farmer field schools to implementing partners, the following dynamics became evident:

- The vast majority of IP do not have their own land, nor their own labor force, so they either rent or outsource, increasing transactional costs for FPPM
- The land rented by IP for multiplication activities were of poor soil fertility and often exhibited poor soil water retention characteristics
- The land rental is seasonal for short cycle crops and annual for cassava giving little incentive to improve or maintain soil fertility, thus the IP, to reduce their operational outlays to increase their profit margin
- Many IP planted less land area than was contracted. They also planted at lower densities than what was recommended in the technical specifications of their agreements with FPPM
- IP did not declare their entire production of seed multiplied from FPPM improved seed or planting material to FPPM

- IP retained the best quality seed for themselves and remitted to FPPM seed that was either infested or of poorer quality
- IP sold their surplus production, often to cover their production and administrative costs, rather than disseminating this seed to producer organizations to whom they claimed to be providing technical assistance
- IP proceeded with a second round of multiplication with seed retained from the "contractual" multiplication with FPPM in order to bulk up their quantities of seed BEFORE proceeding with dissemination of the seed to producer organizations and their farmer members, meaning that this seed was of lower intrinsic value and agronomic vigor than anticipated by FPPM because of its advanced generation
- IP required in-kind payment by Producer Organizations for seed remitted by the IP to the PO, usually two times that which was given to assist in defraying the IP's "administrative" costs
- IP agreements with FPPM required SENASEM certification both for primary and secondary multiplication activities. The majority of IP respected this in the breach either purchasing their certifications, falsifying them, or ignoring the requirement clause even though certification was planned and budgeted. Some procured true paperwork for certification while sitting in their "living rooms" without a field visit by SENASEM inspectors. All of these dynamics created doubt as to the quality of the seed as well as its provenance.

In A-2011, when the project procured foundation seed from the research centers (IITA and INERA) and provided this seed, under contract, to nine institutions, four in Bandundu[1], three in Bas-Congo[2] and two on the Plateau de Batéké[3] for primary multiplication to R1(first generation after foundation seed) the results obtained were anomalous. *All yields (at least for short-cycle crops) were below the DRC national averages. This should have indicated to FPPM that something wasn't right; but no-one in FPPM's agronomic department and no one in management looked at the yield data.* Referring only to the raw production figures they tracked only the quantities of seed and linear meters of improved planting material produced and available for distribution. This was because the focus was on increasing the availability of improved planting materials for the production push rather than looking at the data in any sort of analytic fashion.

Had FPPM done so, we might have noticed that the quantities provided to FPPM were the quoted minimally acceptable production figures included in the contracts that had been signed with these nine service providers rather than the entire quantity produced on the given land area. There was a problem with the contracts and their interpretation by both FPPM staff and the contracted service providers. Two, the project already was (depending upon who you asked) not properly monitoring its investments, not in proximity and taking a bureau-centric hands off approach to implementation, or taking the first baby steps down the path to illicit enrichment for certain enlightened project cadre. In fact, it may have been a combination of all three.

A tell for the absentee management team should have been that when FPPM went looking for supplemental improved planting material to increase land area under cultivation pursuant to the technical guidance received, several of these institutions proved to have quantities of certified R1 seed of the exact varieties they had been contracted by FPPM to grow out from project provided foundation materials available in their warehouses.

FPPM happily bought these stocks, at premium prices, effectively paying twice for the same production.

[1] ACDI-Lusekele, CORIDEK, UDK, and Mere de Sauveur
[2] CDS-Kisantu, UPEC, BDD-Matadi
[3] CADIM, TIFIE Humanitarian

And remember, these were institutions that had been vetted and pre-qualified during the proposal development stage and had signed letters of commitment to work with DAI should the proposal be won. It is true that the proposal development team did not personally meet with each of these institutions during reconnaissance. They relied heavily on recommendations given by the local consultants they engaged to assist them in making connections and in understanding the implementing environment. These same local consultants were hired on as FPPM plank holder team members in upper management roles and key positions after project signing. They were also old colleagues from SECID and were tasked with developing the first round of agronomic service contracts while still consultants and within their trial periods at FPPM. It is interesting to note, however that as FPPM closes only three of the nine remain active partners with FPPM.

Having mishandled the initial primary multiplication activities, and with orders to up production in the next production season, FPPM increased its stable of primary seed multiplication service providers from 9 to 17 and issued secondary multiplication contracts to over 76 implementing partners. Of the secondary multiplication contracts issued, 40 (52.6%) were fulfilled either partially or fully by implementing partners. For the most part, secondary multiplication activities were in-kind transactions with FPPM remitting improved seed and planting material to an IP with the understanding the IP would remit double the quantity received at coppicing or harvest depending on the crop. The remainder was to be remitted to producer organizations who were linked to the IP. These "understandings" were incorporated into MOU between FPPM and the partner IP. The MOU makes no mention of financial compensation, but does include language suggesting FPPM would supply agronomic tools, tarps for conditioning, consumables, tapes for measuring land areas, cord for planting on line and sacks for seed storage, but would take these back at the end of the collaboration. Left unsaid was who would pay to transport the seed/planting material to the IP sites, who would pay for post-harvest conditioning, storage, the costs of cultural operations during the cropping season and the transport of remittances to DAI.

In hindsight, these MOUs were poorly conceived and demonstrated a certain naivety concerning partnership, the level of structural maturity and institutional capacity of organizations encountered in the field, and the confusion that would reign concerning the way the project handled primary and secondary multiplication on one hand and technical supervision of community multiplication activities on the other.

Procuring Certified Seed and Planting Material-Observations and Recommendations

The question now is whether FPPM should have embarked on its multiplication effort and on such a large and diverse scale, especially in the manner it was done. On one hand we supported all the costs of the multiplication activities from purchase of materials to paying the loaders of the trucks and the transport costs, but provided none of the necessary technical assistance in site selection, cultural practices, crop inputs, pest/disease control harvest and post-harvest conditioning etc.; and we were working with multiple varietals, some timeworn and some unproven without instituting any true strategic vision, oversight, traceability, or analysis.

Only small quantities of true foundation seed exist and it is guarded jealously by research stations. Certain research stations specialize in certain speculations and varietal. Some research stations are actually sub-stations of others (INERA Kiyaka for instance, is actually a sub-station of INERA M'vuazi), and the level of professionalism at the sub-stations is often less than that found at the principle station. If an organization wants to procure high quality, low generation certified foundation or R1 seed, they must order it well in advance of the growing season and should be prepared to pay extra for certification, varietal purity and germination tests as well as for extra day laborers for the cleaning and conditioning of the seed. They will almost assuredly need to provide oversight on the

execution of the multiplication contract and ensure there is not some last minute bait and switch going on. In today's environment they would be well advised to procure new storage sacks with one way breathable liners. Moisture at storage needs to be controlled and verified and non-petroleum based marking pens/paint should be used in labeling sacks. INERA often uses "certified seed producers" to bulk up their seed quantities and it is not certain that the level of quality control and respect of standards and the seed multiplication/certification is as rigorous among these contracted outsourced entities as it is on-station. Further, we have encountered instances of seed being sold as "foundation" or R1 certified that had not been conditioned, was in open sacks and where proper labeling was not being followed. In another instance a station director attempted to sell us seed as "foundation", but the center was not one of those known to be performing plant breeding research or multiplication with the variety in question. It turns out that the seed was being grown by the Station Director's wife and being sold as a sideline to help ends meet.

INERA does not self-certify, and therefore, they too, must procure the services of SENASEM to certify their multiplication activities. We found that at least two of the research stations do not follow SENASEM certification protocols and that even SENASEM agents are lackadaisical in their application of the texts governing their sector of expertise. In some instances sales of certificates were emitted without an agent ever setting foot in the field. In Congo it turns out there are many ways to game the system and one must remain at a high level of vigilance to avoid becoming the victim of counterfeiting.

In retrospect it may well be that FPPM, beyond its first tentative efforts in A-2011 to "get something going" (priming the pump so to speak) would have been better off contracting the multiplication of its needed improved planting materials with the experts, providing oversight and quality control as needed. FPPM could then have shifted the focus of its efforts under productivity to building up the capacity of extension personnel and farmers to incorporate this improved planting material into a holistic system of properly managed farming best practices, demonstrations and improved technologies designed to increase productivity (production on a given land area) and quality of product responsive to consumer market preferences. This too would have led to increasing revenues, and farmer's disposable income for eventual reinvestment in their farming enterprises.

We recommend that MOU's be developed with the national directorates of INERA and SENASEM and the International Research Institutes who support and provide technical assistance to their work in order to gain an insider's knowledge/access to most diligent and professionally run services and service providers. Use the system in place rather than by-passing it. FPPM was not a research initiative. It is a development assistance program, but at times it felt like we were substituting for rather than rendering support to institutions already in place.

Fertilizer, Soil Fertility, IFDC

IFDC was noticeably absent as a sub-contractor on FPPM. They came through three times, wrote one study on the operations of the Fertilizer distribution chain in the fall of 2012 and one concept note/trip report the Supply and Use of Agricultural Inputs submitted in May 2013. Based out of Nairobi with no staff embedded in the project, they were set to fail from the outset. They were absent during work-planning, absent during reporting, and absent in the field. With no boots on the ground it is difficult in hindsight to see how, where and with what mechanism they could have added value to the program. But it is also true that the fault is shared.

The FPPM team did not engage IFDC early enough and with enough specificity to make the relationship work. By the time the project was ready to engage with them, it would have been to incorporate their expertise in Integrated Soil Fertility Management and Integrated cropping systems in the Farmer Field School Curriculum. Further, the focus on production, rather than productivity, and on multiplication and dissemination of improved planting materials to the exclusion of all else,

left little opportunity for IFDC to perform other than corollary work on input policy which would not have integrated well into the timeframe and priorities of FPPM.

Given the absence of IFDC, FPPM compensated by calling on in-house talent from our Environmental Compliance specialist to offer basic notions of soil fertility, composting, and erosion control to facilitators in Training of Trainers for Cassava FFS. The curriculum was later modified for the modules on peanuts and maize best agronomic practices which highlighted the effects of liming, chemical and organic fertilizer applications and green manuring.

Late in 2014, FPPM performed a census coupled with an assessment of input suppliers in Bas Congo Province with assistance from our proximity field agents. Once analyzed, we facilitated a workshop for the input suppliers to review our findings and develop an action plan. The majority of the input dealers were based in either Mbanza-Ngungu or Kimpese, but several travelled from the Matadi area as well. It is unfortunate this assessment was unable to be expanded to Kinshasa, Kikwit and Masimanimba. Distances in Bandundu are much greater, road networks are greatly degraded and it is thus a zone ripe for the setting up of village input boutiques which could be run by village associations who could aggregate their member's needs and then negotiate a favorable cost for inputs to serve their local draw zones. An FAO program designed to serve the needs of rural communities was successful in West Africa and the model and training materials could readily be adapted to the Congolese situation.

Impact

Ultimately the project can only report anecdotally on its impact under this component because we never established true traceability on our C1 activities.

- We know that the improved varieties of cassava are much appreciated because farmers who were not beneficiaries of improved materials continue to go out of their way to procure cuttings, either through purchase or midnight liberation from their neighbor's fields.
- Yields for cassava increased progressively throughout the lifespan of the project and throughout the project zone had increased 107.5% above the national average of 8 mT/ha.
- Experimental peanut varieties A-1408 and the ICGM varieties (SM-95530 and SM86021) yielded 1035 kg/ha, which is 15% higher than the published national average and less than 1% below our LOP goal of 1042 kg/ha.
- Cowpea productivity increased in each growing season among farmers using FPPM supplied improved seed.
- INERA recognizes that FPPM is responsible for the introduction and initial diffusion of Mudishi 1 QPM in the province of Bandundu.
- In the province of Bandundu, participating farmers increased the size of their holdings an average of 1.55 ha from 1.33 ha to 2.8, while in Bas Congo holdings were increased by 0,15 ha. On the Batéké Plateau farming enterprises added 0,46 ha per household to their land area under cultivation increasing from 0.68 ha/HH to an average of 1.14 ha/HH.
- In A-2012, IP CORIDEK received 50 kg of QPM Mudishi 1 from FPPM. They planted 2 ha of the seed for multiplication purposes. In A-2013 CORIDEK and its OP partners planted 88 ha of maize with the harvest from the first 2 hectares in the context of the Agricultural Village Project being implemented by the Governor of Bandundu. CORIDEK sold 3550 kg of Mudishi 1 to the Programme Village Agricole for $2 kg. This allowed PVA to plant 142 ha in A-2013.
- ABMAD of Kalo in the Territory of Idiofa, Province of Bandundu, sold 4500 kg of Kasai 1 maize at $1/kg. They used these funds to open an account at the BIAC.
- At first coppicing of their A-29012 cassava field, ODAP an IP in the Territory of Idiofa sold 7725 kg of cossettes (103 sacs @ 75 kg/sac) for 10.000 FC/sac receiving 1.030.000 FC. They further distributed another 64 sacs (4800kg) of cossettes to their members, distributed 13,500 lm of

planting stock to EBS, enough to plant 7.2 ha of community multiplication fields in Impinti Nsu and sold 46,875 lm of planting material to Belgian NGO Faja Lobi for $500 USD. With this material the NGO outplanted 25 ha. Further, in B-2014 ODAP assisted its members with 16,875 lm of seed stock enough for 39 HH to plant 9 ha to production using improved planting materials.

- In Bas Congo, Producer Organization JPPR of Kasi Center sold their production of cassava from A-2012 (28.35 mT) to women producers of chikwangue for 95 FC/kg or 2.693.079 FC (apx$2927[4]). With this sum the organization has procured 2 ha of land for their offices and different structures. The remaining amount was reinvested in B-2014.
- Producer Organization SADAP of Kasi Center also sold their production (20.17 mT) to chikwangue processors for 95 FC/kg, yielding 1.916.131 FC or approximately $2083. This money is being used to pay labor costs associated with their 13 ha farm.
- ENAR of Inkisi distributed the 20.3 mT of cassava tubers harvested to the 20 households who participated in the activity. Ten of the households sold their cassava as fresh roots at 500 FC/kg, earning each 507.500 FC (or appx. $551.63 USD). The other 10 households converted their cassava production to chikwangue. The 1015 kg of fresh roots each received converted to 2500 chikwangue, and each chikwangue was sold at 625 FC earning each household 625.000 FC (appx. $679.35 USD). The revenues in both cases paid for their children's school fees, outstanding medical debts and as seed capital for the creation of two other income generating activities-- the purchase of raw cassava, its processing to chikwangue and its sale in Kinshasa and the purchase and resale of commercial goods in the weekly market.
- Members of APAKI sold a portion of their fresh tubers, converted some others to cossettes for sale, and used the money to pay their children's school fees.

Constraints

- Traceability for seed multiplication activities through the seasons and for the different varietals within each value chain has proven difficult, and at times impossible, to establish.
- Yield data collected are anomalous. They are outside the margins of error for true foundation, R1 and certified seed performance even taking into consideration environmental factors and the possibility of poor choice of land for multiplication activities.
- Certification of seed multiplication activities by SENASEM has proven to be problematic. On one hand producers, producer organizations and our implementing partners are reticent to pay SENASEM for its certification services because they find there is no transparency in the billing of SENASEM services. They are billed depending on the agent's humor or based on the perceived net worth of the organization. Further, SENASEM refuses to certify land areas that are smaller than one hectare. Often field visits occur but the paper trail lags behind. Given that FPPM requires SENASEM certification for payment of primary and secondary seed multiplication activities and includes this as part of the deliverables matrix, there are occasions where payment to a seed multiplier or implementing partner is put on hold, creating financial liability for the partner. FPPM through its contacts with the National Direction of SENASEM has obtained a derogation permitting certification of land areas smaller than one hectare. Information concerning this derogation is slow to percolate through the project zone. On the other hand, FPPM includes money for payment of SENASEM but often our contracted partners either do not pay or delay payment for SENASEM services engendering a level of dissatisfaction and distrust.
- There is a serious lack of valid agricultural statistics for the project zone. Missing from MINAGRIE archives are data on number and size of fields within a farming enterprise, true

[4] 1 USD = 920 FC

production and yield data, historic data on crop rotations successions, fallow and intercropping patterns.

- The producer organizations are not well structured and often lack written documentation on their activities. Often it is a single influential person or the members of the management committee who possess the information on activities that have been undertaken. The fact that management tools do not exist and information is retained from the general membership leads to transparency issues, creates conflict and means that information sought is not readily available.
- Harvests are progressive, especially for cassava, rendering an exact accounting of production difficult, especially for farmers in their individual fields.
- In many cases the production was improperly evaluated with only one sample per field being measured rather than taking the average of multiple samples. On several occasions the plant varieties are not differentiated rendering it difficult to compare and contrast the performance of different varietals.
- Certain IP refuse to provide information on activities undertaken with the program wanting to be "paid" for the information or hoping to receive an in-kind grant as compensation.
- Collection of missing project data in the field has been difficult for the proximity field agents. PO and IP are reluctant to share information they possess. Further, record keeping, organizing and archiving of information is weak at all levels.
- Producer Organizations and their members are reluctant to share information on their production, revenues and earnings for fear that others will be jealous. This impedes FPPM's ability to quantifiably document the impacts of our efforts in the field.

Observations

- On the Plateau of Batéké households retain an average of 18% of their cassava harvest for consumption, however variability is great with some households consuming as much as 50% of their production while others reserve their cassava fields uniquely for sale.
- There is strong demand for improved planting material throughout the project zone. When FPPM changed strategy and required beneficiaries to support the costs of coppicing and transport in order to receive improved planting shows that farmers will contribute for quality inputs.
- In order to avoid the spread of cassava brown streak disease the cassava variety TME-419 needs to be harvested 12 months after plantation. Second coppicing of this variety should be avoided.

Component 2 – Improving Market Efficiencies

Introduction

FPPM put considerable effort into work across the agriculture value chain during its three year lifetime. At the outset of the project, production of value added products was limited, urban markets were largely unknown to producers and market information was guarded by a choice few who moved between multiple markets. The agriculture industry in the DRC was, and remains, highly fractured with a proliferation of small players and limited to no horizontal or vertical integration. This system resulted in uncertain product availability, variable product quality, high unit costs, high losses, low investments, limited innovation and a lack of trust between sellers and buyers.

Against this backdrop FPPM initiated its Component 2 activities with five focus areas:

- Conditioning, Processing and Value Addition
- Market Information
- Financial Intermediation
- Improving Commercial Market Relations
- Improving Market Infrastructures

During the first half of the project, staff targeted the downstream end of the agriculture value chains. Particular emphasis was placed on understanding the markets for cassava, groundnuts and maize with cassava figuring most prominently. Value chain actors were engaged in order to begin the process of linking critical nodes, product innovation was explored and outlets were sought for value added output. Relationships with key players within the DRC banking sector were established and options for agribusiness financing were explored. During this period the C-2 team followed a lot of blind alleys, retraced their steps frequently, received conflicting guidance on priorities and basically reverted to using trade shows to highlight the benefits of micro-cossettes and to pilot cassava flour baked products. The team was in constant motion, establishing lots of contacts but making very little true forward progress.

The second half of the project saw many necessary changes implemented that ultimately led the project to numerous tangible successes. Project strategy was sharpened and focus was placed on the upstream side of the value chain that had been neglected during the first half of the project. Farm gate value added processing center activities were highlighted and the MIS infrastructure was put in place allowing it to gain substantial traction.

These efforts resulted in many positive outcomes but numerous challenges as well. What is clear is that in spite of numerous hiccoughs, a foundation was laid for rural populations to benefit from value addition across our targeted value chains and that the MIS system provided a public service in rendering markets that were once opaque, somewhat more transparent and that these two actions filled a gap and, along with the Farmer Field Schools capacity reinforcement efforts, consolidated our assistance to a point where the synergies developed created flow down effects that were greater than the sum of the individual initiatives. In many ways we were successful in spite of our best efforts to shoot ourselves in the foot, suggesting an intensity of need for interventions of the type outlined below than had previously been distinguished. The challenge is that for true impact to occur the initiatives must be followed through upon and consolidated; otherwise the nascent ember will be extinguished. Greater detail follows regarding each of the five tactical focus areas of FPPM's Component 2 three year effort.

Conditioning, Processing and Value Addition

FPPM's processing subcomponent begins on the farm with post-harvest activities that can include crop conditioning, drying, sorting, cleaning, peeling, chipping, and milling. The goal of the project's work has been to increase the value added for the producer whether for bulk product as in the case of maize and beans, semi-finished product such as manioc micro-cossettes or shelled peanuts, or finished product like cassava and corn flour or starch. In producing a quality product producers can establish better and more stable relationships with wholesale buyers looking for consistent flows of quality product and in so doing receive a price premium for their effort. Finally, with better crop conditioning and processing, post- harvest losses can be minimized, adding to producers' disposable income.

FPPM addressed this via four key tactical objectives:

- Increase the number of rural processing centers; improve existing facilities
- Improve farm to aggregation/processing center transport
- Improve rural household access to and use of processing facilities
- Improve post-harvest treatment (conditioning) and product quality

Increase the number of rural processing centers; improve existing facilities

The processing of raw agricultural production into value added consumer products is an important part of the evolving value chains in the DRC. And while considered to be in the early stages of development, the number of processing centers is growing, particularly in the rural production zones. The result is an increase in the availability of higher quality foodstuff for urban populations and an economic return for the entrepreneurs willing to participate in this supply side activity.

As mentioned earlier, activities related to processing were retarded for two principle reasons. First, project strategy too tightly linked cassava processing center activity to the production efforts of Component 1. Focus was placed on processing harvests derived uniquely from FPPM Component 1 production efforts. Second, Component 1 maize and grain legume replication activities suffered repeated setbacks resulting in insufficient harvest to justify mechanized hulling and shelling creating a perfect storm for processing center establishment delay.

In 2013, following FPPM's management change, two decisions were made that moved processing center activity decidedly forward. First, the decision was made to decouple Component 1 cassava production from processing activities. This freed Component 2 to work with groups where existing production was sufficient to justify transformation. Second, cereals and grain legumes were once again given priority along with cassava. This allowed Component 2 to work with an even greater and more diverse group of potential processing center clients.

Pilot activities and lessons learned

With these start up delays behind them, FPPM staff initiated project processing center activities. These early stage activities were selected to permit staff to get their feet wet and gain insight that could be applied during the processing center establishment push to follow. Focus was placed on cassava as staff believed that a greater return on investment was achievable by producing micro-cossettes than the simple shelling of groundnuts or hulling of maize. In addition, micro-cossette production was less well-known and the process much more involved. Taking the time to become intimate with these details would provide positive returns down the line. Three pilot activities were undertaken to provide staff the insight they desired.

In May 2013 staff facilitated the negotiation of an agreement for the leasing of cassava processing equipment between two of our implementing partners, EBS and PEDM. The agreement, with an initial period of three months, remitted 10% of the cassava processed by PEDM to EBS in return for use of the equipment. In addition to negotiation assistance, FPPM provided PEDM with an in-kind

material contribution to facilitate cossette production. PEDM produced and commercialized 7.5 tons of micro-cossettes and 5.27 tons of improved quality macro-cossettes at a total value of $8,906. With estimated expenses of 6,365,730 FC the net profit to PEDM was $1,987.25.

In Bas-Congo a pilot activity was undertaken in collaboration with our implementing partner UPEC to assist farmers of Mvinda in the processing of cassava into micro-cossettes from a field planted in FPPM improved variety RAV. Assistance was provided to render an existing processing center operational. While equipment was in place, knowledge of the process was lacking. A total of 410 kg of micro-cossettes were produced and sold in the Mbanza Ngungu market for $0.8/kg, resulting in revenues of $328.

Project partner ITAV of Matadi harvested 5.3 ha of improved cassava variety TME-419 from a communal plot and sought to process it into macro-cossettes. To assist in this effort FPPM provided ITAV with 80 meters of plastic film and guidance on drying process best practices. ITAV constructed drying tables with a total of 88 m^2 of drying surface. Farmers assisting in the harvest received a total of 16.5 mT of raw product while ITAV itself retained 8.4 mT from the community field. The 8.4 mT of fresh tubers produced 2.8mT of cossettes.

These early stage agro-processing activities, while modest, permitted project staff to learn several key lessons that influenced follow-on processing center establishment approach.

1. The process of fabricating micro-cossettes is simple to assimilate and master and results in a high quality product even when practiced by novices. However, it is essential to provide training in the maintenance and repair of mechanized equipment.
2. Drying tables are needed in greater number than initially anticipated to permit centers to process the quantity of cassava required to achieve profitability.
3. Improved variety cassava matures more quickly than traditional varieties rendering it lignified and starchy with a resultant high percentage of cyanide if left in the field too long.
4. To succeed an activity of this nature needs a well-structured enterprise with defined roles, responsibilities, checks and balances and distribution/delegation of authority in place in order to be efficient and to effectively capitalize on the presence of the equipment.
5. Weak management and the absence of regular use of management tools and proper record keeping means the activity is opaque to the participating members, generating questions of whether financial transparency is assured and further rendering it difficult to determine the profitability and cost structure of the activity through financial analysis.
6. The intense amount of direct, local support needed to properly establish and monitor a large number of rural processing agribusinesses would require proximity technical capacity that the project did not have. Proximity agents would need to be employed.

The case for micro-cossettes

FPPM chose to focus its processing activities of the production of cassava micro-cossettes for a few key reasons. First, they demand a wholesale price premium over macro-cossettes with an average price paid for micro-cossettes in the Kinshasa market of 750 FC per kilo while macro-cossettes fetch an average of 600 FC. Second, the small size allows for quicker drying compared with traditional large macro-cossettes. This in turn helps to eliminate mold and residues of cyanic acid the consumption of which poses a serious health hazard. Third, it builds on the work of IITA (International Institute for Tropical Research) and other partners who have been promoting the micro-cossette transformation process to farmers in need of improving post-harvest drying. Table 1 below provides a more detailed list of the advantages and disadvantages of both micro and macro-cossettes.

Table 1: Micro-cossette and Macro-cossette Advantages and Disadvantages

	Micro-cossettes	Macro-cossettes
Advantages	• Quick drying • Low level of moisture • Superior quality • Long shelf life • Greater volume per sack aids in transport • Low impact on the flour mill • Relatively stable price across seasons • No cultural biases against it or its production zone	• Low cost of production • Production techniques well known • Broadly consumed by the Congolese • Attractive price for low income families
Disadvantages	• Higher relative cost of production • Restrained market demand • Production technique not well known in the DRC • Up front capital investment required • Demands ability to run equipment and manage teams of people • Risks due to machine breakdown and equipment replacement • Rapid quality loss if wetted	• Long drying time • Frequently incomplete drying • Inferior quality • Possibility of mold development • Lower transport volume possible • Reduces the life of the flour mill • Long production time • Price subject to seasonal variability • Cultural biases based on production zone

Refining the RFP and grants processes and designing an effective business model

Concurrent with the pilot activities of FY 2013 was the initiation of an RFP process in the middle of the year. Implementing partners and beneficiaries were alerted to the process and provided general guidance on the development of concept notes and other necessary grant request documents. Under the RFP process grants were considered to be contributions to community efforts, not hand-outs. They were to be used to permit both parties to put skin in the game and to accelerate and bring to scale more quickly a business proposition or nascent income generating activity. FPPM believed that requiring cost-share, even for in-kind grants, would empower the beneficiaries of these grants and creates true partnership. As part of the RFP process, physical sites proposed by partners for center establishment were prequalified to ensure their suitability. Criteria included accessibility, local production capacity, availability and quality of water, security and proximity to navigable transport routes for product evacuation.

As the process evolved several things became evident. While there was enthusiasm for processing activities, the capacity of the organizations soliciting project assistance was extremely low, limiting their ability to develop concept notes or show more than nascent management capacity. Applicants had difficulty mastering complex concepts related to financial analyses and many were incapable of developing a cash flow model, projecting profitability or putting together a profit/loss statement. This was exacerbated by the fact that they were not entirely open about sharing information on their finances or their material inventory and that many were lackadaisical in their financial record keeping. In general, there was poor documentation available on past activities that could be used by FPPM in the due diligence process. As for cost share, a history of humanitarian assistance throughout the project zone had accustomed them to hand-outs with the idea of contributing financially or materially to the establishment of a project an alien idea. Finally, the amount of information required under the RFP process was considered burdensome and partners became fatigued by the process. The result was that submissions were limited and those that came in were of poor quality requiring substantial revision.

In addition to the general challenges noted above, an issue of a more philosophical nature arose. Applications received under the RFP were from FPPM implementing partners and not OPs/beneficiaries. IPs were under the impression that the RFP was intended for them and they were

in fact direct beneficiaries of the project. This raised a red flag with project leadership precipitating an internal review of project strategy including discussions with staff around the role of IPs and the definition of a project beneficiary. It became evident that staff were indeed confused and that this confusion was the genesis of the present situation.

By the end of 2013 it became clear that a new approach was needed. In early 2014 the decision was made to refine and accelerate the RFP process and grants strategy so as to mitigate or eliminate the previous challenges and ensure that the mistakes of past would not be repeated. The following tactical approaches were implemented which proved to move the project concretely forward.

- Grant values were held to under $10,000 to reduce administrative weight and fast-track their approval.
- Emphasis was placed on establishing processing centers at the OP level as direct project beneficiaries. Where substantial benefit could be proven to accrue to direct project beneficiaries, IP applications would be considered.
- The processing center business model was standardized and a fee for service approach was adopted. This facilitated the development of conceptual notes on the part of OPs who were otherwise struggling.
- In-kind partner contributions were standardized and made common in all grant agreements thereby eliminating challenges with valuation and ensuring minimum requirements were met.
- Financial models and statements were simplified and standardized for use in all concept notes. This permitted ready analysis of financial viability.
- More active, direct support for concept note development was provided to partners by FPPM staff. This ensured the level of detail required for a successful submission.
- A unified approach to trainings for APs and partner organizations was established. This allowed trainings to be easily replicated and ensured quality control.

As 2014 progressed the process improved, grants were approved and agreements were signed. A site-specific rollout calendar with precise milestones and timing was developed for all grants. The presence of FPPM proximity field agents was critical to this process and the support they provided ensured technical specifications and timeliness were met for the most part.

Center Establishment

The project took a graduated approach to establishing processing centers. It was decided that there would be three implementation phases. Five new processing centers would be established during phase one followed by 15 in phase two and then five existing centers would be rehabilitated in phase three. Mills, hullers and shellers would be put in place at the same time as the rehabilitation work. This approach was taken to permit staff to master the process of processing center installation before addressing the majority number.

The table below shows the total number of rural processing and value added enterprises established or expanded by FPPM. The project is proud to share that it was able to achieve 160% of the FY 2014 year end goal of 30 centers. Of the 48 rural processing and value added enterprises established or expanded fully, 25 of them were cassava processing centers. Of those 25, fully 20 were established from ground zero. The first five processing centers were established in the June/July 2014 timeframe in Bas Congo with partner contributions averaging 27% of the grant value. The remaining centers, as well as peanut sheller and corn huller installations, were put in place over the subsequent 2 months of the project leading up to the initiation of close down in October 2014. Given the degree of detail

required in the establishment of each center this is no small achievement for a project that had suffered more than its share of early challenges.

Rural Processing Centers Established or Rehabilitated by FPPM

Activity	Bandundu	Bas-Congo	Plateau de Bateke	Total
Peanut Sheller	6	5	0	11
Corn Sheller	5	3	0	8
Cassava Processing Center Establishment	6	7	7	20
Cassava Processing Center Rehabilitation	0	2	0	2
Cassava Processing Center Rehabilitation w/ ATV	0	2	1	3
Mixed Mill	1	0	0	1
ATV for Farm to Market Transport	1	1	1	3
Total	**19**	**20**	**9**	**48**

The processing center establishment and expansion efforts were made possible in no small part due to support provided by STTA consultants and a sharpened project focus on the process. Capacity building figured prominently not only for FPPM staff but for partners as well. In June 3.5 days of training were held for 26 FPPM staff members including topics such as how to think and operate like a business, types of employees and their tasks, how the granting process works, an explanation of the business model, how to design the transformation area, the environmental issues to consider, how to service, install, and operate all the equipment in the grant, how to pay attention to difficult areas and how to work together as a business team.

Once staff training was complete capacity reinforcement was in turn initiated with the partner organizations in order to prepare them for managing the enterprise. Capacity reinforcement was offered in a stepwise fashion in proximity to the implementation site. A two-session training was held with all new cassava processing enterprises with one session occurring prior to equipment arrival on site and a second following installation. FPPM also arranged for technicians from the equipment dealers to visit each processing center to verify the installation of the equipment, refine its calibration and train the machine operators in proper up-keep and maintenance. The training and monitoring of the processing centers was accomplished by FPPM proximity field agents (AP) in conjunction with representatives of our Implementing Partners (IP). Following well established adult education norms, the training was practical rather than theoretical.

One example of this practical approach was the exchange visits to well-functioning cassava processing centers. These visits enabled grant recipients to see and feel fully operational systems and ask questions on successes, challenges and lessons learned. PIVALI in Kinzau Mvuete in the Territory of Seke Mbanza and Ibi Village on the Plateau of Batéké were gracious in their partnership with FPPM for this purpose. Provincial marketing agents and proximity field agents accompanied three members of each structure on the visits. The visits were interactive and quite instructive. Technique for converting cassava tubers to micro-cossettes was highlighted and, as each site visited was its own successful micro-enterprise, the participants were also initiated in the challenges of managing the center. Discussion were held on moving product from field to the center, on day labor needs, specific tasks and record keeping as well as keys to producing the highest quality end product.

The value add of production

With processing facilities established in June and July 2014 and capacity building largely complete production was initiated with great anticipation by local communities. Each center was tasked with tracking details of production such as product processed, client usage habits and frequency by

village for use by the center itself. The Table below contains aggregated production data for five value added products collected from 15 cassava processing center sites: four in Bandundu, five in the Bas Congo and six on the Plateau of Bateke. The products included in the data set are micro-cossettes, cassava flour, maize flour, Kimpuka and starch. We see that total production across centers for all products was just under 100 metric tons. Perhaps more interesting though is the upward production trend from July through September, a trend that would be expected as word spread of a center's establishment, but no less a positive sign. We see also that production drops in October. Anecdotal information suggests that the onset of the rainy season was the cause of this drop and that production will prove to be cyclical during a given 12 month period.

Value Added Production from 15 FPPM Supported Processing Facilities

	July			August			September			October			Total		
	QTy (kg)	HH	Villages	QTy (kg)	HH	Villages	QTy (kg)	HH	Villages	QTy (kg)	HH	Villages	QTy (kg)	HH	Villages
Micro-Cossettes	3,850	1	-	19,339	58	2	31,817	46	2	15,484	32	2	70,490	137	6
Cassava Flour	1,316	226	3	5,957	887	2	13,263	259	5	512	22	-	21,047	1,394	10
Maize Flour	19	2	-	568	93	1	2,719	53	1	90	-	-	3,396	148	2
Kimpuka	765	2	-	885	1	-	2,990	15	-	-	-	-	4,640	18	-
Starch	-	-	-	61	-	-	42	-	-	-	-	-	103	-	-
Totals	***5,950***	***231***	**3**	**26,810**	**1,039**	**5**	**50,831**	**373**	**8**	**16,086**	**54**	**2**	**99,676**	**1,697**	**18**

Micro-cossettes account for fully 70% of production while cassava flour represents 21%, but shows the largest number of households participating in its production at 1,394. This makes sense given that households tend to grind flour on a daily basis and a mill can accommodate a relatively large number of clients when individual quantities are small. What we are unable to tell from the data however, is how many discrete households are represented by that figure. We suspect that repeat customers figure prominently for this value. The same holds true for villages which are likely repeat counted each month. This would seem logical since it is anticipated that at the outset centers would most likely service households from villages in close proximity.

Disaggregated data provides insight into both regional differences and individual center performance. We see from this data a few interesting facts.

1. Bandundu partner AMIJSKI produced over 28,000 kilos of micro-cossettes during their three month start-up period. This represents the highest volume of production by any partner for a single product during that timeframe.
2. The six Bateke centers averaged 2.8 metric tons of production for the months of August and September. A figure considered somewhat disappointing.
3. The Bas Congo region had the lowest total production of micro-cossettes but the highest production of cassava flour and Kimpuka and the only production of starch. Kimpuka was not produced by any of the Bandundu facilities.
4. None of the centers reached the goal of 3.2 metric tons of production per week as prescribed by the FPPM designed business model.

The value added by a given processing activity

5. As for the value added by a given processing activity, we use as an example, the average Kinshasa market price for macro-cossettes compared to the value added product micro-cossettes. Wholesale pricing data gathered over an 18 month period shows two key economic advantages to commercializing micro-cossettes.
    - First, while macro-cossettes suffer from wide monthly price fluctuations the price of micro-cossettes remains relatively stable over the same period. This price stability profile of micro-cossettes has two advantages. It allows producers to commercialize their product at any time during the year with little price risk and because of this provides cost savings due to not having to store their product during a pricing downturn.

- Second, the average wholesale price of micro-cossettes during that 12 month period is roughly 750 FC per kilo while that of first quality macro-cossettes is 600 FC per kilo. This represents a 25% price premium for micro-cossettes. Based on the sale of 100 kg sacks we see that micro-cossettes returns 75,000 FC while macro-cossettes returns 60,000 FC. With the processing price for micro-cossettes 20% or less on a raw weight basis, the ROI on micro-cossettes is generally higher. This is real money to real people for whom every last FC counts and FPPM processing centers are giving them this opportunity.

Improve rural household access to, and use of, processing facilities

In order to achieve maximum economic impact from a processing facility it must be patronized by members of the communities located in proximity. It must be both accessible and provide a valuable service or economic benefit to would be clients, warranting its use.

In terms of access, FPPM counts both direct and indirect beneficiaries. Direct beneficiaries are the families of the members of a community group that manages a given processing center while indirect beneficiaries are nonmember families living in sufficient proximity to the center so as to make it practically accessible. The 45 processing centers supported by FPPM count, in total, 5,597 member households. With an average household size of six (5.9), the project counts 33,582 direct beneficiaries with access to FPPM supported processing centers. While certainly impactful, the indirect beneficiary number is considerable by comparison. A processing center is considered accessible when a family lives within eight kilometers, a reasonable distance to transport raw product per historic, rural Congolese household practices. Based on an FPPM census of project sites there are between 1,000 and 2,500 families, on average, living within that eight kilometer radius of a processing center. The total indirect beneficiaries then with access to FPPM supported processing facilities is between 270,000 and 675,000 people. A broad range perhaps but impactful nonetheless even on the low side of the spectrum.

Improve farm to aggregation/processing center transport

An important component of value chain efficiency is a functional transport component to facilitate the evacuation of agriculture production to aggregation or processing locations. And while this is important for all crops it is particularly critical for cassava where production per hectare can be measured in the tens of metric tons. For a processing center, offering a transport service means that it can expand its client base to include those households who might otherwise not be able to patronize it.

As FPPM undertook its processing center activities it developed relationships with several existing enterprises that noted a lack of farm to center transport as a constraint to their business. After confirmation by project staff the grants process was used to provide the material support needed to address this constraint. A total of six mechanized tricycles were provided to these existing agribusinesses. Each tricycle includes a cart to carry product. A list of the partner organizations benefitting from FPPM transport support is found in Table 4 below.

Table 4: Partners Receiving Motorized Tricycles for Farm to Processing Center Product Transport

Activity	FPPM Partner Organization	Province
Rehabilitation/Amelioration of Cassava Processing Center & ATV for Farm to Market Transport	COOPALU	Bas - Congo
Rehabilitation/Amelioration of Cassava Processing Center & ATV for Farm to Market Transport	COAGRI	Bas - Congo
Rehabilitation/Amelioration of Cassava Processing Center & ATV for Farm to Market Transport	ASSAMO	Bateke
ATV for Farm to Market Transport	MIDEKI – PIVALI	Bas - Congo
ATV for Farm to Market Transport	PEDM	Bandundu
ATV for Farm to Market Transport	FEDERATION DES EXPLOITANTS DU SYSTEME D'INTERDENCE COMMUNAUTAIRE	Bateke

Improve post-harvest treatment (conditioning) and product quality

One of the first post-harvest steps a producer makes is to condition their crop to make it storable, consumable and/or sellable. In nearly all cases a high quality product is the goal. While FPPM did not focus on conditioning activities and did nothing of any true scale, a couple of efforts are noteworthy.

In Bandundu cassava macro-cossettes are traditionally conditioned by smoking them to obtain the desired dryness. This generally changes the product's flavor profile and produces a flour with a brown tint when milled. The result is a perceived lower quality by the market with a corresponding lower price paid. Recognizing this, provincial staff provided guidance to several producers regarding an improved drying process that did not rely on smoking. This resulted in the production of macro-cossettes of such enhanced quality that basins sold for 6,000 FC instead of the usual 4,000 FC on the Idiofa market. When the macro-cossettes were transported to Kinshasa for sale they received prices comparable to those of cossettes from Bas Congo. Prior to this FPPM intervention Bandundu cossettes presented to the Kinshasa market traded at a 30% discount compared to those arriving from Bas Congo.

Guidance was also provided to producers regarding maize conditioning. Pests such as bruchid beetles and mites are responsible for damage to maize by boring into the kernels. This reduces its home consumption appeal, renders it unsellable and impacts its viability as seed for the next planting season. Drying is also frequently done directly on the soil reducing cleanliness and rendering it vulnerable to pests. With the assistance of FPPM provincial staff producers were provided guidance on maize drying best practices. Producers were informed of the importance of drying maize on a clean surface such as a tarp and plastic sheeting was provided by the project for this exercise. In addition, producers were shown how to undertake the proper triage of maize kernels to ensure that any suffering from infestation were separated from those in good condition prior to storage, consumption or sale.

Market Information Systems

The lack of accurate and timely market information is a major obstacle to efforts to develop the agriculture sector in the Democratic Republic of Congo. Information regarding actors and their respective activities across the value chain tends to be limited and highly localized resulting in the inability of the majority of players to make well informed decisions, keeps potential partners disconnected from one another and promotes arbitrage by middlemen able to move freely between multiple points in the value chain. On the production side, the lack of access to market information prevents farmers from following price trends and reduces their ability to properly time their entry into the market and to successfully negotiate with traders. On the down steam side, urban market consumer product demand and pricing information remains isolated from producers resulting in

urban demand often going unmet and stunting the evolution of product differentiation in the market place. The sharing of information regarding producers, products, prices, transport, traders and market places is therefore key to the development of the agriculture market in the country.

To address this lack of information, FPPM was tasked with the implementation of an intervention strategy in the area of "market information systems" or MIS. MIS can be most simply defined as an organizational and communication platform that facilitates the timely collection, analysis and dissemination of market information to any and all interested parties. The goal of the MIS at FPPM was to make the market more transparent, empower value chain actors to change their behavior and create greater efficiencies across the chain.

This was accomplished via three primary activities. 1) The employment of enumerators to gather local market pricing and quality data of the most commonly traded agriculture commodities at key rural and urban market places in the project intervention zone. 2) The posting of the data on black boards located in several of those markets. 3) The diffusion of pricing and other relevant market information such as quality and transport costs to broad populations via community radio transmission and email. These activities were initiated in 2013 and continued through the end of the project in 2014. To further the impact of the information sharing process “listening clubs” were set up in villages in radio diffusion zones after the initial MIS trial period.

Establishing a Functional Market Information System

FPPM set up a network of 63 market information collection points in the DRC as part of its MIS efforts. 58 of those were market locations while five were ports. This included 15 markets and five ports in Kinshasa 10 markets in Bas-Congo, six markets in the Plateau of Bateke and 27 markets in Bandundu. Sites were selected in collaboration with local community radio stations and the local market enumerators. Emphasis was placed on regional markets and aggregation points playing a key role in the translocation of agriculture commodities as well as the Kinshasa market critical as a terminal outlet for rural production. Enumerators were used to gather information and in some cases update and maintain pricing blackboards at a market site. A total of 14 blackboards were set up with price, market and volume data for reference by market women, producers, buyers and transporters. There were 8 blackboards in Bandundu, 4 in Bas-Congo and 2 on the Plateau of Bateke.

Market information was diffused via a network of community radio stations in order to extend the reach of the MIS to the broader provincial populations. Contracts were signed with three primary radio station “hubs” in each province which provided access to their respective community radio networks. (Refer to Annex 2.4 for a complete list of participating stations.) FPPM radio hub partners were REMOCOB in Bas-Congo, Radio Munku in Bateke and URPB in Bandundu. The Bas-Congo network consisted of 10 community radio stations with emissions beginning in March 2013. In Bandundu a total of 14 community radio stations comprised the network with emissions beginning in June 2013. In Bateke Radio Munku served as the sole diffusion point with emissions beginning in June 2013. Information was gathered by enumerators twice per week at each site in hard copy form, compiled and distributed via CD to radio focal points.

Primary information diffused via the MIS radio network included the current prices of agriculture commodities according to quality and by market and the price of relevant transport. Additional programming was developed and diffused periodically to enhance the educational experience of the listenership. For example, the FPPM Bandundu Provincial Marketing Specialist in collaboration with Radio TOMISA of Kikwit developed a radio program with the theme of improving cassava macro-cossettes. Sub-themes developed included harvesting mature roots, the color and quality of water to be used in washing and soaking, solar drying vs smoking of cossettes, and proper storage and transportation methods. On Radio Kimvuka Na Lutondo of Kenge a facilitator of the FPPM cassava

farmer field school animated five emissions on themes as diverse as calculating planting density and the symptoms of principle cassava diseases. These emissions were noted by the local populations for not only their educational value but also for the role they played in enhancing community radio programming.

After only six months of MIS radio emissions the effect was palpable. Partners repeatedly contacted FPPM to share stories of the impact that the emissions were having and to voice their support for its continuation. Indeed during a three month emission stoppage due to contract renegotiations with radio partners, calls came in from beneficiaries asking the reason for the stoppage and voicing their sincere concern. In Bas Congo, due to high interest among their listening audience the Community Radio Station of Nsioni continued to diffuse market information during this period. On its own initiative Radio Nsoni hired a market enumerator to communicate prices in three Kinshasa markets: Rond Point Ngaba, Gambela and Matete on a weekly basis. For this, the radio paid $10 every two weeks.

Though project beneficiary success stories were many, the two following scenarios highlight the type of impact lived by MIS listeners on a weekly basis.

In the Plateau de Bateke FPPM project clients FESIC, AFAD and FENAGRIS recounted how after a price decrease they stored their cassava cossettes rather than bring them to market. They owed this decision and the eventual financial boon to information gained via MIS emissions.

In the province of Bandundu in November 2013 traders from Kikwit made the decision to go to Kinshasa to buy corn after learning that 1kg of corn was selling for 600Fc in the Kinshasa market while that same kilo of corn was going for 1100Fc in Kikwit. The traders took advantage of this scarcity on the Kikwit market by buying 10 tons of corn in Kinshasa and selling it in Kiwkit. This single transaction provided a gross margin of 5,000,000Fc or $5,000 to these savvy MIS followers.

An interesting offshoot of the MIS has been the creating of MIS Listening Clubs. Listening Clubs were established in villages within SIM emission zones with the following goals: 1) Facilitate the sharing of information received from local community radio emissions with members of the community who have limited or no access to such information, 2) Promote active discussions and debate on topics important to the local community, 3) Mobilize community members to action on projects that positively impact local development. A total of 15 listening clubs were set up in Bandundu alone.

To date the focus of the clubs has been primarily on the first goal as they get their feet under them and establish club norms. Still evidence of the positive impact of their efforts can be seen. In the Masimanimba region of Bandundu Club SIM RF was established in the village of Masongo. The club has 20 members of which five are women. The average age is 28 years old and members include teachers, farmers and a pastor. Club members listen to MIS emissions on Wednesday and hold a meeting on Friday at which time each person shares their impression of the MIS emission including key data on commodity and transport pricing in different markets. On Tuesday of the following week they descend upon the local market to share the information with buyers and sellers. The impact has been particularly positive on growers who have not themselves had direct access to the MIS emissions. The producers visit the market to sell their products to middlemen eager to buy for resale in distant markets. Whereas previously producers sold at a buyer's given price, the leverage has shifted to the sellers now armed with pricing information from club members. Club members report that people now recognize them and seek them out for market information before agreeing on a sale price. Conversely buyers have voiced their concern at their perceived loss of leverage.

The MIS has not of course been without its challenges. The nature of community radio in the DRC is that they are underfunded and short staffed. Many stations found the additional administrative duties required to participate in the MIS to be overly burdensome. Managing enumerators, ensuring blackboards were maintained and fielding MIS related inquiries became taxing. Sharing information

with these far flung community radio stations also posed a challenge. Many do not have internet connections and only have electricity when their generators are operational at airtime. As a result, it became quite difficult to burn CDs with programming information and get them to the radio stations in a timely manner.

MIS in Bas Congo – A Peek Inside a Functioning MIS

Our partner REMACOB was founded in 2005 as a network of community radio stations for the province of Bas-Congo. REMACOB's network contains 31 radio stations situated throughout the province. The Coordinating office for REMACOB is in Mbanza-Ngungu and is headed by Leon Nzita. REMACOB has a professional staff for developing programming and editing content. They have a fully functional sound studio with modern transmission equipment.

Prior to FPPM, REMACOB collaborated with SNV (The Dutch National Volunteer Service) in the development and diffusion of market information.

From April-September 2013 FPPM and REMACOB produced 27 weekly emissions entitled "Vérité de Prix" (Truth in Pricing). The emission is sent to 12 of 31 member stations by CD-ROM or Internet transmission for re-diffusion.

When REMACOB receives the current market information, on Thursday of each week, it creates the "magazine" page for the week's price diffusion, including sketches by a theatrical group called "Sosola" which means "Understand the Truth" in local language. Along with market information and sketches the radio program is rounded out by interviews on current topics and news notes provided by listeners. Currently the emission is developed and disseminated in French. For better outreach it is recommended that future emissions be developed in Kikongo.

In total 44 people are involved in the production and diffusion of this radio program. FPPM trained 24 community animators, 2 per radio station, has trained 8 market enumerators- two each at four different sites-Matadi, Boma, Kimpese, and Mbanza-Ngungu in the collect and posting and publishing of current market information. Six additional people, comprising REMACOB's production staff and journalists have also contributed to this effort.

MIS Performance Evaluation Workshops

From March to May 2014 MIS performance evaluation workshops were held in each of the three FPPM provincial zones. These workshops brought together representatives of the partner community radio stations, market enumerators and FPPM staff to discuss lessons learned during the first phase of MIS operation. An SWOT analysis was undertaken with recommendations for organizational and programming improvement made. Roles and responsibilities of each actor were also defined and a discussion on the actions to be taken post FPPM to enhance the sustainability potential of the MIS activities was carried out.

Below are select highlights from the workshops. Of note is the perception of market transparency created by the MIS. As a central goal of FPPM's MIS efforts this observation points to the success of the system after only one year. As for areas of improvement, a desire for as close to real time information as possible was noted. With prices sometimes changing on a daily basis, timely information only proves to enhance decision making. As regards the question of MIS activity sustainability, several ideas focused on local entities assuming responsibility for the MIS's continuation. This is indeed an area worthy of exploration. SWOT analyses from Bandundu and Bas-Congo Provinces can be found in Annex 2.5.

Strengths:

- Awakening of value chain actors to the realities of the market
- Increased transparency in the market due to MIS
- Quality radio programming of interest to value chain actors is being produced

Weaknesses:

- There are too few blackboards and not all the information on each blackboard is useful to market users
- Enumerator reports are sent too late to the focal points of the community radio (Radio Munku and URPB) because of distance issues → Late diffusion of MIS by certain radio stations
- Little to no regular feedback

Commodity Price Trends

A database of commodity price and quality information was established using the information gathered by enumerators working within the MIS. The data set covers the March 2013 to FY Q4 2014 timeframe and includes pricing and quality information for eleven of the most highly traded agriculture products in the project zones. The data permits some limited trend analysis particularly when viewed within the context of production constraints. Below are examples of some of the trends the project observed in the Kinshasa market.

Overall cassava prices in 2014 have been on average 200 f/kg, and as much as 275 f/kg, lower than 2013. This is due to the fact that rains in 2013 continued into February resulting in producers having difficulty in properly drying their cassava. This led to short-term disruptions, less cassava in the marketplace and resultant higher prices with first quality cassava reaching 900 f/kg in March 2013. In 2014 with favorable environmental conditions, a greater focus on improving productivity and production throughout the zone and an influx of cassava to Kinshasa from Equateur province the market softened reaching 634 f/kg for top quality cossettes in March 2014.

Cassava micro-cossette prices were relatively stable compared to those of macro-cossettes in 2013 reaching their highest in March due to the conditions noted above. In early 2014 micro-cossette prices were higher by 10 to 100 F compared to the same 2013 timeframe as supply could not meet demand in the Kinshasa market. By June 2014 prices had once again returned to 2013 levels. In general, micro-cossettes continued to demand a price premium compared to that of macro-cossettes.

Price levels for yellow maize were higher between March and May 2014 than during the same period a year earlier. This was principally due to poor rainfall distribution during the seeding period of the A-2013 growing season. Germination was resultantly poor translating into lower yields at harvest. January 2014 saw a spike in yellow maize pricing right before the harvest began in February. The trend for white maize was inverse to that of yellow during the same period possibly due to higher production in Equator and Kasai provinces.

In 2013 shelled peanut prices rose progressively from March to May before falling off in June and July. In 2014 the prices rose progressively from January until April, dropped slightly in May before rising to previous year's prices during June. Poor peanut production in Bandundu province during B-2013 and A-2013 has affected prices. By June the poor production in Bandundu, largely due to poor rainfall distribution, was being compensated for by increased production from Equator, Oriental and the two Kasai provinces.

Both white and yellow dry bean prices between April and June 2014 surpassed prices from a year ago by margins varying from 400 to 500 f/kg. Again poor climactic conditions in the growing zones of Bas Congo during C and A-2013 growing seasons are being blamed for this phenomenon.

Niebe prices rose to reflect supply constraints reaching their highest during the rainy season and returning to a more stable price of 1,000-1,050 F/kg from the harvest in February through September 2013.

Soybean prices in 2014 are 500 F/kg lower than those found in 2013. Quantities on the market remain small due to a lack of consumer knowledge concerning this product. Also the soy milk being produced locally is brown rather than white, looks highly unpalatable and often contains a high percent of foreign matter. Given this is still principally a niche product with a high price point, urban consumers seeking to procure this will often substitute with more visually attractive imported products rather than buying the local product.

In summary, the commodity pricing and quality database established by FPPM was beginning to bear fruit for the information it contained. With 18 months of information pertaining to diverse markets and products much greater analysis can be conducted and inferences drawn. It was the intention of FPPM to develop technical primers presenting and interpreting historical price and quality trends of key commodities thereby enhancing the knowledge of value chain actors. In addition, the creation of profitability scenarios or profiles was anticipated to assist actors to conceive of best business practices and approaches. Finally, this information can be combined with environmental data such as rainfall and input data such as seed and fertilizer pricing to undertake more detailed statistical analysis and food security modelling to assist in the prediction of food shortages and other social impacts.

Increasing the Number of Value Chain Actors Using MIS Information

In September 2014 FPPM organized a series of focus groups in collaboration with MIS community radio partners. Two were held in the Plateau de Bateke, 12 in Bandundu and 12 in Bas-Congo. Villages in seven of the 25 community radio partner coverage zones were included in this effort. Participants represented a broad cross section of community members and included 371 men (71%) and 150 women (29%) for a total of 521 people surveyed. Focus groups averaged 20 participants with diverse occupational representation including sellers, students, shop owners, teachers, government workers, transporters, businessmen, medical workers, fishermen and farmers. In general, participants were selected based on their interest in the subject matter and willingness to participate. All can be considered project beneficiaries.

The goal of the focus groups was to gain insight into MIS listenership, the value placed on MIS information and programming and the influence, if any, on household behavior. To achieve this a short questionnaire was developed and used at each location. Discussions were facilitated by FPPM field agents many with the assistance of radio partner representatives. Participants were asked questions ranging from how they arrive at a sale price for their production, whether or not they listen to the MIS emissions, and the impact the emission had on their commercial behavior if any.

The exercise permitted FPPM to gain information and draw conclusions regarding the number of value chain actors using MIS information, however given that the MIS had been in place for only one year these results did not permit any estimate of the “increase” in the number of value chain actors using MIS information. Any estimate of increase would require further census at a later date in time. Nonetheless, the information does indeed have value in that it provides compelling evidence that the MIS listenership is deriving great benefit from the emissions.

We have chosen the total number of project beneficiaries as the base from which to estimate the number of value chain actors using MIS information. This number, while perhaps conservative given the reach of radio emissions, is a confirmed value. Other values, such as individual radio station listenership estimates, cannot be easily validated and were therefore deemed unsuitable for reporting against indicators. Listenership estimates do however permit extrapolation and certain inferences to be drawn regarding the potential broader impact of the MIS.

FPPM counts a total of 66,000 beneficiaries in the three project intervention zones of Bas-Congo, Bateke and Bandundu. The average household size is 5.9 people of which 1.9 are adults[5]. With adults

[5] FPPM project zone census data

comprising 33% of project beneficiaries we arrive at 22,000 adult project beneficiaries that can be deemed heads of households. MIS focus group listenership statistics are shown in Table 5 below. Results reveal that 59% of focus group participants listen to MIS emissions. When asked if they found the information useful (i.e. use the information) 100% of these individuals responded in the affirmative providing numerous examples of how they have used and benefitted from the MIS programming.[6]

MIS Focus Group Statistics

MIS Focus Group Statistics				
	Totals	**Bateke**	**Bandundu**	**Bas-Congo**
Men	371	26	174	171
Women	150	16	65	69
Total	521	42	239	240
# Listen to SIM	309	42	211	56
% Listen to SIM	59%	100%	88%	23%

Making the reasonable assumption that focus group member listening habits (again 59% stating they listen to MIS emissions) are reflective of the broader FPPM beneficiary base we can estimate that 12,980 adult project beneficiaries/value chain actors (rural producers, processors, input suppliers and market sellers, etc.) use MIS information. When we take into consideration the impact of the MIS Listening Clubs and the market based blackboards, both of which are difficult to quantify but no less concrete in terms of the value of information they provide, we can readily infer that the number of value chain actors using MIS information is even greater than our 12,980 estimate. We conclude then that as regards the target of 10,000 rural producers, processors, input suppliers and market sellers using new market information the FPPM MIS has indeed met this goal.

If we move our analysis beyond project beneficiary based estimates we arrive at the possibility of an even greater number of value chain actors actively using MIS information. Taking the example of Radio N'temo in the Bas-Congo we find the following population estimates fall within its listenership footprint.

- Mbanza – Ngungu 569,968
- Songololo 224,864
- Luozi 196, 560

The total population of the Radio N'temo emission footprint is therefore 991,392. Using the same household statistics for adults used earlier we find 327,159 men and women living in the Radio N'temo footprint. It was revealed during the Radio N'temo focus group discussion that 20.25% of participants listen to and use information provided by MIS emissions. Based on these numbers we quickly arrive at the very high estimate of 66,247 individuals deriving benefit from MIS programming. While there are many assumptions build into this exercise such as radio access, the analysis does have value. It points out the vast potential that radio, and more specifically MIS, holds in providing useful market information to a population that engages in some aspect of the agriculture value chain be it as producer on the upstream side, consumer at the household level or trader connecting the two.

Influencing Rural Household Marketing Behavior as a Result of MIS Emissions

Achieving true behavioral change on the part of beneficiaries poses perhaps the greatest challenge to any project. It can be generally agreed however, that change occurs when adults "see" compelling

[6] Examples are highlighted in the section of this report titled "Influencing Rural Household Marketing Behavior as a Result of MIS Emissions".

information or evidence regarding a subject of personal importance to them and that this subsequently evokes responses that encourage and enhance the feelings one needs and reduce the feelings one wants to avoid (the "feel"). These desired feelings and the emotional reaction then provide the energy that makes people adopt change.[7] The process is referred to as See → Feel → Change and encapsulates well the progression that many project beneficiaries have undergone as a result of MIS emissions.

During the focus groups themes began to come to the fore regarding how people were using MIS information and how it had changed their marketing behavior. Key examples are as below.

Commodity Sales Pricing
Prior to having access to MIS information farmers sold their products based on fixed prices and unit weights/volumes set by the buyers. Sellers now insist on negotiating based on publicly known prices and unit volumes. This information of course being gleaned from the MIS.

Commodity Sales Market
Prior to MIS producers chose the market at which to sell their commodities by chance with little to no logical orientation. Sales often occurred in the field where farmers had the least leverage and before full product maturity in the case of cassava. Now sellers choose the market ahead of time based on sales price and estimated expenses such as transport costs using information gained from FPPM MIS.

Commodity Sales Timing
Prior to MIS producers sold their commodities with little to no regard for timing in relation to market price fluctuations. Sellers now track changes in prices not only by market but by price evolution over time often choosing to store their production and wait for improved pricing rather than simply selling at harvest. The benefit of now knowing how prices evolve has influenced this change.

The above examples provide concrete evidence of household level behavioral change. To arrive at an understanding of the quantifiable impact it is important to note that respondents stating that they use MIS information were the very same who provided these examples. To put this however into the context of the project we must recall that an estimated 80% of FPPM beneficiaries are producers and that each of the above examples are production related. We can therefore infer that 80% of the 12,980 project beneficiaries that use MIS information or 10,384 have undergone household level behavioral change as regards their sales activities. The focus groups did not permit attention on other key value chain actors such as buyers and transporters. Such a census would likely reveal additional behavioral change from MIS and result in an increase above the 10,384 number.

Financial Intermediation and Education

As regards agribusiness lending, the financial services market in the DRC can be characterized as nascent. As in many developing economies, agriculture is considered a high risk venture and many banks are not familiar enough with agribusiness practices (most banks being located in urban centers away from all but the most downstream agriculture value chain activities) to easily classify risk. Further, few loan products exist that were created with the specific needs of the agriculture industry in mind. For their part, rural agribusinesses tend to lack knowledge of financial institution lending practices. This lack of familiarity coupled with the challenge of geographic distance creates a broad chasm between urban financial institutions and rural agribusinesses resulting in credit needs going largely unmet and the agriculture sector suffering from delayed economic development.

[7] http://www.kotterinternational.com/book/the-heart-of-change/

Against this backdrop FPPM initiated its finance related activities aimed at improving market efficiencies. In May 2012 it undertook a survey of financial institutions to gain perspective on their view of agriculture lending. It revealed recognition on the part of the financial institutions of the many constraints to agriculture lending including a lack of targeted financial products and the need for more and better capacity building of entrepreneurs. Of the many suggestions made by the financial institutions, many fell out of the purview of the project. A few however, proved relevant to the project focus:

- FPPM should directly contribute to improving access to finance for the agriculture sector by raising awareness and disseminating information on the part of both the lending institutions and partner organizations.
- Identify potentials clients and share relevant information with lending institutions.
- Work with project beneficiaries to raise their business skill level, including helping to develop accurate business plans and introducing systems to improve efficiencies, before introducing these entrepreneurs to the financial institutions.

Armed with this knowledge and recognizing the importance of the financial services market to the sustainability of its efforts to establish and grow local agribusinesses, FPPM focused on two key areas.

- Provide value chain actors with information regarding financial services resources
- Connect financial service users to providers when appropriate

Providing value chain actors with financial services information

The DRC can be described as suffering from a great deal of disinformation and misinformation about financial products and services. Potential loan applicants have a general naivety as to how a financial institution works with concepts such as credit terms and conditions for becoming a business client, foreign to most. The vast majority of FPPM clients fall within this group having never engaged the formal financial sector and, as a result, remain in the dark regarding how to do so. They face the added challenge of having nontraditional needs that require creative/innovative products with flexible terms and conditions and out of the box thinking on guarantees. Finally, the Congolese culture is not traditionally a credit culture, meaning any educational approaches would require sensitivity to this historic context.

Those who have engaged the banking sector often come away disillusioned. Bank transaction costs are high and costly both in terms of time and money. Interest rates are on a par with those of credit cards destined for people with poor credit histories. Further the banks have not always been secure places to deposit money or transact business as, historically money goes in fairly easily, but is difficult and costly to withdraw and often finds itself devalued while sitting on deposit. Transactional confidence is low, client service is rare and potential bank clients prefer to keep their money “working” (invested in parallel sector income generating activities) rather than “sitting” where it could be misappropriated.

Banks, for their part, lack information regarding agriculture and agribusinesses and have limited practical experience with the sector. They lack appropriate training in agribusiness operations and have limited ability to assess risk and its trade off with the potential upside profitability in this non-traditional activity area. As a result, their financial products are generally not adapted to agribusiness clients and they remain focused on short term products, quick turn around and classic bricks and mortar guarantees which are not suitable for many agriculture endeavors.

Against this backdrop FPPM set out to bridge this information gap between financial lending institutions and FPPM partners. The project gathered information regarding the lending practices of DRC financial institutions that it could in turn share with project partners as part of an overall education and awareness process. At the same time, FPPM used its time with the financial lending

institutions to provide them insight into agribusiness practices and explore ways to expand their financial services to address project client needs. The project set for itself as a goal, *At least 3 Financial Institutions (FI) accept to engage in lending to agribusinesses operating in FPPM targeted value chains.*

During this process discussions were held with a total of 10 financial institutions seven of which were microfinance institutions (MFI). The MFIs serve an important role in the overall financial services education process as they often act as an entry point for individuals and groups to engage the sector by establishing savings accounts and taking out small loans. They also tend to have offices in regional urban areas that the larger commercial banks do not.

The project's financial institution survey revealed that while there is a broad range of lenders offering a diversity of products, access to credit by FPPM partners and agribusinesses in the DRC is fraught with challenges. Most notable among these is the near universal requirement that the borrower be a going concern with a cash flow history. This is particularly difficult for start-ups such as those with which FPPM worked. Many require that the interested party be a member of the financial institution with a history of savings or have suitable collateral or third party sponsorship. Finally, although there is a diversity of products, few if any are created with the agriculture sector in mind. Loans are often narrowly defined to support the purchase of capital equipment which can limit the scope of possible agribusiness activities. As a result, agriculture, more than any other industry, suffers from its borrowing needs going largely unmet.

During discussions with local banks several reasons for their avoidance of agriculture lending were noted. Among them were:

- The randomness of agricultural activity profitability.
- The unpredictability of climatic conditions makes agriculture a particular risk.
- The perceived inability of borrowers to repay loans.
- Agricultural firms are often geographically disconnected from banks making the cost of doing business considerable and proximity follow-up cost prohibitive..

With these points noted, the financial institutions however, all voiced their interest in working with FPPM clients. Ecobank and BIC suggested that FPPM send partner enterprises directly to see them to discuss financing needs. Each bank stated that interested parties would undergo an orientation concerning credit thereby advancing the educational process. Advansbank, for its part, went one step further and extended supplier credit to FPPM partner, l'Ets Anydan de Luozi, for the manufacture of cassava processing equipment. These results point to FPPM's success in meeting its goal of having at least 3 Financial Institutions (FI) accept to engage in lending to agribusinesses operating in FPPM targeted value chains.

Among FPPM clients, at least 20% have a declared interest in external credit with estimated needs averaging $10,000. In Bandundu alone 26 groups showed such interest. In order to prepare them for addressing this need the project took to educating partners on two fronts. First, a one page brief on microfinance was developed from the information gathered during the financial institution survey. This lending primer was shared with project partner organizations and included individual lending institution service information including key contacts. Second, FPPM Farmer Field Schools dedicated an entire series of lessons on financial management including how to engage financial institutions in opening accounts and accessing credit.

This provisioning of financial services information to value chain actors has gone a long way in removing the shroud of confusion and disinformation under which both the banks and rural agribusinesses have been living and has helping move them one step closer to each other.

Connecting financial service users to providers

Commercial agriculture operations require financing to scale and diversify their activities whether these be production related, value added processing, for transport/storage or marketing operations. The running of any business requires liquidity and positive cash flow and FPPM partners are no different. Start-ups require seed capital until reserves can be built up; and those already established need financing for business growth and diversification. Unfortunately, financial service users and providers in the DRC remain largely disconnected from one another resulting in agribusinesses being starved for capital. The project set about to address this situation with the following goal: *At least 20 FPPM agribusiness partners and/or clients engage in at least one discussion on financing opportunities for their businesses with FI or Microfinance Institutions (MFI).*

FPPM began the work of connecting financial service users to providers in 2012. Project staff joined representatives from several DRC lending institutions, including BIAC and TMB, at Southshore Bank's training program for credit, commercial and risk officers. At the request of the trainers, FPPM invited two agribusiness companies, DIAMING and SAC (Sécurité Alimentaire de Cataractes), to attend the workshop, introduce their companies and explain their credit needs. Subsequently the trainers undertook field visits to mills and food processors to help them better understand the concept of value addition in agriculture. This type of exchange proved invaluable in educating both sides and created key linkages between the lending institutions and the agribusinesses.

A noticeable constraint in FPPM's project zone is the dearth of proximity financial service providers. Advansbank, after discussions with FPPM regarding its efforts to establish rural agribusinesses, recognized the need for a local presence and has begun efforts to open a branch office in Kikwit to service rural loans. Several FPPM partners have initiated portfolio discussions with Advansbank and anticipate acquiring funding to help bridge financing during the critical start-up phase of their agribusinesses.

Another concrete example of connecting financial service users with providers comes from work FPPM did with cassava processing equipment manufacturer, l'Ets Anydan of Luozi, in helping it secure a loan from Advansbank. Based on their possession of an FPPM purchase order for processing equipment they were granted a $10,000 loan by Advansbank. This linkage has positioned Anydan to receive future financing from Advansbank and Advansbank, for their part, has voiced their interest in meeting the needs of not only Anydan but other FPPM partners.

A somewhat different example comes from FPPM partner PEDM who received 50% credit terms from a chipper manufacturer to expand their micro-cossette business. And though not a bank, this type of credit extension can be just as impactful to small agribusinesses with growth aspirations.

The greatest project impact in the area of connecting financial users with providers has come via work done with implementing partners to promote the establishment of formal accounts with financial institutions. Aid consisted of helping them in opening accounts, managing money, encountering bankers for the first time, differentiating between personal and business accounts and in the understanding of contracts and contract compliance. This has come in two forms.

First, partner groups managing going concerns have established accounts for the purpose of banking their revenue and in general, more formally managing their finances. This was also a prerequisite for Implementing Partners wanting to be on-boarded as technical service providers to the project. This will prove to help both build financial credibility over time and put them in position to seek funding to grow should the need arise.

Second, Village Savings and Loan Associations or VSLAs were established by less commercially advanced groups that nonetheless recognized the need for a local savings and loan vehicle. Under a VSLA members contribute money to a group savings account for the purpose of making loans back

to the membership at terms and conditions set by that membership. VSLAs quite effectively serve as a first step in financial empowerment and education by encouraging a culture of savings, familiarizing the members with the process of borrowing and respecting reimbursement requirements including repayment dates and interest owed. In addition, they facilitate banking relations by bringing together willing clients with interested financial institutions to establish accounts and get them to talk about their businesses. FPPM has acted as a facilitator to the discussion and worked actively to train our clients through the Farmer Field Schools to regard banks as "money stores", enterprises whose business is money-savings and loans. We have successfully assisted our clients in developing bankable dossiers, mobilizing funds to open accounts and extending loads to VSLA members.

Through these combined efforts 60 structures have opened bank accounts with many members also opening individual savings accounts. Fully 11 financial institutions have partnered with FPPM clients for this purpose. 29 groups have opened accounts in Bandundu province, 23 in the Bas-Congo and 18 in the Bateke Plateau. The establishment of these relationships has permitted partners to engage in financial services discussions and FPPM to meets its goal of "at least 20 FPPM agribusiness partners and/or clients engage in at least one discussion on financing opportunities for their businesses with FI or Microfinance Institutions (MFI)". FPPM is proud of its efforts in this area and believes it has made an enduring impact on both the agribusinesses and financial institutions that serve them.

Village savings and loan associations (VSLA) – A first step toward financial empowerment

Real life examples of VSLA establishment from FPPM project zones brings home the impact members are already feeling.

16 members of Farmer Field School (FFS) Kiwawa Kipadi have saved a combined 125,000 FC and $85. This has been deposited to an account at the MICREFEKI of Masimanimba. This permitted the VSLA to issue four loans to members. The loans varied from 10,000 to 45,000 FC. Credits destined for agricultural activities were issued for six months at a 20% interest rate with reimbursement expected in two payments. Credits extended for other commercial activities are for 60 day terms at an interest rate of 10%. A total of 100,000 FC was lent. This FFS was facilitated by FPPM implementing partner CEPAL.

Using a solidarity group lending approach, the NSIONI 1 VSLA is on its 5th lending cycle. During this cycle credit was received by seven members (3 men and 4 women). Each received $450 for six months at an interest rate of 5%/month. Loans have been used for processing of cassava and the creation of small enterprises for the sale of palm oil, Kimpuka and Chikwangue.

Madame Judith Mawasa, a participant in the Kisalu FFS facilitated by implementing partner CDRM of Mwila Mbongo, saved enough money to purchase a cow for 600.000 FC. In addition, she has extended 144,000 FC in agricultural credit to nine people (three men and six women) at a flat interest rate of 20%

In-kind credit was extended to two producers by FFS Kiwawa Kapadi of Masimanimba. Each received a sack of peanuts for seed with reimbursement expected at the end of C-2014. Each producer must return one sac plus one bucket of peanuts to the VSLA.

Other groups continue to mobilize funds as savings. When a self-defined threshold is reached they will begin lending money to members for income generating activities.

Improved Commercial Market Relations

For any value chain to be truly strengthened efforts must be made across the chain from production to consumer. FPPM has done this by not only assisting rural organizations on the supply side but also by working to expand market demand for higher quality foodstuffs. A critical component of this success however, lies in connecting the actors at these two distant ends of the chain. By doing so we

are able to improve commercial market relations and facilitate the flow of goods from producer to consumer. With this in mind FPPM focused its efforts on three specific areas.

- Creating a market environment receptive to processed products
- Linking buyers to sellers of improved quality products
- Influencing the value chain to move from supply driven to demand driven

Creating a market environment receptive to processed products

Consumers in the DRC have long accepted product differentiation and the associated price variance. This is particularly evident with regards to cassava. Cassava macro-cossettes have been used to make the staple fufu for decades and sell at prices based on their perceived quality. Cassava micro-cossettes are less known in the market though consumed by certain market segments and production facilities continue to expand. Cassava flour, a fundamental ingredient in fufu and other traditional consumables, holds promise as a component of flour-based foodstuffs. FPPM, as part of its efforts to improve commercial market relations between agriculture value chain actors, undertook several activities to address the above situations and create a market environment receptive to processed products.

In 2012 FPPM began its efforts by market testing new cassava products to assess demand and consumer awareness. It conducted two major consumer level tasting events where it introduced to consumers new products such as vitamin K enriched gari, vitamin A fortified fresh cassava, high quality cassava flour from micro-cossettes and unfermented refined cassava flour for baking goods such as beignets, cakes and even mini-pizzas. The first event occurred at FIKIN (Foire Internationale de Kinshasa) in July-August 2012. In total 280 visitors from a variety of backgrounds participated in the tasting of refined cassava products and baked goods prepared with refined cassava flour and submitted responses to a questionnaire. The second major tasting event was SAPEF (Salon de l'Agriculture, Peche, Elevage et Foret) in December-January, 2013. In addition to these two major events, FPPM also organized a tasting at a half day, mini farmers market, in February 2013.

FPPM chose to promote cassava micro-cossettes because the small size allows for quicker drying compared with traditional large macro-cossettes. This in turn helps to eliminate mold and residues of cyanic acid, the consumption of which poses a serious health hazard. This also builds on the work of IITA (International Institute for Tropical Research) and other partners who have been promoting the micro-cossette transformation process to farmers in need of improving post-harvest drying. As results of these efforts, production has been slowly increasing however, only limited time has been spent on the consumer marketing side of the equation. FPPM was able to initiate progress to help bridge this gap.

The results of the tastings from FIKIN reveal that over 80 % of consumers who participated in the tasting rated cassava products as good or very good compared to those made from 100% wheat flour. FPPM partner, APTM (Association des Producteurs and Transformateurs de Manioc), who along with FPPM took the lead in organizing the FIKIN pavilion, was awarded the "Revelation de la FIKIN 2012" for presenting and organizing the sampling of the innovative cassava based products. One conclusion from the tastings was that consumers want to compare the cassava products with wheat based products and have interest in learning how to use unfermented cassava flour in place of wheat flour for baking products.

The introduction of these new products and the innovative ways to use cassava were reported on national television, regional channels, radio and in the written press following the trade shows. This provided additional return on FPPM's efforts by extending the reach of our message regarding the importance of eating quality cassava and of locally processed products, especially those with added nutritional value.

With the success of FIKIN FPPM decided to expand its partner participation in the promotion of processed products by inviting several groups to the winter SAPEF fair. At SAPEF producer partners and SMEs market tested and promoted cassava based products to consumers and were able to sell micro-cossettes, enriched cassava grits, and unfermented cassava flour. Annex 2.8 contains the sales achieved by each partner organization. Key results from SAPEF include:

- Total sales recorded by partners exceeded 3500 kilos of micro-cossettes, macro-cossettes, cassava flour, soy flour, maize and maize meal. Micro-cossettes sold for $1/kg.
- 500 retail bags of 500 gms Vitamin K enriched gari sold for 1000-1500 FC at the trade event and in the KinMarche supermarket.
- Vitamin A fortified fresh manioc sold out during the first 2 days of the show (15 25 kg. bags).

In 2013 in association with partner ASCOVI (Association des Consommateurs des Produits Vivriers), FPPM opened discussions with the four largest bakeries in Kinshasa regarding the potential for the use of cassava flour in their baking products. Introductory meetings were held with Midema, Pain Victoire, Pain d'Or and UPAK[8]. Of the four, UPAK responded favorably to the idea and discussions centered on undertaking a pilot project to test the production of cassava flour based products. Challenges arose however, when UPAK set as a requirement cassava flour product quality certification. A local survey revealed inadequate testing and certification facilities in country. A review of facilities outside of the DRC showed certification and logistic considerations too big of a constraint for the project to have any real chance at success. Regardless of outcome however, efforts such as this are important in that they provide insight into the state of the market. With more effort on the demand side and a creative approach to partnering with one of the bakeries a project such as this could easily come back to life.

As evidenced above, considerable effort was made early in the project to create a market environment receptive to processed products. FPPM trade show efforts revealed a market receptive to new product ideas as evidenced by positive responses to taste tests and partner sales at agriculture fairs. Other partners such as PEDM (expose below) have proven that through determined effort and the right linkages a market can be developed for improved products. These successes notwithstanding, it has become clear that to truly arrive at a cultural shift in consumption patterns a much greater marketing effort is necessary. Furthermore, being a first mover in any industry requires a substantial bankroll as educating any target market segment takes time and requires dedicated resources. And while FPPM took up the mantle of improved product introduction and promotion with great zeal and interest, sustained results were perhaps less than hoped for.

A market for micro-cossettes in Kinshasa – The case of PEDM

FPPM partner PEDM (Project d'Encadrement des Enfants Défavorisés et Mal Nourris) can be considered among the groups leading the development of the market for improved cassava products in Kinshasa. As early as 2010 this Ladzum, Idiofa based group began to process micro-cossettes. They identified wholesalers to purchase the product and found good consumer demand. In May of 2013 FPPM provided grant support to PEDM to upgrade their processing facilities. The total production due to FPPM assistance from May to December 2013 was 15.14 mT of micro-cossettes and 16.38 mT of improved quality macro-cossettes for a total of 31.52 mT of improved cassava products. Total revenue from micro-cossette sales alone was $10,834. Macro-cossette sales brought in over $8,000 in additional revenue. PEDM used the proceeds from these sales to the benefit of group members. The outlet for these sales was six wholesalers who have responded to the production by opening up new sales points in key Kinshasa locations. Finally PEDM's success recently allowed them to receive

[8] UPAK is the second largest bakery in Kinshasa

credit terms on new processing equipment from their supplier as they grow to meet demand. This serves as just one example of how FPPM support is helping to create a growing market for processed products.

Linking buyers to sellers of improved quality products

At the outset of its efforts in 2012 one of the first things FPPM did was to facilitate a series of meetings at BUCOPAC (Bureau de Coordination des Cooperative, Parking et Agences Agricoles du Congo) with representatives of the agriculture value chain. This included provincial and government representatives, producer groups, transporters and market women. The goal was to initiate a dialogue that would explore the present state of the value chain, understand linkages and allow each stakeholder to identify their perceived constraints, difficulties and challenges. As the discussions progressed commonalities of experience came to the fore and the group was able to arrive at a consensus regarding key interventions needed at strategic points in the value chain. Following this consensus building a discussion took place to identify next steps and potential actions by represented parties. They included:

- FPPM - pave the parking area in key market locations so that products do not lose their value by being unloaded under poor environmental conditions[9]
- BUCOPAC - meet quality standards for micro-cossettes, maize, and beans, and clean up existing warehousing in the market
- Public Sector - provide better entryway for trucks and re-purpose the beer garden to a receiving area for staple foods

These FPPM initiated discussions served as the genesis of relationships between value chain actors that continue today.

In addition to the effort surrounding the baking initiative with UPAK, ASCOVI proved an important partner for FPPM in other areas. With a focus on providing food related advice to consumers and lobbying on their behalf the organization is well connected to the downstream players to which FPPM hoped to create linkages for its upstream partners. Several activities were undertaken to this end. Early in the relationship members of ASCOVI were directed to the FPPM Farmer Field School to improve their capacity to undertake key initiatives. In addition, workshops were held with ASCOVI to encourage members to set up offices (in homes, schools, etc.) for the purpose of promoting FPPM partner products such as micro-cossettes, cassava flour for baking, vitamin A-fortified gari, Madia Mame, Soyapro, maize flour/grits and iron-fortified maize. This resulted in ASCOVI members establishing offices in each of the 24 communes of Kinshasa. These offices serve as a marketing and sales network for consumer products.

The new ASCOVI network also served a secondary yet no less important purpose. The offices were leveraged to identify and map micro-cossette sales points in the markets located in all 24 communes. A geo-referenced map of this inventory was created and updated over the course of the project. The map has proven a boon to value chain actors. First, it was revealed that micro-cossettes currently sell in only eight of Kinshasa's 24 communes and that these communes are the home to middle and upper class Congolese. This seems to indicate that demand for this product has not yet reached communities characterized as lower income. Second, the map permits value chain actors to gain spatial awareness of micro-cossette distribution in the Kinshasa marketplace. Wholesalers can readily identify gaps in distribution and producers can quickly locate known consumption areas that may serve as an outlet point for their product.

[9] Parking improvement efforts are discussed on the FPPM report titled Improved Market Infrastructure.

Another interesting case is that of Beni-Food. Beni-Food is a for-profit company specializing in the production and sale of value-added food products under the brand name Beni-Food. In early 2013 FPPM assisted Beni-Food to get its cassava based "gari" product on the shelves of the Kin Marché supermarket. Sales quickly took with initial sales reaching 300 500 gram sachets at a price of $1/sachet. Linking partners to successful consumer focused commercial enterprises is truly impactful and the type of activity that FPPM looks back on with pride.

The FPPM Market Information System or MIS is proving an important catalyst to creating linkages between buyers and sellers of improved quality products. In 2014 MIS program listeners in Nkara near Kikwit gained two valuable pieces of information that permitted them to commercialize their production. They learned of acceptable market prices in Kikwit and the names of potential transporters who could help them evacuate their produce from the village. They grouped together 100 sacks of agricultural produce (6.25mT of maize, 1.5 mT of cassava, and 260 kg of peanuts) for sale and contacted three transporters to let them know they had a full load. The transporters called the provincial marketing specialist to confirm the presence of these products in Nkara. Once confirmed a deal was struck with a transporter and the villages brought their product to market. The vehicles of the transporter now visit the sector at least once a week to evacuate product to Kikwit. Sustainable commercial linkages such as this are a building block of economic development.

Returning to the example of PEDM, we find an example of how FPPM has helped to strengthen its commercial relationships in the Kinshasa marketplace and the impact it has had. PEDM maintains client relationships with 27 female resellers who purchase from PEDM in bulk and resell to consumers in Kinshasa markets. 18 women sell PEDM product in Marché de la Liberté in the Masina neighborhood, six women in Marché Mangobo in the N'Djili neighborhood and three women in Marché Gambela in the Kasa-Vubu community. These 27 women work independent of one another and each of them is a faithful client of PEDM. That's 27 linkages by PEDM alone into the Kinshasa marketplace. These ladies earn on average a 40% gross margin on the sales of PEDM products with many adding value by transforming cossettes into flour. By helping to ensure a steady supply of improved quality product from PEDM, FPPM has helped strengthen its linkages into the Kinshasa market.

Finally, partners PROMAB and ASAN provide examples of groups that have developed their own linkages into the Kinshasa market. While FPPM provided grants to help them establish cassava processing facilities these groups, motivated by the assistance provided, initiated their own searches for product outlet in the Kinshasa marketplace. PROMAB, a Mutti based organization, sold 37 50 kilo sacs of micro-cossettes for $1,455. This amounts to 80 cents per kilo. ASAN has chosen to work through a distribution partner to bring their product to market. They provided partner AgroHouse with 15 80 kilo sacs of micro-cossettes that AgroHouse will resell for a commission of 5% of the revenue. Both of these examples show how FPPM support provided at the processing level is inspiring the independent creation of new linkages within the value chain.

Early in its existence FPPM recognized the importance of working across the value chain by connecting producers to buyers. It further recognized that perhaps the most challenging connections

to develop would be on the downstream side of the chain that would serve as an outlet for the increasing quantities of value added products in Kinshasa and the provinces. The examples shared above provide ample evidence of the project's efforts in this area. If there is one area in which the project could perhaps have been more impactful it is in cultivating relationships with large scale buyers that could readily accept the increasing volumes of value added products, in particular micro-cossettes, which are anticipated to arrive in the Kinshasa market in the near future.

Influencing the value chain to move from supply driven toward demand driven

The idea of moving a value chain from that of a supply driven push to a true demand driven pull can perhaps be considered the ultimate goal of any true value chain project. And while FPPM put considerable time into working across the chain during its three year lifetime it was able to achieve this goal in only a limited fashion.

To better understand this let's first define demand within the context of both an agriculture value chain and more specifically that of the DRC and FPPM. When we look at demand we find it at many points in the agriculture value chain, each one reflecting those further downstream. Working backwards we see that demand starts at the consumer level which is reflected in the products made available by local shops and outlets. In turn wholesalers and distributors reflect this local demand in the orders they place to suppliers. Suppliers, producers and processors, for their part respond by supplying the products demanded by wholesale buyers and distribution partners.

In the DRC when FPPM began the chain worked similarly at some points while dissimilarly at others. Household level demand was met by boutiques and small vendors in neighborhood markets with this demand in turn met by the wholesalers who supply them. This much is generally the same as our theoretical value chain described above. At this point however, product push enters the equation to a degree. Producers and processors generally lacked true market demand information leading them to produce product for an opaque market. At times they got it right and reaped the financial rewards while at other times they got it wrong and suffered the consequences. Supply and demand of a given product were frequently in imbalance with consumer prices reflecting this.

Further exacerbating the situation is the fact that the value chains of the various agriculture products sold in the DRC are comprised of unique and independent actors at every point. It is a highly fractured and unevolved industry with many small players and scant evidence of their horizontal consolidation at any single point in the chain. In addition, little to no vertical integration exists that could smoothly connect the dots from consumer table back to producer. And while this is not uncommon in countries where financing and big business experience are lacking it does result in market inefficiencies, delays, limited product innovation and higher consumer prices.

FPPM began within this context but unfortunately failed to recognize the critical producer level push phenomenon at the outset and lacked the necessary marketing knowledge and experience to undertake the activities that would permit it to structure its efforts around working from the consumer back to the producer. Marketing 101 tells us that sales success depends upon the right product, price, place and positioning. Put more generally, intimate knowledge of the target market is not only the first step but a prerequisite to success. Factors influencing demand such as consumer knowledge of product, value proposition, income level, switching cost, culture and social perception of association with a given product are critical pieces of information. And while FPPM could have likely had a strong impact on linking production to consumer demand with knowledge of just of few of these factors it never undertook the market segmentation that would have permitted it to do so. The result was that FPPM started from the production side with a "if you build it they will come" approach.

All that being said, FPPM did in fact have a positive influence on the move toward a more demand driven value chain in one important way. With the implementation of the MIS, market information

became more readily available reducing much of the opaqueness of the market noted earlier. This was particularly evident at the node of the value chain linking producers to local terminal markets and regional aggregation points. Recall that an important aspect of the MIS was the divulging of pricing information for products by quality and market as well as for transport costs to particular markets. Armed with this information producers and processors have responded by selling their products into the markets where prices are most attractive and they can get the best return on their investment. By responding to market pricing they are in fact responding to market demand since pricing generally serves as a proxy indicator of demand. It is hoped that this will lead producers and processors alike to begin basing their commercial decisions on estimates of market demand and eventually to the ultimate step of forward contracting based on true consumer preferences.

Improved Market Infrastructure

Infrastructure such as warehouses and transport are a critical component of any effective agriculture value chain system. Warehouses play an important role by acting as storage hubs on farm, at rural and urban aggregation and translocation points and final market destination. Their poor quality or complete absence leads to product being stored in inadequate facilities or the open air causing quality degradation, theft and the resultant loss of value. Unreliable or insufficient transport has an equally negative impact by creating inefficiencies in the collection and delivery of product resulting in added costs that are eventually passed on to the consumer.

At the end of 2012 work by a consultant revealed that in FPPM project zones, facilities such as agriculture product depots ("parking") in the regional project zones and Kinshasa market place were often of insufficient quality to support efficient and effective product translocation and final destination storage. The rural aggregation depots and way point facilities along major thoroughfares were particularly lacking with many of them open air or constructed of bamboo walls with a tarpaulin roof. On the positive side however, was the fact that there were a good number of existing storage facilities that had been constructed with the support of donor funding but required rehabilitation. At the most rural project sites that had not had the benefit of previous donor support storage facilities were generally absent, highlighting the need for more fundamental support.

Against this backdrop FPPM set out with two market infrastructure focus areas.

- Augment/improve storage capacity in both rural production zones and urban wholesale markets
- Improve aggregation center to market transport

Augment/improve storage capacity in both rural production zones and urban wholesale markets

FPPM focused its storage infrastructure efforts on the rural project zones noted for their absence of facilities. Processing center locations in particular were prioritized for two distinct reasons. First, the Component 2 focus was squarely on the establishment and development of value added agribusinesses. Infrastructure activities complemented this nicely and allowed the project to create synergies by combining the two. Second, it was clear based on lessons drawn from a survey of existing facilities that without sufficient warehouse capacity processing centers would be incapable of effectively managing production or at best would produce products of inferior quality.

As the project matured, storage and processing center field activities coalesced through the FPPM grant program. It proved an excellent vehicle for the combined activities. Storage facilities were constructed by local partners as in-kind contributions and served as cost share for FPPM processing center grants. This approach permitted FPPM to meet numerous project goals simultaneously and maximize its return on investment. Structure's included depots and hangars with their composition

varying by location. Some facilities made of brick and tin roofing while others used more local materials. With the rapid shutdown of the project and the employee strike however, a full picture of the total number and capacity of storage facilities did not emerge. Nonetheless, FPPM can confirm that a total of 27 storage facilities were constructed or improved with project support. This represents a total capacity of 2,402 M^3. With a goal of 1,250 m^3 FPPM's effort amounted to 193% of target. Other FPPM storage infrastructure efforts of note are as below.

FPPM assisted the managers of the Kwilu bridge truck stop to convert three boutiques into warehouse space. Each compartment is 36 m^3 and has the capacity to stock 80, 75 kg, sacs of product.

Following a very lengthy effort to support BUCOPAC with improvements to the truck stop and warehouse space they manage in the Liberty Market of Kinshasa, the unfortunate decision was made not to continue with the grant funding. The project was fraught with challenges including erroneous prices, insufficient in-kind contribution on the part of the partner and faulty architectural plans that called into question the integrity of the project.

A snapshot of typical regional aggregation centers – Kazamba and Pont Kwilu

FPPM undertook several in-depth analyses of regional aggregation points throughout the project zones. And although only limited time was invested in rehabilitation of these facilities the information does serve to provide insight into their capacity and general disposition.

Kazamba is located 5 km west of the Kikwit city center on the road to the airport. It receives agricultural produce from villages in several geographic sectors including Kisunzu Mudikalunga and Payskongila. Kazamba has 300m^3 of warehouse space which was constructed by the PASAR project financed by the African Development Bank. The warehouse is currently managed by the commune of Kazamba which benefits fully from the revenues being generated. The Kazamba zone is serviced by 12 vehicles with a total transport capacity of 193 mT.

Pont Kwilu is inside the city of Kikwit on the banks of the Kwilu river. It is managed by an NGO established by the Jesuit brethren and receives product from Bulungu and Idiofa Territories. Trucks bringing product in from the villages are unloaded at a cost of 200 FC/sac of which 100 FC goes to the stevedore and 100 FC to the storage facility. Before FPPM product was stored in less than ideal conditions with the primary warehouse being constructed of bamboo and covered with plastic tarps. The conversion of the three boutiques noted above has improved the situation. Product moving on from this translocation point is loaded onto large tractor trailers and commercial vehicles bound for Kinshasa. Trucks pay 5,000 FC for parking and 200 FC/sac for product loading. On any given day there are 50 stevedores available to load and unload vehicles. 16 vehicles with a total transport capacity of 400 mT service this location at any given time.

Improving market transport

As noted throughout this report, transport figures prominently in the agriculture value chain in the DRC just as it does anywhere in the world. The two primary modes of transport in FPPM project zones are boat and vehicle with vehicle transport figuring most prominently. Transport is also noted by sellers as the greatest challenge they face in commercializing their products and there are several reasons contributing to this phenomenon. Distances from farm gate to processing center can be lengthy with little in the way of mechanized transport to facilitate the movement of raw product. Roads into rural production zones are often in disrepair making travel difficult and impacting both the frequency of vehicles and the pricing paid for their commission. Further exacerbating the situation is the fact that vehicle number is considered insufficient and/or transporters are unknown to producers and processors limiting carriage options. Finally, transport costs are excessively high owing in part to the informal road taxation system in place in the DRC. As a result, transport charges from farm gate to Kinshasa can be as much as 50% of the value of the load.

After an analysis of these constraints it was determined that most fell outside the potential influence of FPPM. It was decided therefore to focus project efforts on farm to processing center transport and linking producers and processors to transporters.

Again with an eye to capturing synergies within the project, farm gate to processing center transportation was considered a practical constraint to address. A total of six three-wheel ATVs were provided to processing partners under the grants process. All six were pre-existing processing centers that had identified farm to center transport as a constraint to their business. Rehabilitation support was also provided to three of the centers.

The second transport related constraint that FPPM was able to address was that of limited carriage options for producers and processors due to their disconnect from transport services. This was accomplished in two ways. First, the FPPM Market Information System (MIS) went to great effort to gather and report out transport pricing and options during weekly emissions. This information frequently contained transport service details permitting producers and processors to connect directly to those entities. A success story comes to us from Bandundu. In 2014 MIS program listeners in Nkara near Kikwit were ready to commercialize their production but lacked transport services to get their products to market. Via MIS they learned of potential transporters who could help them evacuate their product from the village. They grouped together 100 sacks (6.25mT of maize, 1.5 mT of cassava, and 260 kg of peanuts) and contacted three transporters to let them know they had a full load. The transporters called the provincial marketing specialist to confirm the presence of these products in Nkara. Once confirmed a deal was struck with a transporter and the producers brought their products to market. The vehicles of the transporter now visit the sector at least once a week to evacuate product to Kikwit. This powerful example of the impact FPPM has had on the farm to market transport constraint is but one of many occurring on a daily basis in project zones.

A snapshot of transport in FPPM project zones – the case of Idiofa

FPPM undertook several in-depth analyses of vehicle transport throughout the project zones. And although determined to be outside the purview of the project the following information does serve to provide insight into a typical regional hub to Kinshasa transport scenario.

In Idiofa, Bandundu province nine different transporters were identified who move agricultural production regularly from Idiofa to the Ngaba and Masina Markets of Kinshasa. All are long haul providers with multiple vehicles. When a truck arrives at the Idofa “parking” the driver reviews transport requirements with product owners using the market storage facilities. Other times deals have been arranged in advance between the shipper and transporter. When a deal is struck product is loaded by stevedores as described in the Pont Kwilu aggregation snapshot above. Loads are often partial in nature requiring a transporter to combine the products of multiple shippers. Once full the transporter departs for the Kinshasa market frequently with the shippers riding along to permit them to transact their Kinshasa deals in person.

Transport costs can vary by product, sack weight, distance and whether the shipper has a full or partial load with partial loads sometimes costing more. Depending on the type of truck, road taxes can be from 15,000 FC for a 10 mT MAN commercial vehicle to 250,000 FC for a double cab pickup. Each shipper must contribute 3,000 FC to this charge. All payments, if made in cash are expected after the sales are completed in Kinshasa. Normal in kind tariffs for transport are 1 sac for each sac transported. Pricing quoted to FPPM representatives is as noted in Table 1 below. An additional fee is paid by each shipper to defray transporter parking costs at the Idiofa warehouse. These fees vary between 1,000 – 2,000 total and depend upon the product being shipped. They are not noted in the following table.

Representative Transport Costs of Agricultural Products from Idiofa to Kinshasa

Product	Weight in Kilos	Transport Cost in FC
Cassava Bukabuka	120	20,000
Cassava Kamwanga	110	22,000
Shelled Peanuts	90	20,000
Melon	90	22,000
Maize	100	22,000
Maize Mbata	75	18,000

Challenges encountered

- FPPM Component 2 staff lacked the business, project management and technical knowledge to independently implement processing centers.
- The capacity of the organizations who have solicited project assistance for processing equipment is extremely low, limiting their ability to develop concept notes or show more than nascent management capacity.
- A history of humanitarian assistance throughout the project zone has accustomed clients and partners to a hand out mentality for turn-key infrastructures often without consulting the community before the installation, nor training them more than superficially after installation. The concepts of contribution, responsibility/empowerment and appropriation are new ones for our clients. They find the process of capacity building, community mobilization, and the effort needed to qualify for financing, tedious.
- The notion of true partnership is poorly understood. Partners are not entirely open about sharing information on their finances or their material. This makes it challenging to undertake adequate due diligence.
- Partners have difficulty mastering complex concepts related to financial analyses of their rural enterprises. Many are incapable of developing a cash flow analysis, projecting profitability, putting together a profit/loss statement or annual earnings report. Many partners are lackadaisical in their financial record keeping. All of these reduce their ability to acquire loans.
- More time than anticipated was needed to establish processing centers. While the technology may be simple in terms of machinery, the implementation with partners has been slower than expected in no small part due to the vetting of sites and inability of OPs to develop the necessary support documentation.
- Monetization of MIS information will be necessary to ensure system sustainability. And while the information provided by FPPM via the MIS was universally appreciated by actors across the value chain, the value these actors place on the information and their willingness to pay for it remains unclear.
- The project incorrectly qualified IPs as direct project beneficiaries until Q1 2014 when emphasis was placed on OPs. This created frustration on the part of IPs who had spent considerable time developing dossiers to receive project funding. This in part precipitated the employment of proximity agents to directly implement project activities.
- IPs did not have the capacity to effectively implement project activities and too little support was provided to alleviate this shortcoming.
- Many community radio stations found participation in the MIS burdensome due to the need to manage enumerators, maintain market blackboards and field MIS related inquiries.
- Due to distance challenges enumerator reports often arrived late to the radio focal points resulting in programming with outdated market information.

- Low and often late payment of enumerators leaves them demotivated and can result in a sloppy work product.
- The agricultural sector suffers from a lack of available credit, a lack of suitable financial products with advantageous terms and conditions and a lack of understanding on the part of the financial services community of the sector and its potential suitability.
- There is a dearth of proximity financial service providers in the rural areas where many agribusinesses are located.
- Identifying large scale buyers in the Kinshasa market place for improved quality product has proven a greater challenge than anticipated.
- The promotion to and adoption of improved quality cassava products by populations where such products are not historically consumed requires a great amount of marketing and consumer education and hence resources.
- The slightly higher price for products such as cassava micro-cossettes can potentially keep lower income populations segments from becoming consumers.
- Private warehousing initiatives are very limited in the project's rural intervention zone. Farmers keep their stock in their own homes which makes it difficult to assess the quantity of product available and this dispersion acts as a disincentive to transporters and market wholesalers who are looking for fixed supply points with sufficient aggregated product to load their vehicles efficiently rather than driving from point to point looking for product.
- Transport is one of the single greatest challenges to the efficiency of the agriculture value chain in the DRC. Roads into rural production zones are often in disrepair making travel difficult and impacting both the frequency of vehicles and the pricing paid for their commission. Further exacerbating the situation is the fact that vehicle number is considered insufficient and/or transporters are unknown to producers and processors limiting carriage options. Finally, transport costs are excessively high owing in part to the informal road taxation system in place in the DRC. Transport charges from farm gate to Kinshasa can be as much as 50% of the value of the load.

Observations, Lessons Learned and Recommendations

- The project paid for too many aspects of project activities early on creating a sense of entitlement on the part of beneficiaries that hindered progress on processing center establishment that required beneficiary in-kind participation.
- Any commercial oriented project must start with an in-depth marketing analysis and market development strategy upon which upstream activities can be based. Future projects must ensure that they are staffed with individuals with the requisite marketing experience.
- A true market segmentation analysis of consumers in the Kinshasa marketplace would permit a more targeted and hence efficient approach to the introduction and sale of new value added products.
- An in depth census of agriculture product wholesalers in key urban locations would provide fundamental support for rural producers of value added products seeking distribution partners.
- The privately owned and operated processing centers show more organization, profitability and sustainability in their operations than those of subsidized community associations. Community based processing centers must function like a private sector enterprise rather than a social club.
- Frequent, proximity visitation is the key to assisting partners in developing the management and governance structures necessary to profitably manage income generating activities. Most POs do not possess appropriate management tools for recording their production costs, labor or sales volumes and margins. This makes it extremely difficult to project revenues, profitability and cash flow.

- Beneficiaries suffered from donor fatigue due to ever-changing project promises and delayed implementation timelines.
- Component 2 waited for project cassava to be harvested instead of establishing processing centers to use existing stocks. This caused more than a one and one half year delay in processing activity initiation. Future projects must take this into consideration.
- Monetization of MIS information will be necessary to ensure system sustainability. And while the information provided by FPPM via the MIS was universally appreciated by actors across the value chain, the value these actors place on the information and their willingness to pay for it remains unclear. However, increasingly requests are being received for "expedited" information via email or SMS. Electronic information delivery has been successful in other countries and could very well be an important component of eventual MIS sustainability in the DRC. It is recommended that this area be explored in an effort to continue the momentum already gained by the project.
- Farming communities have become empowered and reenergized as they realize not insubstantial financial gain arising from the use of the information provided by MIS programming.
- The opportunity exists to explore ways to assist community radio stations to gain greater financial independence (and hence better support activities such as MIS). Connecting them to similarly disposed radio platforms in the US or Europe could be a first step in the process and was in fact being strongly considered had the FPPM project continued.
- The information contained in the MIS database offers a wealth of important market data that should be broadly shared with governmental, donor, NGO and educational actors.
- Education of both banks and agribusinesses regarding the activities of the other, plays an important role in bridging the gap between the two.
- VSLAs serve as an important entry level vehicle for village based groups with limited to no financial sector experience that recognize the need for a savings and loan vehicle.
- A study should be funded to look at the demand for and viability of a mobile money platform in the DRC. Such a platform has proven to shorten the learning curve and "ease" into the formal sector those with limited to no knowledge of banking and the financial industry.
- Rural agribusinesses, in order to gain access to credit on the financial market, must generally be established going concerns. In order to promote the establishment of agribusinesses start-ups a financing vehicle that reduces the risk to the private sector will need to be developed. Public/Private partnerships that share the burden of risk can play a critical role. The Ecobank/SNV model, where each has contributed $100,000 to a loan fund, is of particular note.
- Micro-cossettes currently sell in only eight of Kinshasa's 24 communes and these communes are the home to middle and upper class Congolese. Demand for this product has not yet reached communities characterized as lower income. Given the limited timeframe of the project FPPM was unable to determine if there is a correlation between micro-cossette consumption patterns and income. This certainly merits exploration as these 16 untapped markets represent great potential as outlets for cassava micro-cossettes and improved food products in general.
- Many warehouse infrastructures are precarious, either in terms of their management or in terms of the quality of their infrastructure. Basic practices- palleting, cleanliness, organization, stacking/labeling like items together, proper aeration, and isolation/destruction of damaged stock are not being practices. Producers, Processors and merchants all recognize the need for secure warehouse space with proper weather protection but are not yet accustomed to the need to pay market price for quality warehouse space. The pricing structure and management of available warehousing must

improve. Receipts from warehouses should serve as investment funds to improve the space and to pay personnel. These should be revenue centers not cost centers, or at the very least be revenue neutral.

- The poor condition of farm to market roads (mostly unpaved) remains a major constraint to the positive evolution of the agriculture value chain in the DRC. Until this situation is addressed commerce will continue to be negatively impacted and consumer prices will remain high.
- Many processing center partners were initially reluctant to build storage facilities using local materials due to expectations they had of donor projects. This changed as they went through the grant process and were able to understand that storage facilities were their contribution.

Success Story -A Market for Micro-Cossettes in Kinshasa

PEDM (Project d'Encadrement des Enfants Défavorisés et Mal Nourris) can be considered among the groups leading the development of the market for improved cassava products in Kinshasa. In 2013 this Ladzum, Idiofa based group received a grant and contract negotiation assistance from FPPM to operationalize micro-cossette processing facilities.

Over a six month period they produced 15.14 mT of micro-cossettes and 16.38 mT of improved quality macro-cossettes for a total of 31.52 mT of value added products. A network of wholesalers and resellers was created and they found good consumer demand. Total revenue from micro-cossette sales alone was $10,834. Macro-cossette sales brought in over $8,000 in additional revenue for a total of $18,834. PEDM used the proceeds from these sales to enhance their business and benefit group members.

To date PEDM maintains client relationships with 27 female resellers who purchase from PEDM in bulk and resell to consumers in Kinshasa markets. 18 women sell PEDM product in Marché de la Liberté in the Masina neighborhood, six women in Marché Mangobo in the N'Djili neighborhood and three women in Marché Gambela in the Kasa-Vubu community. These 27 women work independent of one another and each of them is a faithful client of PEDM. These ladies earn on average a 40% gross margin on the sales of PEDM products with many adding value by transforming cossettes into flour. PEDM's success recently allowed them to receive credit terms on new processing equipment from their supplier as they grow to meet demand. This serves as just one example of how FPPM support has helped to enable value added production, link value chain actors and develop demand for high quality products.

Component 3- Capacity to respond to market opportunities reinforced

Introduction

FPPM is USAID's first major economic growth activity in the DRC since the end of the civil war. As such, its approach differed radically from the Humanitarian Relief programs that preceded it in the field and which continue to dominate the development landscape in the DRC today. FPPM's implementation is private sector- oriented and demand-driven, with an early emphasis on private sector engagement and participation. Instead of doing for others, FPPM was supposed to assist our partners, collaborators and beneficiaries to do for themselves. FPPM was destined to partner, to catalyze on-going initiatives and efforts. It was never intended to be a hand-out giveaway program; but one which would empower its beneficiaries, build wealth and offer choice in how and where to invest new revenue streams in rectifying their primary needs and investment aspirations while solutioning the enigma of food security in the DRC. As such there was recognition that much time and effort would need to be spent on building capacity.

This component is cross-cutting and designed to be foundational. It was originally conceived to develop the capacities of smallholders and other market actors to understand and respond to changing market conditions. The target audience was Producer Organizations, business associations, finance providers, and market information providers, and the Implementing Partners who were anticipated to provide training and extension services to POs and SMEs. By raising capacity reinforcement to a component level and placing it under the direct operational management of the COP, the project designers were sending a clear message concerning their vision of the key role this component would need to play in assuring FPPM's overall success.

Capacity reinforcement needed to begin on day one of the project; instead it only truly began at the end of project year 2. The approach finally adopted by FPPM was a modified Farmer Field School Approach. The Farmer Field School (FFS) is an experientially centered group-based learning process. Activities combine the introduction of theoretical concepts with simple experiments, regular field observations and group analysis in apprenticeship or demonstration fields over the course of a cropping cycle. The knowledge gained from these activities enables participants to make their own locally specific decisions about best crop management practices. Each training session is designed to:

a) build group dynamics,
b) impart new information of a technical nature, timed with the necessary cultural operations at different stages in the agricultural season, and accounting for the cropping cycle of the targeted agronomic speculations and
c) improve critical analytical observation through actively mentored agro-ecosystem analysis (AAES).

Setting the Stage

Regrettably, as noted earlier, this component like C-2 did not effectively start its training activities until April 2013, two full years after project inception and only 19 months before FPPM closed down. From Project inception, the Component was never staffed and the COP was unable to give the component the attention it deserved. A FFS coordinator was hired in April 2012 at the end of PY 1. Lodged inside the productivity component and fairly junior in his

tenure, the FFS coordinator was constantly pulled off task to fill resource gaps for productivity related issues. In early 2013 the FFS coordinator was elevated to C-3 lead and the FFS approach was adopted as the default for all capacity building activities to be undertaken with FPPM.

From April 2012 through the end of the calendar year the FFS coordinator primarily focused on the development of curriculum materials and the training of facilitators for FFS in Rural Enterprise in conjunction with a consultant from Making Cents International. In September and October 2012 recruitment of provincial FFS master trainers was completed. In December 2012 a FFS workshop for the development of a curriculum in best cropping practices, with an emphasis on cassava, was facilitated. From January-March 2013 much time was invested in preparing the administrative minutiae for planning and budgeting the roll out of the FFS program, including contacting IP, identifying technical facilitators, and hosting an introductory training of trainers session for facilitators designated to work on the cassava FFS.

In March/April 2013 the consultant from Making Cents returned to the DRC. He found that not only had the rural enterprise curriculum not commenced operations, but that the IP facilitators he had trained in August 2012 had conveniently forgotten both the techniques and the material they were supposed use in training others. Thus, Making Cents was forced to repeat the August training, adding in, as extra value, a student teaching segment which placed the facilitators before eager participants. In the same timeframe, one of the Provincial Master Trainers had resigned from the program in late March 2013. He was never replaced, thus leading to a continuous game of musical chairs as FPPM attempted to cover the continually shifting, but always empty province.

The Making Cents STTA returned, once again, in July/August 2013. At this time he undertook a series of focus group exercises with participants and facilitators to assess progress being made against the curriculum, to test participant comprehension and retention of information being imparted, and to assist in setting up improved monitoring and reporting protocols. Further the consultant, accompanied by the C-3 coordinator, invested time in mentoring the master trainers and the facilitators to improve their delivery skills and comprehension of the material. Facilitators were invited to visit participants outside of the classroom, at their places of business to offer one on one individualized mentoring and to handle issues specific to each business.

Cassava Farmer Field Schools

In B-2013 (April/May 2013) FPPM contracted 60 different implementing partners for 100 Cassava FFS. Fixed Price Purchase Orders (FPPO) were signed for a 12 month period. Early in 2014 with the realization that the execution of the activity was running behind schedule, the period of performance for these FPPO was extended from 31 March through 30 June 2014. Of the 60 IP with contracts, 40 IP successfully completed the curriculum with 72 FFS. Fifty-one FFS were contracted but never opened their doors while at 17 FFS facilitators only partially completed the curriculum.

	Bas Congo	Bandundu	Plateau	Total
IP	15	31	14	60
Cassava FFS	24	53	23	100

The majority of the non-performing IP and facilitators were in Bandundu Province followed by Bas Congo. Reasons for this dynamic varied, but four dominate.

First: Choice of Implementing partner and the number of FFS attributed to each. Cassava FFS were closely aligned with multiplication activities and it was in Bandundu that the greatest shortfalls in production and land area cultivated were registered. It was also in Bandundu that contract compliance was at its lowest. In Bas Congo it often appeared as though everyone qualified for a

contract with FPPM no matter how large or how small, well-structured or not and contracts and MOU were issued like door prizes at a new opening so that project cadre could garner influence and respect.

Second: Lack of proximity and distance to sites. This lack of proximity concerns both the provincial master trainer and the IP. The provincial master trainer was challenged by the large distances he was asked to cover by motorcycle and so visited the cassava FFS infrequently and usually only when he could catch a lift with a project vehicle. This was the case in both Bas Congo and Bandundu, though it was most frequently raised by the Master Trainer in Bandundu. This created challenges for mentoring, offering of technical assistance, and oversight. The IP have their offices in the territorial capitals and many of the IP chose to have their lead person (President, Executive or General Secretary, Managing Director, etc) as the cassava FFS facilitator. This meant the facilitator was not truly resident in the village where the FFS was located and they had multiple demands on their time, meaning their presence was discontinuous. A number of the facilitators either lived in Kikwit or were University Students in Kikwit and so were absent from their communities for extended periods of time. The leaders of the IP seeing there was a stipend (financial incentive) for facilitators, proceeded to adopt the philosophy that in charitable acts one should start with oneself before extending a helping hand elsewhere.

Third: Snafus in contracting and document handling continued to plague the project. On one level there was confusion between the MOU IP signed with the project signed and the Fixed Price Purchase Order (FPPO) that needed to be executed. At a second level, in order to avoid losing the "B" 2013 agricultural season, the Provincial Master Trainers at the first training of trainers, encouraged the facilitators to begin installation of the demonstration sites and the first round of training activities BEFORE signing a contractual instrument with FPPM. The period of performance in the FPPO did not align well with the agricultural calendar, nor the vegetative cycles of the cassava varieties being used. We needed to modify the period of performance for all active cassava instruments for three months, until the end of June 2014. Even then, many, cassava related, deliverables are still filtering in for payment as FY 15 opens. In addition, the terms and conditions of the FPPO for reporting and payment were misunderstood by both our project staff and the IP. This created delays in the processing of paperwork for payment as deliverables were constantly being returned for correction, completion, harmonization, etc.. The delivery/payment schedule for the FPPO was unrealistically ambitious. It accounted neither for the distances partners needed to travel to the Provincial Offices, nor the turn-around time for deliverable verification and payment. It accounted not at all for the expenses incurred neither for travel (and lodging) nor for the fact that most of the IP had no discretionary funds available to front the money for training and were ultimately reliant on the payments of their deliverables for training to progress. When payments were delayed, training stopped. Too, FPPM's administrative systems were faulty. Deliverables arrived without being registered. Deliverables were returned to partners without being receipted out and without receiving proof of reception by the partner. Inside our offices deliverables passed from hand to hand without a transmittal document. No agent (Master Trainer, M&E or Provincial Coordinator) owned the documents. No true filing system was ever developed to allow documents related to individual PO to stay together and archiving of information was unheard of and often was merely a stack of documents or a box of documents that were co-mingled.

Fourth: There were too many concurrent activities with too many partners, too widely disbursed, especially for an innovative and untested product for FPPM to manage proper oversight, mentoring and control.

Even with all that proceeds, the Cassava Farmer Field Schools were a top notch success. There are 72 facilitators qualified in cassava best farming practices (19.4% women) and a minimum of 1454 individuals who have been trained as lead farmers in their communities 856 (58.9%) of whom are women. Ten technical and three marketing/social cohesion themes were developed. Agricultural

statistics, planting density/planting on line and disease identification/integrated pest management and techniques for improving soil fertility were the most popular themes. Farmers who attended the Farmer Field days recognized that best practices coupled with improved varietals produced the best yields and that adoption of best practices improved the yields of local varieties to where they were regularly out-producing the national mean. On the Batéké Plateau where sandy soils and water deficits maintain yields at an average of 6mT/ha, local varieties under improved management were producing double this.

Technical challenges to rolling out the cassava farmer field school program the way FPPM did it, using stepwise training techniques and cascading training, first with facilitators, then with lead farmers were:

- It is resource intense and time consuming. True results only begin to appear after 12 months
- FPPM developed its curriculum in-house and relied on pulling technical expertise from our component staff to develop the materials in a timely fashion. This did not occur.
- Facilitators requested that technical materials and reference documents be produced in color, in local language and be plasticized to protect them from moisture and dirt.
- The treatments differed from site to site with a distinct lack of uniformity in plot size and dynamics being compared. There was no standard technical protocol developed and distributed to the provincial master trainers so each went about the implementation of the modules in differing ways.
- There was little attempt and, apparently, zero interest in associating FPPM's provincial agronomists in site selection for demonstration plots or in mentoring/monitoring the evolution of results obtained during the AAES
- Planning and execution of the stepwise training for facilitators was complex as it occurred across multiple sites in different provinces and during a compressed time frame. Because of the cost of each TOT session, procurement was complex, time consuming and often last minute, creating unneeded tension and conflict.

Rural Enterprise FFS

The Rural Enterprise FFS approach was developed jointly by FPPM and our sub-contractor Making Cents International. It is a curriculum that contains 16 modules focusing on basic business concepts from planning and costing, to defining the value proposition, cash flow analysis and risk management. It includes two real-life business simulations and was designed for a heterogeneous group of participants from different sectors of targeted value chains. The curriculum is hands on and highly participatory, but it is also quite theoretical and the material developed currently only exists in French and English. In the future we recommend that the curriculum and trainer support materials be translated into local language to render them more accessible. Further, while the curriculum is well adapted to our working environment it needs to be more visual and more graphical in order to permit less literate participants (mostly women) to gain maximum advantage from their participation. Further, curriculum needs to provide a space for the creation, implementation and monitoring of necessary business management tools rural entrepreneurs need to ensure their businesses are well governed and transparently managed.

Two phases of Rural Enterprise Training were offered before the project came to an end. Had the activity rolled out in September/October 2012 as originally anticipated, just after the recruitment of the FFS Coordinator, we likely would have had a third phase.

During Phase 1, training sites were closely aligned with seed multiplication activity, primarily cassava. During Phase 2 an effort was made to align the schools with the newly created agro-processing sites and to ensure that producer organization leaders and processing unit management

staff attended the FFS. FPPM anticipated rolling out a rural enterprise curriculum tailored to the needs of market women wholesalers, but Component 2 was unable to provide a list of their market wholesale collaborators and their specific business needs.

Making Cents International provided FPPM with excellent value for our sub-contract. They were responsive to feedback and very field oriented. The STTA spent a good portion of each trip, training, mentoring and providing feedback to facilitators in order to improve their skills and performance.

Phase 1

By the end of phase I, FPPM partners and facilitators had achieved the following results.

	Bas Congo	Bandundu	Plateau Batéké	Total
IP	25	44	20	89
Rural Enterprise FFS	35	56	31	122

In Total 89 IP were contracted for facilitation of 122 FFS for Rural Enterprises. Of these, 48 IP completed the entire curriculum. Only 4 IP representing 5 FFS in Bas Congo (14.3%) did not complete Phase 1 curriculum within the period of performance, while 29 IP representing 37 FFS (66%) did not complete the curriculum in Bandundu. Ten of 31 FFS on the Plateau of Batéké (32.3%) did not complete the entire curriculum. Forty –one IP (46%), responsible for facilitation of 53 FFS (43.4%) did not complete the required curriculum within the period of performance.

The lowest overall completion rate occurred in Bandundu Province with only 46% of IP completing the curriculum. There are a number of reasons for this. These include:

- In Bas Congo, agents spent time with IP explaining the terms and conditions of the contract.
- In Bas Congo partners were able to pre-finance training activities while waiting payment for deliverables.
- In Bas Congo certain facilitators and participants manifested an interest and a hunger for the knowledge being imparted and moved more quickly through the curriculum.
- In Bandundu IP are smaller and less fiscally endowed. As such, they did not have the resources available to “front” the money for activities.
- In Bandundu, distances are greater, the road network is poorer, and communication “black holes” still exist, meaning that monitoring was less frequent and when deliverables needed to be returned for correction the lag time was greater.
- In Bandundu and on the Plateau of Batéké, a number of facilitators were selected who were non-resident and thus unavailable for extended periods of time. Gaps in training required a greater investment in reviewing previously covered topics.
- Participant illiteracy, especially among women, proved challenging to facilitators and, in some cases, delayed the execution of the curriculum.

An evaluation of the Rural Enterprise Farmer Field Schools revealed that the themes most appreciated by the participants were the planning of activities, registration of expenses, time and resource management, respect of the agricultural calendar, risk management and the need for savings mobilization.

Phase 2

The second phase of Rural Enterprise Farmer Field Schools was launched during Q4 of FY14. When we launched this phase we added two eliminatory criteria to our list for partner selection. These were:

a) The IP needed to have an active bank account

b) The IP and the facilitator proposed needed to have successfully completed the 16 module curriculum in Phase 1 Rural Enterprise Training

To this we also:

a) Limited the number of Rural Enterprise FFS any structure could facilitate to a maximum of two, as we found in Phase one that IP capacity to administratively manage and mentor their facilitators decreased proportionally with the number of FFS being contracted with the IP. Given the pilot nature of the activity most IP were able to manage one or two schools, completing the curricula and providing value to participants. Surpassing this number taxed the management capacity of the IP, usually because they did not have the logistical means or requisite human resources to manage implementation in the desired time frame.
b) Restructured the budget so there were no sitting fees for participants, but added extra money to cover the administrative costs of the IP. We broke out the stipend facilitators were to receive for their facilitation because we found that the IP management often budgeted x in their proposal but paid y, with y being substantially lower than x. This widespread practice, negatively impacted facilitator motivation and the results obtained in Phase 1.
c) Increased the number of participants targeted for each FFS from 20 to 30
d) Realigned the deliverable schedule, decreasing the number of deliverables from four to three and weighting the three payments
e) Created joint Purchase Orders, where possible with FFS for Maize and Peanuts

A total of 22 contracts were signed with 22 IP throughout the project zone to run 23 FFS. For the first time rural enterprise training sites were aligned with the new agro-processing centers and space was reserved so that the management committees of the enterprises could benefit from the curriculum. In zones where a qualified facilitator was not readily available, structures adopted two primary compensating mechanisms- either they negotiated places in a school being facilitated by an IP in proximity to their location, or they negotiated the services of a trained facilitator to train at their site from an IP that was not contracted for Phase II services.

Province	IP	FFS	Men	Women	Total
Bandundu (BDD)	9	10	169	131	300
Bas Congo (BC)	7	7	110	110	220
Plateau of Bateke (PLA)	6	6	100	90	190
Total	22	23	379	331	710

Women's participation was greater than 50% at the introductory session for the Farmer Field School and during the second simulation exercise of enterprise profitability. It was lowest during the discussions on savings and credit and basic notions of cash flow analysis. Men's participation was highest at themes related to savings and credit, cash flow, the simulation on planning and costs and cost/benefit and risk analysis.

A disaggregation of participants along the value chain shows that smallholder farmers constitute the lion's share of participants (82.7%%, of whom 45% are women) followed by merchants (37.7% of whom 53.6% are women)), processors (6.3% of whom 64.4% are women) and "others". The transporter category, heavily male dominated, comes in last. The Other participant category, often voluntary observers, included school teachers, nurses, small business people (tailors, carpenters, hair dressers, etc..) as well as a few public administrators. In other words people with an entrepreneurial bent, outside of our target population, who wanted to benefit from the curriculum being offered. Women dominate the merchant and value added processing categories.

Maize/Peanut Farmer Field Schools

In order to prepare facilitators for the managing of Best Practices in the production of maize and peanuts, FPPM initiated a series of three stepwise training of trainers for facilitators of maize/peanut farmer field schools across the project zone. Two sessions were facilitated in each province and the third session brought together the active facilitators from all provinces.

In the first TOT 45 people were trained of whom 8 (17.8%) were women. Those trained included two representatives of government technical services. Principle themes included the FFS methodology, setting up the demonstration plots, the different cropping stages and best cultural practices.

THEME I :Setting up demonstration fields for best practice apprenticeship for maize and peanuts, best cropping practices for each crop						
Province	Training Site	Dates	# of people trained			
			Men	Women	Total	Gvmt Tech Svce
Bandundu	Kikwit	du 27 au 30 aout 2014	15	4	19	0
Bas-Congo	Mbanza Ngungu	du 24 au 28 aout 2014	13	2	15	1
Kinshasa	Mbakana	du 13 au 16 aout 2014	9	2	11	1
Total			**37**	**8**	**45**	**2**

The second training of trainers occurred during September. At this session only 44 participants were in attendance including 8 women (18.2%) and two representatives of government technical services. The themes at this session focused on plant diseases and pests and appropriate management strategies for each, depending on the crop.

THEME II : Principle diseases and pests for maize and peanuts and appropriate management strategies for each crop

Province	Training Site	Dates	# of people trained			
			Men	Women	Total	Gvmt Tech Svce
Bandundu	Kikwit	du 25 au 27 septembre 2014	14	4	18	0
Bas-Congo	Mbanza Ngungu	du 25 au 27 septembre 2014	13	2	15	1
Kinshasa	Mbakana	du 18 au 20 septembre 2014	9	2	11	1
Total			**36**	**8**	**44**	**2**

The third TOT was facilitated the first week of December. Present were 28 facilitators, including three women, representing 21 IP, twelve from Bas Congo, nine from Bandundu and seven from the Plateau of Bateke. Themes developed included the harvest, post-harvest conditioning and value added processing of maize and peanuts. In addition economic analyses on production costs, harvest production and yields were undertaken. Harvest for the demonstration plots is scheduled for the first two weeks of December.

FPPM signed contracts with 33 IP for the facilitation of maize/peanut FFS: 16 in Bandundu, 10 in Bas Congo and 7 on the Plateau of Batéké for a total of 44 FFS. By the end of Q4, 23 Implementing partners contracted for 30 FFS in maize and peanuts throughout the project zone had effectively started this activity and presented deliverables for payment and/or had been visited by a monitoring/mentoring team.

At 30 September a total of 839 farmers were participating regularly in sessions at these farmer field schools 52.4% of whom were women. Average participation per training day was 27.22 of a targeted 30 pp. Throughout the project zone a total of 166 discrete training sessions were held. Total participation was 4,432 of whom, 2,331 (52.6%) were women. Training was most intense in Bas Congo and least intense on the Plateau of Batéké.

Province	IP	CEP	Participants			# séances
			Men	Women	Total	
Bandundu	8	9	111	134 (54.7%)	245	47
Bas-Congo	10	14	194	211 (52.1%)	405	87
Plateau Batéké	5	7	94	95 (50.2%)	189	32
Total	23	30	399	440 (52.4%)	839	165

In total 18 different technical themes were developed. They range from site selection to protecting oneself from Ebola. Thematic diversity was greatest at FFS in Bas Congo and less evident on the Batéké Plateau. Numbers in Bandundu are somewhat anomalous given that the rainy season started earlier in this Province. Unfortunately, for all of our forward planning, the distance/logistics factors came into play, delaying the first training of trainers and thus, execution in the field.

The Maize/peanut FFS demonstration plots were established using foundation seed of the Mudishi variety (for maize) and the JL-24 variety for peanuts. Seven different treatments were established at most sites, replicated twice. These were mono-cropped Mudishi maize w/o mineral fertilization, mono-cropped Mudishi maize with chemical fertilization (NPK and urea), Local variety maize planted in the traditional manner, JL-24 peanuts monocropped, JL-24 peanuts with lime application, mono-cropped, local variety peanuts planted in the traditional fashion and an intercrop of improved variety maize and peanuts. Each test plot in the demonstration site was 50 m^2 . Two meter wide alleys were placed between the test plots within the demonstration and efforts were made to isolate traditional from improved OPV varieties to maintain varietal purity and generational vigor. At harvest the participants will divide the harvest of the improved varietals and use this seed in their own production fields next season.

Initial observations from demonstration plots at the FFS reveal that:

a) Maize suffers from bird attacks both at planting and at harvest. Bird attacks at harvest left many bare spots requiring massive (and costly) re-seeding.
b) Maize with fertilizer application produced up to 3 mT/ha, almost three times as much as improved maize seed without fertilizer
c) Peanuts under best cropping practices produced between 1.9 and 2.5 mT/ha
d) The maize/peanut intercrop produced between 1.9 and 2 mT/ha of peanuts with an additional minimum of 600 kg/ha of maize. The improved maize variety produced 1.2mT/ha when intercropped with peanuts.

Learning from the trials and tribulations of the cassava FFS, a standard technical itinerary was developed and formally documented for the maize/peanut FFS. It detailed plot size, distance between treatments, number of treatments and details of the treatments under comparison. This systematization, accompanied with the same varietals of improved varietal maize and peanuts across the FFS will permit comparison of yields, production costs and profitability inside of, and between, provinces.

Impact of FFS

Cassava FFS

- During the Cassava Farmer Field School Training in Agricultural Statistics in Mongata, on the Batéké Plateau, after finishing a field exercise in calculating land area, the facilitator accompanied a farmer to his field where a tractor whose services he had rented was plowing. Using the knowledge from the Farmer Field School and knowing the shape of the field the farmer calculated the effective land area, finding it to be 0.72 ha instead of the 1 ha the farmer had paid for Presenting the data to the tractor operator, the operator agreed to plow an additional 0.28 ha at no additional cost. This type of cost savings has been reported in numerous deliverables received from our IP as a result of the agricultural statistics module in FPPM's FFS curriculum.
- Anecdotal data suggests that participants have begun to seed on line, respect the planting density and begin to replant areas that did not germinate all in order to maximize productivity on their land. Savings in material due to respect of these cultural practices are allowing farmers more uniform production and more efficient use of their inputs.
- 60% of participants in cassava FFS have adopted the technologies-planting on line, respect of planting density and re-planting of dead pockets in their fields.
- 70% of farmer participants in cassava FFS have planted their fields using improved cassava planting material in hopes of increasing their productivity.
- GAS, the Agricultural Cooperative of Songololo has decided to produce improved cassava planting material instead of cassava tubers because sales of planting material are profitable while sales of tubers are not.
- As a result of economic analysis on production and marketing practices performed at the Farmer Field Day deld at the Tuwisana FFS with IP OSV/Ngemba participants decided it was more profitable to sell cassava cossettes by the kg @80 F/kg of fresh tuber weighed using a scale than by the traditional practice of selling by the basin (4000 F/basin of fresh roots).
- 65% of farmer participants at cassava FFS had visibly lower insect and disease infestation as a result of adopting best practice techniques learned at the FFS including pest control, weeding, use of improved planting material, proper timing of planting and harvest activities.
- Farmers are adopting new technologies promoted by FPPM. This is especially true of planting using micro-boutures, planting on line and on flat ground, respect of planting density, and making frequent phytosanitary pass-throughs looking for pests and plant diseases.
- In Bas Congo, two Farmer Field School Facilitators for cassava have been hired as community animators by TRIAS. They are to use the FFS approach in promoting best practices for horticultural production.

Maize/Peanut FFS

- Three FFS maize/peanut participants in Songololo, after participating in the establishment of demonstration fields using irrigation during the "C" agricultural season, used a motopump to irrigate 0.5 ha of peanuts for themselves.

Rural Enterprise FFS

- At least 70% of regular participants at the Rural Enterprise FFS have transitioned from oral planning to a written plan.
- Kodia Tanzimbu a facilitator for the Rural Enterprise FFS for ADPNK/NKIEME has saved enough money from his business enterprises to purchase a cassava mill and a solar panel. He plans on using the solar panel to recharge the cellphones of his neighbors for 200 FC/charge.

- Twelve members of OTRAPAID of whom 5 were participants in FFS for Rural Enterprise saved up enough money to purchase a television, satellite antenna, decoder generator and 45 plastic chairs in order to open a community cinema center in Mongata, Plateau of Batéké.
- 20 participants of whom 15 are women, participants in the FFS for Rural Enterprise associated with the COOPEC CEAC in Lukula each received individual credits in amounts varying from $150-$500 for marketing of diverse agricultural products. The group of CEP participants organized in solidarity groups of 5 each served as the guarantee for each member's loan. Loan terms vary from 6 to 12 months at an interest rate of 5%.
- Eight members, all from different households, of the Producer Organization Isadore who had participated in Rural Enterprise FFS facilitated by IP UPDMA in Muluma, bulked together their cassava cossettes for sale. The receipts (270.000FC) were deposited in a savings account at BIAC in Kinshasa.
- Two facilitators in Mbankana (KIN) are using their kits and training to teach the curriculum of the Rural Enterprise FFS to students of the 5e class of agricultural humanities curriculum at the Technical School of Mbankana.
- Four rural enterprise facilitators from Bas Congo each purchased a motorcycle for themselves after applying the principles learned in the module on savings and credit.

Savings and Loans

- At FFS SoyaPro, 11 participants at the FFS who are all employees of SOYAPRO are saving 50.000 FC each month as a buffer against unexpected consequences. To date they have already saved 275.000 FC. In addition SOYAPRO has established its own savings plan for 2014, setting aside for savings 25.000 FC from each day's receipts.
- At least 50 beneficiaries from 2 FFS (Lukula and Nsioni 2) have opened savings accounts at their local COOPEK.
- 5 members of the FFS in Masimanimba (Bandundu) have saved 520.000 FC. They have issued credit to two members a man and a woman. Each credit was for 250.000 FC at an interest rate of 10% per month. The woman used her loan to pay her children's school fees, while the man used his to invest in construction of a house.
- Two women firewood sellers who are members of the GAD of Bibwa FFS with IP BUCOPAC have each obtained credits from FINCA, one for $400 and the other for $1000 at 10% interest per month for a period of 4 months to assist them in increasing the volume of their business.
- Members of FFS Kiwawa Kipadi with 16 members have saved 125.000 FC and $85. This has been deposited to an account at the MICREFEKI of Masimanimba. In addition, the VSLA issued four loans to members, all men. The loans varied from 10.000 to 45.000 FC. Credits destined for agricultural activities were issued for 6 months at a 20% interest rate with reimbursement expected in two payments. Credits extended for commercial activities are for 60 day terms at an interest rate of 10%. A total of 100.000 FC was lent. This FFS was facilitated by FPPM IP CEPAL.
- Using a solidarity group lending approach the VSLA created by the NSIONI 1 FFS is on its 5th cycle of credit. This cycle credit was received by seven members (3 men and 4 women) Each received $450 for 6months at an interest rate of 5%/month. Credits have been used for processing of cassava and the creation of small enterprises for the sale of palm oil, Kipuka and Chikwangue.
- Madame Judith Mawasa participant in the Kisalu FFS facilitated by IP CDRM of Mwila Mbongo saved enough money to purchase a cow for 600.000 FC. Further, has lent 144.000 FC from her savings as agricultural credit to 9 people 3 men and 6 women at a flat interest rate of 20%.

- In kind credit was extended to two producers, one member of the FFS Kiwawa Kapadi of Masimanimba. Each received a sack of peanuts for seed. Reimbursement is expected at the end of C-2014. Each must return a sac plus 1 bucket of peanuts to the VSLA.
- 20 participants of whom 15 are women, participants in the FFS for Rural Enterprise associated with the COOPEC CEAC in Lukula each received individual credits in amounts varying from $150-$500 for marketing of diverse agricultural products. The group of CEP participants organized in solidarity groups of 5 each served as the guarantee for each member's loan. Loan terms vary from 6 to 12 months at an interest rate of 5%.
- Three new VSLA have been started by participants of the Rural Enterprise Farmer Field Schools. All of these are in Bandundu Province:

FFS	IP	Type	Amount @ 30/3/2014
New Life	ADPNK	Credit Union	150.000 FC
GAD de Bibwa	BUCOPAC	Credit Union	
Mushinga	GAPAK	Community Emergency Fund	350.000 FC

Constraints

- Many IPs do not have the necessary fiscal reserves to pre-finance activities while waiting for their deliverables to be approved and their next round of financing to be deposited. Because of this they suspend operations until the "money" hits their bank accounts, slowing implementation.
- FPPM needed to extend the period of performance for both the cassava and the Rural Enterprise Phase 1 FFS. The Cassava FFS was extended 3 months past the original 12 month period to capture harvest of differing maturity varietals and host the Farmer Field Day activity. Phase 1 Rural Enterprise instruments were extended between 9 and 10 months beyond their original 3 month time frame. Three months proved to be too short to take into account participant availability, facilitator availability, the learning curve for the curriculum (more time was spent reviewing notions previously covered for participants who had been absent or did not understand the material the first time around), and the new administrative burden of preparing and presenting substantive deliverables and bills meeting minimally accepted standards.

Cassava FFS

- Many of the cassava demonstration plots have been victims of theft- either of leaves or of tubers. Further free ranging domestic small ruminants have used the demonstrations as pasture and caused quite a bit of damage.

Maize/Peanut FFS

- Irrigation by hand using a watering can to get a jump on the A agricultural season, prior to the first consistent rains was found to be tiring and time-consuming by FFS participants.

Lessons Learned

- In selecting implementing partners for Farmer Field School Programs preference should be given to those partners with staff possessing rural animation skills and who have financial reserves enabling them to pre-finance the participant training sessions.
- As the value of the rural enterprise curriculum is being exhibited by certain participants there is growing demand for more sessions, a demand for the creation of more farmer field schools, and potential participants are willing to register for courses voluntarily without benefit of either sitting fees or the payment of transportation expenses.

- Regular monitoring visits with field school participants by FFS facilitators has assisted participants in the application of the knowledge they've learned and has resulted in collaborative development of management tools for their economic activities.
- IPs need to be trained, coached, mentored and monitored on the elements they need to include in and pay attention to when submitting deliverables. They need to be informed of the timing for payment of their invoices and the reasons behind any potential delays in payment.
- IP should distribute the Terms of Reference for FFS to the facilitators and spend time explaining to them their roles and responsibilities in executing the contracts that have been signed.

FPPM- the end game

FPPM received word of its anticipated closure during the first week of March 2014. It was a major shock to all FPPM staff. DAI informed local staff of events immediately. Project Management, working with legal counsel, began mapping out the end of project strategy and necessary administrative steps in order to avoid falling awry of the Congolese labor code. The COP and Director of Administration and Finance collaborated with DAI HR to develop a severance policy, given that one is not contained in the Congolese labor legislation.

Our proposed severance indemnity was discussed with the COR and A/COR who indicated their verbal non-objection as it was aligned well with USAID/Congo Mission HR practices.

In May DAI, through our local lawyer, submitted a request to proceed with closeout to the Labor Ministry. In July, after waiting the requisite 45 days we received de-facto non-objection from the Labor Minister for progressive project downsizing leading to closure on 31 December 2014 and we began issuing notice to staff.

In parallel with this, the COP held multiple meetings with the COR and A/COR to work through the guidance contained within the de-scoping letter in order to make the necessary administrative moves in an appropriate time frame while preparing a revised workplan concept paper and financial projection package. These were submitted in late May and underwent multiple revisions between June and the end of August. The de-scoping contract modification, however, was only issued on 10 October 2014.

In August and September employees on Indeterminate Length Agreements began talks with Project Management designed to enrichen, to the maximum extent possible, their payout packages. Early on the employees and their lawyers gave lip service to reaching a mutually agreeable settlement in order to permit the project to finish “strong”. In hindsight this was never their intention. Angry at the accelerated shutdown, frustrated that DAI’s lawyer would take leave in the middle of settlement negotiations, faced with looming closure of provincial offices and upset that management changes had introduced increased oversight on activities, travel, and procurement, while tightening financial controls and cash management practices, the staff were committed to taking DAI/FPPM down with as much prejudice as possible.

Three days following the approval of the de-scoping modification, a majority of DAI/FPPM staff on indeterminate length contracts began an illegal strike and refused to submit their Q4 reports. The strike was part of an overall strategy developed conjointly with their legal counsel to increase pressure on DAI to quickly negotiate a highly remunerative settlement. When the first week passed without reaching closure, they reached out to the world with fallacious allegations and inflammatory language and followed this up with a planned media scandal. Certain staff maliciously wiped their hard drives of data while others retained their computers and data through the end of November. Employees of bad faith, continued to circle back around on negotiation points which had either already been settled or which had been tabled. Even though a settlement was reached, the strike continued and staff with time remaining on their notice periods resigned rather than re-joining the workforce..

This is Congo, jobs are difficult to obtain. Staff have families and financial obligations. Pre-mature closure of the project is highly disruptive, even though USAID gracefully gave DAI lead time and resources to effect a “proper” closeout. The project’s less than stellar reputation among the INGO community and the limited number of productive years certain staff have available to recoup their anticipated earnings acted as accelerants to the movement. Other staff have been burned during closedowns in the past, walking away with no severance and decided now was the time to recoup

their previous losses. Still others have made a career of gaming the uncertain nature of development work by threatening legal action at project closedown to a series of previous employers and always ending up with a favorable negotiated settlement.

Would we have been better off withholding the information until the last minute to avoid giving staff time to organize? Should we have paid out their notice period rather than having them work through it? Would better communication earlier on and more frequently through the process have avoided the witnessed meltdown?

It is doubtful any of these measures would have positively influenced events. Staff on CDI were determined to seek the maximum financial gain possible and wring as much as possible from the project, DAI, and USAID. They were committed to seeking short-term damages and interest and did not look at the longer time horizon and the consequences their actions might have on future career opportunities.

It should be noted that under the original management team there was a *Laissez-faire* attitude. All was permitted, nobody truly worked very hard or invested of themselves. There was lots of money, lots of toys, and impressive titles to impress their friends and neighbors. When management changed, accountability was introduced, metrics and oversight were instituted and field visits occurred on a regular basis with written reports documenting findings and recommendations. For a few this was a breath of fresh air, for others work began to impede upon their personal projects and they found that they actually had to invest of themselves and do real work.

It is interesting to note that we have had zero problems with termination among our employees on fixed length contracts, because the terms and conditions of their engagement are clear, when the contract's period of performance is finished, the employer –employee relationship is concluded, and both are free to go their separate ways.

Conclusion

On the surface it would appear that FPPM ended, much as it began, under a dark cloud. However, impressions can be deceiving. Yes, we had a difficult and problematic start-up, principally due to a dearth of leadership and vision combined with some mis-steps and mis-cues. It is also true that the last few months of the project were not as productive as we would have liked. But if we explore the results obtained in the 18 months, post management change, with a new strategy, new systems, better proximity and support of the USAID Mission and our Home Office backstop team, it is evident that the development model is valid, will produce tangible impact, can increase revenues, improve food security and reduce rural poverty.

There are a multitude of lessons that were learned; more than can be set forth in the pages of this report. We have tried to capture the highlights. It is evident that much capacity needs to be built. Capacity reinforcement, begun early in a project cycle can result in progressive, sustained improvements in people's lives. There is a latent hunger for learning. The fact that, despite its structural problems, we registered great success with the market information system bears witness to the need actors throughout the value chain have for consistent, timely information. The application of farming best practices, taken holistically, more than any one technology taken in isolation improves productivity. The technologies are cost effective, efficient and adaptable to the Congolese environment.

FPPM demonstrated that producer organizations can establish and manage value added processing for profit. We have shown that the greater the diversity of revenue streams in a farming household the more economically robust the farming enterprise. People in rural communities will group together when there is a mutual benefit and the value proposition for doing so is clearly defined.

It is said that science learns as much from its failures as from its successes. FPPM did not go to term and did not achieve the level of return on investment that was anticipated, but we have set forth in this document our lessons learned and recommendations for future implementers in the hopes they may avoid the pitfalls we encountered.

In closing we would like to thank USAID for its continued and unwavering support. We would like to thank our partners and collaborators, but most of all we would like to thank our beneficiaries for the confidence they exhibited in our project and for their resilience and entrepreneurial spirit.