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# YEAR 2 WORKPLAN SEPTEMBER 2008 - AUGUST 2009

**INTEGRATED INITIATIVES FOR ECONOMIC GROWTH IN MALI  
(IICEM)**

**Contract: EDH-I-00-05-00005-00, Order No. 05**

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# ACRONYMS

AOM	Citrus Fruits and Edible Oils of Mali
ATP	Agribusiness and Trade Promotion Project
AVRCD	Asian Vegetable Research Development Center
BI	Boutiques d'intrants (Input Stores)
BICIM	Banque Internationale pour le Commerce et l'Industrie au Mali
BIM	Banque Internationale du Mali
BNDA	Banque Nationale de Développement Agricole
BOA	Bank of Africa Mali
CAPAM	Mandela Agro-Pastoral Cooperative
CRRA	Regional Center for Agronomical Research
DCA	Development Credit Authority
DNA	Direction Nationale de l'Agriculture
DNCN	Direction Nationale de la Conservation de la Nature
DRCN	Direction Régionale de la Conservation de la Nature
DRA	Direction Régionale de l'Agriculture
FIAS	Foreign Investor Advisory Service
FO	Farmer Organizations
GFSR	Global Food Security Response
IER	Institut d'Economie Rurale
IFDC	International Center for Soil Fertility and Agricultural Development
LOA	Loi d'Orientation Agricole
MEIC	Ministry of the Economy, Industry and Commerce
NGO	Nongovernmental Organization
NRM	Natural Resource Management
ODRS	Office for the Rural Development of Sélingué
PACCEM	Projet d'Appui à la Commercialisation des Céréales au Mali
PAFA	Programme d'Appui aux Filières Agricoles
PCDA	Project de Competitivité et de Diversification Agricole au Mali
PIV	Irrigated Village Perimeter (Perimetre Irrigué Villageois)
PRODEPAM	Programme de Développement de la Production Agricole au Mali
SICA	Company for Collective Agricultural Interest ( <i>Société d'Intérêt Collectif Agricole</i> )
SCOFLES	Cooperative Society for the Commercialization of Fruits and Vegetables of Sikasso
UCPMY	Cooperative Union of Yanfolila Mango Planters
URCEP	Union Régionale des Commerçants Exportateurs de Pomme de Terre (Potato Traders and Exporters Union of Sikasso)
USAID	United States Agency for International Development
WARDA	Africa Rice Center
WATH	West Africa Trade Competitiveness Hub

# INTRODUCTION

The Integrated Initiatives for Economic Growth in Mali project (known by its French acronym IICEM) is funded by USAID and being implemented by Abt Associates in partnership with ACDI/VOCA, Sheladia Associates, and IBEX. IICEM seeks to achieve economic growth and in turn reduce poverty by improving the efficiency of the following five value chains: rice, potato, mango, shallot, and tomato.

This workplan describes the activities scheduled during IICEM Year 2 from September 2008 to August 2009. It focuses on two major categories of activities: (1) The consolidation of the Year 1 results for the five core value chains, with emphasis on site expansion, primarily for growing rice; and (2) New initiatives brought on by an expansion in the project made possible through additional funding as part of the U.S. government's *Global Food Security Response*. Emphasis will be on increasing areas for growing rice and trade within the sub-region. The other programs will focus on *catalytic* activities to increase linkages to promising markets whether they are domestic, sub-regional or international with a particular emphasis on trade in the sub-region. To achieve this, the project will also continue its focus on crosscutting issues affecting all these value chains such as development of financial services, improvements in the agricultural environment, trade and investment issues, natural resources management, and biodiversity.

## PROJECT OBJECTIVES

IICEM's strategic objectives are as follows: 1) Expansion/Rehabilitation of irrigation systems and intensification of agricultural production in target areas 2) Enhance access to finance 3) Improve market access 4) Introduce, transfer, and facilitate the adoption of improved technologies in all agricultural sectors 5) Increase control of village associations over natural resources and biodiversity and 6) Enhance the agriculture, trade and investment environments.

Across these strategic objectives there is a strong emphasis on promoting equality between men and women and on building organizational capacity.

## ORGANIZATION OF THE YEAR 2 WORKPLAN

This report consists of the following four sections:

- Introduction
- Presentation of planned activities by value chain
- Presentation of the crosscutting activities, natural resources management, and biodiversity
- Annexes

# EXPANDING IICEM AS PART OF THE GLOBAL FOOD SECURITY RESPONSE

In January 2009, IICEM was awarded an additional \$8 million when it was modified to be a part of the US government's Global Food Security Response (GFSR). The GFSR seeks to promote increased agricultural growth, stability and food security through immediate humanitarian response, urgent agricultural measures to address high food prices and a favorable international policy agenda. As part of the urgent measures to address high food prices, the GFSR supports increased agricultural productivity; reduced trade and transport barriers, including improved efficiency through value chain development; and sound, market-based principles. Mali is one of five countries in West Africa to receive this funding along with Ghana, Nigeria, Senegal and Liberia along with West Africa regional programs.

IICEM already addresses food insecurity through the majority of its work. In the northern part of Mali, IICEM focuses on rice production, which is largely for food security. The project works with highly vulnerable shallot farmers in the *Pays Dogon* who must earn income to buy food. IICEM is also building the capacity of women's groups to ensure income for food through rice and potato cultivation. And the project focuses on increasing incomes of smallholders who spend most of their income on food. For many of these producers, increased income is equivalent to food security. From increasing productivity through marketing and supply chain issues to addressing market access and the enabling environment for agriculture and trade, IICEM also already focuses on many of the key GFSR issues through its value chain approach.

This modification will allow IICEM to significantly increase the pace and scale of its activities, focusing on staple crops and populations vulnerable to food shocks in line with the GFSR. This section focuses on these specific activities IICEM is adding or expanding to address elements of the GFSR. Some of the activities include increasing productivity through dissemination of new technologies and enhanced irrigation and water management; reducing trade barriers by developing agricultural value chains; and increasing access to capital. The following list summarizes key initiatives under this expansion. References site the detailed activity descriptions within the workplan.

- Dramatically increased work on irrigation infrastructure for rice production in the north of Mali and for women's groups in the *bas fonds* area of Sikasso and strengthening users capacity to manage water resources (IR 1.2 and 1.3 under Rice);
- Wide dissemination of the System of Rice Intensification (SRI) technique for improving yields; reducing use of water, fertilizer and seed; increasing incomes (IR 1.7 under Rice);

- Improving supply chain for rice through rehabilitation and construction of warehouses to reduce post-harvest losses; promoting grouped sales and developing markets for parboiled rice (IR 2 under Rice);
- Improving shallot marketing for food insecure *Dogon* producers through substantial restructuring of the institutional environment, promoting group sales to achieve economies of scale and building warehouses to reduce substantial post-harvest losses and allow producers to sell before and after peak times in fresh markets, thus increasing prices. Shallots are a cash crop critical to food security in the *Pays Dogon* where soils are not suitable for food production. (IR 2.1, 2.3 and 4.2 under Shallots);
- Expanded efforts in potato productivity and marketing, including building of warehouses to reduce post harvest losses and promote aggregation for group sales; testing of seed potato development; and continued work in building the institutional environment necessary to make these efforts successful. Potato is an alternative source of protein and an excellent source of income, and therefore has important links to food security for the focus populations in the Sikasso region and in the North and is traded intra-regionally. (IR 1.4 and IR 1.5, and IR 2.4 and 2.5 under the Potato value chain);
- Development of a guarantee fund for working capital for input dealers in the North to address chronic lack of inputs choking productivity as well as a medium-term guarantee fund to provide credit for critical investments necessary to make long-term increases in productivity. Both of these are important to sustainable increases in production, especially in the North where populations are particularly vulnerable to food shocks. (Crosscutting activities);
- Implementation of a Strategic Activities Fund to catalyze potentially transformative investments in processing and other value added across the IICEM value chains. The Fund helps investors to structure transactions and provides grants, technical assistance and market linkages. (Crosscutting activities);
- Addition of technical assistance in the millet and sorghum value chain. IICEM will complement and ramp up the successful work of the INTSORMIL project building producer organization capacity and linking producers with financial institutions to ensure input credit. IICEM will significantly expand seed production and dramatically increase access to these seeds (“Activities under the GFSR in millet/sorghum and Kayes cereals marketing).

USAID / Mali and IICEM staff received the GFSR indicators at the time of final submission of this workplan. IICEM will work collaboratively to provide detailed targets against those indicators to complement reporting already in place that responds both to custom and IEHA reporting needs.

# THE RICE VALUE CHAIN

The IICEM project targets its assistance on the rice value chain in two main areas: Sikasso and three regions of Northern Mali. In Sikasso the project promotes development of the value chain for rice grown in the *bas fonds* or lowlands. In the North, in the regions of Mopti, Timbuktu and Gao, IICEM promotes the value chain for rice grown in irrigated village perimeters.

## CONSTRAINTS FACING THE RICE VALUE CHAIN

Increasing production and productivity of rice in IICEM's focus regions faces a variety of constraints. In the Northern irrigated village perimeters, irrigation canals often have defects causing loss of water, increasing cost in diesel fuel due to the need to continue pumping beyond what would otherwise be required. In addition, few farmers use certified seeds or produce based on best available technologies, and many apply the wrong amounts of fertilizer. In the *bas fonds* or lowlands of Sikasso, there are additional issues including very low yields and poor control of irrigation water. For these *bas fonds* farmed by women, there is also significant untapped potential for bringing new land under production.

Commercialization presents its own challenges. In the North, producers sell their rice at weekly village markets in small quantities. They have no major problems selling their entire rice inventories during the season. The villages that grow rice out of season, however, occasionally experience difficulties selling quickly the large quantities they produce. Here, IICEM can make a difference by building business linkages between farmers and traders in local markets. For rice grown in the *bas fonds* in Sikasso, women sell small quantities and generate very small revenues. To help them improve their income, the project will continue to support storage activities to allow them to time the market, increasing the selling price and income. The project also will initiate a program to generate a sub-regional market for rice.

## IMPLEMENTATION STRATEGY

IICEM uses a value chain approach to increase communication and meet market demand by promoting more efficient interaction of stakeholders along the value chain. The project will focus on increasing production and productivity to meet that demand; improving post harvest handling and packaging in line with market requirements; facilitating access to financing and other services; and creating added value across the chain and for small producers, in particular. To implement this strategy, the IICEM project will:

- Expand arable areas by developing and rehabilitating the sites to improve water control;
- Improve rice productivity through distribution of improved varieties and other technologies;
- Strengthen skills in basic agricultural practices, management, and the governance of partner farmer organizations;

- Strengthen the links of cooperation among the players in the value chain; and
- Conduct a marketing test for par-boiled rice (*riz étuvé*) for the women farmers of Sikasso.

## ACTIVITIES AND EXPECTED RESULTS

The following section describes the IICEM's strategy to address the constraints described above. This strategy is divided into activities and expected results according to the project indicators.

### IRI: IMPROVED AGRICULTURAL PRODUCTIVITY

IICEM will assist partner producer organizations with a target of producing 7,000 tons of paddy rice in 2009 including substantial assistance to women's groups. The list of sites supervised in Year 2 is in Annex A. IICEM will support reaching these production targets by carrying out the following specific activities:

**IRI.1 Rehabilitation of irrigation perimeters** through finalizing Year 1 work on surfacing the irrigation canals of the irrigated village perimeters (known by their French acronym *PIV*) in the North, and deepening drainage canals in the Nièna plain in the South. Annex C provides the details of the work to be completed. In Year 2, the project will begin new *PIV* rehabilitation work in the following 10 sites:

- Timbuktu region: *Kano, Beregoungou, Siboney and M'béto*;
- Mopti region: *Sah* (Association Benkadi), *Diogui* (*Wafa Koye and Gomni Kondé and Korientzé* (Association Dowmbia Jigi sèmè2); and
- Gao region: *Djefilani, Adourou*

The team expects this work in rehabilitating 10km of canals to significantly decrease the volume of water consumed for these irrigated perimeters. As a result, operating expenses, including the cost of diesel fuel, maintenance and operation of the motorized water pumps, will be reduced.

**IRI.2 Development of new areas suitable for rice cultivation through expansion of and construction of irrigation works.** Such development will increase rice production and hence decrease the need for imported rice, making Mali more resilient in the face of future food shocks. In general, the project will build main canals using cement, with encased metal reinforcements as warranted, and secondary canals using rolled clay fill. This will involve the following activities. This will involve the following activities:

- Identify potential perimeters and plan the studies necessary to develop them;
- Retain irrigation design consultants to identify the perimeters to be built and expanded. The consultants will study 2,125 ha -- 583 ha for expansion and 1,542 ha for new construction -- to increase arable lands in the regions of Sikasso, Mopti, Timbuktu, and Gao. Based on the studies, IICEM will select final sites using financial and technical criteria included in Annex B;
- Retain one consulting firm per region to oversee construction work, provide technical studies for the preliminary design, develop requests for proposals to select the construction contractors, and oversee construction.

- Based on the studies, select final sites based on available budget and potential for impact and validate the work with the communities, the authorities, and the DRGR;
- Hire construction contractors based on a competitive process;
- Implement construction in two main ways:
  1. Construction of primary and secondary canals by construction contractors, as well as the provision of the structures to divert water to the perimeters;
  2. Final work carried out by producers and overseen by consultants including tertiary canals, parcel smoothing, and installing the structures for water intake.
- Purchase the motorized pumps and other equipment necessary to feed the expanded or newly built perimeters;
- Build one warehouse for each improved perimeter;
- Officially deliver the perimeters to the Malian authorities (IICEM, FO, NGO, and government).

IICEM staff members expect these activities to make between 450 and 750 new hectares suitable for cultivation in Sikasso and in Northern Mali.

**IRI.3 Strengthen water management capacity for the partner sites.** IICEM will implement a comprehensive approach to improving water management including putting in place water management committees, preparing forms for recording flows and volumes, and preparing the committees to adequately repair and maintain canals. Because water volumes depend on several factors it is necessary to train the farmer organizations adequately in these basic concepts.

- Create a water management manual adapted for the sites in the North
- Calculate the requirement for irrigation water
- Define relationship between agronomy and hydraulics
- Define the schedule for the growing season to allow more efficient planning and cultivation
- How to use climate data
- Calculate irrigation water consumption for both the winter season and counter-season
- Irrigation management
- Provide practical guide to parcel irrigation
- How to record water flows and volumes
- Types of instruments to be used for measuring the flow to the parcel
- Train the NGO field agents in basic water management concepts
- Put NGO field agents in place to train the producer organizations in water management

Staff expects this activity to increase the capacity of producer organizations to manage water resources more professionally according to best practices; reduce water usage; and achieve higher returns.

**IRI.4 Strengthen capacity in managing motorized water pumps for the supervised sites and facilitate the acquisition of motorized pumps.** This requires the following activities:

- Train 20 motorized pump operators in best practices in the areas of motorized pump maintenance and management;

- Deliver the five motorized pumps the groups purchased in year 1;
- Train the groups interested in purchasing a motorized pump on how to complete financial applications, including such areas as providing the necessary funds, ensuring annual repayment, the impact the counter-season has on repayment and other areas.
- Help defray the purchase costs and support the farming cooperatives to prepare applications to finance the motorized pumps.

The expected result is better motorized pump management to decrease the costs of diesel fuel and increase the service life of motorized pumps.

### **IR 1.5 Support production of basic seeds and community-based seed multiplication**

placing special emphasis on production of certified seeds, which is fundamental for increasing agricultural productivity. In supporting seed production through Malian government entities, IICEM will contribute to facilitating sustainable access to improved seeds, a key success factor for the Malian government's *Initiative Riz* designed to promote increased production. In this respect, the project will:

- Continue to produce "G4" basic seeds in the research facilities in partnership with the *Centres de Recherche Agronomique du Mali (CCRA)* by funding the production of basic seeds for the Nionoka, Wat 310, Wassa, BG 90-2 and ADNI 11 varieties over about 6 ha in the regions of Timbuktu and Gao, and by financing the production of basic seeds of the Nerica4 variety over about 15 ha in the Sikasso region.

The expected result is that the government of Mali will move toward self-sufficiency in basic seed production through its network of research centers.

### **IR 1.6 Support development of seed-producing farmers to sustainably improve access to seeds in the regions of Timbuktu, Gao, Mopti and Sikasso.**

IICEM will encourage farmers who have already invested in seed production, and facilitate investment by others who are interested, in order to ensure reliable access to seed through seed-producing farmers in each region. To do so, the project will carry out the following activities:

- Identify a core group of farmers who would like to become seed-producers through awareness building workshops;
- Support these farmers by multiplying seeds with technical assistance from the DRAs and CCRA in the target regions;
- Help defray the cost of seed purchases for selected producers in the North including Nerica 1 and 2, Nionoka, Wat 310, Wassa, BG 90-2 and ADNI 11 varieties.
- Continue seed multiplication activities for the Nerica 4 variety on 30 ha in the Sikasso region with seed cooperatives and other interested producers;
- Select a larger cooperative for conversion into a seed cooperative with the goal of producing Nerica 1 and 2 on 25 hectares yielding seeds for 2,000 hectares in Year 3.

The expected result is that improved seeds will be available for use by the seed-producing farmers of the four regions, with high yields and the taste and other characteristics the market demands.

**IR 1.7 Disseminate good rice production practices including SRI.** IICEM field agents will counsel producers in choosing appropriate fertilizer and complying with dosing recommendations and the use of organic manure for rice production through dissemination of the Integrated Soil Fertility Management (ISFM) technology. In addition, the project will disseminate to targeted producers in the North a rice production technology called the System of Rice Intensification (SRI) already tested by AFRICARE. Specific activities will be as follows:

- Identify sites based on area under cultivation, soil quality and benefits to women and other disadvantaged social groups. Train those selected producers in a new production technology called SRI which has a number of benefits including reduced water and fertilizer use and increased yields (March and April);
- Train the selected producers (May and June)
- Purchase small equipment to weed the parcels (June and July);
- Further disseminate SRI techniques to target producers in the North. *Africare* has tested this rice production technique in some PIVs in the North and has shown significant potential. To accomplish this, IICEM will install learning parcels at several sites including some counter-season sites which are already project partners (June and July);
- Train producers in rapid composting techniques;
- Train the management committees for rice producer organizations in preparing growing season plans and observing the agricultural calendar;
- Organize visits among farmers to share the results of the technologies that are disseminated.

These activities will result in dissemination of new technologies, including SRI, in the regions of the North. For SRI specifically, IICEM will target at least five sites in the Mopti region (2 ha) and five others in the Timbuktu region (2 ha), for an average of 0.2 hectares per producer.

## **IR2: IMPROVED MARKETING OF AGRICULTURAL PRODUCTS**

The project will work with partners to facilitate marketing an estimated 2,000 tons of paddy and hulled rice versus 1,340 tons in 2007-08, an increase of nearly 50 percent. To achieve this objective, the project will carry out the following activities:

**IR 2.1 Promote grouped sales by the target organizations** to even out the distribution of rice to the North and to the South, thereby increasing sales and earning higher prices. To this end, the IICEM project will:

- Make the members of the organizations and PIV committee members aware of the benefits of networking with other rice producers and creating cooperatives or unions of cooperatives so that they are able to offer large inventories that can be sold to potential buyers. The members of the PIV organizations will be trained in: (1) Grouped marketing strategies and systems for agricultural products; (2) Preparation and maintenance of inventory lists; and (3) Preparation and presentation of activity reports and balance sheets;
- Rehabilitate four rice storage warehouses in Sikasso;

- Canvas the traders or wholesalers and introduce them to the large cooperatives and unions of cooperatives. If necessary, create a small simplified list for dissemination.

This activity is expected to result in grouped sales in the regions of Timbuktu, Mopti, and the Sikasso to traders or wholesalers.

**IR 2.2 Pilot test to produce and sell 20 tons of parboiled rice under the Riz Étuvé Nerica4 Mali label to increase exports in the sub-region.** To enable the women producers in the *bas fonds* to sell their crops at more lucrative prices, the project will test the processing and marketing of Riz Étuvé Nerica4 Mali with women rice farmers in the Sikasso region. Through this project, the women will create added value and sell their crops at more lucrative prices. The activity will allow them to position themselves as the leaders in the processing and marketing of *Nericascal riz étuvé*, known as converted or parboiled rice in English. To achieve this, the project will:

- Take a study trip to learn about the techniques for preparing converted rice from the women of Bobodialaso to adapt the product to this buoyant market;
- Train the women of Sikasso in marketing techniques to develop the label;
- Help defray the cost of purchasing a huller and a scale for the partner women's groups;
- Prepare and provide labeled sample bags of Étuvé Nerica4 to the women;
- Produce informational radio messages and advertising spots about this new product to be broadcast on Malian radio;
- Conduct a test in Burkina Faso to measure interest and potential in the sub-regional market.

The expected result is a Nerica4 label product in 25 kg and 50 kg bags, sold in the Sikasso market and available for the sub-regional markets. In addition, IICEM will facilitate a 20-ton test shipment to the Bobodialaso market in Burkina Faso or in the Guinean market.

### **IR3: ENHANCED FINANCIAL SERVICES**

To achieve the productivity and marketing objectives for rice, the IICEM project will facilitate financing 150 million FCFA for partner farmer groups in rice. To achieve these financing objectives, the project will carry out the following activities:

**IR 3.1 Facilitate producer access to financing for agricultural inputs** with the BNDA in the North and Kafo Jiginew in Sikasso. The project will carry out specific activities such as:

- Providing support for cooperatives in completing the financing applications and follow-up with the financial institutions;
- Organizing meetings between the financial institutions and cooperatives to discuss requirements for granting loans and securing repayment;
- Providing follow-up/counseling for producers so that the loans are used judiciously.

IICEM staff members expect these activities to result in producer organizations raising FCA 150 million, better use of producer organization resources and better planning to avoid paying prohibitive interest costs.

**IR 3.2 Develop an internal system to secure loans** to create and maintain trust between the financial institutions and target producers. The group-selling strategy in paragraph IR 2.1 will be the focus of this system. To achieve this, the project will:

- Train the organizations in the management of group loans;
- Train the organizations in setting the *redevance* rate-the internal pricing for in-kind contributions by member producers or loan repayment;
- Create mechanisms to build capital mobilizing resources within producer groups.

The expected result is that producer groups will repay loans at a target rate of 95% and that three cooperatives per region will begin to build a sustainable capital base.

**IR 3.3 Strengthen producer skills in financial management.** In order to train these producers, many of whom have just learned to read, IICEM will use modular training in the local languages with simplified teaching tools. Using these techniques, the IICEM project will train the organizations to:

- Prepare and keep documents on the management of the organization's activities; and
- Prepare and submit the income statement and balance sheet.

The expected result is that eight organizations per region will use adapted management tools.

#### **IR 4: IMPROVED AGRICULTURAL ENVIRONMENT**

The IICEM project will work to improve the agricultural environment by improving the capacity of cooperative unions<sup>1</sup> to defend their interests with the other stakeholders in agricultural circles and with the national and local governments and elected officials. IICEM will carry out this training with the Regional Chambers of Agriculture. To achieve this objective, the project will strive to disseminate the following to participants in the rice value chain:

- The Loi d'Orientation Agricole (LOA) and its decrees, including the establishment of common rules for approving pesticides at the ECOWAS level, its law and decree on quality control for fertilizers, including following the regulations on trade and competition, fertilizer quality and their impact on the environment, and the method of using fertilizer on farms.

The expected result will be that the managers of five unions, one per region, will be trained over three days.

#### **IR 5: IMPROVED TRADE AND INVESTMENT ENVIRONMENT**

Previous USAID projects contributed to improving the trade and investment environment by participating in the revision of legislation on animal feed, updating the specifications for exporting mangoes, and contributing to the emergence of the framework of the law on Malian investment

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<sup>1</sup> Cooperative union refers to second level organizations that bring together groups of cooperatives to represent their interests. IICEM will direct its efforts at this level of organization to achieve maximum impact.

promotion agency, the *Agence de Promotion des Investissements-Mali* (API-Mali). For the rice value chain, IICEM will focus on the following activities:

- Disseminate the legislation already in effect on trading agricultural products in the WAEMU and ECOWAS zones to ensure that the unions of women's cooperatives understand the legislation, since they will be part of the rice integration and promotion test (IR 1.2).
- Provide functional literacy training and/or empowerment/negotiation training for ten women's groups per region.

These activities will improve the Union of Women's Cooperatives' knowledge of the rules and administrative procedures for sub-regional trade and a better perception of businesswomen in general and as potential business partners.

# THE POTATO VALUE CHAIN

During the second year, the IICEM project will build on the accomplishments of the first year and work to build ownership of those accomplishments among participants in the potato value chain to ensure sustainability. As a result of the *interprofession* (consultation among technical experts) put in place with IICEM support, value chain participants have already made commitments to work together to grow the industry. Year two will take full advantage of this involvement and commitment.

## CONSTRAINTS FACING THE POTATO VALUE CHAIN

Potatoes are grown in over 100 villages and hamlets in a 50-km radius of Sikasso generating sales of more than CFA15 billion benefitting nearly 50,000 households. USAID has implemented different programs that have worked to improve this value chain.

Since its inception, the IICEM project has carried out activities along the value chain from increasing market access to improving productivity building on these previous efforts. The results the project achieved in its first year of activity are encouraging. However, the project must still address the following major challenges to keep up the pace of developing the value chain: (i) The volumes marketed at the sub-regional level are low despite high demand; (ii) Availability of warehousing infrastructure is poor; (iii) Inputs are difficult to obtain primarily due to the poor financial position of the producers with inputs accounting for 60% of production costs; and (iv) Small average parcel size varying between 0.25 and 1 ha per producer.

## IMPLEMENTATION STRATEGY

IICEM will focus on enabling producers to organize themselves to sell in the sub-regional market. More specifically, to implement this strategy, the IICEM project will:

- Identify buyers and build linkages to domestic and sub-regional potato markets;
- Create a climate of trust between buyers and producers;
- Improve potato production and productivity;
- Vertically integrate potato production and storage;
- Develop a system to make the target organizations autonomous;
- Strengthen institutional and organizational skills.

## ACTIVITIES AND EXPECTED RESULTS

This strategy addresses the issues identified under constraints above. The following section presents the specific activities IICEM will implement and the expected results aligned with project indicators.

## **IRI: IMPROVED AGRICULTURAL PRODUCTIVITY**

IICEM partner producer organizations, both men and women, are targeting production of 10,000 tons of potatoes this season representing significant growth over the slightly more than 7,000 tons in Year 1. IICEM will support them in reaching this goal through the following specific activities:

### **IRI.1 South/Groups Year 1 and Year 2: Facilitate access to quality potato inputs**

through a local distribution system in the Sikasso region. IICEM will support URCEP cooperatives (Year 1) and the SICA-member cooperatives (Year 2) in facilitating access to inputs as follows:

- Awareness and counseling for producers to better assess their input needs, facilitate a meeting to determine the conditions for acquiring inputs, determine the necessary quantities of inputs and set up one group purchase per cooperative;
- Facilitate discussions between input suppliers and target cooperatives to organize the delivery of seeds and fertilizer including validating the quantities, varieties, and procedures for input delivery;
- Train the producers in knowledge and dosage of specific fertilizer appropriate for potatoes.

These activities will result in easier access to fertilizer for 700 producers to plant around 650 ha in the Sikasso region. In total, IICEM will train 20 people and facilitate a large meeting bringing value chain actors together.

**IRI.2 North/Groups Year 1: Facilitate access to quality potato inputs** through a local distribution in the regions of Mopti, Timbuktu and Gao. For women who obtained a starter kit last year including Lac Horo, Bourem Inaly, and, under Trade Mali, Kabara for the Timbuktu region, and Tondibi and Djidara for the Gao region, the project will:

- Counsel producers on the choice of potato varieties in conjunction with ecological conditions in the North, choosing varieties based on soil types, the duration of the cool period and other factors;
- Make the producers of the North aware of and provide advisory services on how to place grouped orders in view of the distance from the production zone to the sales outlets for seeds;
- Train producers determining specific dosage of fertilizer suitable for potatoes.

IICEM expects these activities to result in easier access to inputs for 120 women farmers to plant about five ha in the regions of Timbuktu and Gao. In total, IICEM will train 20 people and facilitate a meeting on group purchasing.

**IRI.3 North and South/New women's groups: training and starter kits for potato production.** To continue disseminating potato production as a way to diversify activities for women's groups, the project will:

- Identify new women's groups in the region of Timbuktu, Gao and Mopti, in addition to new women's groups in the Sikasso region;

- Meet with the village chiefs to gain their acceptance, explaining the value of diversification of activities offered to women;
- Help defray the cost of purchasing seeds and fertilizer for these new groups;
- Provide agricultural training and monitor/supervise women's groups through partner NGO field agents.

The expected results are easier access to inputs for 12 women's groups planting 18 ha in the regions of Sikasso, Mopti, Timbuktu and Gao. In total, IICEM expects to train 750 women who will receive seeds and fertilizer and benefit from assistance in good agricultural practices.

**IR I.4 Introduce and disseminate new potato production technologies and larger holdings.** To accomplish this, the IICEM project will select two plots of 10 ha and larger and introduce best practice seeding and planting techniques for industrial cultivation based on recommendations made by IER. IICEM will also advise farmers on decreasing watering time to reduce production costs. Specifically, the project will:

- During the growing season, identify producers that have large holdings;
- Raise the awareness of the cooperatives and unions to establish large-scale potato farms;
- Pre-finance the necessary inputs and equipment, including seed, fertilizer and GMP for setting up parcels for the following growing season with the credit for seed and fertilizer to be reimbursed after the growing season;
- Pre-finance the layout and leveling of the parcels that are selected;
- Organize exchange trips to visit agribusiness operations in the Netherlands or Morocco with Inter Agro of Sikasso to identify best practices;
- Monitor and evaluate the test;
- Disseminate the results to the members of the supervised organizations.

This activity is expected to result in increased awareness and adopted technologies to increase potato yields and decrease total costs, and facilitate the creation of pilot large-scale potato farms in the Sikasso region, which will lead to a broader implementation of larger scale farms.

**IR I.5 Introduce new potato varieties through a Public Private Alliance with Sikassoise Seeds.** IICEM will set up demonstration parcels for two new potato varieties with high potential in close cooperation with seed supplier *Sikassoise*. The following activities will be carried out:

- Select innovative producers;
- Provide fertilizer at reduced cost with *Sikassoise* delivering the seeds;
- Provide technical supervision and assessment of the two varieties according to a productivity plan, its ability to be preserved and its performance in the market;
- Disseminate information to producers at the *interprofession* meetings and meetings of unions of organizations.

These activities will result in good performance of the varieties in terms of the germination rate, yield, shelf life, and consumer satisfaction. Over the medium term, IICEM expects producers will

adopt these varieties to compete with certain licensed varieties currently in use to decrease costs considerably and increase incomes.

**IRI.6 Disseminate good potato production practices** to improve the skills of IICEM partners in the regions of Sikasso, Timbuktu, Mopti and Gao. The project will carry out the following activities:

- Provide counseling support on the choice and observance of specific doses of fertilizer for potatoes;
- Train the producers in GIFS/GIC technology for rapid composting techniques with organic fertilizer;
- Organize visits among farmers to share the results of the technologies that are disseminated including print, radio and television coverage.

These activities will train more than 1,500 producers resulting in wide adoption of best agricultural practices in each focus region.

## **IR2: IMPROVED MARKETING OF AGRICULTURAL PRODUCTS**

Through partner organizations, the project will assist in marketing roughly 8,000 tons of potatoes approximately doubling the 4,000 tons marketed in 2007-08. At the sub-regional level, the producer organizations expect to export 2,500 tons, versus 1,600 tons in Year 1, an increase of more than 50%. To achieve this objective, the project will carry out the following activities:

**IR 2.1 Promote grouped sales by producer organizations** for the organizations to have greater control over potato marketing and to obtain funds to repay input loans. These collective sales are not yet commonplace, as producers prefer to sell their crops individually. This will require the following activities:

- Raise the awareness of the member organizations of *Société d'Intérêt Collectif Agricole (SICA)* to establish roughly 20 marketing committees in the target villages;
- Train these committees in grouped sales and in keeping inventory and sales books;
- Market potatoes using grouped sales.

As a result of this activity, IICEM will establish 15 committees, train at least 100 people and assist partner producers in achieving their overall marketing goal of 8,000 tons.

**IR 2.2 Introduce the producers from Sikasso to the Bamako market** to build more direct and efficient business relationships between the two parties. These relationships will improve producers' and marketers' understanding of market needs and better position them to improve the quality of their product. To make this happen, IICEM staff will carry out the following activities:

- Organize a business meeting between the traders of Bamako and the players of the Sikasso region;
- Train the traders in potato sorting-packaging and in determining cost prices and the method for setting the selling price.

Through this activity, IICEM will establish relationships between partner producers and traders in Sikasso and ten traders from Bamako and improve marketing of Sikasso potatoes in the Bamako market.

**IR 2.3 Market Malian potatoes and negotiate commercial contracts in the sub-region** through the Potato Traders and Exporters Union of Sikasso (URCEP) targeting markets in the sub-region for quality potatoes. IICEM will carry out the following activities:

- For promotional purposes, have the URCEP members travel to the major purchasers in Abidjan (SDTM-CI), Togo, Benin, Accra and Burkina Faso in partnership with the sub-regional USAID funded Agribusiness and Trade Promotion project;
- Train the traders in techniques of negotiating contracts and marketing;
- Train the traders in potato sorting-packaging;
- Purchase and deliver 25-kg jute bags to the traders/exporters for the potato delivery tests in the sub-region. Because these are volume sales to Ivoirian buyers, the price per kg is lower than small volume sales in Mali, making traders skeptical. For these tests, IICEM will subsidize the bags to ensure Malian traders are committed and can see the benefit of these higher volume sales.

These activities will result in renewed trust between the traders in the sub-region and potato marketing organizations in Mali and increased capacity in Mali to deliver large orders according to established schedules and to the specifications and volumes agreed. Over the medium term, Malian exporters will look to take market share in these countries from major European and South African potato importers. In total, IICEM partners will export 2,500 tons of potatoes in the sub-region.

**IR 2.4 Upgrade existing potato warehouses** to promote staggered sales and increase producer income. In order, the following activities are necessary:

- Identify innovative producers who have traditional potato warehouses;
- Renovate and improve the warehouses of the selected producers;
- Make and deliver wooden crates for storage in the renovated warehouses;
- Supervise and monitor warehouse management for the first year.

As a result of this 20 warehouses will be renovated and given wooden crates for preserving potatoes. These warehouses are for SICA and URCEP members benefiting the overall export supply chain for potatoes. These warehouses, combined with the new ones for groups and villages (activity IR 2.5 below), will be the backbone of exportation on a much larger timeframe

**IR 2.5 Build new improved warehouses for storing potatoes** to foster group storage by the organizations. The following activities will be necessary:

- Select the major potato production areas in Sikasso most appropriate for placing warehouses;
- Select the beneficiary organizations;
- Select contractor to design the blueprint for the type of warehouse to be built;

- Prepare requests for proposal and choose local contractors to build the warehouses and inspect the construction;
- Take delivery of the warehouses.

In total, IICEM will build 15 new warehouses, including one in the city of Sikasso that can be used as a grouping and packaging center for the traders and 14 in the large areas outside the city where potatoes are produced.

### **IR3: ENHANCED FINANCIAL SERVICES**

To achieve the production, productivity and marketing objectives for potatoes, the IICEM project will support producer organizations so that they raise more than 200 million FCFA in financing with coverage from the IICEM guarantee fund for relatively little. To achieve the financing objectives the project will carry out the following activities:

**IR 3.1 Facilitate producer access to financing for agricultural inputs** from the BNDA and the Kafo Jiginew microfinance network. The project will carry out specific activities such as:

- Supporting farmer organizations in completing the financing applications and follow-up with the financial institutions;
- Organizing dialogue meetings between the financial institutions and cooperatives to discuss the requirements for granting loans directly and ensuring repayment;
- Providing follow-up/counseling for producers so that the loans are used judiciously.

The expected result will be continued strong relationships between borrowers and lenders with renewed trust resulting in 200 million FCFA in financing.

**IR 3.2 Strengthen producer skills in financial management** to improve management and governance in partner organizations. The project will carry out modular training in local languages with simplified teaching tools. The IICEM project will train the organizations to:

- Prepare and keep management documents of the organizations' activities;
- Prepare and submit income statements and balance sheets.

As a result of these activities, partner cooperatives including SICA and URCEP will put in place basic accounting tools. Overall, IICEM will train 200 members of the boards of directors of the target producer organizations.

### **IR 4: IMPROVED AGRICULTURAL ENVIRONMENT**

**IR4. 1 Organizational and institutional strengthening** for the target umbrella organizations of producers, using as focal points SICA and URCEP. The details of the activities are as follows:

- Support hiring an executive secretary for SICA;
- Strengthen operational capacity at SICA headquarters;
- Train the organization managers in leadership for change and governance;
- Develop a strategy for building a capital base for the organizations;
- Train 20 target cooperatives in the cooperative law and organization and management;

- Train the managers of SICA and URCEP in preparing key management documents including the calendar and associated plan for the growing season, and income statements and balance sheets
- In a participatory manner, prepare a three to five year strategic development plan for SICA and URCEP.

These activities will result in a more professionalized SICA with a growth strategy in place that receives more involvement from and provides better services and advocacy for its cooperative members. In total, IICEM will train 400 managers in 26 cooperatives.

**IR4.2 Disseminate information on the Loi d’Orientation Agricole (LOA)** The IICEM project will work to improve the agricultural environment by improving the capacity of cooperative unions to defend their interests with the other stakeholders in agricultural circles and with the national and local governments and elected officials. IICEM will carry out this training with the Regional Chambers of Agriculture. To achieve this objective, the project will strive to disseminate the following to the players in the potato value chain:

- The Loi d’Orientation Agricole (LOA) and its decrees, including the establishment of common rules for approving pesticides at the ECOWAS level, and the fertilizer quality control law and its decree; this legislation deals with different aspects, and in particular with observing the trade and competition regulations, fertilizer quality and their impact on the environment, and the method of fertilizer use on farms.

As a result of the three-day training for URCEP and SICA managers, they will have a better understanding of their rights, obligations and opportunities as they relate to the LOE.

**IR4.3 Strengthen dialogue/coordination links among value chain participants.** IICEM will continue to provide technical assistance to the potato *interprofession* in Sikasso which has already improved efficiency and cooperation across the value chain. To this end, the project will:

- Train the managers in the roles and responsibilities of the *interprofession*;
- Support the *interprofession* in identifying and removing constraints to improving the environment for potato production and marketing.

IICEM will train 20 members of the *interprofession* in addition to ongoing technical assistance. As a result of this activity these players will continue to deepen their commitment to their role and responsibilities as part of the *interprofession* and increase the capacity of the group to spur additional development in the value chain.

## **IR 5: IMPROVED TRADE AND INVESTMENT ENVIRONMENT**

For the potato value chain, IICEM will do the following to improve the trade and investment environment:

**IR5.1 Strengthen the capacity of potato traders and exporters** in carrying out administrative procedures related to cross border trade. To this end, the project will carry out a

two-day workshop so that the key operators can improve cross border trade and carry out the following additional activities:

- Disseminate information on the legislation already in effect relating to trade agricultural products in the WAEMU and ECOWAS zones to ensure traders and exporters are in compliance and are in a better position to defend their rights when faced with border harassment;
- Pay the expenses for one exporter from each country in the sub-region to attend the workshop to develop relationships;
- Improve image of the Malian value chain by presenting to buyers improvements related to the *interprofession*, professionalization of SICA and stronger support for URCEP for marketing to meet sub-regional standards.

As a result of this workshop, traders and exporters will better understand the sub-regional trade rules, continue to build linkages with key buyers and traders in the sub-region and ultimately increase sub-regional potato exports.

**IR5.2 Advocate for enforcing the trade laws on agricultural products** in partnership with other USAID projects in the sub-region and sub-regional organizations such as the WAEMU and ECOWAS. IICEM will also collect and share information on constraints and problems traders have experienced in the different corridors. For this workshop on sub-regional trade IICEM will collaborate with the USAID-funded ATP project, WAEMU and ECOWAS in some countries of the sub-region.

# THE MANGO VALUE CHAIN

For year 2, IICEM will begin to disengage from the exporters of fresh mangoes who must now become independent after extensive assistance. To prepare for this, IICEM will involve the quality managers from partner exporters in all the production and marketing activities so that they can take over the role IICEM has played. IICEM will stress support for the producers so that they develop business linkages with domestic and sub-regional buyers. The project will continue to support exporters who have developed partnerships with the producers and *pisteurs* (agents who harvest and consolidate mangos for exporters).

## CONSTRAINTS IN THE MANGO VALUE CHAIN

Mali is a country with vast natural potential for producing mangoes. Despite this potential, the value chain faces problems in production, processing, storage and marketing that hinder its development and make Malian mangoes less competitive in the international markets.

In terms of production, Mali suffers from low productivity due to aging orchards, the dying trees that are drying up, and insect infestation. This situation means that there is a very high rate of variability in the orchards and packaging centers, which lowers exported values considerably. IICEM will stress training the producers to meet the requirements of the various mango markets. To this end, the project will, with the *Groupements d'Intérêt Economique* (GIE) exporters, prepare a guide that producers can use to adopt good practices from orchard maintenance to harvesting. Implementing this jointly with the GIE and producers will make the guide a key to creating sustainability and allowing IICEM disengagement.

In terms of marketing, certain varieties that are not exportable and fruit that is rejected by European buyers have real value in the sub-region and at the national level. Yet few producers tap these domestic and sub-regional markets to sell fruit they cannot export to Europe. IICEM will work with producers to explore domestic and sub-regional markets so they can sell a significant portion of the fruit the exporters reject.

For dried mangoes, the IICEM project worked with two drying facilities during its first year. This year the project plans to work with five drying units in the Koulikoro and Sikasso regions. One of the main constraints continues to be certification of orchards and processing facilities. In an effort to make drying Malian mangoes more worthwhile, the project will invest in the organic certification of the partner orchards and drying facilities to reach the promising markets that require organic certification. Last year the issue of marketing dried mangoes arose because clients in Burkina Faso did not meet their commitments of purchasing products from Mali. The trip that IICEM took to Burkina Faso showed the old system of marketing via Burkina Faso is not reliable or profitable. To achieve medium term success Malian producers must build direct relationships with partners in the region and the rest of the world. Thus, the project will seek out new markets in Europe, North Africa, the sub-region and in Mali and build awareness more broadly of Mali as an exporter of quality dried mangos.

## IMPLEMENTATION STRATEGY

IICEM's implementation strategy in the mango value chain is built around two major thrusts:

- **Disengagement from Fresh Mango and Transfer Skills.** First and foremost the strategy will focus on disengaging from assistance in fresh mango exports and transferring the basic skills to partners so they can continue to produce and market at a high level. USAID has supported fresh mango for some time and IICEM has provided significant support in the fresh mango supply chain for the past two seasons. It is now time for IICEM to disengage from supporting fresh mango exports and transfer skills to partners so they can continue improvements in the supply chain without significant drop-off. In addition to transferring these basic skills, IICEM will continue to help exporters target domestic and sub-regional markets as complements to European exports. IICEM staff will focus on partners with the greatest potential to sustain the improvements made recently, primarily producers, *pisteurs*, and others working in partnership with AOM, IB Negoce and Yaffa & Frères.
- **Ramp up Support for Development of Value Added Processing, Especially Dried Mango.** The project will build its support for value added activities in mango processing and marketing focusing on domestic and sub-regional markets. To do so, the project will support the partner drying units to establish GIE groups-a type of corporate entity-so that they can scale up and better manage their drying operations. Once they form GIEs, they will be able to better fill orders that are received; produce and sell using printed packaging with the GIE logo; negotiate contracts; and place grouped orders for natural gas, a large cost element in the drying business.

## ACTIVITIES AND EXPECTED RESULTS

The strategy is designed to address the constraints identified at the beginning of the section. The following paragraphs break down the strategy into activities and expected results aligned with the project indicators.

### IRI: INCREASED AGRICULTURAL PRODUCTIVITY

In year two, IICEM will work with eight producer organizations in the regions of Koulikoro, Bamako and Sikasso, for a total of about 1,800 mango producers over a total area of just over 2,000 hectares. In these areas the project aims to increase yields from six to seven tons per hectare for total production of more than 14,500 tons. This production will be achieved by carrying out the following specific activities:

**IRI.1 Prepare the Best Practice Guide to Mango Harvesting and Orchard-side Packaging.** IICEM staff will prepare a guide on harvesting and packaging building on the technical assistance staff have provided over the past several years (before and during IICEM). This guide will be for the exporters who have forged links with the producers and harvesters, including principally AOM in Sikasso and Négocce and Yaffa et Frères in Koulikoro. IICEM staff will use the

guide to disseminate best practices to producers, most of whom are illiterate. To achieve this, IICEM will carry out the following specific activities:

- Create an illustrated guide with image boxes or photos in four colors with brief comments in French or in Bamakan; several guides already exist (Aprofa/WB, CAE/USAID), and they will be used to quickly determine the key images to be adopted;
- Replicate the trainers guide, about 20 copies, for the exporters;
- Disseminate the training materials in A4 format, black and white, for 300 producers;
- Disseminate the guide to this target population.

Through distribution of the best practice guide, IICEM will improve the capacity of producers to train themselves, enabling disengagement from project assistance.

**IRI.2 Train the producers supervised by AOM, IB Négoce and Yaffa et Frères in good practices for establishing new orchards** to replace existing orchards which are aging and producing poor yields. To this end, the IICEM project proposes:

- Conducting eight training sessions with the producers supervised by AOM, IB Négoce and Yaffa et Frères on growing techniques and varieties sought in the export markets to encourage orchard replacement, either in terms of the varieties or by planting new plants.

IICEM will train 750 producers in cultivation practices which, in the longer run, will motivate them to replace Mali's existing orchards with export varieties.

**I.3 Train the producers supervised by AOM, IB Négoce and Yaffa et Frères in the use of phytosanitary products and orchard treatment.** In the past few years, no phytosanitary products approved in Mali have been available to treat the orchards. In view of the new market standards and GLOBALGAP certification, the use of unapproved products and failing to master treatment techniques is very risky. Now that three phytosanitary products have been approved in Mali, compliance with the pesticide usage standards imposed by the GLOBALGAP referencing system is mandatory. This unique activity is described as follows:

- Hold eight training sessions with the producers supervised by AOM, IB Négoce and Yaffa et Frères on the appropriate use of phytosanitary products, the choice of products, and the precautions to be taken before and after these products are handled;
- Raise the awareness of the producers in the organic-certified zones so that they avoid all contact with phytosanitary products.

The expected result is that 750 producers will have adequate knowledge and therefore will use phytosanitary products appropriately in the orchards and understand and respect pesticide-free organic zone.

## **IR2: IMPROVED MARKETING OF AGRICULTURAL PRODUCTS**

Through its organizations of partner producers, the project targets marketing roughly 14,000 tons of mangoes versus just over 11,000 tons in 2007-08, representing a 25% increase. Dried mango marketing will rise from less than 10 tons to more than 20 tons this year setting the stage for much higher volume exports in the future. To accomplish this, the project will carry out the following activities:

**IR2.1 Explore new domestic and sub-regional markets** to diversify the traditional markets of Senegal and Mauritania and to establish other markets for below-grade fruit and secondary varieties. *Société de commercialisation des fruits et légumes de Sikasso (SCOFLES)* is now one of the largest second-grade mango marketing companies in Mali. SCOFLES marketed 4,400 tons of mango with project support in the last growing season on the domestic market, in Mopti and Gao. SCOFLES wanted to expand beyond the domestic market to grow and diversify its business and increase income. Last year IICEM introduced SCOFLES to AOM so that SCOFLES could obtain the rejected mangoes from the AOM packaging center for the Mopti and Gao markets. AOM, which appreciates this good cooperation with SCOFLES, gave the IICEM project several leads to wholesale traders in Senegal and Mauritania who are interested in mangoes from Mali. Several promising activities are planned:

- Attend an agribusiness fair to explore new markets with exporters AOM, IB Négocce and Yaffa et Frères;
- Support a Spanish importer that has a fleet of trucks to purchase containers of mangoes directly from the PLAZA;
- Explore new domestic markets for a cooperative in Sélingué, COMPABAS, or in the regions of Gao and Mopti;
- Explore Senegal and Mauritania so that SCOFLES is able to diversify.

The expected results are an increase in export quantities from partner exporters greater than 100 tons to Morocco and the creation of new partnerships for COMPABAS, resulting in ten 10-ton trips or a total of 100 tons of additional sales. SCOFLES plans to export 500 tons of mangoes to the sub-region.

**IR2. 2 Strengthen capacity of selected *pisteurs* in good techniques for mango harvesting and packaging.** At this time no Malian exporters or *pisteurs* are able to retain skilled personnel during the off season. As a result, many exporters and *pisteurs* lose most of their skilled harvesters or packagers each growing season. To compensate for this, new persons must be hired and trained for harvesting and for the packaging centers. To reduce losses caused by poor mango packaging due to this high turnover, the project aims to:

- Permanently transfer expertise in picking and packaging techniques to the supervised exporters. They will train their packagers themselves.

As a result of this activity, the three exporters AOM, IB Négocce and Yaffa et Frères will be trained as well as their 100 harvesters in picking and packaging techniques for exportable

mangoes. In the long run, the result should be a major decrease in the rejection rate at the facility because the exporters themselves will be positioned to train their staff at the beginning of the harvest season.

**IR2.3 Support exporters AOM, IB Négoce and Yaffa et Frères to control the quality of fruit at the facilities in the Sikasso region.** To achieve this, support will be provided as follows:

- Technical assistance will be provided by the project's mango experts to the Sikasso packaging stations for AOM, TEM, Katope and *Société Fruitière de Yanfolila* to support the employees to correctly differentiate exportable mangoes.

As a result exporters will not reject any containers of mangoes exported by project partners. In addition, Malian exporters will take over the quality control and continue to produce good quality mangoes for export, building on the achievements of the previous year and preparing for disengagement.

**IR2.4 Promote dried mangoes** to increase domestic production, promote local and sub-regional consumption, and increase exported volume. Several additional activities are necessary, both in terms of drying and marketing. For marketing, recent trips to Burkina Faso and Morocco made it clear that the market must be diversified as Swiss buyer Gebana now monopolizes it. The sub-regional market, however, is very promising. These activities are divided as follows:

- Train the drying units in good hygiene and manufacturing processes to prepare them for certification and to diversify the activities of the drying units;
- Help defray the cost of organic certification, a requirement for exporting to Morocco and Europe;
- Organize a workshop to bring the players together, including the five principal mango-drying units in Mali, to assess the possibility of creating a common label for selling dried mangos (*Mangue Séchée*) from Mali;
- Support the drying units so they are able to negotiate adequate supplies of natural gas. This is a serious problem that affects competitiveness as Malian gas utilities sell small bottles of gas only, while in Burkina Faso and other markets they have supply specifically designed for the drying units;
- Help defray the costs of acquiring 300 wooden crates to store the harvested mangoes while they ripen for three companies: KENE YIRIDEN, GIE/AGSSA and US Tako;
- Help defray the cost of acquiring quality packaging for the local and sub-regional market to ensure the quality image of the product labeled *Mangue Séchée* from Mali;
- Explore the Wouol and Gebana export market with the representatives from the drying units to prepare contracts for the next growing season.

Through these activities partner companies will produce and sell 20 tons of dried mangoes in Europe and the local and regional market, and the *Mangue séchée Mali* product label will appear in the domestic and sub-regional market.

### **IR3: ENHANCED FINANCIAL SERVICES**

Last year the project took a risk and realized a significant return by financing the *pisteurs* in Mali for the first time. The project will continue to provide this support to achieve the objectives of production, agricultural productivity and marketing for fresh and dried mangoes at the national, sub-regional and international levels. The IICEM project will support the *pisteurs*, exporters, and processors in raising over 100 million FCFA in financing. To achieve these financing objectives, the project will carry out the following activities:

**IR3.1 Facilitate access to financing for the *pisteurs* and exporters** to be able to continue the strong export growth generated last year in part as a result of greatly expanded access to financing. To achieve this, IICEM employees will carry out the following activities:

- Introduce 50 *pisteurs* (30 in Sikasso and 20 in Koulikoro) to financial institutions to access financing;
- Support preparation of contracts between *pisteurs* and exporters to ensure that loans are repaid: after this second year, the exporters and financial institutions will take over ownership of the process;
- Provide advice to exporters in preparing bankable financing proposals;
- Assess financing applications from exporters who use the IICEM guarantee fund, which is granted if the application is bankable and if the risk is deemed adequate.

Through these activities, IICEM expects to facilitate 50 loans resulting in total financing of 100 million FCFA. Long-term relationships will be built between financial institutions and *pisteurs*, exporters who contract with the *pisteurs*, and exporters who better understand the requirements and banking standards of the financial institutions for lending for the growing season.

**IR3.2 Facilitate access to financing for the drying units** to grow the dried mango industry. Some partner companies are well-positioned to add dryers and increase production. This requires medium-term financing, which necessitates more demanding advisory support to convince financial institutions. To accomplish this, the project will:

- Provide advisory support to partner companies to complete financial statements and provide continuing support in financial management;
- Provide advisory support in selecting the best financing strategy, including the mix of equity and debt financing, according to cash-flow projections;
- Evaluate financing applications for exporters who seek to access the IICEM guarantee fund. IICEM approves guarantees if the application is bankable, if the risk is deemed adequate, and the borrower is deemed to be of high priority.

The expected result is that three units will be financed for a total amount of 10 million FCFA.

### **IR 4: IMPROVED AGRICULTURAL ENVIRONMENT**

As with other value chains, the IICEM project will work to improve the agricultural environment by improving the capacity of cooperative unions to defend their interests with the other stakeholders in the agricultural sector and with the national and local governments and elected officials. IICEM will carry out this training with the Regional Chambers of Agriculture as follows:

**IR 4.1 Awareness of the LOA (Loi d’Orientation Agricole).** To achieve this objective, the project will strive to make mango value chain players aware of:

- Information on the LOA and its decrees, including radio messages on the local radio stations.

The expected result will be 30 managers trained from two major cooperatives in Sélingué.

## **IR 5: IMPROVED TRADE AND INVESTMENT ENVIRONMENT**

To access the sub-regional markets, mango traders and exporters encounter a wide range of barriers across the various corridors of the sub-region. Moreover, they do not fully understand all the forms necessary to be in compliance and to minimize the potential for administrative harassment. To improve this situation and make the business and investment environment more favorable, the IICEM project will carry out the following activities through its NGO agents:

- Disseminate legislation already in effect on trading agricultural products in the WAEMU and ECOWAS zones to ensure that traders understand the legislation that pertains to the unions, GIEs or cooperatives and/or traders who sell in the sub-regional market. This legislation will be distributed to 20 member producers of the Union de Yanfolila and five dried mango processors in the Sikasso and Koulikoro zone.
- Empowerment/ negotiation training for three GIEs or women’s businesses for a total of 20 persons.

Through these activities, the unions and traders will better understand and better comply with the rules on trading agricultural products sub-regionally in the WAEMU and ECOWAS zones.

# THE TOMATO VALUE CHAIN

In the first year, the IICEM project selected the Baguinéda zone, supervised by the OPIB, as the focus for activities in the tomato value chain. In Year 2, IICEM plans to expand its activities into other regions in Mali to build on the successes of Year 1.

## CONSTRAINTS IN THE TOMATO VALUE CHAIN

The Baguinéda zone, covering 22 villages, has a strong history of tomato production, and tomato is still the leading source of income for producers. However, promoting tomato production and marketing to increase producer incomes in Baguinéda and the surrounding area still faces a number of significant constraints:

- The markets are saturated during the harvesting periods, causing prices to fall. Producers must find other buyers, such as processors, to absorb this surplus and enable expansion;
- Poor value added due to a lack of modern processing and preservation, such as a tomato paste manufacturing facilities or tomato drying units;
- Poor productivity, due to white fly virus though these have been largely controlled through action taken by IICEM in Year 1.

Value chain analysis also shows that the cost of inputs is high in terms of startup investments required for purchasing seeds and fertilizer. Even more important, since tomatoes are highly perishable and vulnerable to a number of diseases, post-harvest losses are often very high thereby reducing returns to producers.

## IMPLEMENTATION STRATEGY

IICEM will promote development of the tomato value chain by:

- Supporting the development of a modern wholesale vegetable market at the Baguinéda crossroads on the Bamako – Ségou road in cooperation with the OPIB, the mayor's office, and the World Bank PCDA project;
- Assessing the potential of the local and international market for dried tomatoes produced by the women's organization of Tanima 2000;
- Carrying out an advocacy project for a change in policy providing for a VAT exemption on seed imports;
- Continuing the Host-Free Period technique with expansion into the neighboring zones and replicating it in the Sélingué basin;
- Capitalizing on the accomplishments in virus control by strengthening the monitoring of statistical data, preparing a teaching tool, and disseminating the results.

## ACTIVITIES AND EXPECTED RESULTS

The following section translates the strategy in specific activities directed at addressing the constraints identified above.

## **IRI: IMPROVED AGRICULTURAL PRODUCTIVITY**

The organizations of male and female producers in the 22 villages of the Baguinéda zone plan to grow tomatoes on 95 hectares and are targeting production of 2,500 tons. IICEM will support them through the following specific activities:

**IRI.1 In Year 2, continue the Host-Free Period (HFP) from June to July initiated in Year 1 expanding it into the neighboring zones and in the Sélingué basin.** This will mean that in addition to the 22 OPIB villages, 10 villages in the peripheral zone will participate in controlling all the focal points of the disease, preventing re-infection in the core 22 villages. The following activities will be carried out:

- Train the anti-virus teams *brigades* (in French) in the ten new villages;
- Conduct an awareness and information campaign in all of the 22 former villages plus ten new villages;
- Adopt the Host-Free Period during the months of June and July;
- Monitor, present and discuss the results of the HFP;
- Prepare a protocol with the Office of Rural Development of Sélingué (known by its French acronym as ODRS). IICEM will use as a base the expertise developed in the OPIB to replicate virus control in Sélingué. The OPIB has a good mastery of the Integrated Pest Management technique.

As a result of these activities IICEM will consolidate its fight against the virus in the core villages with additional control in the peripheral villages of the OPIB. Moreover, a new zone, Sélingué, will disseminate the Host-Free Period method.

**IRI.2 Disseminate the concept of virus control.** The results and methodology are critical for dissemination to the farmers so that they can master the techniques. Specifically, the details of the dissemination activities are as follows:

- Prepare a flyer on the Host-Free Period to strengthen the capacities of producers and assist in facilitation in the new intervention zones;
- Support the IER in printing and disseminating a guide on the techniques for controlling certain diseases of horticulture crops;
- Organize a workshop to present and discuss the results of the virus control program;
- Produce and disseminate a documentary film on the Host-Free Period process and its impact on tomato production.

The expected results are that a flyer will be designed and disseminated in 1,000 copies while 50 copies of the more detailed guide will be disseminated through the villages. There will be a discussion and presentation workshop, and IICEM will distribute a documentary film.

**IRI.3 Transfer skills to ODRS technique personnel for the Host-Free Period technique** by different activities:

- Train the technical team in the technique of virus control using IPM;
- Organize a guided visit to ICRISAT in the AVRDC facility.

The expected result is that 20 ODRS employees will be trained in IPM.

**IRI.4 Expand the IPM production zones by providing seeds of tolerant varieties** to other partners, such as PCDA-Ségou, the dried tomato company AGRIDEV, IB-Négoce, the seed distributor Comptoir 2000, and to at least one group of women truck farmers associated with a mining company in Kenieba.

- Distribute seeds to the partners;
- Support and monitor the activities and results.

The expected result is that improved seeds will be distributed to other producers within a five-hectare area.

**IRI.5 Monitor and evaluate the impact of the Host-Free Period technique**, following the large-scale demonstration of virus-tolerant seeds and the distribution to approximately 500 farmers.

- Local monitoring of production by following up on the disease and actual yield measurements.

Through this activity IICEM will monitor progress on 20 sites and 50 producers.

## **IR2: IMPROVED MARKETING OF AGRICULTURAL PRODUCTS**

The tomato-producing cooperatives of the Baguinéda zone plan to market practically everything they produce apart from post-harvest losses. The project plans to follow the distribution itinerary for 1,300 tons. To do so, the following activities have been scheduled:

**IR2.1 Strengthen OPIB capacities** to obtain a better market information system for monitoring the statistical data on marketing:

- Put tools in place to collect data on price, quantity, and the status of market supply (type of purchaser, origin, etc.);
- Monitor and analyze the data with the OPIB at the end of the growing season.

The expected result is that the OPIB will better incorporate the marketing data, ensuring a broader understanding of the tomato value chain.

**IR2.2 Develop new markets in the dried tomato niche** through the partnership of two firms that seek to process fresh tomatoes into dried tomatoes:

- Target the Dutch retail market for tomatoes with GLOBALGAP certification with AGRIDEV SA. Continue drying tests with different varieties to evaluate the types of seeds that have the highest yield of around 10 kg of fresh tomatoes for 1 kg of dried tomatoes.

- Exploratory research in Europe for organic dried tomatoes with TANIMA 2000, a group of women from Baguinéda who dry tomatoes in the sun. This type of drying generally produces low or uneven quality. IICEM will conduct research to determine if there is a market either on the local market or on the international fair-trade or organic markets. If a potential contract is possible, a test will be planned by acquiring Hoheinem dryers, each with the capacity to dry 200 kg of tomatoes every three days.

The expected result is better positioning in the international market. The project will also seek to assess the profitability of the AGRIDEV electric dryer in view of high electricity costs. With TANIMA 2000, the expected result is to determine whether a GLOBALGAP niche or organic market exists in the international market.

### **IR 3: ENHANCED FINANCIAL SERVICES**

**IR 3.1 Introduce the producers to the microfinance institutions.** IICEM staff will provide basic training in how to access financial services with the representatives of the microfinancing institutions that work on-site, in order to assist the cooperatives of the 22 villages to develop trade relations with these institutions. The importance of savings, the merit of showing the transactions in the accounts, and the impact on access to lending will be the topics that are discussed.

The expected result is that the employees of the financial institutions will have a better knowledge of the tomato value chain and vice versa and that the producers will have a better knowledge of the conditions and methods of how the financial institutions will operate. In the long run, trade relations should develop.

### **IR4: IMPROVED AGRICULTURAL ENVIRONMENT**

**IR 4I Strengthen producer organization capacity** by organizing training sessions for the members of the farmer organizations:

- Management training for four groups including production and marketing management, covering such things as the cost of production, setting selling prices, calculating margins, planning for marketing and others.

The expected result is that 80 persons will be trained in management.

### **IR5: IMPROVED TRADE/INVESTMENT ENVIRONMENT**

**IR 5.1 Advocate for taxes on imported seeds** through a regional workshop organized by the Malian Association of Seed Producers (known by its French acronym ASEMA) with support from IICEM and the participation of the players from the seed sub-sector in Mali. The expected result is greater awareness of the political decision-makers regarding the tax status of the seed distributors.

# THE SHALLOT VALUE CHAIN

For the shallot value chain, the IICEM project is working principally in two regions. In Mopti, IICEM is promoting shallots from the Dogon Plateau. In the North, mainly in the Timbuktu region, the project is supporting shallot producers in the Lac Horo area.

## CONSTRAINTS IN THE SHALLOT VALUE CHAIN

The shallot value chain plays an essential role in food security and in the survival of families in the Dogon Plateau and Lac Horo production zones. However, there are major constraints to increasing efficiency in the value chain, including poor production practices, preservation, processing and even marketing difficulties. In general, these problems are:

- The lack of organization of the players in the value chain. Year 1 studies have clearly shown that participants in the value chain have no suitable venue for exchanges and cooperation;
- Difficulties in obtaining improved seeds, plus the lack of funds for producers to acquire seeds when needed;
- Market saturation and low prices in the Bamako market especially as production comes on line from competing producers in Niono.

The direct competitors of the producers from the Dogon Plateau and Lac Horo are mainly from the Office du Niger. As soon as shallots from Niono reach the Bamako market beginning in January, prices begin to drop and the producers from the North abandon the market and begin preserving the shallots for sale later through various types of processing. During these periods when Niono shallots are being sold they drive prices down in the market making it unprofitable for Dogon and Lac Horo producers given their higher production costs<sup>2</sup>.

## IMPLEMENTATION STRATEGY

To ensure production of better quality in order to provide a high-end product to traders and consumers, IICEM technical staff will provide support and counseling to the producers to use improved seeds selected by the IER, use special fertilizer formulas instead of urea, especially for shallots that are to be preserved, introduce coordinated grouped sales to create economies of scale, support development of a processing facility and restructure and develop the institutional capacity of the unions of Bandiagara and Lac Horo. This will address the above constraints by:

- Improving competitiveness of the value chain in all target markets through institutional restructuring and capacity building, grouped sales and improved quality and shelf life;

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<sup>2</sup> The production and marketing costs hover around 100 FCFA/kg. The average price of shallots is 225 FCFA/kg, providing a profit margin just over 100 FCFA/kg when shallots are sold fresh. Producers earn a higher margin when they process shallots into powder or into a dried sliced form for sale later.

- Timing domestic markets better by obtaining better seeds earlier to produce before Niono, and reducing post-harvest losses by improving the life of the shallots after production through improved storage and more appropriate fertilizer;
- Diversifying markets for IICEM partners by developing business linkages and facilitating export transactions in already identified target markets in Guinea and Cote D'Ivoire; and
- Increasing value added and diversifying markets through the addition of shallot grinders for selected producers.

## ACTIVITIES AND EXPECTED RESULTS

The following paragraphs describe the IICEM implementation strategy to address the constraints identified above aligned with activities and expected results.

### IRI: IMPROVED AGRICULTURAL PRODUCTIVITY

IICEM's partner producer organizations in shallots, ten in the Dogon Plateau and four in Lac Horo, are targeting production of 4,000 tons in 2009. IICEM will support them in meeting this target through the following specific activities:

**IR 1.1 Develop business linkages with Niono seed producers** to ensure that yields are optimized. To access high-performance seeds, the project will:

- Organize partner producers to make grouped seed purchases;
- Direct the producers to dealers that possess seeds locally and, if necessary, to traders that supply seeds in Niono with support from the IER.

This activity will result in the use of improved seeds by selected producers in each village and the building of relationships between producers and seed suppliers that will increase uptake of improved seeds and use of grouped purchases in subsequent growing seasons.

**IR 1.2 Test the use of specific inputs** to ensure that yields are optimized and in particular that they produce better quality shallots. Most fertilizers are not suitable for growing shallots. On the contrary, they contribute to causing the shallot bulbs to swell, reducing shelf life. This is one of the main reasons for considerable losses, both among producers and traders, if the product is not sold quickly. With this in mind, the IICEM project will introduce a formula developed especially for shallots by fertilizer manufacturer and distributor YARA to the producers in the Dogon Plateau. This special fertilizer formula is advantageous in that it results in shallots with longer shelf lives while also increasing yields. To ensure uptake of this fertilizer the project will:

- Set up demonstration parcels with five producers for each of the 10 producer organizations for a total of 50 tests;
- Evaluate the tests in terms of yield, quality and duration of preservation/storage;
- Organize a farmers' day to disseminate the results to the producers.

This activity is expected to increase awareness in Dogon villages of the risks generated by the use of the standard fertilizers and the positive impact appropriate fertilizer has on shallot quality.

**IR 1.3 Introduce better composting methods through ISFM technology** to improve the skills of partner producers. The producers will be counseled in the use of organic manure for producing shallots using the Integrated Soil Fertility Management approach (*ISFM*). To disseminate this practice the project will:

- Train producers from the ten villages in rapid composting. The producers will prepare the residue from the harvest and the project will provide the mineral fertilizer.

The expected result is that the villages of the Dogon Plateau, where the land is the poorest, will have a good grasp of composting, understanding agronomic value, economic value and environmental value.

## **IR2: IMPROVED MARKETING OF AGRICULTURAL PRODUCTS**

Through its 14 partner organizations in the Dogon Plateau and Lac Horo, the project will facilitate marketing of 2,000 tons of shallots in year 2, more than double the total of 759 tons in 2007-08. To achieve this objective, the project will carry out the following activities:

**IR 2.1 Promote grouped sales** to improve negotiating capacity with wholesale purchasers so that the shallots are sold more quickly, enabling producers to obtain better prices. Currently, the producers are selling individually, keeping prices low. These small volumes do not justify large traders in Bamako in sending a truck which requires at least 20 tons. To this end, the IICEM project will:

- Train the members of the organizations and cooperative committees and unions to create networks of shallot producers in order to establish and offer large inventories to the potential buyers. The members of the organizations will be trained in: (1) strategies and systems for grouped marketing of agricultural products; (2) the preparation and keeping of inventory management documents; and (3) the preparation and presentation of activity reports and the balance sheet.
- Provide technical assistance and institutional strengthening to facilitate group sales through the *Union du Plateau Dogon*. See IR 4.2 below for more details.

As a result of this activity 100 persons will be trained in group sales and, combined with institutional restructuring in activity IR 4.2, IICEM partners in the Dogon Plateau will execute at least one grouped sale.

**IR 2.2 Develop new sub-regional markets** based on the studies IICEM performed in the first year in the sub-region. They are primarily the markets of Siguiri and Kankan in Guinea and the Abidjan market in Cote d'Ivoire. To develop these new markets, Malian producers must improve quality. Foreign customers complain that shallots from Mali have certain defects, such as poor packaging, bulbs that are not ripe and poor grading and sorting among others. Thus, it is necessary

to combine these business linkages with greater attention to quality. The following activities are thus required:

- Train traders to provide quality shallots to satisfy the sub-regional market. Training will be on sorting-packaging, compliance with sale contracts, and business information;
- Facilitate the establishment of business linkages between the Malian traders and buyers in the sub-region.

As a result of this activity, three traders will be trained in export quality and up to two tests of 40 tons will be successfully shipped in the sub-region.

**IR 2.3 Promote the construction of a shallot preservation warehouses** to resolve the lack of seed early in the season and to allow producers to time the market to avoid low prices during the height of production in Niono. If producers can obtain seed early, they can produce before shallots from Niono hit the market and command as much as four times the price. New warehouse infrastructure will also allow *Dogon* producers to hold the shallots-either fresh or preserved-so they do not have to sell when lower cost Niono shallots enter the market. The cooperatives and traders will provide the local construction materials, such as bricks, sand and adobe, as well as unskilled labor. The project will purchase iron, sheet metal and wooden pallets, and provide skilled labor. Moreover, IICEM will provide grinders for women's groups. Specific activities include:

- Promote the construction of warehouses for partner cooperatives. The project will help build eight warehouses with a capacity of 15 tons in the Dogon Plateau and will renovate the UCAMHO storage facility in Lac Horo.
- Cooperate to increase storage capacity in Lac Horo by helping to build a 25-ton storage facility;
- Help defray the costs of eight motorized grinders for eight villages including six in the Plateau and two UCAMHO facilities in Lac Horo.

This activity will result in eight new storage facilities, one 15-ton renovated facility, one newly constructed 25-ton facility and eight more grinders provided for the Plateau and Lac Horo. This infrastructure will greatly reduce post harvest losses, improve quality and result in increased revenue to partner producers.

### **IR3: ENHANCED FINANCIAL SERVICES**

To achieve the agricultural productivity and marketing objectives for shallots, the IICEM project will support partner producer organizations in raising 25 million FCFA in financing. To achieve the financing objectives, the project will carry out the following activities:

**IR 3.1 Facilitate access to input financing** through the BNDA for the cooperatives of the Dogon Plateau. The project will carry out specific activities such as:

- Provide technical assistance to farmer organizations in completing the financing applications;
- Facilitate loans for seeds;

- Facilitate processing loans for marketing;
- Monitoring/counseling for producers in using loans effectively.

The expected result is that 15 million FCFA will be provided in input financing and 10 million FCFA to support processing, so that 80% of the supervised cooperatives in the Dogon Plateau will receive one of the two types of financing.

## **IR 4: IMPROVED AGRICULTURAL ENVIRONMENT**

As with other value chains, IICEM will work to improve the agricultural environment by improving the capacity of cooperative unions to defend their interests with the other stakeholders in the agriculture sector and with the national and local governments and elected officials. IICEM will carry out this training with the Regional Chambers of Agriculture as follows:

**IR 4.1 Awareness of the Loi d’Orientation Agricole (LOA).** IICEM will raise the awareness of the players in the shallot value chain with regard to:

- Information on the LOA and its decrees, including radio messages on the local radio stations.

The expected result will be that the managers of two unions, one per region, will be trained in the LOA.

### **IR 4.2 Strengthen the organizational capacity of a Dogon Plateau Union and UCAMHO**

To promote group sales and the *Pays Dogon Shallots* brand, IICEM will facilitate the emergence of a cooperative union to support the village cooperatives. The role of IICEM in this restructuring strategy is to initiate meetings with the different parties to prepare a restructuring plan that determines the roles and responsibilities of all the players and the activities to be carried out to ultimately establish a strong union with well-defined economic activities. To this end, the project will carry out the following activities:

- Facilitate a workshop for discussing studies and developing an action plan. During the workshop, partners will present the market studies carried out by IIECM and PCDA, staff will present the system for collective marketing, and partners will present the results of the study on the organizational and institutional assessment of the ULPTE Union;
- Carry out a preliminary assessment of UCAMHO in its role as an umbrella and marketing organization;
- Help defray operational costs to develop a Cooperative Union for Dogon Plateau shallot producers, a *Union du Plateau Dogon*, including an executive secretary and accountant, a computer, printer and desk in accordance with the results in the workshop and the resulting plan. IICEM will reduce assistance over two years as the Union moves to financial sustainability.

For the Dogon Plateau, this activity will result in identifying a credible partner and will develop a union that supervises the community cooperatives in order to market significant volumes that meet export quality standards. For Lac Horo, as a result of this activity, UCAMHO will better

understand its umbrella role and build capacity to adequately manage the rehabilitated storage facility and carry out other elements of its mandate.

## **IR 5: IMPROVED TRADE AND INVESTMENT ENVIRONMENT**

Shallot traders/exporters do not understand the necessary forms and formalities associated with trade across borders. Because of this, they often do not have the necessary forms in place and are not adequately informed to defend themselves against harassment by authorities along the route. To improve this situation and to make the business and investment environment more favorable, the IICEM project will carry out the following activities:

- Disseminate the legislation already in effect on trading agricultural products in the WAEMU and ECOWAS zones to ensure that the legislation is well understood by the cooperative unions and traders who will be involved in sales in the sub-regional market;
- Provide empowerment/negotiating training for five women's groups.

As a result of these activities, 30 cooperative union managers and traders will better understand applicable business rules for agricultural products in the WAEMU and ECOWAS zones and those exporting in the sub-region will encounter fewer problems and trade more successfully.

# NEW VALUE CHAINS IN YEAR 2

IICEM will expand its scope to include value chains in year two. IICEM staff will first analyze the potential impact for the project in these new value chains. IICEM will first target value chains for shea butter, sesame and soy bean. If the analyses indicate these value chains have development potential, IICEM will pursue additional activities.

IICEM will analyze these new value chains in three stages:

## 1. *Value chain overview*

- a. Describe the target markets: with the players (producers) assess the potential markets (types of products, local and export market, market size, purchaser requirements in terms of quality, prices, volumes, and supply capacity (seasonality));
  - b. Map the value chain. Identify the different players and all the segments of the chain; identify the added value for each player and segment in the chain;
  - c. Analyze the competitors. Identify the competitors of the target producers and evaluate their degree of performance; identify competing products or alternatives;
  - d. Explore market access. Identify existing, export or local consumption markets; explore the existing conditions and infrastructures (rural market versus urban market, access to road infrastructures, storage capacities, etc.);
  - e. Identify services. What services exist in the value chain?
  - f. Broaden the trade environment. Identify the situation at the macro level (tax systems, duties and tariffs on exported products, quality control and health and packaging requirements, etc.).
2. **Opportunities, vision and strategies for revitalization:** Identify opportunities for improvements in the different segments of the value chain and see what the different players have already done; identify existing activities and development plans in the value chain; identify the development visions for the value chains; and, with the target players, prepare the revitalization strategies.
3. **Recommendations for an improvement action plan:** Prepare an IICEM action plan to support the players in their improvement strategies to better market the products in the target markets.

The expected result of the analysis is an IICEM action plan for each product that includes the priority activities to develop the value chain through support for production, storage, processing, capacity-building and the professionalization of the different players involved. The following paragraphs provide context for the three target value chains.

## PROMOTING SHEA BUTTER MARKETING IN PARTNERSHIP WITH THE PEACE CORPS

USAID is already supporting the shea butter industry through a partnership program with the Peace Corps Volunteers that are working with the unions and women's groups. However, in order to access international markets, value chain participants face difficulties in processing, quality control, and marketing. Global prices in the shea butter market vary considerably from year to

year, and the lack of updated information makes it impossible to identify promising markets where products with added value could be marketed.

The activities for the shea butter value chain are:

- Identify new niche markets for Mali, including attendance at a fair/workshop in Burkina Faso that is scheduled for late March 2009, with the opportunity to meet the principal shea butter buyers in the sub-region and the four large global operators.
- Perform a marketing test with the supply supervised by the Peace Corps Volunteers program in a selected niche export market.

## **SUSTAINING AND BUILDING ON MOMENTUM IN SESAME**

IICEM staff identified sesame as a promising value chain because production volume in Mali is increasing in the zones of Koulikoro, Sikasso, Ségou and Mopti and global demand is increasing, especially for organic sesame. The main project activities will involve:

- Conduct a marketing study including a status review of the different global markets that will highlight production opportunities with added value;
- Identify potential partners in the Koro, San and Bankass zones which market sesame and are requesting additional support;
- Search for niche markets to perform tests for promising exports and to determine possibilities for developing organic products;
- Research and develop initial contacts with buyers/exporters for products in demand through attendance at international fairs, including Fruitlogistika and ProSweets Cologne in early February in Germany.

## **DEVELOPMENT OF THE SOY VALUE CHAIN THROUGH AN ALLIANCE WITH A PRIVATE DEVELOPER**

IICEM will work with a private company to put in place a development plan for the soy bean value chain. Soy bean is a highly nutritious food and can be processed into an edible oil with the by-product of the processing useful as a base for animal feed. Currently, there is very little production of soy bean and the seeds currently used do not perform well. Given the high potential value added, the development of this value chain can benefit the Malian economy, increase incomes and reduce pressure on food security. IICEM foresees the following activities:

- Establish an MOU with the private developer. The developer will provide the improved seeds and appropriate fertilizer while the project will train producers and build institutional capacity of producer groups that commit to production.
- Seed multiplication starting with a container of 20 tons of soy bean seeds coming from Brazil in partnership with the IER;
- Train producers to produce soy bean over 300 ha, intercropped with jatropha which the company will also develop;
- Develop agricultural parameters for the growing season and evaluate results.

This alliance will result in the introduction of higher performing varieties to Mali, allowing 20 tons of seed to be multiplied into 500 tons by the end of the season. These seeds will feed soy bean production over more than 5000 hectares the following year with significant impacts in producer incomes.

## **OTHER VALUE CHAINS**

Other value chains may be added based on market opportunities as a result of visits to international fairs or in line with possible impact on food security in view of the priorities of the GFSR.

# ACTIVITIES UNDER THE GFSR IN MILLET/SORGHUM AND KAYES

As noted at the beginning of this document, IICEM received a substantial increase in January 2009 as part of the Global Food Security Response (GFSR). In addition to expanded activities in IICEM's five base value chains that we have already identified, the project has added new activities linked to the GFSR objectives. These activities are critical enough that they need to be presented separately from the value chain work above. In particular, this supplemental funding will allow IICEM to extend to Kayes, a key region not already covered, and to work in cereals crops outside the existing value chains like millet and sorghum.

## COLLABORATION WITH INTSORMIL on SORGHUM and MILLET

During Year 2, IICEM will collaborate with the Sorghum, Millet and Other Grains Collaborative Research Support Program (INTSORMIL CRSP)<sup>3</sup> to strengthen and expand their program in millet and sorghum production and marketing. INTSORMIL implements a program in Mali that supports millet and sorghum production and marketing in a range of selected villages in cooperation with the IER. The program mainly focuses on providing a small initial subsidy and a technical package to increase production and create marketable surpluses to increase incomes.

IICEM will work alongside INTSORMIL to strengthen the program by building the institutional capacity of the village associations they work with, putting in place a warehouse credit program (called the *credit stockage vivrier* or CSV). Such a program will allow them to time the market when selling their newly gained surpluses, and link producers in these villages with lenders to ensure availability of input financing. The collaboration will focus on six villages (Kafara, Kolokani, Tingoni, Dioila, Garasso, Kaniko) in which the INTSORMIL program has gone through at least one cycle of planting and harvest. IICEM will also work to increase on a much wider scale multiplication of the improved seed, which has been successfully proven to increase yields under the INTSORMIL work. At present, there is a relative shortage of these seeds. Wider seed multiplication would enable IICEM to ramp up the impact of the work in sorghum and millet quickly in year 3. The following provides detailed activities and a timeline for the collaboration:

- Field visits to 6 villages which are in at least their second cycle of working with INTSORMIL, to assess the organizational capacity of the villages associations (February);
- Training of association in cooperative management and evaluation of their capacity to transform into formal cooperatives under Malian law (March);
- Technical assistance in building and registering cooperatives (March and April);

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<sup>3</sup> INTSORMIL supports international collaborative research to improve nutrition and increase income in developing countries and the United States. The program focuses on enhancing production and use of sorghum, millet and some other grains (finger millet, folio and tef).

- CSV training for village associations (April);
- Building of business linkages with the microfinance institutions (April and May);
- According to the availability of improved seeds of the varieties tested by INTSORMIL, move toward a program of community level seed multiplication to produce seeds on a larger scale to ramp up the approach more broadly;

Expected results include improved capacity of village associations and progress toward registration as cooperatives; implementation of a CSV program to provide financing for market timing; and the building of sustainable business linkages between village associations in four to six villages with a selected microfinance institution to ensure input financing. In addition, this will result in significantly greater production of improved seeds as a basis to rapidly ramp up the impact of the program in this value chain in year 3.

## **FOOD SECURITY ACTIVITIES in KAYES**

With the additional funding, the project will extend its assistance to the region of Kayes. Kayes is a cereals deficit area, which makes it an important target for work under GFSR. As its first entry into Kayes, IICEM will build its activities in coordination with a planned US Department of Defense (DoD) investment in a cereals warehouse. IICEM will assist in identifying the right location for the warehouse, working with the local authorities to obtain land, work on governance and management issues, and develop business linkages among women's groups involved in commercialization and processing of cereals and in the production and commercialization of vegetables.

**Support in Locating and Managing a Cereals Warehouse:** The DoD is planning to build a warehouse to improve stocks of cereals and increase food security in the Kayes Region. IICEM will focus on complementing this investment in order to ensure good private sector management of the facility. To achieve this objective, IICEM will implement the following specific activities:

- Identify women's groups already buying volumes of cereals that would justify the need for such a warehouse, and the commercial strength to put it to maximum use;
- Identify a potential site and submit a request to the region's governor in order to obtain a site close to the city of Kayes, likely on one of the trunk roads leading out of the city;
- Develop an MOU between IICEM and the women's group to manage the warehouse with clear commitments on both sides;

These activities will result in the appropriate placement of the cereals warehouse, and the sustainable management by a women's group for the benefit of its members, directly affecting at least 250 women traders in the city of Kayes and having wider effects on food security through their families and for those families selling and buying cereals moving through the warehouse.

**Institutional Capacity Building for the Women's Group Managing the Warehouse:** Once the women's group has been identified, the project will provide technical assistance to

reinforce the group's institutional and organizational capacity to ensure sustainability through good management over time. Specific activities will include:

- Conduct a participative organizational diagnostic using the PIVA model already applied under IICEM;
- Sign a sub-agreement with an NGO, likely Afrique Verte, to provide institutional capacity building training and technical assistance;
- Implement training on management, leadership, financial management and commercialization / marketing;
- Provide advisory services in obtaining working capital to build the financial health of the organization and the warehouse operations;
- Build business linkages with producers in order to ensure purchases of cereal and to obtain a line of credit and set up a repayment process that reduces risk for the lender.

As a result of this activity, the selected group will have a manager and accountant in place allowing them to adequately manage the warehouse for the benefit of their members. In the short term, this will support marketing of 2000 tons of cereals. For next year, the objective will be to put everything in place to maximize cereals purchases and marketing for the next agricultural season.

### **Rehabilitation of Wells and Improved Water Management to Support Women's**

**Groups:** IICEM will support six cooperatives growing vegetables in Kéniéba, working with them to assure they have adequately operating wells and that they are able to manage that resource optimally, a critical component to market gardening. This directly leverages investments made by the Canadian not-for-profit UPA-DI, the APCAM and the Tamboura Mining gold mine. The gold mine invested \$300,000 in land development for these six perimeters and has committed to buying the output. This could be an important public private partnership model with significant potential to improve incomes and food security that could be repeated in other areas of Kayes and have a positive impact on food security. The team will implement the following specific activities:

- Establish a partnership with the six women's organizations;
- Conduct a diagnostic on the quality of the water points, through a visit by IICEM's irrigation specialist;
- Procure and implement a contract to rehabilitate the wells;
- Support and build capacity of the six cooperatives following IICEM's proven model. This would include provision of improved seeds.

This activity will result in a successful public private alliance, six rehabilitated wells and improved production and management capacity in the selected women's groups.

# CROSSCUTTING ACTIVITIES

This section presents IICEM's crosscutting activities. Crosscutting activities either work across several of the selected value chains, making it difficult or repetitive to spread across value chain discussions, or are sufficiently important in scope to distinguish them from the activities to be carried by the value chain.

## STRATEGIC ACTIVITIES FUND

During Year 2, IICEM will put in place a Strategic Activities Fund (SAF) to catalyze potentially transformative investments in IICEM's priority value chains. Value added activities such as processing are poorly developed along these value chains and in Mali in general. There are few facilities that process agricultural products, for instance, and much of the processing that does take place is done on a small-scale basis for the local market. Yet there is unmet demand in domestic, sub-regional and international markets for value added products that meet necessary quality requirements, such as GLOBALGAP standards for European markets, and in volumes necessary for large importers. Such transformative projects in staple value chains such as rice, millet, and sorghum may also have implications for improving Mali's food security by increasing resilience in the face of future food shocks.

In many cases, there are strong commercial reasons to make these investments, but investors are hesitant because of high perceived risk and low levels of technical and management expertise. The SAF will identify interested and qualified investors and help shape the investment, find financial resources, bring technical expertise, and provide a grant to support the investment. The SAF grants may be used for preliminary technical, financial and market studies, startup training costs, and seed capital to enable investors to obtain financing for the project.

IICEM will use a competitive process to select investors and projects to support. The project will issue a request for expressions of interest to select the best technical and financial proposal with proven managerial and technical expertise, capital, markets, and impact on the value chain and export. IICEM will sign a partnership agreement with the investors selected establishing the procedures for programs and conditions for disbursements. Investors selected will be required to bring their own capital with SAF grants never providing more than 90% of total project cost.

IICEM will target up to five of the following types of investments:

- Innovative projects in the rice, millet, sorghum, and corn value chains;
- Expansion of a production unit for animal feed using local compounds (for a suitable feed compound at a lower cost);
- An industrial cold chamber unit for storing potatoes, thus fostering exporting at better prices;
- An industrial unit for drying fruit, thus increasing added value through sales in the sub-regional and international markets;
- An industrial fruit juice unit primarily for the domestic and sub-regional market.

The following activities will be carried out to select and implement SAF investments:

- Prepare and issue competitive requests for proposals;
- Evaluate the proposals and carry out the due diligence according to the information that is received;
- Meet the potential investors and financial institutions to evaluate the feasibility of the loan package;
- Develop the specific partnership agreements according to each proposal that is accepted;
- Carry out the partnership agreement activities including technical assistance.

The SAF will result in up to five significant investments in IICEM's selected value chains which increase value added and promote exports and agribusiness jobs in Mali.

## **COORDINATION WITH OTHER PROGRAMS**

USAID awarded a number of contracts and cooperative agreements in the different areas of economic growth and regions of Mali to promote research, the adoption of best practices, and economic opportunity. Through its activities in several value chains and several regions, IICEM may provide a significant complement to these activities. The IICEM project is carrying out or planning the following activities in coordination with other USAID-funded contracts or cooperative agreements:

1. Trickle Up (NGO): Technical assistance for women's groups that are at the stage of approaching the microfinance institutions;
2. FIAS (World Bank/IFC): Joint technical assistance in reform programs to promote growth in the private sector and support through the SAF for investments in value added processing facilities;
3. Peace Corps: Assistance to villages' volunteers who are assisting in the shea butter value chain to make linkages to shea buyers;
3. AED (Sustainable Tourism Project): Development of biodiversity programs to preserve threatened areas within the area covered by the sustainable tourism activities;
4. IER (Basic seed unit): Technical input in the workshop on the national seed policy and the law that creates rules on production, quality control, certification, and marketing of seeds of vegetable and plant origin;
5. CNFA (Capacity-building for agricultural traders): Technical assistance and market linkages to support fertilizer dealers supported by the CNFA program (in the South, IICEM in the North);
6. IPM CRSP-Africa Food Security Initiative (Virginia Tech/IER): Coordination on expanding the tomato IPM to other zones in Mali and coordination for rice virus analysis at IICEM sites in Sikasso;
7. IPM CRSP-Mango Pests: Participation in the Dakar sub-regional workshop; dissemination of the findings by a national workshop with all the players;

8. IPM CRSP-INTSORMIL: Coordination and support on building capacity of producer organizations, warehouse receipts in the form of the Credit Stockage Vivrier (CSV), building business linkages between producer groups and financial institutions;

Other coordination projects—current and potential:

9. Africare: Dissemination of the results of SRI tests to other village perimeters in the North;

10. ATP (Abt Associates): Regional coordination in identifying markets for the shallot/onion value chain;

11. PAFA (SNC Lavalin): Coordination for shallots and shea butter;

12. PCDA (World Bank): Cooperate in several regions and value chains including governance of the PLAZA mango packaging and sorting facility, institutional restructuring in the shallot value chain in Bandiagara and other areas;

13. PGP 2: Governance training for women's cooperatives that received support for the potato value chain.

## **SUPPORT ECONOMIC OPERATORS TO REENERGIZE THE AGOA COMMITTEE**

The AGOA Committee is an entity set up by the private sector with support from the government of Mali to encourage Malian businesses to export to the United States under flexible and favorable customs conditions. With a few exceptions, the Committee has not significantly increased exports to the United States to take advantage of AGOA. The project will support Malian companies looking to export to the United States so that they become more engaged in the AGOA Committee. In order to do so, the project plans to carry out the following activities:

- Take stock of the achievements of Malian businesses in exporting and preparing for exporting—for instance which companies are upgrading production capacities and compliance with U.S. specifications. IICEM will train companies ready to export in standards and procedures in the United States;
- Conduct a meeting with the Ministry of the Economy, Industry and Trade (known as MEIC for its French acronym) to determine the programs to be implemented during the year to reenergize the AGOA Committee;
- Support the MEIC in carrying out selected activities to reenergize the AGOA Committee;

As a result of this activity, IICEM expects the AGOA Committee to re-energize its activities around agriculture and textile exporters interested in the U.S. market.

## IMPROVED FINANCIAL SERVICES

Among the major issues in the target value chains is the low level of investment by the players because they experience difficulties accessing financing and because agricultural inputs are not available or not sufficient in some zones, such as the regions of the North. The IICEM project will set up two guarantee funds to promote the financing of agricultural investment and to ensure that agricultural inputs are more widely available. All of these activities aim to improve productivity, the value added by the processed products, and thus to temper the increase in the price of food commodities.

**1. Promote medium term investment in the target value chains.** This guarantee fund will be set up to promote purchases of agro-industrial equipment. Equipment will be purchased over periods of five years in order to depreciate it over the service life of the machinery. The goal is to facilitate more financing by banks and microfinance institutions for medium-term investment projects in the target value chains for twice the amount of the guarantee fund. This fund will be in an amount equivalent to \$300,000 in FCFA.

IICEM will implement the medium term guarantee fund as follows:

- Negotiate a cooperation framework and sign a guarantee agreement with the partner financial institutions;
- Make producer organizations aware and provide information to them and the players on the conditions for accessing financing;
- Support the preparation of applications for financing;
- Support the beneficiaries in the choice of equipment and the purchasing process.

IICEM will target placing a guarantee fund in the BNDA, and potentially in MFI Kafo Jiginew. The guarantee fund will cover credit risks up to the limit of 50% of the value of the loan. Given the guarantee period of five to eight years, the fund may require a specific agreement to keep it under the management either of the host bank or of USAID/Mali Economic Growth Team projects.

**2. Foster the development of the input distribution network in the regions of the North.** To increase input availability and accessibility in the North, IICEM will work with Toguna SA to develop their distribution network. Often, despite the fact that producer groups have the cash to pay for inputs, the inputs are simply not available through local distributors due to lack of working capital. The project will provide financial guarantees for certain local distributors with the BNDA so the input distributors are able to bolster their inventories and thus increase the accessibility of the remote areas. The objective is to increase inventories based on the needs in Mopti, Timbuktu and Gao. Some input stores that are more credible with the BNDA could also possibly obtain guarantees if the BNDA agrees to take this credit risk. The maximum amount of this fund will be \$400,000.

To achieve this objective, the project will carry out the following activities:

- Identify Toguna's partner distributors in the regions of Mopti, Timbuktu and Gao and evaluate their capacity;
- Negotiate a cooperation framework and sign a guarantee agreement with the BNDA;
- Establish a partnership between Toguna, BNDA and IICEM;
- Make the distributors aware and inform them of the conditions for accessing financing;
- Support the distributors to prepare the financing applications.

IICEM will place the guarantee fund at the BNDA. It will cover credit risks up to a limit of 50% of outstanding capital. This guarantee fund is expected to result in up to \$800,000 in financing and increased availability of inputs in the three target restaurants.

## **MARKET PROSPECTING TRIPS AND TRIPS TO PROMOTE MALIAN AGRICULTURAL EXPORTS**

***ISM- International Sweets and Biscuits Fair, Cologne, Germany, from February 1 to 3, 2009.*** This is the only international tradeshow that exhibits everything in the area of confectionary, including cookies, snacks, etc., with considerable emphasis on organic products and a high percentage of innovative products. This tradeshow drew 1,675 exhibitors from 70 countries in 2008. ISM 2009, to be held from February 1 to 3, 2009 in Cologne, will again highlight organic products that give businesses new leeway in terms of price and design. This tradeshow provides new opportunities to develop organic activities in a highly promising segment.

This tradeshow will identify needs for organic products, and in particular those that are part of the IICEM value chain, including dried mangoes, sesame, and dried tomatoes that are processed for the confectionary industry and other products. This fair takes place before the Fruit Logistica tradeshow, so that two tradeshows can be visited during the same week.

***FRUIT LOGISTICA, Berlin, Germany from February 4 to 6, 2009.*** This is the major event on the international business agenda for fruits and vegetables. In February 2008, more than 50,000 decision-makers from 125 different nations attended, and 2,115 exhibitors from 68 countries exhibited the largest range of products ever offered, from production to sales outlets via distribution and marketing.

During the show, attendees will learn about current status in the sector and future trends, while concentrating on the products of the value chains selected by IICEM and other products and export opportunities. IICEM staff will place special emphasis on finding business contacts for dried mangoes, sesame and dried tomatoes.

***The Organic Africa –BIOFACH Initiative in Nuremberg, Germany from February 19 to 22, 2009.*** This is the world's largest organic tradeshow with an African pavilion. The exhibitors and buyers come from Africa, Asia, Australia, Europe, and from South and North America. Over the years, BioFach has become an important meeting point for those involved in the organic food industry, including traders, exporters, researchers, NGOs, political officials and development partners.

The African pavilion will have national and sub-regional booths to display the products and specialties of the countries of Sub-Saharan Africa. This pavilion will serve as an information center for the activities of the different importers, as an agency to promote exports, as consulting firms and certification organizations and services offered by these different players. At this fair contacts will be established to develop trade relations for the products identified in IICEM.

***Shea 2009: Optimizing the Global Value Chain, Ouagadougou, Burkina Faso, from March 25 to 27, 2009.*** *The shea butter market doubled from 2004 to 2008. How can we ensure that this growth continues and still confront the major challenges? This tradeshow will bring together the companies of more than 12 African countries, as well as experts, international buyers, and regional service centers to explore all of the new investment opportunities. They will also discuss the fundamental and crucial points of the shea butter industry.*

The points discussed will include:

- What environmental and social aspects have an impact on shea butter, for example, child labor and pesticide use?
- What economic added value can the production of organic shea butter and certified fair trade have?
- How can improving product quality at the source and the management of shea butter facilities raise the economic value of the product?
- What will the effect of the large-scale production of biofuel using jatropha be on shea butter production?
- How can modern consumers influence the demand for shea butter through a change in health systems and natural cosmetics?
- What are the needs for identifying quality standards and implications for the regulation of the shea butter industry?

Through this tradeshow, IICEM and identified partners will have direct contact with the principal buyers in the shea butter value chain and establish trade links to develop markets for Malian products.

### **Other exploration missions**

According to the needs identified and through seeking a contact, other sub-regional exploration missions may be carried out.

# IMPROVED NATURAL RESOURCE MANAGEMENT AND BIODIVERSITY

**IR 6.1 Train the partner NGO/GIE employees in the process of preparing, adopting, and approving a local convention** for natural resource management to standardize the different approaches and adopt a consistent framework across IICEM sites.

- A two-day workshop to be attended by the employees involved in preparing the local NRM convention;

The expected result of the workshop will be increased understanding at the village and communal level of the process for developing the conventions which will in turn facilitate the development process under 6.2, 6.3 and 6.4 below.

**IR 6.2 Prepare, finalize and approve the local conventions** drafted by the previous project. This will continue in Year 2 of IICEM and IICEM staff will work with local partners to prepare new conventions. IICEM staff will carry out the following activities to achieve this important objective:

- Four conventions drafted by the previous project will be finalized;
- Seven new conventions will be prepared.

Experience from Year 1 showed that there are latent conflicts in the *bourgou* pastures in the regions of Gao and Timbuktu which may make it impossible to proceed with selected conventions. As a part of this activity, IICEM will work with all the stakeholders, including government agencies, technical entities, neighboring villages, professional organizations and individuals to identify the basis for any conflicts. Any site where IICEM identifies conflicts, especially involving land ownership, activities will be abandoned. In the end, IICEM expects eight of eleven conventions to be finalized.

**IR 6.3 Support communities in implementing conventions approved in Year 1.** Staff and supervisory committees are experiencing major difficulties in implementing agreed conventions. The boundaries of the massifs addressed in the conventions, have not been delineated, leaving an opening for opportunistic farmers to clear the land to search for fertile soil while claiming they are outside the forest. IICEM will carry out a major awareness program to build acceptance among local populations. This support will be as follows:

- **Translate and distribute community conventions** (in the villages involved); this is an extremely important stage in implementing local natural resources management conventions. To do so, IICEM staff will facilitate general assembly meetings in each village; and broadcast radio programs to reach the maximum numbers of targets. As part of this, IICEM will develop

and deliver one radio program per quarter on the conventions in each region, in French as well as the local dominant language;

- **Put in place signage** to show the boundaries of the convention areas with signs that have information about the convention at strategic points at each site;
- **Place markers for the Kléla-Sikasso trail** after the “Noupaganion” intercommune convention is approved, and provide financial support to the communes of Fama, Diomatènè, Zangaradougou, and Sikasso to mark the trail. In total, IICEM will have contributed to marking about 100 km for the trail over an area of 1,000 ha. It is of paramount importance to carry out this activity for the communes involved because each year farmers plant on the right of way on the trail and claim the boundaries are unknown, primarily because they are un-marked;
- **Train the village supervisors and communal council members in legislation on natural resource management** before the communal council session to adopt local conventions. IICEM will organize a training session on the relevant legislation. Understanding the legislation in effect will facilitate the understanding of the provisions in the convention;
- **Provide equipment to the village supervisors** after they are trained so that they are able to fully carry out their tasks. All the trained supervisors will be equipped with small equipment including clothing, flashlights, and badges with the words “village supervisor”. Given the distances between the villages of Komio, Kamaka and Kanguila and the massif to be supervised, IICEM will also provide bicycles to these supervisors. This will help address the major constraint of limited access to areas for management of forest resources.

The expected result is effective implementation of the conventions adopted by the local governments and approved by the supervisory authorities.

**IR 6.4 Specific activities in the area of natural resource management** to contribute to improving the management of natural resources at certain sites:

- **A greenbelt will be made around the city of Diré** to control sanding. This greenbelt, included in the development master plan of the commune of Diré, will serve as protection (the Niger, cemetery, urban areas, etc.) from sanding. The species will be the eucalyptus or *Prosopis juliflora* or both. The major constraint identified by the communal authorities is the lack of water, because water is required, particularly during the dry season in the first year. To solve this water problem, the target associations have agreed to build traditional wells at the site. Planting, maintenance, and harvesting may be addressed in a convention between the mayor’s office and the different village associations. The communities will share in the revenue from the sale of forest products, and this revenue may be a source of motivation for them. IICEM will purchase 10,000 plants to begin the belt.

The expected result is a 2-km greenbelt for this first year (over a total of 35 km), with spacing of 4 m x 4 m. This will represent an area of 20 hectares.

- **Rebuild the dune pastures** to control sanding, a major challenge in Northern Mali. The fine grains of sand from the moving dunes are “burying” crops and urban areas. In some places the Lac Horo peripheral canal has been completely filled in by sand. To fight the causes, communities have identified about 60 hectares of dunes that need to be secured toward the village of Echell. The 2008/2009 action program of the Environmental Program to Control Sanding in the Timbuktu Region (*Programme Environnemental de Lutte contre l’Ensemblement de la région de Timbuktu*) will secure 20 hectares. IICEM proposes to secure an additional 20 ha. This is easy to do in the Timbuktu region because the materials (*Leptadenia* and *Euphorbia*) are widely available and therefore inexpensive. Securing will be done using grasses such as *cram-cram*. The species is increasingly being used routinely by the local people for cooking. Ideally, a combination of mechanical methods (with unfastened 5 m x 15 m quadras) and biological methods will be used. Staff will study all variations for cost effectiveness with the specialists from the SCN, the program to control sanding, and the local communities. Regardless, biological fixation will be included. IICEM will select the plant species in conjunction with the local communities.

The expected result is the reconstruction of the dune pastures in Lac Horo, with an area of 20 ha.

**IR 6.5 Specific activities to protect biodiversity** to contribute to establishing biodiversity conservation areas. In Mali wildlife is characterized by the location and diversity of species and their dwindling numbers. In the 1960s and even in the 1970s there were no fewer than 136 species of mammals, including 70 large species of mammals living in the Western Sudan savanna and in the Sahel area. Some of these species that used to be abundant, such as the Derby elk, giraffes, damalisks, addax, and oryx have since disappeared or are seriously endangered. Today, the habitats for wildlife have shrunk by over 65% and are now used for shifting agriculture and pasturing livestock. The use of wood for energy is also excessive given the rapid population growth and successive droughts. To contribute to protecting biodiversity, the project will carry out the following activities:

- **Inventory of fauna and forests, followed by delineation of the protected areas in the Bougouni –Yanfolila complex:** In the Sikasso region the State has a series of protected forests and areas, including the protected forests of Diangoumérila and Djinétoumanina (cercle of Yanfolila), the fauna reservation and the Nièndougou Wildlife Management Area and the protected forest of Dialakoro (cercle of Bougouni) located on both sides of the ‘Baoulé’ waterway, a major branch of the Bani (Niger River tributary). There are approximately 160,000 ha of protected lands in these areas. The annex provides the details of the areas by reservation.

This activity will result in an inventory of the fauna and forests of 150,000 hectares with the placement of markers that delineate the forest around Baoulé.

- **Inventory of fauna and forests, followed by delineation of the gallery forest along the Bagoé to turn it into a protected forest:** The Bagoé River is a major tributary of the

Upper Bani. Consequently, with the Sankarani, Baoulé, and the Banifing, this waterway is a very important source for regulating the Niger River. To protect this waterway and the Niger indirectly, the Sikasso DRCN and the decentralized territorial governments decided to build the gallery forest 500 m wide on both sides of the principal riverbed. To achieve this goal a map must be prepared by interpreting the satellite images, inventory must be taken of plant, animal and fish species, the boundaries must be marked, and a preliminary plan for protection must be prepared.

This activity will result in an inventory of fauna and forests over 3,000 hectares with markers put in place that delineate the gallery forest along the Bagoé.

- **Support the GSTA project in preparing a convention to protect the Toupéré Forest:** The Toupéré Forest, with over 8,000 ha, is located in the cercle of Bandiagara. This forest has been spared intrusion to date because of its isolated location. As the tourist trail is developed, substantial pressure is being placed on this forest by the farmers in the nearby villages and even the farmers from Bandiagara. This massif is replete with protected species, but these species are in great demand, such as the *rônier*, *lengué* or *cailcedrat*. The massif is also being invaded by the agricultural hamlets. To overcome these various threats, the local communities have voluntarily approached the Bandiagara nature conservation service (SCN) to protect a part or all of the forest. IICEM will carry out the following activities to protect biological diversity in this area: preparing the map interpreting the satellite image; taking inventory of fauna and forests; delineating the massif; and holding general assembly meetings in the village to prepare the process for *classement* or classification as protected. IICEM will implement this activity with the Global Sustainable Tourism Alliance (GSTA) project funded by USAID in Bandiagara. IICEM's role will be to prepare a map based on satellite images, and inventory of the forest and wildlife and marking of the massif. GSTA will facilitate general assemblies in the affected villages to develop the protection plan.

The expected result is that a convention to protect at least 2,000 hectares of the Toupéré Forest will be prepared.

- **Support the GSTA project in preparing a convention to protect the Samori Forest** using the same approach as for the Toupéré Forest. This forest, in the Cercle of Bankass, covers 240,000 ha. IICEM will prepare a convention to protect at least 50,000 hectares. This area in the protection zone may be revised either upward or downward during discussions with the local communities. This activity, like the Toupéré convention, will be carried out with GSTA, the USAID tourism project in Bandiagara, which is very interested in this zone. The GSTA will be in charge of community mobilization, while IICEM will bear the expenses and provide the necessary technical expertise. The IICEM / GSTA division of labor will be identical to the Toupéré forest activity above.

The expected result is that a convention to protect at least 50,000 hectares of the Samori Forest will be prepared.

- **Inventory of the fauna of the Sourou River and the Inner Niger Delta:** Categorized as humid zones, the Sourou and Inner Niger Delta (known as DIN for its French acronym) possess rich biological diversity, both in terms of fauna and flora. The Delta was designated a Ramsar site in 1987. Considered the largest floodplain in West Africa, the Delta suffers substantially from the combined harmful effects of low water levels and human encroachment. In addition to the rehabilitation of the natural habitat by planting the *Acacia kirkii* and bourgou by projects such as the UICN/Walia and Wetlands, IICEM involvement will be to conduct a status review through an inventory of the avifauna and hippopotamus in January and June. In January migratory birds from Asia and Europe are in the area, while in June only African and local birds are there. These activities are part of the international bird census. In Sourou, no such technical data about this site exist. This is the main constraint for putting in these wetlands at the Ramsar site, despite the willingness of the appropriate technical departments. Staff will also collect data on fish in addition to the inventories of avifauna and hippopotamus.

All of these studies will be contracted with Wetlands International, which has proven expertise in the area.

This activity will result in inventories of the fauna (birds and hippopotamus) of the Sourou River and the Inner Niger Delta. The number of hectares affected will be determined by the satellite maps.

# ANNEXES

## A. Sites selected for Year 2

Région	Sites	FO	Area (ha)	Canal surface	Complete Development
Mopti	Touara	Men's cooperative	16		60
		Nyeta women's cooperatives	8		
		Kouin cooperative	20		120
		Baramadougou cooperative			120
	Sah	Benkadi	55	X	
		Men's Socoura	23		
	Diogui	Wafa Koye	53	X	
		Gomni Kondé	59	X	
	Kouakourou	Koro pondo cooperative	40		
		Kouakourou 2	15		
	Sahona	PIV Association	33		
	Korientzé	Dowmbia Jigi sèmè 2	20	X	
		Korombana Jigi	15		
		Yèrè dèmè ton	12		
		Dowmbia jigi sèmè 1	20		
		Agro sylvo pasto coop	25		
	Fanabougou	Fanabougou cooperative	30		
	Gobi	Benkadi	20		
	Sobo	Sobo coop	26		
	Kamaka	Men's coop	22		22
	Kouana	Farmers' coop	14		120
	Baramadougou	Peza culture cooperative	15		
TOTAL	12	22		4	5
Région	Sites	FO	Area (ha)	Canal surfacing	Complete development
Gao	Tondibi	UCUTOHA			30
		Adourourou		X	
	Tonditihio	Tonditihio cooperative			30
	Gassi	Gassi cooperative			30
	Djeflani	Djeflani cooperative		X	

Région	Sites	FO	Area (ha)	Canal surfacing	Complete development
Timbuktu	Kondi				<b>61</b>
	Feindoukaina	Cop Maayel Farrou			<b>6</b>
		Annia Association			
	Kesoubibi	Agricultural Coop.			<b>30</b>
	Kano			<b>X</b>	
	Beregoungou			<b>X</b>	
	Bourem Inaly				
	Iloua				
	Kabara				<b>19</b>
	Sibo	A. Doundoubangou			
	Tonka				<b>30</b>
	Bagadadji				<b>30</b>
	Adinakoira				<b>30</b>
	Donghoï				
	Saobomo				
	Niambourgou				
	Siboney	Siboney Agric. Cooperative			<b>X</b>
	M'betou	M'betou Coop			<b>X</b>
Goubo	Casgo Coop			<b>441</b>	
<b>TOTAL</b>	<b>18</b>				

Région	Sites	FO	Area (ha)	Canal surface	Complete development
Sikasso	Nièna		150		40
	Loutana		120		
	M'Pègnesso		17.75		
	Nantoumana		6		
	Bamadougou		12		
	Danderesso		<b>NA</b>		
	Kléla		750		
	Finkolo Village		20		100
	Gladié				750
	Loulouni		15		15
Total	10				

## B. Sites under Review for Irrigation Development

Region	Site name	Existing/Rehabilitation	New/Development	Total Areas
<b>SIKASSO</b>	Niena	40 ha		40 ha
	Gladié		750 ha	750 ha
	Finkolo village	20 ha	100 ha	120 ha
	Loulouni	15 ha		15 ha
<b>SUBTOTAL SIKASSO</b>		<b>75 ha</b>	<b>850 ha</b>	<b>925 ha</b>
<b>TIMBUKTU</b>	Kabara/ women rice	16 ha		19 ha
	Truck farming		3 ha	
	Tonka / women		30 ha	30 ha
	Kondi	32 ha	30 ha	62 ha
	Kessoubibi		30 ha	30 ha
	Nianfunké/ Goubo	334 ha	107 ha	441 ha
	Adina Koira	30 ha		30 ha
	Findoukaïna /women		6 ha	6 ha
	Bagadadji		30 ha	30 ha
<b>SUBTOTAL TIMBUKTU</b>		<b>412 ha</b>	<b>256 ha</b>	<b>648 ha</b>
<b>GAO</b>	Tonditihio		30 ha	30 ha
	Gassi		30 ha	30 ha
	Tondibi/ Ucutoha	30 ha		30 ha
<b>SUBTOTAL GAO</b>		<b>30 ha</b>	<b>60 ha</b>	<b>90 ha</b>
<b>MOPTI</b>	Touara	24 ha	36 ha	60 ha
	Baramadougou		120 ha	120 ha
	Kouin	20 ha	100 ha	120 ha

Region	Site name	Existing/Rehabilitation	New/ Development	Total Areas
	Kamaka	22 ha		22 ha
	Kouana/ Kamaka		120 ha	120 ha
<b>SUBTOTAL MOPTI</b>		<b>66 ha</b>	<b>376 ha</b>	<b>442 ha</b>
<b>GRAND TOTAL (Based on the studies and the budget, the final sites will be selected)</b>		<b>583 ha</b>	<b>1,542 ha</b>	<b>2,105 ha</b>

### C. Year 2 NRM conventions to be completed

No.	Région	Commune	Village/Site	Description	Area (ha)	Comment
1	Timbuktu	Soboundou	Sibo	Bourgou pasture management convention	30	New
2		Bourem Inaly	Bourem Inaly	Fishing convention		Old
3	Gao	Taboye	Tondibi	Bourgou pasture management convention	5	New
4		Gabéro	Dongomé	Bourgou pasture management convention		Old
5		Soni Ali Ber		Convention to protect the Zindiga doumeraie	300	New
6	Sikasso	Zangaradougou	Zangaradougou	Convention to protect the village forest in Zangaradougou	50	Old
7		Niéna	Niéna	Fishing convention in the canal in the western Niéna plain	0,6	New
8		The 12 communes of the		Convention to identify and manage rural		New

		Noupaganion intercommune		paths		
9	Mopti	Kounari	Manako, Guirowel and Karbaye	Toguéré-Karbaye protection	43	Old
10		Doucoumbo	7 neighboring villages	Songho protection convention	16	New
11		Ouadouba	4 neighboring villages	Mènèmènè protection convention	14	New

## D. Bougouni-Yanfolila areas under Biodiversity

location	Description	Area (Ha)
Cercle of Yanfolila	Protected forest of Diangoumérila	57,500
Cercle of Yanfolila	Protected forest of Djinétoumanina	16,180
Cercle of Bougouni	Protected forest of Dialakoro	33,200
Cercle of Bougouni	Niênendougou Wildlife Management Area	50,422