



**Cooperative League of the United States of America
(CLUSA)**

SWITCHING TO SOY

**A CASE STUDY OF THE IMPACT OF INTRODUCING
SOY BEAN CULTIVATION TO RUACE VILLAGE,
ZAMBÉZIA PROVINCE, MOZAMBIQUE**

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**Expanding Soy Bean Production and Marketing in Northern
Mozambique
ProSOJA Project**

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ACRONYMS

ADIPSA	Apoio as Iniciativas Privadas ao Sector Agrario
ASCA	Accumulating savings and credit associations
BOM	Banco Oportunidade de Moçambique
CAPEL	Compania de Agro Pequaria de Lioma (Agro-Livestock Company of Lioma)
CLUSA	Cooperative League of the USA
COPSA	Cooperativa Agrícola de Prestação de Serviços (Cooperative for the Provision of Agricultural Services)
DUAT	Direito de Uso e Aproveitamento de Terra (Land Use Right)
FAO	Food and Agricultural Organization
FBAL	Basic Adult Literacy Training
IIAM	Instituto de Investigação Agraria de Moçambique (Institute for the Agricultural Investigation of Mozambique)
IITA	International Institute for Tropical Agriculture
INE	National Institute for Statistics
M&E	Monitoring and Evaluation
NBCA	National Cooperative Business Association
NGO	Non governmental organization
NORAD	Norwegian Agency for Development
NUIT	Numero Unitário de Impostos Tributário (Tax number)
PCR	Poupança e Crédito Rotativo (Revolving Savings and Credit)
ProSOJA	Expanding Soy Bean Production and Marketig in Northern Mozambique
RCRN	Rede das Caixas Rurais de Nampula (Network of Rural Finance of Nampula)
RGEDP	Rural Group Enterprise Development Programme
SACCO	Savings and Credit Cooperatives
SDC	Swiss Development Cooperation
SME	Small and Medium Enterprise
USAID	US Agency for International Development
VSLG	Village savings and lending groups

EXECUTIVE SUMMARY

Background

This study analyses the socio-economic impact of the ProSOJA project since its inception in 2007. For logistical reasons it was decided to focus only on the community of Ruace in north western Zambézia Province where approximately one-third of the project's producers reside and which is also in the centre of the main soy bean producing areas of the region, including two large plantations producing soy among their main crops. Without baseline data or other primary sources, the analysis is almost entirely based on observation, interviews and project related documents (mainly annual reports).

In 2002, the Norwegian agricultural purchasing cooperative Felleskjøpet examined the possibility of promoting the cultivation of soy bean in Mozambique with the objective of exporting non genetically modified soy bean to Norway. Subsequently, two phases over 2003-2006 were funded by NORAD, leading to the 5 year (2007-2012) ProSOJA project. High levels of domestic demand (mainly for poultry feed, with soy contributing about 30% of feed volume) has led to all of local production being absorbed by the domestic market.

Climatic and soil conditions in the project area are highly conducive for soy cultivation. This, combined with ease of cultivation, consistently high prices and an easily accessible market, meant that previous cash crops such as maize and beans were eclipsed by the much higher yielding soy crop. The mainly NORAD-funded ProSOJA project, coordinated by CLUSA, has been responsible for the introduction of the crop, facilitated through the creation of farmer associations and fora, marketing arrangements, seed production and distribution (on credit) and demonstration plots. Other auxiliary components of the project include: access to mechanized plowing, animal traction, conservation farming techniques (ripping), the provision (by credit) of equipment (threshers and rotavators) project-financed credit arrangements, the creation of community based savings and credit groups, assisted access to commercial bank loans, the promotion of soy-based nutrition, basic functional adult literacy courses and access to land use deeds.

Impact at the Household Level

At the household level, impact was gauged in terms of expenditures, financial inclusion, education and nutrition. The most notable impact of the almost universal switching to soy as a cash crop by farming households has been a significant increase in disposable income, manifesting itself through higher levels of food consumption, the building of brick and mortar houses with zinc roofing, pervasive use of bicycles and a rapidly growing proportion of households using motorcycles. High priority is also given to the purchase of household furniture, kitchen appliances and TVs, DVD players and sound systems, especially since the provision of electricity in 2010.

One of the biggest non-agricultural successes of the project has been the creation of community based savings and credit groups (known locally as "PCRs"), mobilizing savings from members and on-lending to members. As experienced elsewhere in Mozambique, the development of the groups was slow to

start but took off after the demonstration effect of the initial groups (some 40 groups averaging around 20 members are envisaged for this coming season).

Access to commercial credit has been difficult but some progress was made by facilitating credit for from the new agri-focused bank Banco Terra. The imminent establishment of the microfinance bank Banco Oportunidade de Moçambique in Guruè bodes well for a broader and more reliable access to credit for soy producers. In the meantime, ad hoc credits on a small scale have been provided by ProSOJA.

Closely linked to the savings and credit groups, is the Basic Functional Adult Literacy programme. Although there is little evidence of improved literacy translating into employment, it is clearly an empowering instrument, in particular for women, and has also allowed for better agricultural practices, improved nutrition and PCR management, requiring basic record keeping skills. FBAL courses have been adapted to cover a variety of relevant issues which have indirectly improved capacity and awareness in issues such as nutrition, use of banks, cultivation techniques and land rights issues.

The project has made significant efforts to promote better nutritional awareness. Despite the prominence of the crop, resistance to changing the traditional diet has made the project interventions challenging. Nevertheless, positive signs have emerged through household surveys indicating that most households now keep a small part of their production for household consumption. Support for bakers using soy has also been positive. Health workers have indicated that soy plays an important potential role in infant nutrition and positive impacts observed on severely malnourished infants has resulted in a significant increase in participation in nutrition training over the past season.

Impact at the Community Level

The project has had a significant impact on the creation and development of farmer groups, taking a lead in securing land rights¹ and stimulating local economic development. CLUSA's core strength has traditionally lain with the promotion of farmer groups. Initially, with a poorly developed trader network, the project-stimulated groups, in addition to facilitating better agricultural practices, played an important intermediation role. However, with highly concentrated soy production, traders have been drawn to Ruace and Lioma, offering good prices with immediate payment to individual producers, significantly undermining the role of the fora. Aggravating the situation is evidence that some forum and association leaders are not trusted by members.

The project has played an important role in the legalization process of fora and associations, including the attribution of tax numbers and opening bank accounts. The project has also helped farmers obtain land use rights (protecting them from the type of expropriation that has occurred with the advent of plantation enterprises) and assisted many farmers in obtaining identification documents as a critical first step in attaining land rights.

In Ruace, local economic development has been stimulated by the significantly increased purchasing power of its residents. Although much of the disposable income is diverted to the district capital Guruè,

¹ 214 processes to obtain land titles have been undertaken with an average of 11.2 ha., of which 181 farmers have obtained their DUATs

Lioma and to non-local traders of the weekly markets, local enterprises have been stimulated by community based expenditures.

Impact at the Regional Level

At the regional level, the project has played a critical role in catalyzing the significant deepening of the soy value chain. Since the inception of ProSOJA, the Ruace-Lioma region, has transformed from a maize and bean producing area to the principal soy growing region of Mozambique with significant vertical integration and a strong prospect of developing a large scale poultry industry within the project area, stimulating both production, generating employment and the creation of secondary income generating activities.

Gender

Although the project proposal placed a great deal of emphasis on promoting gender, there was no coherent strategy spelled out. It was only during the course of the project that the most important pro-gender components emerged, notably EBAF in the first year, PCRs in the second, and land rights in the third. The project has, during the past year encouraged female entrepreneurs especially in the production of soya-based foodstuffs.

Lessons Learned

ProSOJA will be judged as the critical precursor to what is likely to be a major soy-based agro-industry in the country and has stimulated other soy producing projects in Tete, Manica, Niassa and Cabo Delgado.. This has essentially guaranteed the prominence of soy as a cash crop in the region with implications for market stability, vertical economic integration, job creation and ancillary economic development. Although soy-derived income has clearly led to a substantially higher standard of living for many of the households and is arguably the most important short-term impact of the project, it is the longer term, more deeply rooted transformations, that are of greater developmental consequence.

At both the community and gender level, the more direct impact of the project has been the organizational foundation of empowerment groups, specifically to increase educational and financial capacity - of women in particular.

Two areas in which the project failed to make notable impact are credit and the development of fora and associations that provide tangible and enduring benefits for their members. Agricultural and commodity trading credit have always been a difficult challenge. With the imminent exit of the project, the arrangements for facilitating credit for emerging farmers need to be regularized, possibly through the intervention of the fora but with a proactive role for the beneficiaries. It is also important that the project takes the initiative of linking BOM with producer groups.

In contrast to the project's success in attaining production targets, ProSOJA has so far failed to build up effective and well managed fora and associations. To some extent, the anticipated development of the groups was hindered by the almost total abandonment of the fora as market intermediaries. The development of strong, transparent, legally responsible and democratic organizations will be essential for retaining membership as well as winning the confidence of key potential value chain partners.

The main challenge for an expiring project will be to ensure the continuation of its most important components. Given the value chain related developments, the project can withdraw from its role of seed distribution, credit provision, extension and demonstration plot maintenance without serious consequences. Animal traction promotion has not been a big success and would need several more years of promotion before reaching any significant and sustainable scale. PCR development may, by the end of the project, reach the critical mass that would ensure continual self-perpetuated expansion but may need periodic intervention. There is a clear demand for literacy groups and efforts should be made to see how such groups could continue after the project's termination. One possibility would be for associations to take over their organization and for beneficiaries to pay for their courses.

1. INTRODUCTION

Following a prolonged civil war of some 18 years, Mozambique, when it signed the Peace Accord in 1992 with the rebel group Renamo, was the poorest country in the world, with poverty heavily skewed towards rural areas dominated by subsistence farming. Since then, rural production has seen substantial surpluses of food crops and newly introduced cash crops traded through a rapidly expanding agricultural commodity trading network resulting in significant increases in rural disposable income. Nevertheless, in 2008, in their provocative book *Do More Bicycles Equal Development in Mozambique?* Joe Hanlon and Teresa Smart² argue that little of Mozambique's impressive growth since the Peace Accord of 1992 has trickled down to rural households except in the case of tobacco producers. This study of soy bean producers in the village of Ruace situated in northwest Zambézia Province describes the substantial developmental impact that CLUSA's ProSOJA project³ has had and is likely to continue to have on the community through the introduction of soy bean as the main cash crop in the region. Taking Hanlon's and Smart's argument to a higher level, anyone returning to Ruace after an absence of a few years would be surprised to see how the average standard of living has changed in terms of ownership of bicycles, motorcycles, cement block houses with tin roofs, refrigerators and even satellite dishes – changes almost totally attributable to soy production. It will, however, be demonstrated that development has not only been manifested through impressive changes in household material well-being but also in terms of other developmental indicators such as education, social capital formation, improved nutrition, financial empowerment and better farming practices.

Prior to the pre-ProSOJA pilot project (2003-2006), soy production had already been important in northwest Zambézia Province through large scale plantation agriculture in the early 1980s and later revived on a small short-lived experimental scale in 2002 by World Vision. Nonetheless, despite the optimal growing conditions of the region, soy bean production had ceased by the time of launching the ProSOJA project.

Since the inception of the ProSOJA project in 2007, soy bean production rapidly emerged as the overwhelmingly dominant cash crop of the region (previously food crops such as maize and beans had been the principal source of household income), cultivated by the majority of the households in the project area. Several important developments have subsequently occurred that strongly indicate that a full value-chain dynamic is evolving in the project area (mainly in the Ruace-Lioma region) including the establishment of large foreign-owned farms, contract farming arrangements with emerging farmers, the building of feed mills and possibly poultry breeding and processing operations. Private sector momentum has, to a large extent, been catalyzed by the ProSOJA project, and should, by the time the project winds down, provide minimum conditions for some of the more important project initiatives to continue independently.

2. OBJECTIVES AND METHODOLOGY

The objective of this study was to review the components of the ProSOJA project and to assess their impact on the socio-economic development of the population of the village of Ruace. Ruace was chosen as the focal point of the study because approximately one third of the total project producers live there

² Hanlon, J. and T. Smart, 2008. *Do More Bicycles Equal Development in Mozambique?*, James Curry, London

³³ ProSOJA is mainly financed by NORAD with additional support from the Gates Foundation and USAID.

and, given the limited time for field work (conducted during August 2011), was logistically convenient to focus on one community where the project started and where the largest concentration of farmers reside.

The consultant was provided with relevant project documents by CLUSA and then identified and reviewed a variety of relevant documents from the Norwegian Embassy spanning phase 1 and phase 2 of the pilot project (2003-2006) as well as several supplementary reports relating to ProSOJA. Three days of interviewing were spent in the Ruace area and another day in the administrative post of Lioma. Most interviewees were pre-selected by project staff but a number of interviews were undertaken at the initiative of the consultant in particular, health workers, commodity traders, shopkeepers, market vendors, school teachers and students. Focus group discussions were held with members of two savings and credit associations which also included participants of adult basic literacy courses. Interviews were also conducted in Guruè with senior project staff, the first project manager (Carlos Vasconcalves) and the former gender officer (Julieta Rodrigues), and shopkeepers supplying goods to Ruace. In Nampula, interviews were conducted with TecnoServe and Gett Farms and in Maputo discussions were held with the Norwegian Embassy, Banco Oportunidade de Moçambique, Swiss Development Cooperation and the Project Manager of the SDC supported Private Sector Led Agricultural Growth project. Email exchanges were made with Stephen Gudz, former CLUSA Country Director in Mozambique. Annex 2 lists all people interviewed and contacted for this study. Interviews were developed according to the activity or role played by the respondent.

No baseline data exists nor any other primary source of socio-economic information relating to the population of Ruace. The impact analysis is therefore based on observations made during the field visits, interview material and project related documents, mainly annual reports.

3. RUACE: AN OVERVIEW OF ITS SOCIO-ECONOMIC EVOLUTION

Ruace is a large village with a population around 10,000 situated in the north eastern part of Guruè District and about 20km by road from the administrative post of Lioma, the main town and commercial center of the project area. Ruace was originally developed as a company town serving the mixed (state and private enterprise with Brazilian interests) agricultural company CAPEL starting in the late 1970's and closing in 1986 due to the intensity of the conflict with Renamo rebels operating from a large base in the nearby mountains. Maize was the main crop cultivated by CAPEL (approximately 5,000 ha) followed by soy (approximately 1,000 ha) introduced as an experimental crop due to the propitious soil and climatic conditions identified by the Brazilian agronomists.

Following CAPEL's closure, many ex-employees stayed on and cultivated the large expanses of fertile cleared land, growing mainly maize and beans for self consumption. Renamo forces occasionally raided the village for food but the village was never abandoned.

After the 1992 Peace Accord, one of the biggest economic changes to occur in the rural areas of central and northern Mozambique was the revival of agricultural marketing, with producers selling surplus maize and later crops such as pigeon peas, sesame and sunflower seed. Mozambique's main cash crops linked to large agro-industrial processors were cotton and tobacco.

In 2002, World Vision re-introduced soy production in the Ruace-Lioma area with 40 farmers on 1 hectare plots. It also organized producer associations in the Ruace area including one forum (Eduardo Mondlane) and 5 associations. Despite this initiative, soy production failed to make a comeback as no market linkages were developed and Ruace households produced mainly maize and beans for self-consumption with surpluses sold to traders usually constituting the main source of cash income. Prior to the ProSoja project, non-agricultural sources of cash income were limited to a small market, services (hairdressing, bicycle repairs) and traditional activities such as basket making, the production of alcoholic drinks, clay bricks, selling firewood and hut building. Livestock breeding is mainly in the form of goats, chickens and pigs. Commodity trading was limited to informal scattered trading posts (*postos de venda*) comprising of one or two men with scales purchasing surplus production on behalf of larger traders based in Gurué (district capital), Quelimane (provincial capital) or Nampula (main city and commercial center of northern Mozambique).

Following the start of the ProSOJA project in mid 2007, the government, keen to recoup on some of the investments made through CAPEL, gave authorization to the Portuguese company Quifel, through its Mozambican subsidiary Hoyo Hoyo, to exploit 23,000 ha of CAPEL land and use of some of the old infrastructure. With promises that were never honored by Hoyo Hoyo, farmers who had been cultivating many years on cleared CAPEL land, were lured into signing a pact that reallocated them to less favourable areas. However, under the encouragement of the then ProSOJA coordinator (Carlos Vasconcelves), was the pact legally retracted but to no avail as some 250 producers (mostly growing soy) have been subsequently dispossessed of their land and remain uncompensated despite obligations to do so.⁴

Hoyo Hoyo, producing soy, sunflower and maize on a plantation basis, has been the main employment generator of Ruace during the past two years, mainly in the form of seasonal labour. Hoyo Hoyo was found to be held in bad esteem by almost all those interviewed. Until now there is no evidence (nor indeed expectations now) of the new infrastructures promised (running water, hospitals, better schools). Bitterness prevails about the land appropriations and many criticized the company's harsh working conditions (workers appear to work for less than the minimum wage and are required to work 7 days a week including national holidays).

Almost all residents of Ruace have access to a *machamba* (farm), producing subsistence and cash crops (usually involving all adults of the household, including those with non-farm income generating activities). Relatively few households are involved in non-farm income activities such as civil service jobs, seasonal work for Hoyo Hoyo, the traditional activities mentioned above and informal trading. The main source of cash income in Ruace is overwhelmingly soy followed by pigeon peas. With the exception of the three main commodity traders (all foreigners) and health workers, all those interviewed were involved in the production of soy, including the police chief, school teachers and shop-keepers. In addition to the high household propensity to produce soy, the presence of Hoyo Hoyo and the American owned plantation company *Rei de Agro* (growing similar crops to Hoyo Hoyo) located some 10 km from Ruace) has made Ruace the soy producing centre of the region which in turn provides more than two-thirds of the country's soy.

Most expenditures driven by soy-generated incomes are spent in the district capital, Gurué (return fare by public transport being USD 4.50) and to a smaller extent Lioma (USD 2 return fare). The first general

⁴ Three different offers were made (500 MT per ha; crop sharing, and relocation) but none have been applied.

retailer, selling a wide variety of goods ranging from food to building materials and bicycles, was established in Ruace some 6 months ago. The shop and warehouse is operated by a Bengladeshi linked to a Guruè-based trading company also involved in commodity trading. Smaller retailers selling from closed kiosks (*barracas*) typically sell food, batteries, matches, candles, soap, cleaning materials, etc. and are found along the main internal roads, probably numbering around 10. There are around 30 vendors in the small Ruace market. Every Tuesday a large “feira” takes place with more than 100 traders selling mainly blankets, plastic tubs and buckets, suitcases (popular for storing clothes), radios, batteries, pots and pans, bicycle parts and other haberdashery.



Fig. 1 Tuesday weekly market day where a wide variety of household goods, clothing and bicycle spare parts are sold by itinerant traders of the district.



Fig 2. Traditional ceramic brick making (one of the more common non-agricultural income generating activities)

Modern non-agricultural productive activities in Ruace today include grain milling (approximately 10),

bicycle and motorcycle repairs, carpentry, building, tailoring and transport (2 mini-buses and 2 trucks). Baking (bread, cakes, snacks) is done by women and either sold from their house or at the market. Service activities included a number of bars, hairdressers and several DVD cinemas.



Fig. 3. Local market Ruace

This year, soy bean trading was done almost exclusively between producers and commodity traders (3 large traders with warehouses and the Bengladeshi shopkeeper) and many small *postos de venda* (agricultural commodity buying agents) scattered throughout the region, acting as agents for larger trading companies, mainly based in Nampula. In previous years, producers sold to their associations and, in turn, to the fora in order to obtain higher prices based on higher volumes⁵ but long delays in getting paid from the fora (which often face long delays in obtaining payments from their buyers) has led to producers preferring direct sales to obtain immediate cash. In addition to the forum and 5 associations created earlier by World Vision, an additional 23 associations were created by ProSOJA.

Infrastructure and services consist of one health post (staffed by a medical technician and 3 nurses), a primary school (up to 6th grade) with some 1,800 pupils, and 3 water fountains. Electricity was supplied in 2010. Substantial but largely dilapidated infrastructures remain from CAPEL including a number of houses (many occupied but in a bad state of repair) and various warehouses and service facilities that are being used by Hoyo Hoyo, a tractor cooperative (COPSA) and rented by some commodity traders.

⁵ An example of how bulk sales affect prices was offered by Julieta Rodriguez, formerly working with ProSOJA who was purchasing soybeans on behalf of Abilio Antunes, a major poultry producer in Manica Province who offered USD 0.60 per kg. but USD 0.70 per kg for amounts in excess of 50 tons (August 2011).



Fig. 4. One of 3 water hand pumps with health post in background



Fig. 5. Ruace Primary School (grades 1-6)

Two important developments are likely to impact strongly on Ruace's future development. One is the imminent opening of a bank branch (BCI) in nearby Lioma because of its larger commercial base. The second is the tarring of the Guruè-Cuamba road, passing through Ruace, (financed by the Millenium Challenge Account). With the anticipated greater traffic passing through Ruace and the growing number of soy related investments taking place in Ruace's immediate surroundings, it is likely that Ruace will attract a disproportionate amount new economic investments in favour of Lioma, eventually making it the prominent commercial hub.

4. PROSOJA: ORIGIN, PROJECT CONCEPT AND PERFORMANCE

4.1 Project Origins

Following the Norwegian Government's decision to grant import tax exemption on agricultural production from Less Developed Countries, the Norwegian agricultural purchasing cooperative Felleskjøpet (FK) carried out a feasibility study on 3 Southern African countries. Having chosen Mozambique, the option of focusing on maize was felt to be inappropriate given food security considerations (due to maize being the main staple food crop), so soy was chosen as an alternative. The initial option of producing soy through Zimbabwean farmers in Manica Province was dropped (because of growing disaffection of the farmers with their conditions which led to the eventual exodus of most) and a strategy to produce soy via small holders was proposed. CLUSA was approached for piloting the crop through its associations. Although the initiative was considered somewhat of a long shot (especially given CLUSA's lack of agronomic experience), CLUSA agreed to a partnership. In late 2003 a pilot was initiated, funded mainly by Norad and USAID over dispersed areas in Nampula, Niassa and Zambézia). Phase I (2003/04 season) involved about 3,500 farmers of which about 2,142 sold to the CLUSA initiated agricultural trading and seed production company IKURU⁶ a total of 120 tons of which 90 were exported to Norway.

A second phase scheduled over two seasons (2004/05 and 2005/06) was intended to "contribute to a commercial export operation of some 50,000 metric tons of soybeans from Mozambique to Norway on an annual basis, providing income earning opportunities for Mozambican farmers in general and smallholders in particular..." However, by the end of phase II, only 504 tons were produced by 1,400 farmers during the last season. Despite the low achievement, the final report for phase II was optimistic about the potential, reporting that a thriving poultry industry had emerged and the nine largest producers had formed an industry association that would allow for a greater coordination of demand for soy beans, and that over the next 3-5 years soy demand would greatly increase in both Mozambique and in Malawi. The report also indicated that, in high potential areas of Guruè, soy beans was the crop of choice for most farmers and that net income from soy production was 3-4 times that of maize. The main lessons learned from Phase II was that promoting a crop such as soy is better done in a concentrated area (as is the case for ProSOJA) and that focusing on clusters of farmers grouped in associations and producer groups would increase the effectiveness of technical assistance and the viability of input and output marketing.

A concept paper for ProSOJA was presented and subsequently a full application for the funding of a 5 year project was submitted in September 2006 and a contract signed in July 2007. The project was coordinated by CLUSA through its Guruè office and officers located in Lioma, Ruace and Tetete. TechnoServe has contributed to the ProSOJA project by way of seed credits and training/monitoring of demonstration camp managers.

⁶ IKURU was established in 2003, largely through the initiation of CLUSA in order to obtain better margins for the fora created in Nampula. Although referred to as a "farmer owned" company, only 10% of it is owned by 29 farmers representing 22,000 farmers, with 45% owned by the development finance institution GAPI and 45% by the Dutch NGO Oxfam-Novib. In addition to trading, IKURU has extensive seed multiplication activities, including soy.

4.2 ProSOJA: Project Description

The ProSOJA Mid-Term report⁷ states that, despite the relatively low yields during the pilot phase, the signatory parties were encouraged to continue to support soy bean production through an initiative that would include capacity building, promotion of agricultural growth, socio-economic development and possible export to Norway, if feasible. The launching of the new project would inter alia take into account that:

- Introducing new crops takes time
- The project has a strong element of rural poverty alleviation
- An alternative cash crop has been introduced, rescuing farmers from the low prices of cotton which in many areas is the main cash crop
- The project has a potential for streamlining a strong gender balance dimension since soy bean is a crop with a high share of women growers

The report also mentioned that, from a modest level in 2006, the demand for soy, mainly for chicken feed had grown considerably and that local market needs were about 40,000 tons annually. In 2009, a report prepared by the Support for Private Initiatives for the Agricultural Sector (ADIPSA) project estimated local demand to be approximately 65,000 tons vs. the estimated 6,000 tons produced in Mozambique, of which about 68% was produced in the Ruace-Lioma region.⁸

The **goal** of the ProSOJA project is to increase participant farmer incomes by 10% per year in high potential soy bean production areas along the Lioma and Mutuali valley in Northern Zambézia and Western Nampula, while the **purpose** of the project is to increase soy bean production in the area from approximately 500 Mtons to 5,500 Mtons per year.

Table 1 summarizes the project objectives, the main interventions and the targets.

Table 1. Project Objectives, Supporting Interventions and Targets

Objectives	Interventions	Targets (as set by project proposal or amended during project)
<i>1. Increase production through the transfer of appropriate technologies to small producers involved in the production, storage and marketing of soya beans.</i>	<ul style="list-style-type: none">• Demonstration Plots• Conservation farming techniques• Mechanical ripping and threshers• Promotion of emerging farmers	<ul style="list-style-type: none">• 5,000 soy bean producers, of which 4,000 will be members of associations• 40 demonstration plots to be established• New soy bean varieties developed and available for the market;• Profitability of soy beans production clearly demonstrated
<i>2. Increase the amount of land under production by introducing animal traction and, when viable, mechanization.</i>	<ul style="list-style-type: none">• Promotion of animal traction (selling oxen, yokes, ploughs, carts; training of oxen and owners)• Coordination of existing tractors for ploughing, including the provision of	<ul style="list-style-type: none">• 300 ox owners and service providers• 1,500 farmers benefiting from animal traction services• 10 rotavators (walking tractors) introduced in 5th year

⁷ Svein Jorgensen, 2010. *Mid-Term Review of Soy Bean Production and Marketing in Northern Mozambique* Report for Norad, Nordic Consulting Group.

⁸ Findings of the ADIPSA study “Study for the Promotion of Soy in Nampula and Zambézia” presented at the ADIPSA sponsored Workshop “Development of the Soy Value Chain” (Tete, February 2009).

	credit	
<i>3. Improve access to inputs and output marketing opportunities and business support services to small farmers.</i>	<ul style="list-style-type: none"> • Seeds provided on credit • Support to seed multipliers • Project credit given for land preparation • Project credit given for acquisition of animal traction and threshers • Promoting access to commercial banking credit • Promotion of organic soy producers • Savings and Credit (PCR) groups 	<ul style="list-style-type: none"> • Credit to be provided through Banco Terra and BOM • 40 PCR groups established
<i>4. Strengthen the network of member owned and member controlled producer organizations and equip them with the skills and knowledge to effectively and profitably produce and market soya beans.</i>	<ul style="list-style-type: none"> • Training for association and Forum leaders in financial management, organizational leadership and commercialization. • Legalize fora and associations • Acquire NUIT (tax numbers) and open bank accounts for fora • Forum members given exposure to demonstration plots for onward training of association members 	<ul style="list-style-type: none"> • A minimum of 2 marketing and service cooperatives or Unions, with some 75 producer groups and 20 FORA will be providing services to approximately 4,500 small farmers (members and non-members). • Associations/coops market share of soy bean sales in the two regions reach 50% by end of project. • Associations/coops profit from soy bean sales total 5%
<i>5. Improve the enabling environment and understanding of soya bean production.</i>	<ul style="list-style-type: none"> • Basic adult education courses (EBAF) • Nutrition awareness • Land rights 	<ul style="list-style-type: none"> • Train 4,800 farmers to read, write and do basic calculations, 60% being women. • Finalize DUATs for 200 producers at present waiting for approval (to make 417 producers in total). Begin phase of assisting associations to register common land. Assist a further 500 (mostly women) to obtain ID cards (1,500 in total).

4.3 Project Results End of 4th Year (June 2011) and Selected Plans for Year 5⁹

The evolution of project results over the project's four years is presented in annex 1. The results achieved by the end of the fourth year are summarized below as are some of the selected plans for the last year of the project.

4.3.1 Production and Income

- In terms of production and producers, the project had already almost reached end of project targets by the end of the fourth year.
- There were 5,024 producers (22% women; 33.5% women in Ruace), producing 5,464,515 tons on 5,117 ha.
- Yield has progressively increased to 1,068 kg/ha (from 826kgs/ha in June 2008).
- The farm gate value of the season's production was USD 2,641,182 (USD 704,238 2007/08 season) with a net income of USD 1,193,556.

4.3.2 Production Technology and Segmentation

⁹ CLUSA, 2011. *ProSOJA Annual Report (July 2010-June 2011)*

- 29 producers were contracted to supply IKURU with seed for certification with a projected production of 226,800 kg.
- There were 21 demonstration plots where 399 participants from the project fora attended training sessions.
- Only 12.5% of land was plowed by tractors due to the breakdown of some tractors (29% in 2008).



Fig 6. Two broken down tractors belonging to the tractor cooperative COPSA (the tractors were provided on credit from the government but their quality is poor and spare parts expensive (the tractor has not been paid for))

- Oxen were used to plough 24.5 ha (0.5% of the cultivated land area), benefiting 46 producers. Considerable emphasis has been put on animal traction in 2011, 30 people have been trained in conjunction with Tillers International on animal traction and 15 pairs of oxen will be plowing about 120 hectares of land, 6 pairs of oxen, 6 carts, 6 plow strippers and seeders will be distributed to the beneficiaries. CLUSA is encouraging the producers to use animal traction to weed the fields as well as hand cultivators, as means to contain the production costs and reduce field work.



Fig 7. Team of oxen and cart (with firewood) provided on credit by ProSOJA (oxen are used for plowing and transport)

- There were 12 emerging farmers identified for the program (1 woman) averaging 8.4 ha soy, 3.5 ha. maize and 0.2 ha sesame (in 2008/2009 there were 20 emerging farmers of whom half were women, explained by the fact that when the emerging farmer component was launched, emerging farmers were defined as those cultivating at least 2ha, but in subsequent years it was increased to 5ha.
- Organic soy was produced by 123 producers on 191 ha. with an expected volume of 229.2 tons to be inspected Ecocert at the end of July 2011. 80 farmers used conservation techniques as a result of extension work and demonstration plots implemented by the project staff.



Fig 8. A thresher provided on credit by ProSOJA. This one is owned by the President of a forum and his wife a manager of a demonstration plot.

Planned for 2011/12

- In order to increase producers' use of inputs, the project intends to increase the number of demo plots to 40 in different soil types and use them to demonstrate the use of foliar feed fertilizer and inoculants. The uptake of inputs is likely to remain limited by the fact that there is as yet little tradition of input use amongst the project target group, added to the fact that the cost of inputs is prohibitive to most small scale producers.
- In order to mitigate the reduction of mechanical traction capacity, the project plans to collaborate with Rei do Agro, use the tractor acquired by Ruace forum, introduce 10 newly acquired walking tractors (rotavators) and help in the creation of a mechanical service provider organization.

4.3.3 Credit and Financial Inclusion

- 145,000 kg. of seed was distributed on credit and USD 13,306 credit was provided by the project for 104 producers (56% women) for land preparation and tools.
- After the successful disbursement and reimbursement of 13 loans in year 3 of Banco Terra loans to emerging farmers (averaging about USD 5,000). Loans for year 4 were made available only in February 2011 which was too late to be useful so were rejected.
- There were 22 PCR groups with 456 producers of whom 82% were women. The average accumulated savings was indicated as about USD 245 but this is likely to be considerably higher as two PCRs visited had USD 1,500 and USD 2,500 (vs. USD 100 and USD 40 reported)

Planned for 2011/12

- Banco Terra will be approached again for the forthcoming season.
- Develop the credit and savings groups to bring the total to at least 40 more groups (primarily for women) during the next year. In project meetings and with the services of the intern from the local Catholic college, focus on empowering women to access these services.

4.3.4 Social Capital Formation

- The project supported 8 fora (3 legal) and 127 associations (107 legally registered). Awareness raising meetings, in addition to other cross cutting issues relating to gender (such as female adult education and land ownership), encouraged women to take up strategic positions within associations and a more active role in governance.
- The FBAL (adult literacy) program was provided through 96 centres, 1,026 participants were registered in Level 1 of whom 855 graduated to Level 2 and 1,245 participants were registered in Level 3 of whom 967 graduated. For both levels, 62% of the registered participants and 64% of the graduated participants were women. The program reached a graduating rate of 81%.
- In terms of land rights acquisition, 1,000 acquired their ID cards and 217 had acquired legal rights to their land (DUATs)

Planned for 2011/12

- Legalize the remaining 22 (of 127) associations and 5 (of 8) fora.g
- Strengthen the FBAL program with 11 further pedagogic facilitators (to make 73 in total).
- Finalize the 200 producers' land ownership applications which are at present waiting for approval (to make 417 producers in total) and encourage more producers to initiate the process. Begin the phase of assisting associations to register common land. Assist a further 500 (mostly women) to obtain ID cards.
- In order to strengthen project fora, the project will focus on training in building and working in associations. The project will also continue to focus on other elements that strengthen fora such as forum bank accounts, tax numbers and land registration.

5. SOCIO-ECONOMIC IMPACT

5.1 Individual Level

5.1.1 Incomes and Expenditures

Data for the 2010/2011 season indicates that a net income of about USD 1.2m was earned by just over 5,000 producers, giving an average of USD 240 per grower. In terms of the findings of the 2008 *Trabalho de Inquérito Agrícola* (TIA), this would put soy producers in the second highest quintile of households earning cash from agricultural income nationwide.¹⁰ This represents substantial increase in the overall average income of the rural homestead of the region and has had a significant impact on the reduction of poverty. Unlike southern Mozambique where the main source of income comes from migrant remittances, rural households in central and northern Mozambique are almost entirely dependent on income derived from agricultural activities and non-farm income generating activities which include traditional activities (described in section 3) and increasingly from informal vending in the market or near the household residence. Although a broad sample of households was not interviewed, interviews suggest that the main source of income for a large majority of Ruace households is derived from soy cultivation (a few hundred households would be earning seasonal wages from the Hoyo Hoyo plantations).

Land distribution is skewed with less than 10% of the farmers occupying more than 30% of the land (see section 5.2.2) so cash crop income is likely to be even more skewed as only farmers with larger land areas will be devoting proportionately more of the land to cash crops. Although farmers with the smallest pieces of land are unlikely to have benefited greatly from soy production, it is likely that a very significant percentage of Ruace's households have benefited from surplus incomes that have allowed them to make purchases that go well beyond those necessary to maintain their basic needs.

¹⁰ The mean for the 4th quintile was found to be USD 344 with a median of USD 188 (information obtained from "Some Notes on Rural Incomes in Mozambique" Josheph Hanlon, 25 February 2010. .



Fig 9. Ruace family standing outside of their new home financed from soy bean production

One interviewee remarked that anyone returning to Ruace after a 4 year absence would be amazed to see the difference, most obviously demonstrated by changing visible expenditure patterns. A number of interviews conducted along a cross-section of the Ruace community showed a fairly consistent expenditure pattern, starting with the building of an improved house (mainly in the form of fired clay bricks, cement and tin roofs), followed by the purchase of a motorcycle (often purchased by women), then by household furniture and, since last year with the installation of electricity, basic household appliances, in particular fridges, televisions, DVD players, sound systems and an occasional satellite dish. As indicated earlier, almost all adult members of the community were involved in producing soy on their household *machambas*. . The material welfare of Ruace in comparison with most other rural villages in non-soy growing areas is striking and it is clear that its residents are aware of the soy-driven bonanza.



Fig 10. Bicycles assembled from Kits. There is a big demand for bicycles in Ruace but the proportion of motorcycles is increasingly rapidly (purchased in Guruè).

Less visible expenditure changes have also occurred in terms of food (see below) and education which has been reflected in the disproportionate percentage of secondary students from Ruace attending Lioma's secondary school. Ruace students have to pay boarding fees at the school dormitory or, as in the case of many students unable to get a space in the dormitory, are required to rent rooms and pay for their meals.



Fig 11. Satellite dish in Ruace (electricity was installed in 2010)

5.1.2 Financial Inclusion

The success of an agricultural value chain ultimately depends on credit in order to stimulate the production phase or for facilitating the marketing of production. CLUSA is well aware of the challenges of rural finance and has worked at improving the credit environment for many years, either through direct contracts or arrangements with financial service providers or by building up farmer groups as intermediaries for channeling input credits to farmers or for buying their produce.

CLUSA has had a long-term partnership with Gapi, a development finance institution with which it jointly developed the innovative credit facility for fora based on a solidarity pact¹¹ and later, through various projects, tried without much success to develop financial products for emerging farmers. The project proposal foresaw continuation of CLUSA's relationship with Gapi but subsequent disillusionment with Gapi's poor performance with the cotton producers of the ProVal project and Gapi's disinclination to replicate its forum loans, made CLUSA look for alternative credit sources such as Banco Terra for SME

¹¹ De Vletter, F. 2003. *A Review of Three Successful Cases of Rural Finance in Northern Mozambique* World Bank / CGAP, Washington

producer loans and Banco Oportunidade de Moçambique (BOM), a commercial bank, specializing in microfinance loans with a focus on rural areas.

Although not originally contemplated in the project proposal, CLUSA recognized the potential for creating and developing savings and credit groups known locally as PCRs (*grupos de poupança e crédito rotativo*), given the expected increases in producer incomes. PCRs were introduced to ProSOJA during the second year.

Smallholder Input Loans

The problem that CLUSA faced in stimulating smallholder soy production was that, at the time of project conception, there was no potential financial partner with a product suitable for financing smallholder production on a large scale. The task of providing soy seeds on credit as well as a modest level of credit for land preparation and tools was provided by the project in collaboration with TechnoServe (with Gates funding)¹². Although the project did successfully stimulate production, the seed credit arrangement is not sustainable and the supplementary credit was of only token importance in relation to total needs.

The recent collaboration between the rural microfinance provider Rede de Caixas Rurais de Nampula (RCRN) and CLUSA's SANA project which has successfully provided input credits to farmer associations appears to be a good model for ProSOJA but will depend on the availability of a willing and capable financial service provider. BOM, imminently starting operations in Gurué, would appear to be the best prospect at this stage.

Marketing Loans

Also critical for effective value chain rotation is the availability of marketing/trading credit. Since the Peace Accord of 1992, it is likely that the most important development for stimulating commodity trading credit has been the creation of farmer associations and fora dominated by CLUSA interventions. Farmer associations, provided with credit have the means to attract their members and other producers to sell for cash. Associations, in turn, supply their respective fora. With the exception of Gapi and the recent collaboration with RCRN, credit to associations has been exclusively provided by large traders and sometimes by the direct users of the crop (see next paragraph) in the form of credit advances¹³. This model is predicated on trust and good management.

In the case of ProSOJA, there appears to have been only one attempt at a trader advance, initiated during the first project year by the poultry producer Abilio Antunes of Manica Province. A combination of naiveté on the part of the purchaser, lack of experience and poor management capacity on the part of the collaborating farmer associations, resulted in a poorly conceived and uncoordinated distribution of

¹² Technoserve supports the expansion of smallholder soy production through both new entrants and yield increases and facilitates access to inputs and advancements in science and technology through the introduction of better technical practices demonstrated in demo plots and the supply of inoculants. It promotes the coordinated development of sustainable alliances comprised of committed stakeholders from the public and private sectors, through meetings with the different stakeholders and publishing of a newsletter.

¹³ Ibid.

some USD 100,000 in trader advances. Although about 90% of those funds were recovered, the experience was not a positive one and has since not been repeated.

As a second best alternative to obtaining credit, farmer groups provide a channel for producers to get their produce to the market but with substantial delays in obtaining their payments. In new and underdeveloped markets, farmer associations play a key role in the trading cycle as was the case during the early years of ProSOJA.

As discussed later, the very rapid development of the soy value chain in northern Mozambique led to significant changes to marketing patterns. With the domestic poultry industry growing by some 80% per year¹⁴ and the price of domestically produced soy significantly lower than imported soy, buyers have increasingly moved towards the production areas, thus undermining the association model, to the extent that more than 70% of soy production during the last season was sold outside of the associations.

Emerging Farmer Loans

Emerging farmers have been specially identified and promoted by ProSOJA, usually cultivating between 10-30 ha., normally with better farming practices than other farmers. Emerging farmers have been targeted for project support because of their potential influencing role on smaller farmer and will have subsidized access to tractor services provided by the plantation company *Rei de Agro*. Due to their large size and being considered better farmers, emerging farmers have been assisted by the project to obtain commercial credit. Unfortunately the mechanisms for delivering credit to this group, remain grossly inadequate. Gapi's disappointing performance in credit provision to emerging cotton farmers in the ProVal project demonstrated the importance of efficient and timely delivery for calendar-sensitive inputs. It was hoped with the advent of Banco Terra with its self-proclaimed interests in developing the rural and agricultural small and medium enterprise (SME) market, that Gapi's ineptitude would be overcome. Encouraging experiences with Banco Terra and soy farmers linked to ADIPSA/CLUSA initiatives in Manica and Tete as well as CLUSA-supported soy farmers in Nampula Province, led to negotiations with Banco Terra and on-site visits with ProSOJA farmers in the second season of the project (2008/2009). A positive response led to 13 emerging farmer loans for a total disbursed value of approximately USD 65,000 (guaranteed by ADIPSA) in the third season (averaging USD5,000 per farmer).

Despite the fact that all but one farmer managed to pay back the loans without any problems¹⁵, Banco Terra failed to deliver the subsequent loan request in time (available only in February rather than November), leaving the project to try and resolve (to a small degree) emerging farmer financial needs. As a result, the production plans of the emerging farmers were not realized but the project mitigated the situation by providing loans averaging USD 705 per farmer. This experience underscores the current underdeveloped state of SME agricultural finance in Mozambique and prospects are not encouraging for a positive turnaround in the near future. The financing of emerging farmers is much more likely to come from the various large value chain enterprises being established in Guruè District in the form of direct credits or subsidized inputs such as plowing services. At this stage, the farmers will have access to mechanical services on credit from different mechanical service providers such as *Rei do Agro*, *Alif Quimica*, *COPSA*, *Forum Acisse Ruace* and *Rabuquene*.

¹⁴ Personal communication Luis Perreira, TechnoServe, Nampula.

¹⁵ The one farmer repaid eventually

Community-Based Savings and Credit Groups (PCRs)

CLUSA has long had an indirect relationship with what are known as village savings and lending groups (VSLGs) or accumulating savings and credit associations (ASCAs) and locally as PCRs, originally introduced by Care International to Mozambique in 1998.¹⁶ There are now more than 100,000 members promoted by a variety of NGOs as well as Gapi.

Although not originally foreseen as a component for ProSOJA, PCRs were for the first time introduced to the project area in reaction to the very substantial income increases enjoyed by the project's soy producing communities. The principal promoter, based in Nampula, Ophavela, was approached but failed to deliver the requested services so project personnel have taken over the task of PCR promotion.

PCRs are composed of members, often from the same association, who contribute savings at regular meetings where deposits are recorded and placed in a wooden box with 3 locks (keys held by 3 different committee members). The deposits are available on a monthly basis (10% interest per month) for members usually for income-generating purposes. At the end of a cycle (in the case of Ruace, the end of the calendar year, to coincide with weeding), members receive their accumulated savings and their share of the interest earned.

Past experience has shown that the process of getting communities to accept PCRs is an exponential one, with the introductory phase taking time for demonstrations and gradual but wary acceptance, especially in poor and highly risk-averse environments.

With Ophavela unable to provide services in Zambézia, the project staff, trained in basic PCR methodology by Ophavela, took on the responsibility of promoting PCRs. The results have been very positive and cost-effective with PCR groups now in a takeoff stage characterized by a high take-up rate as community members observe the positive impact of such groups.

In market towns such as Lioma and Magige, PCR members are more likely to use accumulated savings during the cycle period for commercial purposes. In less economically diversified towns such as Ruace, the tendency for PCRs is to act as a safeguard for money until the end of the cycle which coincides with soy weeding time when funds are needed to pay for "ganho-ganho" labor (used for the temporary seasonal needs of planting, weeding and harvesting). PCRs therefore play a very important role in allowing soy producers to accumulate funds that would have otherwise been obtained through input-credits. As the number of PCRs are likely to increase rapidly, more and more producers are likely to devote more funds for soy production purely on the basis of community based resources.

¹⁶ Care developed the PCR program in Mozambique after the success of developing this methodology in Niger.



Fig 12. Some members of a PCR and FBAL group (this particular group had recently lost almost USD 1,500 after their money box had been stolen)

There is an increasing recognition by financial institutions, especially microfinance commercial banks such as BOM and Banco ProCredit that PCR members are good credit risks and often exempt them from collateral requirements. ADEM, one of the more progressive PCRs promoting NGOs, has taken important steps in the creation of savings and credit cooperatives (SACCOs) which would allow member PCRs to access externally sourced finance. With the rapid growth of PCRs in the project area, the creation of a SACCOs should be possible within a few years.

Of serious concern, is the high risk involved with the PCR methodology. Possibly for the first time since PCRs were introduced to Mozambique, a savings box with almost USD 1,500 was stolen from a PCR when the treasurer had to leave her house for a family emergency. Another PCR interviewed had a box with USD 3,000 and members were almost anticipating its theft. With more boxes with large amounts of money being kept in easily penetrable houses, theft will become an increasingly worrying issue and could threaten the future of PCRs.

An obvious solution, especially for PCRs which operate mainly as a savings facility, would be to deposit the accumulated savings in a bank account, especially with the imminent opening of a BCI branch in Lioma. The members of the two PCRs interviewed were, however, found to be heavily distrustful of the banks. (see next)

Bank Accounts

The project has played an important role in encouraging legalized farmer associations and fora to obtain NUIT (tax) numbers and open bank accounts. Unfortunately, it has not promoted the use of bank accounts with PCRs and individual producers. Although, based on only a few interviews, the consultant is of the opinion that many soy farmers, including women, have bank accounts but that an obstacle towards opening an account may be the level of education of the potential depositor. Discussions with two PCR groups indicated a high level of distrust for banks, associating them the government (possibly

because of memories of the former state bank the BPD – now Barclays). Even after the theft of the savings box, PCR groups were reluctant to deposit their savings in a bank. FBAL courses (see below) in the Lioma area, in anticipation of the opening of the BCI branch, have already integrated training on how to open a bank account and how to undertake simple transactions. Similar efforts but perhaps more sensitized to the inherent suspicions of banks from more rural students, should be introduced soon in coordination with PCR promoters in order to avoid future robberies.

The Bank of Mozambique laments that considerable amounts of money (notes) finds its way into rural areas but does not circulate. Interviews with PCR members indicate that most of the members save half of the money in the house and other in the PCR box to share the risk. ProSOJA could consider the possibility of offering some form of incentive for rural households, starting off with PCR members, to deposit precariously saved cash into the banking system.

5.1.2 Functional Basic Adult Literacy (FBAL)

A 2004 study of CLUSAs Rural Group Enterprise Development Programme (RGEDP)¹⁷ observed:

Women have benefited greatly from two products: functional literacy provided directly by the RGEDP and nutritional extension provided through a partnership arrangement with CARE Int. These programmes have demonstrated that when women are interested and the product is relevant, they will actively participate.

Despite CLUSA's success with its FBAL courses, its inclusion was not specifically foreseen in the ProSOJA proposal but it was, nevertheless, introduced at the outset of the project. In 2009, following recommendations of a the 2009 Gender Mission¹⁸ a request was made by CLUSA to supplement the FBAL budget and to introduce a new component to acquire land rights (see below).¹⁹ According to the funding request, 92% of the women in the project area were considered to be illiterate.

FBAL training has two phases. Phase one, teaches in the local language Lomwe and involves the issues surrounding the production of soya, beans and maize such as yield, land law, commercialization, market prices, credit and savings, counting to 100, simple addition, concepts in measurements such as kilograms, dozen and other units. Phase two and three, taught in Portuguese, involves working in associations, the use of new and improved techniques, commercialization - negotiating sales, contacting buyers etc - counting from 200 to 1000, multiplication and division, time and duration. Nutrition (see next section) also plays an important role in FBAL courses. In Lioma, where a bank branch will soon open, sessions are devoted to procedures for opening an account. Participants in the FBAL courses were often found to be linked to the PCR groups. Courses are given three times a week in two hour sessions, usually in the afternoon.

The number of FBAL centers increased from 80 centers last year to 96 this year. The FBAL team was strengthened with the addition of one more supervisor to assist the centers, making a total of three technicians working full time in the team paid by the project.. Participants in the training sessions are assisted by 96 animators (all of whom received training in delivering FBAL sessions) and 11 pedagogic trainers subsidized by the project. There is an MOU signed between CLUSA and Ministry of Education articulating the information and activities carried out in the field according to the ministry's priorities. After the end of the project there will be continuity but with some difficulty because the Ministry of Education does not use the same methodology and lacks didactic materials such as the manuals used by the project..

¹⁷ Fion de Vletter and Sylvi Hill, 2004. *The CLUSA Rural Group Enterprise Development Programme in Mozambique: A case study*

Workshop on Income Generating Opportunities in Rural Areas, Aga khan foundation, Canterbury

¹⁸ Collier, E. and S. Martins, 2009. *Gender Mission to Lioma and Guruè: Report of a consultancy to appraise the gender strategies proposed by CLUSA-Prosoja.*

¹⁹ CLUSA, 2009, *Request for 3 Years of Supplementary Funds for "PROSOJA" - Developing an Enabling Environment and Strengthening of Women's Participation: Functional Basic Adult Literacy Land Tenure Registration*

During the past year (2010/2011, 1,026 participants were registered in Level 1 of which 855 graduated to Level 2 and 1,245 participants were registered in Level 3 of whom 967 graduated. For both levels, 62% of the registered participants and 64% of the graduated participants were women. The program reached a graduating rate of 81%. The participants who graduated from Level 3 received an end of program diploma from the Ministry of Education and about 30% of the participants with adequate social and economic conditions continued studying in the sixth grade of the formal education system (in Ruace some 35-40 FBAL graduates were attending night classes). Others continue to be members of the associations and some became the leaders while others participated in other programs such as the food nutrition and project credit programs.

It is difficult at this stage to assess the impact of the FBAL courses but it is evident from the limited number of interviews with FBAL participants that literacy is an important empowering tool, particularly for women. Apart from various respondents indicating that they had hoped that they would be able to obtain work as an FBAL animator attached to one of the training centers. Being literate was psychologically important to women and helped them to establish groups separated from men, including 25 associations. FBAL courses were also considered to play an important role in conveying important information regarding financial literacy, nutrition, agriculture and land rights issues.

5.1.3 Health and Nutrition

CLUSA, through close collaboration with the International Institute for Tropical Agriculture (IITA) has trained 25 women in basic nutrition and the use of soya as part of the daily diet. The project provides nutrition trainers with bicycles, flour and sugar and a salary of 100 mt per day to work with producer groups and health post staff, demonstrating how to make soy derivative products such as soya milk, flour, cakes, porridge and bread. During the fourth year 1,653 participants (99% women) participated in nutrition sessions. The significant increase in the number of participants over previous year is attributed to the positive results observed during the previous year in particular of a significant level of under nourished children who were observed to have recovered after consuming these products. The trainers work closely with EBAF groups where nutrition and cooking demonstrations formed part of the curriculum. A 15 page cookbook for soy derivatives has been prepared by the project.

Although 75% of women attending the sessions say that they now routinely include soya in their families' diets, the adoption of soya for consumption within the home is limited, not only because of the very high price obtained in relation to maize, but also due to the fact that soya needs to be de-shelled and soaked overnight or roasted before it can be consumed.

Habits and customs are difficult to change despite irrefutable evidence of their detrimental effects or more beneficial alternatives. Discussions with the workers of the Ruace Health Post indicated that higher income levels have not had much impact on hygiene and nutrition, although there are indications of a positive impact by incorporating into the FBAL classes subjects considered to be important for the socio-economic development of the trainees and their households (such as nutrition, soy-based recipes, hygiene, AIDS awareness, farming practices, marketing and land rights issues) and through FBAL classes are having an impact.



Fig 13. Baker and seller of soy bread rolls

Given soy's very high protein content (1 kg of soya is said to represent 60 eggs and 5 kg of meat), the health workers stated that there was no reason for malnutrition in Ruace and other soy producing areas, yet the incidence of malnourished infants coming to the health post remains disturbingly high. Nevertheless there is positive evidence that areas served by the project have benefited from the nutrition initiatives, demonstrated by the fact that the Lioma administration has requested the project's nutrition officer to mount a similar nutrition awareness campaign in areas outside of the project's catchment area. An informal survey of project-served households demonstrated that most households now keep between 25-50kgs of soy for food consumption purposes. Health workers appeared to confirm this trend, stating that soy-producing households typically sell 85% of their produce, save 15% for seeds and consume 5% (project annual reports suggest that this is more likely to be about 3%), which they claim is not normally sufficient but is nevertheless an improvement.

The director of the Lioma Secondary School dormitory felt that more should be done to take advantage of the presence of soy in the region to enhance the nutrition of the dormitory meals and that the students had just been exposed to nutrition classes and soy recipes in the hope that they would transmit their lessons to their families. School teachers recalled when they were students at the Ruace School, during the time of CAPEL and when it was the main school in the area, soy milk and soy bread was served every Saturday for school children (no classes) and on national holidays. These treats were highly appreciated by the students who would come out of their way to the school on off-days to be served.

Although interviews suggested that higher disposable income has led to larger quantities of food being eaten, the scope of the study did not allow for an in-depth study of changing dietary patterns. Apart from indications that more soy consumption is taking place, it can be assumed that higher incomes have led to the greater consumption of meat (mainly chicken and to some extent goat) and maize substitutes

such as rice and wheat flour based products (such as pasta) and other food items with a high income elasticity.

In terms of health problems, the health workers claimed that most cases were related to water parasites as much of the population bathe and wash (and possibly drink) from the stagnant waters of the old dam. Malaria is the second most common sickness and sexually transmitted disease is the third. It is not known that the HIV infection rate is but it was felt that 25% of pregnant women were HIV positive.

It is likely that the consumption of alcohol and prostitution has increased along with the substantial increase in disposable income over the past 4 years.²⁰

Three ovens were constructed involving women's groups (8 members each) with project loans of about USD 200 each, repayable over 10 months. The group-owned ovens are usually based at an association centre and production is mainly sold in the local markets. With project assistance to transport produce to Guruè town centre, the groups also sell soya flour to two bakeries in Gurue. One bakery supplied the Guruè hospital with baked products made from soy flour. Since the previous project coordinator (Gerson Daniel) left, soy flour has stopped being supplied to the Guruè bakeries.

5.2 Community Level

5.2.1 Associations, Fora and Marketing

Ironically, one of the weakest components of the project has been the development of the producer groups which, for many years, has been a core activity of CLUSA's (viz. the three phases of CLUSA's Rural Group Enterprise Development Programme (RGEDP), extending for more than a decade since 1995).

A case study of the RGEDP²¹ stated in 2004 that:

There is strong evidence that the recent increased centralization of the CLUSA-created trading structure has been associated with marginalization of the ordinary members of the RGEs (both from a decision-making and benefit-deriving perspective), resulting in falling membership and a tendency for disillusioned members not to participate. Benefits seem to be small in many associations.

The study further noted that

The logical progression from building up the association base was to develop the forum in order to take advantage of scale both for trading and service provision. The concept has been embraced by donors but there are indications that there are still serious teething problems in terms of leadership/management accountability and the ability of the associations to control forum activities and to change those in charge of those activities. CLUSA needs to address the relations between the two structures and to consider new incentives for belonging to associations to prevent the alienation of ordinary producer who is intended to be the ultimate beneficiary of the structure being created.

²⁰ This was the impression of both the police chief and health workers.

²¹ Fion De Vletter and Sylvi Hill, 2004, *The Clusa Rural Group Enterprise Development Programme In Mozambique A Case Study, paper presented at the Workshop On Income Generating Opportunities In Rural Areas* Aga Khan Foundation, Canterbury, England

These arguments are still valid for ProSOJA. Discussions with forum and association leaders and some members suggests that leadership may be entrenched and privileged (as is common in African society). The ownership of highly subsidized machinery such as the project-supplied threshers by forum executive members has only exacerbated the differentiation. The lack of obvious benefits for their members has also plagued fora and associations, especially as soy buyers gravitate towards the production areas, making producer group intermediation increasingly redundant. Although, unable to get more than a fleeting insight into forum and association issues, it would appear that considerable work is needed to build up grass-roots confidence in the fora and associations. Cynically, it would appear that fora and association exist because of the benefits that are derived by their executive members. One forum, having earned about USD 7,000 from its trading margins was able to put a deposit down for a tractor which was ostensibly purchased to service the needs of its members but just how equitable those benefits are remain to be seen. Similarly, another forum has created a credit fund to be accessed by its members, begging questions about who gets priority and how rigorously lending conditions are applied.

During the 2008/09 campaign, the project encouraged producers to save a margin of their revenues (0.5mt per kilo sold) as a self supporting credit fund for members. This system worked well during the last campaign and project fora saved about USD 20,000 for distribution on credit, accounting for 71% of total credit for the 2009/10 season. However, with increased side selling, only three fora sold their produce collectively, saving a total of about USD 8,000.

The soy market has essentially been a tumultuous free-for-all over the past few years with trading contracts largely not respected. However, as the value-chain becomes more sophisticated and concentrated in Guruè District (see sub-section 5.3.1), greater market stability could be anticipated and hence more important and relevant roles for fora and associations especially with the imminent exit of the ProSOJA project.

In addition to credits and tractor services that the above-mentioned fora claim to provide, fora are expected to pass down information observed from visits to demonstration plots to associations and their members. It is not known how effective this way of farmer training has been which is considerably different than the leader farmer model presented in the project proposal.²² During the 2010/11 season a total of 399 participants attended the training sessions that covered the topics of best practices in soya production, soil improvement, crop rotation and the use of adequate inputs. Association registers show that these individuals have returned to their own communities to disseminate what they have learned, thus the training has indirectly reached all project members.

The development of stronger, more democratic and better managed fora and associations within an increasingly sophisticated value chain, the role of farmer groups should become clearer. In a more stabilized market, it makes more economic sense for processors to work directly with fora and cutting out intermediary traders. Trader advances can be anticipated if contracts are respected and applied in a functioning legal environment. Building up on the experience of the RCRN and the SANA project in Nampula, it can be anticipated that associations can play an important role in both input credit provision as well as input supplies.

²² Leader farmers in other CLUSA projects such as ProVal were charged with the establishment and maintenance of demo plots and were responsible for the training (in collaboration with a project technician) of between 10-20 neighboring farmers who would be attached to that demonstration plot.

A process is ongoing for obtaining NUITs (tax identification numbers) and bank accounts for fora. To date, two fora have obtained a NUIT which will allow them to operate more independently and commercially. With NUIT numbers, fora can themselves move their own money and can negotiate with different buyers and then emit legal receipts to clients – this is particularly important since buyers are liable to be fined if they do not have formal purchase receipts.

5.2.2 Land Rights

The issue of land rights was not raised as an issue in the project proposal but its relevance, especially in terms of protecting women in a matriarchical society, became apparent with the attribution of 23,000 ha to the agricultural company Hoyo Hoyo, leading to the expropriation of land cultivated by some 250 farmers despite cultivating the land since the closure of CAPEL in 1986 which, according to the Land Law, gives the right (after 10 years of occupation) to continue using the land. The government, argues that the land continues to be under the control of CAPEL and therefore transferable to Hoyo Hoyo. Under the lure of many promises (until now not honored), farmers signed an agreement effectively conceding large segments of their land to Hoyo Hoyo. However, under the advice of the first ProSOJA coordinator and in accordance with their legal rights (within 30 days of signature), called for the rescission of the agreement. The provincial administration, in turn, sent various delegations to discuss the matter with the coordinator and the farmers to no avail, with considerable threats made against the coordinator and who continues to be stigmatized as a supporter of the opposition which making employment in Mozambique difficult. At the end, the farmers lost their land and, so far, the various attempts to compensate the farmers have not been implemented.



Fig 14. Hoyo Hoyo plantation with farming equipment in background

The success of the soy production experiments of the pilot phase and subsequent ProSOJA project has meant that private sector interests are increasingly encroaching on communal land cultivation, especially on areas cultivated by larger (“emerging”) farmers. According to a survey done by the National Institute of Statistics (INE) in 2000, 72% of the holdings in Guruè have less than one hectare of land. This occupies only 39% of the cultivated area, while 7% of the holdings occupy 28% of the

cultivated area.²³ With the increasing importance of cash crops, especially soy, in the District of Guruè, the relative value of land is increasing. A few private companies (such as Hoyo Hoyo and Rei de Agro) have already obtained the right to use and benefit from the land in the project's target area, and other such as Gett Farms and Corridor Agro are negotiating for use of large areas increasing the risk of further compulsory relocation.

Land and economic decisions are generally controlled by men, even in matrilineal societies such as with the Lomwe ethnic group living in the project area, where the uncle or the brother makes decisions regarding land. Where cash-cropping dominates, the influence of men is even stronger. Most of the land holdings are inherited through families and therefore untitled which renders farmers' land rights invisible in the National Land Register. This situation is exacerbated by high levels of illiteracy (which blocks producers' access to knowledge of their rights in relation to the Land Law) and few producers holding identity cards especially in the case of women.

A recent FAO case study²⁴ identified the following constraints to women's land rights:

- Minimal participation in consultations and other land management issues in the Land Law context
- Commercial opportunities and 'land deals' dominated by community leaders, most of whom are men
- Relative land scarcity exacerbating these trends, with women losing out
- Customary norms and rights of women increasingly under threat due to HIV/AIDS epidemic, with new economic land values stimulating the seizing of property by (male) in-laws and others.

In 2009, following the consultancy examining the issues of literacy and land rights, a request for the fund of a land rights component (in addition to the expansion of the FBAL component) was made²⁵ and approved, recognizing, that *"The process of legalization is slow, bureaucratic, expensive and complex, which means that few producers will be able to own their own land without external assistance"*.²⁶ Because of the complex issues surrounding the Hoyo Hoyo case, the project initially focused on the areas of Tetete and Lioma to help producers obtain what are known as "DUATs" which is a formally recognized right to use a specifically identified piece of land for a specific purpose. In order to better reach its target audience, the project has staged theatre performances relating to land registration (as well as other issues including adult education and nutrition). These are presented in the local language by volunteers and have been popular (with an audience of on average of 150 people).

The project has held meetings with community leaders and producer groups in order to raise awareness of the benefits of legally registering common land for themselves (land that is used by members of an association but as yet has no legal owner). The project will then support them to submit applications and prepare land use plans in the same way as it has supported individual producers to gain legal ownership of their land.

²³ Cited in CLUSA, 2009, *Request for 3 Years of Supplementary Funds for "PROSOJA" - Developing an Enabling Environment and Strengthening of Women's Participation: Functional Basic Adult Literacy Land Tenure Registration*

²⁴ Norfolk S. and C. Tanner, 2007. *Improving Tenure Security for the Rural Poor. Mozambique - A Country Case Study*. Support to the Legal Empowerment of the Poor (LEP) project, FAO

²⁵ CLUSA, 2009, op. cit.

²⁶ ProSOJA, Annual Report 2008/2009.

In order to assist in land ownership the project has assisted producers to obtain identity cards, a prerequisite for legal land registry and an obstacle affecting female producers in particular. Through project awareness raising meetings and assistance to female producers, 1,000 producers have obtained ID cards with the intention of gaining legal ownership during the next campaign. This will facilitate these producers to go on to obtain legal land ownership during the next year. During the 5th year, the project hopes to finalize the 200 producers' land ownership applications which are at present waiting for approval (to make 417 producers in total with a DUAT) and encourage more producers to initiate the process. The project will also begin the phase of assisting associations to register common land and assist a further 500 (mostly women) to obtain ID cards.

5.2.3 Local Economic Development

The economy of Ruace was described in section 3. The immediate impact of ProSOJA has been a significant increase in household incomes generating a localized multiplier effect through the building of improved housing, expenditures on basic foodstuffs, cleaning materials and other small household items and a limited number of local purchases of larger consumer items such as bicycles. Most expenditures are leaked out of the community by purchasing more important items in Guruè and Lioma as well as the weekly market. The multiplier effect has also had a positive effect on services (such as bars, hairdressers, DVD cinemas, bicycle and motorcycle repairs), trading through the local market, small retailers (*barracas*) and one shop, food processing (grain mills) and transport.



Fig 15. Female emerging farmer and owner of one of the main grain mills



Fig 16. One of the more successful *barraca* (small general retail shop) owners

Commodity trading activities have increased substantially but, apart from generating rent for houses and warehousing and a small amount of employment generation, the local development impact outside of the increased (important) advantages of trader proximity has been limited.



Fig 17. *Postos de Venda* are located throughout the project area, consisting of one or more agents hired by large traders (usually based in Nampula, Guruè or Quelimane) to buy and store a variety of agricultural products which are periodically collected by truck.



Fig 17. Recently opened general dealer and commodity trader with scales outside to buy produce from farmers (Bangladeshi owner) (note the motorcycles which are very common in Ruace)



Fig 18. Local produce (soy, maize and beans) stored inside one of the largest commodity trading warehouses (formerly owned by CAPEL and now rented from Hoyo Hoyo by the company AKAI Industrias de Namialo)

The establishment of Hoyo Hoyo Plantations has also had an income-generating effect, partly generated by soy production but so far production has been disappointing and rumours abound about imminent closure abound.

With the consolidation of value chain activities (see below) in the district and mainly along the Ruace-Lioma hub, it is likely that more fundamental economic changes will emerge within Ruace. With the anticipated microfinance services of BOM from its Guruè branch, it is likely that microenterprises will take off in Ruace, providing retail services that can more effectively compete against the larger commercial centres. Furthermore, with the imminent completion of the tarred road linking Guruè with

Cuamba, Ruace will grow in importance and is likely to draw a significant amount of Lioma's economic activity as Lioma becomes a decreasingly important transit hub.

5.3 Regional Level

5.3.1 Value Chain Development

Measuring the success of the ProSOJA project goes well beyond gauging target achievements. The dynamic set off from the moment CLUSA agreed to experiment with the introduction of soy in 2003 must rate as one of Mozambique's greatest agricultural success stories. The process was underpinned by three essential factors: excellent growing conditions, easy cultivation and insatiable domestic demand. As such, ProSOJA was the catalyst for what appears to be the establishment of a full soy value chain (soy cultivation to poultry processing) within a 10km radius of Ruace with significant developmental implications (both positive and negative) for the region.

A meeting of soy industry stakeholders convened by TechnoServe in August 2011 underscores the extent that the value chain has evolved in the Ruace-Lioma-Tetete region²⁷. Actors involved in the value chain include CLUSA and TechnoServe as development agents (CLUSA working directly with small holder farmers and groups and TechnoServe involved in seed distribution, credit, price incentives and private sector investment support); large scale farms producing a variety of crops (Hoyo Hoyo and Rei de Agro); companies with out-grower contracts (Gett Farms, Rei de Agro and Alif Quimica); seed production (IKURU) plant research (Institute for the Agricultural Investigation of Mozambique (IIAM) and the International Institute for Tropical Agriculture (IITA); commodity traders (IKURU, Gett Farms, AKAI Industrias de Namialo, JFS. ALIF Quimica and Sanam and many smaller traders including several Mauritians in the region) and a poultry food rations plant (Gett Farms in Lioma). Gett Farms is considering transferring its poultry processing facilities to Lioma based on the economic savings of transporting higher value chicken to the main consumer areas rather than low value high bulk feed from Guruè District to Nampula.. Gett Farms is currently receiving technical support from the SDC-funded Private Sector Led Agricultural Growth Programme and collaborates with Standard Bank's Agra-financed agricultural credit programme providing loans to some of the 120 contract farmers (minimum cultivated area 5 ha.) it will work with (linked to the Fora of Napalame and Tetete). In addition to the production impact, Gett Farms' investment in Lioma area will generate employment through its processing activities and may also stimulate the creation of local small/memdmium scale poultry producers supplying the poultry processing plant. Corridor Agro, based in Nampula Province, is considering producing soy in Guruè District.

As the value chain develops through a rapidly growing private sector presence, we will see the eclipsing of the donor-driven development interventions and the disappearance of direct subsidies from ProSOJA, TechnoServe and the government. Of concern to the private sector stakeholders is the production of quality seed and the provision of mechanized plowing services. Although the more commercially oriented direction (new manager and new board) of Ikuru is appreciated, there are continuing doubts about its capacity to monitor seed multiplication. With a very significant increase in soy production

²⁷ The meeting was attended by 30 participants with the objective of coordinating operations during the wht 2011/12 season between CLUSA, TechnoServe, the plantation enterprise Rei de Agro, the poultry processing company Gett Farms, IKURU, COPSA, fora and the trading/producer companies SAN/JFS and Alif Quimica.

anticipated, it is felt that large areas need to be set aside for seed multiplication with planting material being brought in from Zimbabwe and South Africa and a local seed processing plant established ²⁸.

As the value chain develops, we are likely to see an increasingly more important role for emerging farmers as well as fora and associations as intermediaries for small-holder producers responsible for the bulk of the region's total production. Although some companies like Gett Farms may establish the full value chain line of operations in the area, many poultry producers remain far from the soy production areas and will continue to depend on reliable supplies. During the past few years, high demand for limited supplies led to price volatility and a prominent trader presence in towns such as Ruace and Lioma. With an increasingly stabilized market and better managed fora and associations, it is likely that direct linkages between soy buyers (poultry farmers) and soy producers (fora and associations) will be revived in order to cut out the additional trader middleman costs.

6. GENDER ISSUES

Although the project proposal placed a great deal of emphasis on promoting gender, there was no coherent strategy spelled out.

From the outset, the program will encourage and support the full participation of women in all project activities. A strong technical team and partners who understand and appreciate gender issues and are committed to mainstreaming gender in all program activities will be put in place. The baseline will identify gender-based constraints and opportunities to be taken into account during implementation of the program..... To achieve gender equity, the program will emphasize approaches that attempt to increase benefits to women. The areas of focus will include enhancing women's capacities to make decisions, securing leadership roles in their organizations, and increasing business acumen and entrepreneurship.

It was only during the course of the project that the most important and very successful pro-gender components emerged, notably EBAF and nutrition training in the first year, PCRs in the second, and land rights in the third.

In terms of soy production, the percentage of women involved seems to have fluctuated but with an overall downward proportional trend from 33.5% in the first year to 22% in the fourth (in the second year the proportion had increased to 41.2%), suggesting that, as the number of producers increase, significantly smaller numbers of new women producers are joining. In stabilized areas such as Ruace the proportion of women producers has remained steady at around a third. No explanations were found regarding the diminishing proportion of women in overall production. Unfortunately, there is no consistency in the way that gender disaggregated production information is presented but it would appear that women generally produce smaller areas than men with lesser yields (see annex 1).

In Mozambican society, women generally play a subordinated role in situations of leadership, decision-making and organization when placed with men. There are, however, no taboos nor obstacles for women attaining positions of leadership or economic power. In Ruace, several women were encountered who are successful entrepreneurs and large farmers.

²⁸ Opinion of Chibembe Nyalugwe Project Manager, Private Sector Led Agricultural Growth (supported by SDC) which is currently focusing on technical assistance to Gett Farms.

The process of female empowerment has always been a challenge but CLUSA has had a successful record in achieving this through the creation of groups with objectives that suit women's needs without threatening household dynamics. As demonstrated above, women dominate the participation of the FBAL and PCR groups and the 25 women-only associations have been established. Empowering women through formal education and through the accumulation of funds to pursue income-generating activities (agriculture and trading) was found to hit a very positive chord among the women interviewed in Ruace.

Women have also been specifically targeted for support in acquiring identification documents and land registration a process that has been pioneered by ProSOJA with excellent results and likely to be replicated by other NGOs

Nutrition courses have been almost exclusively attended by women. As with any initiative which seeks to alter customs and traditions, this initiative aimed to change eating habits was initially resisted but, with impact of better nutrition noted on malnourished children, participation in nutrition courses has increased considerably and subsequent changes in diet as well as retention of larger quantities of soy at the homestead level, have been recognized by local government officials who would like similar interventions in non-project areas.

7. CONCLUSIONS AND LESSONS LEARNED

ProSOJA will be judged as a critical precursor to what will inevitably be a major soy-based agro-industry. Excellent growing conditions, easy cultivation and high domestic demand facilitated the achievement of project goals which required the basic elements of extension, awareness promotion, and seed distribution. The consequent soy bonanza has led to substantial material benefits for soy-producing communities as exemplified by Ruace's metamorphosis which was almost entirely attributable to the advent of soy production in 2007. Although soy-derived income has clearly led to a substantially higher standard of living for many of the households and is arguably the most important short-term impact of the project, it is, as Hanlon and Smart imply, the longer term, more deeply rooted transformations that are of greater developmental consequence.

The most important longer-term transformation catalyzed by the project has been the development of the soy-based value chain within the immediate vicinity of Ruace-Lioma. This has essentially guaranteed the prominence of soy as a cash crop in the region with implications for market stability, vertical economic integration, job creation and ancillary economic development.

At both the community and gender level, the more direct impact of the project has been the organizational foundation of empowerment groups, specifically to increase educational and financial capacity - of women in particular. In the face of growing competition for arable land, the project has also been a pioneer in its innovative approach of securing land rights for small-holders with an emphasis on women. This initiative will hopefully take on its own momentum and be continued through the intervention of producer groups.

Two areas in which the project failed to make notable impact are credit and the development of fora and associations as market intermediaries. Agricultural and commodity trading credit is always a difficult challenge. In the wake of Gapi's ProVal experience, Banco Terra seemed like a more logical alternative

and provided much hope in the third year with emerging farmer loans but only to disappoint in the following season with late and consequently ineffectual loans. With the imminent phasing exit of the project, the process of emerging farmer loans needs to be formalized, possibly through the intervention of the fora but with a proactive role for the beneficiaries. It is also important that the project takes the initiative of linking BOM with producer groups, applying a similar methodology to the RCRN-SANA experience.

In contrast to the project's success in attaining production targets, ProSOJA has so far failed to build up effective and well managed fora and associations. To some extent the anticipated development of the groups was hindered by the almost total abandonment of the fora as market intermediaries, depriving them of the revenues foreseen to acquire productive income-generating assets (such as tractors) or building up credit funds. The development of strong, transparent, legally responsible and democratic organizations will be essential for retaining membership as well as winning the confidence of key potential value chain partners.

The main challenge for an expiring project is to ensure the continuation of its most important components. Given the value chain related developments, the project can withdraw from its role of seed distribution, credit provision, extension and demonstration plot maintenance without serious consequences. Animal traction promotion, as demonstrated in other projects such as ProVal, has not been big success and would need several more years of promotion before reaching any significant and sustainable scale. PCR development may, by the end of the project, reach the critical mass that would ensure continual self-perpetuated expansion but may need periodic intervention of an organization such as Ophavela. There is a clear demand for literacy groups and efforts should be made to see how such groups could continue after the project's termination. One possibility would be for associations to take over their organization and for beneficiaries to pay for their courses. The acquisition of individual DUATs provides important benefits (security) for beneficiaries who could be expected to pay for the required legal services. The initiative should be carried forward by fora in collaboration with legal experts and government.

ProSOJA was a pioneering project in the promotion of smallholder production of soy and has inspired several similar projects (e.g ADIPSA) in other provinces and Gates Foundation nationally. With such high returns and such a positive response by smallholders to growing the crop and with such a high level of unsatisfied local demand, soy bean cultivation is set to take off on a major scale in Mozambique.

The main lessons learned are summarized as follows:

Concentration in small geographic areas: Following the experience of the first and second pilot phases, the concentration of the project in one focused area was critical in terms of extension, marketing and value chain development.

The importance of emerging farmers as catalysts: By supporting larger more efficient farmers and facilitating their access to credit, the project has not only been able to demonstrate the benefits of scale and good practices to smaller producers but has promoted a small but powerful (both economically and locally influential) group of producers who have become key players in the development of the soy value chain.

The importance of small holders in producing major crops, not necessary to have plantation agriculture: The very positive results obtained by smallholder production should be a warning to the

government that the perceived advantages of large land concessions to agro-businesses such as Hoyo Hoyo may be illusory and that promoting smallholder production not only makes economic sense but, as has been obvious in the case of Ruace, smallholder production of soy has been very effective in increasing rural household incomes.

Credit needs to be on time: CLUSA's experience with agricultural credit providers in Mozambique has been a frustrating one. Gapi's poor performance in the ProVal cotton value chain production led to its expulsion from the three-way consortium between CLUSA, Gapi and the cotton ginnery. After a promising start with Banco Terra in the ProSOJA project. Despite claiming to be an agricultural bank, full risk guarantees provided by ADIPSA and a very good repayment rate by the emerging farmers, Banco Terra provided credit some 4 months too late during the second season.

Developing market linkages through Associations more difficult than agricultural extension: The ProSOJA experience has demonstrated that working with associations to facilitate agricultural extension has been quite straightforward. However, using associations and fora as channels for obtaining benefits for members through more effective marketing has been much more challenging due to the greater management capacity requirements. Significant marketing margins have been earned during the early part of the project, the appearance of traders dealing directly with producers with spot cash transactions has made group trading arrangements more difficult, even if more advantageous.

Changing nutritional practices is a gradual process: Changing traditional behavior such as eating habits is a process that usually takes time as target groups are normally skeptical of the benefits of change unless irrefutable evidence is directly observed as in the case of severely malnourished children responding positively to soy pap. Training is important as a first step but first hand observation of nutritional benefits is usually necessary for convincing mothers or wives to adapt the household diet.

Importance of building up market linkages: The earlier experience of World Vision in the Ruace area had a positive effect on association development but efforts to expand soy production through pilot plots alone failed, largely due to lack of follow-up in identifying markets. ProSOJA's success in linking up soy producers to the poultry industry was a crucial initial step towards expanding soy production.

Urgent need for improved financial education: The prevailing attitudes of PCR members towards commercial banks and the repercussions of the stolen cash box highlights the urgency for financial education especially towards commercial banks. To avoid further loss of money and to develop more synergistic relationships with the banks (potential source of credit for well-organized PCRs or more sophisticated savings and credit associations (SACCOs))

Literacy as tool for empowerment: FBAL beneficiaries were found to have gained considerable self-confidence through the functional literacy courses which helped them run the PCR groups better as well as improving their business and agricultural skills. Women in particular took advantage of the opportunity to graduate with the FBAL courses and to continue with formal secondary school classes.

ANNEX 1: PROJECT EVOLUTION 2007/08-2010/11

	2007/2008	2008/2009	2009/2010	2010/2011
Production and Income				
Producers	2,045 (33.5% women)	3,977 (41.2% women; 45% women in Ruace)	4,710 (34.8% women; 31.6% women in Ruace)	5,024 (22% women; 33.5% women in Ruace)
Tons produced	1,124,672	3,214,000 (33.9% women)	4,604,000	5,464,515
Ha planted	2,215 (19% women)	3,248 (37.4% women)	4,428	5,117
Yield/ha	826	916	1,039	1,068
Farm gate value (USD)	704,238	1,360,082 (34% women)	1,429,000	2,641,182
Net Income (USD)				1,193,556
Production Technology				
Seed Multiplication/ Distribution	Technoserve provided 85 tons of seed; 10.8 tons bought with project funds; Ikuru produced 110 tons in Lioma)	138 seed multipliers	79 seed multipliers selling to Ikuru expected production 395,000 kg.	29 producers contracted to supply IKURU projected production 226,800 kg
Demonstration Plots	5 demonstration plots	No demo plots with the use of a mechanical ripper, introduced a new, narrower, row spacing of 50cm rather than 75 cm	100 demo plots (size 10x10m)	21 demo plots (size 50x50m) Selected CDRs demonstrated to producers the use of 5 different seed varieties and agricultural inputs (foliar feed fertilizer, inoculants, NPK and phosphorus fertilizer). Producers were able to observe the increased yields, notably those resulting from Santa variety and with the use of foliar feed fertilizer and inoculants
Conservation farming		Introduced mechanical ripping for plowing		
Mechanized Ploughing	29% of cultivated land	566ha (21.2%), using ripper which was introduced this season	865 ha (20.3%)	12.5% of land plowed due to breakdown of tractors
Animal Traction	1% (14.5 ha) ploughed by animals belonging to IITA; 19 producers benefited	10.5 ha (03%) For a were responsible for oxen; decision to sell oxen to capable individuals	49.6 ha (1.2%)	0.5% of land; 46 producers benefited; 24.5 ha ploughed
Emerging Farmers		20 EFs identified (10 women); 10- 30 ha each; 38 haf soya, 75 ha maize; 13 applied for land legalization.	14 EFs (3 women) average of 16 ha of soy/maize identified for the Emergent Farmers program.	12 EFs (1 women) average of 8.4 ha soy, 3.5 maize and 0.2 ha sesame identified for EF program
Organic Soy	160 ha selected for organic production. organic inspection July 2008;	184 organic producers, of which 39 (21%) women; produced 250Mtons of soya this year	162 producers; will be inspected Ecocert in Sept. 2010. 211 ha expected to produce 251.7 tons of organic soya	123 producers, 191 ha expected to produce 229,200; to be inspected by Ecocert at the end of July 2011.

Credit and Financial Inclusion				
Clusa	95,800kg of seed (84% recovered); USD 35,677 for land preparation, weeding and tools; 96% recovered	161,500kg of seeds to approx. 3,000 farmers; 1,471,610 MT mainly for plowing and weeding; 328 farmers benefited (72.5% women)	355,000 kg expected production of seeds; credit provided was 243,689MT (58% women and a reduction of around 33% of beneficiaries from 2008/09);	226,800 seed expected to be produced by project to be distributed on credit USD 13,306 project credit for 104 producers (56% women)
Commercial Banks		Banco Terra approached to provide financing to EFs as had been done in Nampula district. meetings with ADIPSA in order to negotiate the provision of guarantee funds.	823,300 MT (\$22,251) in credit (an average of \$1,589 per producer) from Banco Terra - the first time that producers in the region have benefited from bank credit.	Due to a lack of collateral by the farmers, Banco Terra did not supply the funds necessary to conduct the production activities of the farmers and the money was loaned by the project.
Savings and Credit Groups	Ophavela approached for technical assistance	4 groups created with 69 members	16 groups, 2 of which contain both women and men, whereas the other groups only include women. 201 members of whom 187	22 groups, 456 producers
Social Capital Formation				
Producer Organizations	7 fora (1 previously legalized, 1 awaiting authorization, 5 in process), 67 associations	8 fora, 121 associations (of which 105 legalized); 24 all-female groups	9 fora, 112 associations, 97associations and 3 fora legalized. 4 fora with bank accounts and NUIT (tax)	8 fora (3 legal), 127 associations (107 legal)
EBAF (Adult Education)	49 centers; 1,646 participants (67% women)	48 centers, 1586 students (72% women)	100 centers, 2,299 participants (61% women), expected 1,272 participants to take national exam (70% anticipated to receive diplomas certifying them to a grade 5 education.	967 producers completed level 3; 2,754 currently participating; 59% women; graduating rate 81%
Land Rights		31 producers submitted proposals for land legalization	82 farmers legal owners of the land; 70 in progress and a further 50 to initiate the process. 300 women and 20 men obtained ID cards with intention of gaining legal ownership	1,000 acquired their ID cards; 97 farmers supported to obtain legal ownership; 75 applications in progress and 200 planning to apply

ANNEX 2: PERSONS MET

Name (by order of encounter)	Place	Function
Carolina Reynoso	Nampula	Mozambique Programme Manager, CLUSA/NCBA

Antonio Petulante	Gurué	ProSOJA Coordinator
Voldomar Alberto	“	M&E Technician, ProSOJA
João Macumbire	“	Production Supervisor ProSOJA
Felisberata Augusto	Ruace	Soy producer/ex-employee Hoyo Hoyo
Gomes Fernando	“	Police Chief
Catarina Alberto	“	CDR manager, producer of soy based bread, owner of soy thresher
Ernesto Elias	“	President of Forum Acissa
Fernando Maliango	“	Manager of Forum Acissa
Rafael Martin	“	Technician responsible for PCRs
PCR group Barragem Economica	“	Members (about 15 present)
Eugenia Mertoni	“	EBAF animator
Lourdes Armazia	“	PCR animator
PCR group Nitxarenone	“	Members (about 15 present)
Cesar Wahela	“	President, Association Eduardo Mondlane
Mohammed Jafar Alam	“	Bangladeshi Trader
Rosario Pedro	“	Soy Producer
Antonasio Alberto	“	Secondary student (9° classe Lioma)
Anonymous	“	Soy producer and seller of bicycle parts in Ruace market
Castello Joaquin Francisco	“	Tecnico Medico, Health Post (clinic)
Maria Ines de Medonça	“	Nurse, Health Post
Hotencia Barraca	“	Nurse/nutricionist, Health Post
Arnando Zecas Justino	“	Nurse, Health Post
Augusto João Verde	“	Manager, Cooperativa Agricola de Prestação de Serviços (COPSA)
Alberto Paulo Morepa	“	COPSA
Alberto Mushengeti	“	Emerging farmer
Antonio Josamo	“	Emerging farmer
Gabriel Pedro		Emerging farmer
Katoma Potoro		Emerging farmer
Bina Sandra	“	Owner of electric maize mill and emerging farmer
Carlitos Jackson	“	Soy producer and bicycle assembler and repairer
Dinis Samuel	“	Owner of general goods barraca
Mohamed Fale	“	Mauritanian commodity trader
Carlos Mirione	“	Owner of general goods barraca
Omar Abdala	“	Commodity trader for AKAI Industrias de Namialo
Jeremias Cardoso Musa	“	Teacher, Ruace Primary School (also soy producer)
Eugenio Lucas Besuro	“	Administrative Assistant, Ruace Primary School
Basilio Cipire Mucarea	“	Oxen and cart owner, Certified trainer in animal traction and President of Association Barragem Económica
Martinho Mpoluia	“	Regulo (community leader)
Edson Machabana	Lioma	CLUSA
Alberto Jaime Chabissa	“	Responsible for Agriculture, Administrative Post of Lioma
Isabelle Jaime Armindo	“	ProSOJA technician responsible for Nutrition and EBAF (Lioma area)

José Romão	“	Vice President of the Federation of Producers of Gurué District
Graciano Arezuano	“	Deputy Director, Pedagogy
Maria José Cebola	“	Director <i>Centro Internato Ruace-Lioma</i> (secondary school dormitory)
José João	“	Head (<i>Chefe</i>) Administrative Post, Lioma
Various representatives	“	Ikuru Trading Company, Lioma
Manuel Estenio	Gurué	Extensionist Mulungu (Gates)
Carlos Vasconcales	“	Former Coordinator ProSOJA
Julieta Rodrigues	“	Formerly responsible for M&E, Gender and EBAF, ProSOJA
Mahibullah		Owner, SAID Comercial (sells to Ruace clients and also supplies Mr. Alam the Ruace based trader)
Silvino Jorge	“	Head, EBAF ProSOJA
Lurdes Rafael Eusse	“	EBAF Promoter, Tetete
Carolina Reynoso	Nampula	CLUSA-NBCA (Washington)
Todd Chapman	“	Acting National Director, CLUSA-NBCA
Jake Walter	“	Director, Technoserve, Mozambique
Luis Perreira	“	TechnoServe, Nampula
Shannon Johnson	“	Technical advisor, Rede das Caixas Rurais de Nampula (microfinance provider to farmer associations)
Rob Paterson	“	Advisor Gett Farms
Carlos Mate	Maputo	Norwegian Embassy
Kathryn Larcombe	“	Banco Oportunidade de Moçambique
Douglas Pond	“	“
Michel Evequoz	“	Swiss Development Cooperation
Chibembe Nyalugwe	“	Project Manager, Private Sector Led Agricultural Growth (supported by SDC)
Stephen Gudz (via email)	Washington	Former CLUSA Country Director