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# International Guidebook of Environmental Finance Tools: A Sectoral Approach

Protected Areas, Sustainable Forests, Sustainable Agriculture, and Pro-poor Energy

## CHAPTER 5: SUSTAINABLE AGRICULTURE

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# CHAPTER 5: SUSTAINABLE AGRICULTURE

*Sustainable agriculture is agricultural production that is economically viable and does not degrade the environment over the long run. (OECD)*

## Introduction and Definition

The purpose of this chapter is to identify the financial tools most likely to support sustainable agriculture practices in developing countries. While there is more than one definition of sustainable agriculture, this report utilizes the OECD definition referenced above. The predominant tools used to support sustainable agriculture include loans and fees with several variations of loans used most frequently.

Because the emphasis of this *Guidebook* is pro-poor, most of the environmentally sustainable case studies in this chapter focus on tools that enhance soil health and eliminate or minimize synthetic inputs, while improving livelihood at the smallholder level over the long-term. Financial tools that bridge the critical funding gap between planting, and harvest and sales are also predominant. Because of the breadth of the topic of agriculture, most case studies in this chapter focus on plant-based food production; however, the financial principles and practices herein can and should apply to projects that involve livestock and textiles as well.

## Financial Tools

### FINANCIAL TOOL CHOICE

As discussed in Chapter 1 above, this *Guidebook* focuses only on financial tools most commonly implemented in and most applicable to developing countries. Thus, this chapter did not attempt to assess innovative new financial tools or tools with limited application.

For sustainable agricultural finance, loans and fees predominate. Some traditional tools, such as government and corporate subsidies, are not as relevant for sustainable agriculture, since by definition, the goal is to have closed loops, operating without regularly added inputs (e.g. GMO seed, synthetic pesticide). Processes that require a constant flow of these costly outside inputs are inherently financially and environmentally unsustainable over the long term.

No matter the size of an operation, growers need financing to bridge the gap between planting and harvest. Financing for this “gap,” usually through some form of loan, can come from multinational distributors of commodity crops (See case studies in Peru, Tanzania), or from local consumers willing to give credit now for future products (Morocco).

Financial support for the transition to, or maintenance of, sustainable agriculture is largely dependent on tools that manage the risks inherent in reliance on nature for a return on investment. Tools used in sustainable agriculture financing include a wide range:

- “Classic” governmental programs such as subsidies and tariffs;

- Programs launched with seed money from NGOs with an eye to becoming self-sustaining over time;
- Public/private partnerships supporting research and development, pilot programs, and market development, etc.;
- Cooperative marketing and certification schemes; and,
- More recent finance tools such as micro-insurance premium sharing (Kenya.)

However, from end-consumer funding through up-front payments to a community-supported agriculture (CSA) plan, to the intricate contracts and guarantee structure of international value chain finance, loans in all their forms are a dominant financial tool for sustainable agriculture.

Available financing plays a key role in determining the nature, quality and quantity of inputs--from irrigation water to fertilizer to seeds to enhancement of skilled labor. In turn, the outputs (crop quality and quantity) rely upon the inputs. If financing exists for industrial agricultural inputs (nitrogen fertilizer, transgenic seeds, etc.) but not for organic agricultural inputs (education and gap loans), farmers will of course select the methods that lead to sustaining the immediate needs of hunger and income.

While trends in sustainable agriculture are moving toward smaller-scale, local efforts, local markets and reduction of synthetic inputs; often the system that finances agriculture still favors large-scale projects, agribusiness initiatives, and cross-border movement of, and focus on, commodity crops. As shown in the analysis and case studies below, successful implementation of sustainable and organic agriculture requires collaboration, education, localization and capacity building.

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## LOANS

### Overview

Environmental finance loans can range from multi-million dollar World Bank investments in national agricultural projects to micro-finance programs that offer small loans to individuals. Loans may also take the form of credit, in which a buyer receives a product up front (such as seeds and fertilizers) and pays back the cost, plus interest and/or fees, over time. Patient loan programs have proven successful, allowing borrowers to take several years to pay back relatively small amounts. Some of the challenges with implementing a loan include the following.

**Setting loan amounts and terms:** Loans are a financial investment and thus require sophisticated contractual agreements that must be appropriate to the potential borrower and attractive to the lender. Like fees, it must be determined in advance how much a borrower can and is willing to accept in debt, and how long they can/will take to pay it back. Lenders must determine the level of risk they are willing to assume, the interest loan rate or fee, and what return on investment they need in order to maintain a sustainable program.

**Defining collateral:** Loan programs normally require collateral to help guarantee repayment and reduce risk. Collateral is a borrower's pledge of specific property against which a loan is made. The property could be a home, tractor, or any other item that has equal or greater resale value than the original loan. In developing countries, many borrowers have no collateral to offer, which raises the level of risk to the lender.

In the agricultural arena, a new breed of loans (value chain finance) has broadened the definition of collateral to accept the future value of a product or service.

**Risk pooling:** Because the availability of collateral is unlikely in developing countries, some borrowers, especially in agriculture, have formed risk pools, which combine the uncertainty of individuals into a calculable risk for large groups. For example, if a small farming community is jointly responsible for a single loan, one farmer may fail, but the group can pool their revenue to pay back the loan. While this is a complicated approach that requires the cooperation and participation of several borrowers (often through the form of a local cooperative), it can reduce risk for both the lenders and borrowers.

**Delinquent payments:** Delinquency is always a concern for a lender and terms need to be established for when a borrower is delinquent and what the penalties may be before a loan program is implemented. Lenders must also develop protocols for repossession of products when buyers become delinquent.

**Developing financial infrastructures:** Because so many developing countries lack local banks to provide credit and accept payment, grassroots financial infrastructures frequently need to be developed before loan programs can be launched.

## Agricultural Loans

Access to credit is vital for farmers, and the agricultural sector continues to be underserved. For instance, agriculture accounts for 40 percent of Nigerian GDP, yet the sector receives only one percent of commercial bank loans. Local financial institutions are often unwilling or unable to extend loans for agricultural production. Outside support or other financial guarantees can ameliorate this. The variability and risk of agriculture also make it an unattractive sector for big lenders. In response, for-profit social mission institutions (for example, Triodos in Tanzania and Root Capital in Peru) are taking the initial risks and hopefully blazing a trail for other capital to follow.

Loans are most effective when the market is proven (and collateral exists in the form of guaranteed future contracts). One approach with the best prospect for success in sustainable agriculture is value chain finance. In value chain finance, traders, processors, input suppliers and exporters provide short-term loans to growers, with the credit linked to the subsequent sale of produce. Value chain loans operate without tangible collateral, and “trickle down” to become small and even micro-loans for smallholder farmers (See Case Studies in Tanzania, Peru and Uganda.)

However, value chain finance has drawbacks. Value chain finance loans, while very effective, are only useful in situations where there is strong demand and market access and preferably a long-standing relationship across the chain from grower to processor to exporter to wholesale/retailer abroad. The international value chain brings risk along with opportunity, as the grower becomes dependent on markets far away that can be drastically altered by global economic crises or changes in trade regulations.

A completely different kind of “loan” is the development of Community Supported Agriculture (CSA) and other forms that involve developing domestic markets and eliminating middlemen so that growers and end consumers interact directly (Morocco). This has add-on benefits of increasing food security and educating the (middle class) public about sustainable agricultural products.

Drawbacks to successful loan programs include inadequate financial infrastructure, theft and corruption, and inattention to the risks inherent in a weather-dependent industry. Additionally, achieving equity is challenging: microfinance has favored male farmers despite the fact that women greatly outnumber men in agriculture (WorldWatch, State of World, 2011)

Crop insurance and other types of insurance policies could have the potential to mitigate the risk inherent for growers. Bolivia is experimenting with a new program to provide crop, life and input micro insurance; in Kenya, the Kilimo Salama program (see case study) combats the expense of insuring many small farmers by cutting expenses through use of mobile technology.

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## SUBSIDIES

### Overview

Subsidies are direct transfers, usually from government to consumers or producers, to lower their costs or augment income. In environmental finance, subsidies often aim to encourage a particular behavior, e.g. using less pesticide. Subsidies can be used to protect and support the growth of a young industry but they can also create reliance on below-market prices for products.

Some of the challenges with implementing subsidies include the following.

**Unintended consequences:** Subsidies artificially set prices that do not accord with the market. As a result they can have unintended consequences, such as overproduction, reducing innovation and preventing competition.

**Political difficulties:** Politically, subsidies are very difficult to eliminate once they are put in place, yet they are costly for governments to maintain over time.

**Market suppression:** By introducing subsidies that support specific products, the market that may have developed otherwise may be suppressed because there is no incentive for competitive products, which typically bring down prices.

### Agricultural Subsidies

Transition to more sustainable production techniques often needs to be subsidized or supplemented by grants or loans, either from processors/retailers (Uganda) or from NGOs (Cambodia) or government (Philippines). While subsidies for organic agriculture (e.g., organic fertilizer) have been under discussion for years in some areas (as in India), the research for this Guidebook did not reveal any examples of any national-level programs that have been implemented in developing countries. This said, legislative efforts to create subsidies are underway in Indonesia, India, Sri Lanka, and South Korea to help promote adoption of sustainable agriculture policies. One subsidy case study included below operates at the local (municipal) level in China and involved the government requiring the entire township to transition to organic production. This kind of policy is only possible in highly centralized government situations, and may not be the easiest to implement in other cultures. Beyond input subsidies, there are examples of government subsidies that encourage foreign investment (Tunisia) or agricultural behavior change (Philippines.)

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## TAXES

### Overview

Taxes usually require large-scale, national-level implementation and developing countries face many challenges when they attempt to establish taxes. Taxing their own citizens can be extremely difficult if most workers are employed in agriculture or in small, informal enterprises and their earnings are largely “off the books.” At the same time, tax development and administration requires experienced and highly trained staff, and ideally computerized systems to collect statistics and track revenue.

Some of the other challenges with implementing taxes include the following.

**Collection and distribution:** Because most developing countries lack sophisticated tax systems to track and monitor the collection and distribution of funds, monies often get diverted to non-intended uses. Taxes also fall prey to competing legislative agendas that seek to reassign revenue to other areas.

**Relying on future revenue:** Reliance on a steady stream of tax revenue can be risky if the tax amount is fixed and not structured with a formula to respond and adjust to economic fluctuations and inflation. Taxes should be implemented so that they can rise and fall as necessary in order to guarantee a certain level of income.

**Financial auditing:** Most developing countries do not have the capacity to perform the necessary financial audits to track revenue generation and distribution.

### Agricultural Taxes

The volatile nature of world tariff discussions and the uncertain path from tax collection to revenue disbursement have led to few opportunities for the effective application of import/export taxes to support sustainable agriculture. WTO guidelines now make it very difficult to impose new agricultural import tariffs; even if taxes can be successfully imposed, historically the monies rarely go back to the sector (e.g., sustainable agriculture) that they were intended to support. Export taxes, on such commodities as palm oil, usually are imposed to protect domestic consumers from spiking prices and supply shortages; they frequently encounter stiff industry resistance, as is the case in 2011 in Indonesia, where industry pressure caused the government to lower the palm oil tax rate.

## Overview

Fees can be self-assessed or imposed on others. As presented in the case studies below, explaining and demonstrating the value of the fee to the payer has been shown to reduce resistance, especially if the payer perceives a benefit from the fee. While fees are a useful stream of revenue, they are rarely sufficient to cover the full costs of a project (e.g. farmer cooperative fees don't cover full costs of transition to organic or market access). Some of the challenges with implementing a fee include the following.

**Setting/determining the fee:** While seemingly straightforward, it can take years to establish stakeholder support to implement a fee. Determining the appropriate amount a potential user will pay may demand significant research, require stakeholder input, and remains an inexact science at best. Fee analyses such as willingness-to-pay studies are time consuming yet critical to setting the right amount and maximizing revenue.

**Collecting the fee:** A fee collection infrastructure should be established that ensures transparent and accurate accounting of revenue.

**Corruption/crime can threaten collection/distribution:** Fees can generate significant revenue and are susceptible to corruption and crime. Again, implementing an accountable and transparent system, can help support a fee system of collection and distribution.

## Agricultural Fees

Fees from associations are important for supporting certification, promotion and other market development activities. Fees consist primarily of membership fees in coops and associations.

Membership fees create a sense of ownership, but the value often must be explained and the appeal to the poorest is hard to convey. The poorest farmers have the least chance of having the cash on hand for membership fees in cooperatives or associations and many farmers do not see the benefits of the cooperative as outweighing the near term cost of paying the fee. More problematic is the fact that membership fees rarely cover the costs of the association; they must be supplemented by grants or commission on sales or other earned revenue (see Cambodia case study).

## Case Studies Included in this Chapter

Financial tool case studies were evaluated for the effectiveness of the tool including its level of success, community impact, pro-poor focus, environmental and biodiversity sustainability (including the potential to reduce carbon emissions), and financial sustainability. Criteria for selecting case studies included:

- Significant environmental benefit, either accrued or intended;
- Replicable in other developing countries;
- Financially sustainable over the long term; and
- Pro-poor emphasis that provides community level benefits.

The case studies listed below are included in this chapter.

## Sustainable Agriculture Case Studies

Tool	Country	Title
Loan-Customer Advance	Morocco	<i>Consumer Bridge Loans: Community Supported Agriculture Aids Farmers and Develops Local Market</i>
Loan-Supplier	Uganda	<i>Taking Money Out of the Equation: Fruits of the Nile's Non-monetary Loans to Farmers</i>
Loan-Trade Finance	Peru	<i>Supporting Cocoa and Coffee Over Cocaine through Trade Finance Loans</i>
Loan-Trade Finance	Tanzania	<i>Built to Last: A Long-Term Lending Relationship Leads to Sustainable Local Enterprise</i>
Subsidy-Input	China	<i>Community-wide Conversion: Local Government Supports an Entire Township's Transition to Organic</i>
Subsidy: Insurance Premium Sharing	Kenya	<i>Input Insurance Program Grows with Shared Premiums and Mobile Technology</i>
Subsidy-Investment	Tunisia	<i>Applying Foreign Direct Investment Incentives to Organic Agriculture</i>
Subsidy/Loan	Philippines	<i>Supporting Urban Agriculture by Providing Plastic Pots and a Savings Scheme</i>
<b>Fee – Coop Membership</b>	Senegal	<i>Organic Banana Farmers Target Financial Independence in Senegal</i>
<b>Fee- Coop Membership</b>	Cambodia	<i>An Organic Producers' Association Provides Marketing Assistance, but Member Fees Fall Short</i>

## Attracting Investment in Sustainable Agriculture

Evaluating the performance of individual financial tools that support sustainable agriculture is complex, since most projects require significant investments in capacity before a project can be successful. However, in general, most sustainable agriculture programs will rely on some sort of internal or external financial investment. Thus in almost all of the case studies below (with the exception of China) the projects must be attractive to investors in order to succeed. Those investors will, in turn implement and/or, contribute to the financial tool. Loans need lenders, insurance programs need insurers, and cooperatives that implement fees must have the support and confidence of their member investors that their money will provide an acceptable return. As a result, the success or failure of a financial tool can often be determined by whether or not it maintains the ability to attract and retain investors.

In order for investors to find a project attractive, certain criteria must be in place including: effective management and/or leadership, adequate supply chain, proof of concept, environmental risk management, market maturity, sustainable financial



approach and environmental and social sustainability. While not all elements are always necessary for a successful project, each should be carefully considered and assessed before a project is launched and a financial tool is implemented.

Each element is discussed in greater detail below, followed by a Sustainable Agriculture Investment Checklist designed to help decisions-makers better understand the type of financial tool that is most effective depending on the stage of a project.

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## MANAGEMENT/LEADERSHIP

Investors, from banks to venture capitalists, will first look at the quality of management and leadership that drives a sustainable agriculture project. Profitable financial tools rely on public sector leadership to build infrastructure and implement the appropriate government policies and regulations that sustain the agricultural supply chain, from seed to market. Once an effective system is in place, investors will then assess the management team that will lead the project or program to determine if their investment is sound. Strong management teams supported by public sector champions can reduce risk, improve return on investment and support the successful implementation of a financial tool.

### *Government's Role*

Government participation at multiple levels is critical to the success of many initiatives. It is important to involve local civic officials at the outset, especially for new forms of participatory associations where farmers are expected to cooperatively assume financial responsibilities. Where the market is local, small-scale solutions such as CSAs may be optimal choices for environmental finance. To support CSAs, government roles involve avoiding or minimizing punitive fees or regulations (e.g., vendor licenses) or improving infrastructure (e.g., maintaining the road that leads from protected area or farm to consumer.)

At the national level, government support of organic product certification boards, foreign investment incentives, and infrastructure improvements is essential. Conversely, and as presented in the Morocco case study, the lack of government support for sustainable agriculture can slow its growth and commercial uptake.

### *Management's Role*

No matter how brilliant the inspiration, it is ultimately the project leadership and management that will bring a good idea to fruition. For sustainable agriculture projects where individual farmers are required to coordinate their efforts and accept financial responsibility – sometimes for the first time in their lives – management become even more critical. In order for financial tools to succeed, business skills capacity must often be built and/or strengthened at the local level to reduce risk and attract investors. When assessing a management team some questions to ask include the following.

- Does management have the financial and business skills necessary (including basic accounting and auditing expertise) to successfully implement a tool?
- Does management have strong and trusted relationships with all stakeholders including the producers, buyers and investors?
- If financial capacity is a concern, does management have the ability to adequately structure and operate a transparent financial entity (e.g., a cooperative or microfinance institution) that can collect and distribute money?
- Can management guarantee timely cash flow so that un-financed gaps between seed and harvest can be financially supported?
- Does management understand the local and national regulatory barriers and opportunities to implementing and managing the financial tool?

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## SUPPLY CHAIN

Risk and uncertainty are ubiquitous and varied within agriculture and agricultural supply chains. The unpredictability of weather and its impact on the growing process, distances between production and customers, and the impact of seasonality on the market all serve to enhance risk and challenge successful implementation of financial tools. An effective supply chain

can help mitigate that risk and enhance the viability of a financial tool; and investors, from the farmers in the cooperative to international agricultural development agencies will want certain guarantees that an efficient supply chain is in place.

An agricultural supply chain encompasses all the input supply, production, post-harvest, storage, transportation, processing, marketing and distribution, and food delivery from the seed to the dining table. These functions typically cross other supply chains and even geographic and political boundaries, and often involve a wide range of public and private sector institutions and organizations. Thus, in addition to the challenges of growing crops, financing agriculture needs to address a complex web of interrelated issues all of which impact stable and regular supply distribution and influence price fluctuations.

Before a loan program is established, before a fee system is implemented or before a subsidy is introduced, investors should always define and assess the supply chain prior to committing funds to an agricultural venture. If significant aspects of the supply chain are either missing or inadequate, the investment is at risk, and the first steps may be to fund supply chain capacity before financing sustainable agriculture.

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## PROOF OF CONCEPT

Because the agricultural industry is inherently uncertain, investors are more likely to be conservative and seek to control those elements that are not subject to the whims of nature. Thus, as discussed above, they will seek out projects with strong government support and experienced leadership. In addition, they will look for those projects that have been proven successful elsewhere. This proof of concept provides at least a measure of certainty that most things being equal, the financial tool has a stronger chance of success. Projects that are new and innovative may be exciting, but they are also more likely to require some sort of subsidy or grant to prove that the concept can be viable before investment money flows in.

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## ENVIRONMENTAL RISK MANAGEMENT

Agriculture is a risky venture and climate change will only aggravate that reality. An agricultural project's vulnerability to weather and climate is a frequent concern for potential investors. In addition, because so many of the successful financial tools rely on upfront funding with repayment tied to a successful harvest and accompanying sales, environmental risk management becomes a critical part of a tool's success. Investor's will want to know: what happens if there is a major storm or drought, what happens if commodity prices fall?

While not all risk can be mitigated, developing an environmental risk management plan can help defray some of the concerns and help assure the success of the tool. Before a financial tool is introduced, investors must inquire about contingencies in case of natural and/or man-made threats to a successful harvest. A sustainable agriculture project that takes into account environmental risk mitigation and adaptation will have attractive opportunities to scale.

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## MARKET MATURITY

In general, any product has a life cycle in which it is: 1) first introduced to the public, 2) awareness and interest grows, 3) the product matures and is at the peak of its value, and then 4) as other competitors move into the market, the product's value declines. Knowing where a product is within this lifecycle is critical to an investor. Financing a product too soon or too late can result in negative returns. Thus, the success of a financial tool depends on the knowledge of market maturity, which will serve to inform consumer awareness and the level of competition.

Unlike energy or protected areas, the market for sustainable agriculture products tends to go beyond the immediate community, particularly for organic. Some case studies address developing an in-country market for sustainable agricultural products, while others focus on exporting, which creates a more complex value chain.

Investment, grower education, government support and promotion/marketing assistance are combined in the most successful case studies. Farmer cooperatives can decide on their own to transition to sustainable practices to the benefit of

the environment, but market creation and growth depends on promotion campaigns, good roads to deliver the products, and consumer perception of value in order for such projects to thrive past the seed funding stage.

## FINANCING

### *Financial Sustainability*

A healthy industry is one in which multiple financial options (loans, credit, equity, etc.) are available to support growth and success. Successful financial tools are those that generate their own revenue and are self-sustaining over time. While loans have proven to be successful in providing sufficient funds with adequate returns, they are usually unaffordable to the very poor. Fees can be adjusted to respond to lower levels of income, however they are often inadequate to support a project in its entirety. And while a subsidy can serve to brace a new product or industry, a product that survives entirely on the support of a subsidy over time is not financially sustainable. This suggests that a bundle of tools may be the best and most sustainable approach to financing sustainable agriculture.

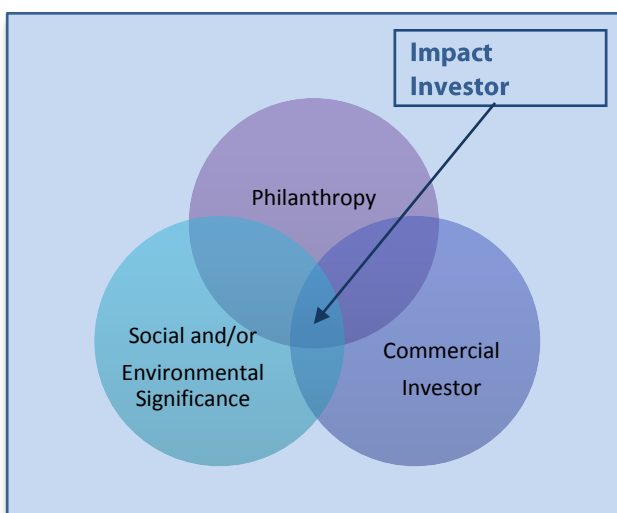
### *Financial Tool Bundling*

In many cases, no single tool is adequate to fully finance an agricultural project. In response, a bundle of tools are used to promote success. For example, urban agricultural projects are often supported through financial tool bundling: usually through a combination of savings, subsidies and/or microcredit. In the case study from Marilao, Philippines, middle class households' waste is diverted (at no additional cost to the households) to make compost, which is in turn distributed to poor families to promote urban agriculture. Poor families are credited with initial growing supplies, the costs of which are repaid through a savings scheme. The resulting increased food security has additional effects for urban quality of life at all levels.

## SUSTAINABILITY

Agriculture projects that benefit poor communities will have a low rate of financial return and/or a high degree of risk. At the same time, sustainable agriculture, which lessens reliance on water and expensive fossil-based inputs, often carries less risk for financial loss than conventional agriculture while providing environmental benefits. As a result, because pro-poor sustainable agriculture has the potential to provide high social and environmental returns at lower financial risk, impact investors have been attracted to the market.

### *Attracting Impact Investment*



In the past few years impact investors have become more prominent, representing firms that seek more than a bottom line return on their investment. These mission-driven financial institutions and social entrepreneurs have reframed discussions around repayment time horizons, the need for and type of acceptable collateral and required rates of return for investments in developing nations. Willing to accept a lower rate of return, impact investors instead require social and environmental impacts, which are imbedded in their investment criteria.

This new approach has created hope that amount of capital available for sustainable agriculture will grow beyond the currently limited field of microfinance. In addition, unlike other conventional investors,

impact investors frequently take a hands-on approach, assisting with building financial and supply chain capacity. As impact investors organize as a formal financial industry sector, it will become easier to reach and attract the kind of “slow money” funding that is so essential for sustainable agriculture to scale.

*Impact Investment Criteria*

Truly sustainable agriculture projects will contribute to poverty reduction, food access, social equity and national security. Impact investors are not philanthropists but nor are they commercial investors; their investment criteria include most of the standards of “regular” investing while also requiring proof of positive social or environmental impact.

Impact investors consider:

- Viability of business model (which will include management team, proof of concept, supply chain, etc.),
- Positive cash flow,
- Potential of model to scale, and
- Potential for social and/or environmental impact

Impact investors may have additional criteria around geography, target populations, transparency and ethical standards, and range of investment amounts.

## Sustainable Agriculture Investment Checklist

The checklist below is designed to assist decision-makers in evaluating the likelihood and risk factors of their sustainable agriculture tools. Naturally, not all questions will be equally applicable for all projects. However all projects should consider the categories Management/Leadership, Supply Chain, Proof of Concept, Environmental Risk Management, Market Maturity, Financing and Sustainability. Some detail in each category is included below the checklist:

SUSTAINABLE AGRICULTURE INVESTMENT CHECKLIST	YES	NO
<b>Management/Leadership</b>		
Investors of all kinds usually put the greatest weight on the quality of the management team when evaluating a business investment. Sustainable agriculture relies not only on growers, but also on various levels of leadership (from the community to the national level) and political support. If the answers to the majority of questions in this section are “no,” attention should be given to the project team’s composition before a tool is implemented.		
Does the project team have strong project management skills and experience?		
Describe the management team’s experience, qualifications and skills.		
Are there local/national leaders that support the project?		

SUSTAINABLE AGRICULTURE INVESTMENT CHECKLIST		YES	NO
Describe local/national support and leadership (including policies, programs, certification agencies, extension services, etc.):			
<b>Supply Chain</b>			
A demonstrable supply chain is critical to a successful agriculture and necessary to attract financial investment. If the majority of answers to this section are “no,” the project should be reconsidered and may require start-up subsidies and grants to build the supply chain.			
Is there an existing supply chain for the project/product?			
Describe the product supply chain, including vendors, suppliers, processors, certification bodies, distributors, exporters (if applicable), labor force, etc.:			
Is there a well-managed, transparent supply chain?			
Explain transparent processes, such as regular auditing, quality assurance standards, etc.:			
Can the product reach the market within an acceptable timeframe?			
Describe the transport infrastructure (roads, rivers, etc.) that supports the supply chain. Include any efforts to address reducing rates of damage/spoilage.			
Does the viability of the transportation infrastructure fluctuate with the season?			
Do climate conditions affect when/if the product reaches the market?			
<b>Proof of Concept</b>			
There are multiple instances of nearly every kind of sustainable agriculture project. Learning from others’ mistakes and best practices will make a project more financially sustainable and more attractive to outside investment, either through value chain			

SUSTAINABLE AGRICULTURE INVESTMENT CHECKLIST		YES	NO
<p>finance or other kinds of loans. If the answers to these questions are “no” then it may be difficult to attract investors. The product may have to be “proven” first, which would require subsidies, grants or other initial support.</p>			
Has this product/kind of project succeeded in similar countries?			
Describe where and how has it succeeded in other countries:			
Has this product/kind of project succeeded in the target country?			
Describe where and how has it succeeded in this country:			
<b>Environmental Risk Management</b>			
<p>Agriculture is dependent on climate, in terms of seasonality, access to water, and the impacts of climate change. An agricultural project’s vulnerability to weather and climate is a frequent concern for potential investors and initial capacity building may be necessary to allay that fear.</p>			
Are there plans in place to balance the seasonality of agricultural product supply with any fluctuations in demand?			
Describe what regulations, if any, are necessary for the success of the project:			
Has consideration been given to contingency planning in the event of severe weather events?			
Describe contingency measures that can be taken to mitigate potential climate impacts, such as drought or flooding, or resource impacts such as soil degradation.			
<b>Market Maturity</b>			
<p>In this section, if the majority of answers are “no,” then a subsidy may be the best option. However if a subsidy is chosen to help develop a market, then a timeframe should be established to phase out the financial assistance over time. In addition, if consumer education is needed, how does that affect marketing budget and timeline?</p>			

SUSTAINABLE AGRICULTURE INVESTMENT CHECKLIST	YES	NO
Is the product unique?		
What is the competition and status quo? Are there competing products/projects - sustainable and/or conventional?		
Is the market open to changing the status quo (market inertia)?		
Describe how the market is open to change, including any resistance likely to be encountered:		
Is there a plan in place to address product competition?		
Explain how this project will overcome competition, including status quo/market inertia/lack of understanding of value of organic .		
Is there a system to ensure consistent product quality and performance?		
List the established auditing/quality assurance/certification systems:		
Has the market been defined?		
Describe the target market by size, demographics, etc.:		
Has a communications plan been developed?		
Describe the marketing message and approach and who is responsible for implementation (local retailer, international distributor, marketing board, etc.):		
Is there an existing relationship between the growers and consumers?		
Describe the current relationship between growers/distributors and local consumers, if market is local:		
Does the market perceive the value of the product?		

SUSTAINABLE AGRICULTURE INVESTMENT CHECKLIST		YES	NO
Explain how the market understands the value of the product:			
Can the market afford the product?			
Describe the price analysis that has been completed to determine product affordability (with or without subsidies):			
Does the market demand exist?			
Does the market need to be developed? Describe the market research that has been completed to support the project:			
Is there a short, one year or less, implementation period?			
<p>What is the timeline for implementation, and how will the development period be financed?</p> <p>Describe any grower or consumer education and/or training necessary (e.g., transition to organic processes) to connect the market to the project (including a timeline) and how it will be financed:</p>			
Can the market grow?			
<p>Does projected supply match projected demand curve?</p> <p>Describe the plan to expand your project and grow the market; include a consideration of seasonality, if applicable.</p>			
Are there regulatory/certification bodies in place for products under consideration?			
Describe any certification needs and challenges and any other regulatory bodies that should be considered.			
<b>Financing</b>			
<p>A healthy industry is one in which multiple financial options (loans, credit, equity, etc.) are available to support growth and success. A product that survives entirely on the support of a subsidy is not financially sustainable over the long term. In addition, access to capital has been identified as one of the critical barriers of growth for sustainable agriculture in the developing world. In this section, if the majority of answers are “no,” then a subsidy may be the best option. If a subsidy is chosen to overcome lack of capital, then</p>			



SUSTAINABLE AGRICULTURE INVESTMENT CHECKLIST		YES	NO
a timeframe should be established to phase out the financial assistance over time and a financial infrastructure should be developed to support access to capital.			
Does the financing take into account the project/product's life cycle?			
Is there a plan in place to cover: start-up costs, transition costs, gap financing, certification, and promotion expense?			
Is there a transparent, local financial system in place?			
Describe local financial systems (banks, member coops, etc.) that are in place to support this project: Describe how financial transactions will be completed:			
Is there a financial auditing system in place?			
Describe the auditing system(s) in place:			
<b>Sustainability</b>			
Agriculture projects that benefit poor communities will have a low rate of return and/or a high degree of risk. However, sustainable agriculture, which lessens reliance on water and expensive fossil-based inputs, often carries less risk for financial loss than conventional agriculture. As a result, investors will often include social and environmental impacts in their financial decisions.  In this section, if the majority of answers are "no," then the initiative should be reconsidered as a financially and environmentally viable project.			
Will the project become financially self-sustaining?			
Describe the plan for this project to become self-sustaining over time, including any necessary subsidies or projected grant funding:			
Will the project support poor and/or under-served communities (e.g., women)			
Describe and quantify how impoverished populations will benefit.			

SUSTAINABLE AGRICULTURE INVESTMENT CHECKLIST		YES	NO
Will the project be environmentally sustainable?			
Describe and quantify the environment benefits, remembering that moving toward more sustainable practices will represent a savings in inputs and/or risk.			
Does the project contribute to community/national resilience?			
Describe and quantify how the project contributes to energy security, social equity, and/or political stability:			

## Summary of Findings

- The risky nature of agriculture makes it unattractive to investors and financial institutions, therefore appeals beyond financial return, such as social impact, often need to be included as an incentive for investment, normally in the form of loans.
- Government or NGO involvement is critical in the capacity building pilot phases of most sustainable agriculture projects in order to support the feasibility and success of the financial tool.
- The success of the financial tool, from loans to fees and subsidies relies on efficient supply chains for sustainable revenue generation. Supply chains that bring agricultural products overseas to proven markets are better able to leverage large-scale loans and other forms of investment; domestic-based markets often require smaller investments (fees and loans) in projects that can be launched with government seed money (subsidies) to become self-sustaining.
- Growers can maximize their ability to attract capital by forming cooperatives to oversee the implementation of the financial tools and taking advantage of economies of scale and other efficiencies.
- The very nature of sustainable agriculture tends to discourage the traditional subsidy model, which historically has supported the use of synthetic fertilizer, pesticides, and other external inputs that are antithetical to sustainable agricultural practices.

A common thread of the successful implementation of sustainable agriculture is the embrace of solutions that include education, participatory management, and small-scale, local efforts. The long-standing framework of the farmer cooperative has evolved at local levels in order to take advantage of economies of scale. Unfortunately, these kinds of approaches do not have the kind of technology-focused, input-intensive focus that traditionally have attracted outside funding and support from major funders such as The World Bank. The ultimate financial sustainability of many of the projects in this chapter depend on developing support models that can become self funded and generate revenue, often through assessment of fees from participants or the creation of revolving loan funds. The very nature of sustainable agriculture requires the elimination of synthetic inputs that are most successful for a corporation to develop and sell, and therefore to fund. There is no intellectual property attached to creating successful organic farms or agritourism projects, and so they are less likely to be funded than projects involving transgenic seeds or a new type of fertilizer.

# SUSTAINABLE AGRICULTURE CASE STUDIES

# Sustainable Agriculture: Loans

## Consumer Bridge Loans: Community Supported Agriculture Aids Farmers and Develops Local Market



**Case Study:** *Sala Almoustaqbal, outside Rabat*

**Loan Type:** *Consumer Bridge Loan*

**Country:** *Morocco*

*A Community-Supported Agriculture (CSA) program provides funds to farmers at the start of the growing season, repayable in produce upon harvest. There are few CSAs in developing countries; Sala Almoustaqbal, a CSA outside of Rabat, Morocco, was begun in 2009 and has exceeded capacity in terms of the number of customer subscribers. Growers are incentivized to participate in organic practices by the CSA with a guarantee of a \$1,200 monthly salary by the project's leader, which in turn guarantees the supply that is then pre-sold to customers. Despite the 20% price premium, there is a long waiting list (100+ households) for this CSA program.*

### Financial Instrument

A group of three farms outside of Rabat is experimenting with advanced payments through Community Supported Agriculture (CSA), whereby produce is sold directly to urban families in agreements set six months in advance. The project's leader (also a farm owner) contracted with three other farmers in 2008 to implement organic agricultural practices in exchange for a stable monthly salary of \$1,200, payable by check. The project leader has an agreement with a group of urban families to subscribe, buying produce some six months before harvest, mitigating risk of price fluctuations due to oversupply.

The CSA model depends on easy access to a middle-to upper-urban class that is interested in fresh, healthy food from reliable sources. The local CSA model entails less financial exposure than dependence on an overseas market that is susceptible to global economic pressures, competition and variable exchange rates.

### 2008 – Ongoing: Support to Develop Financial Instrument

Fluctuating prices, an uncertain market, and the need to negotiate with several intermediaries between field and table hamper small farmers in developing countries. The direct contact of CSA growers with consumers eliminates much of the time and income that would be lost through such intermediaries. Consumer-members of the CSA pick up produce boxes

once a week at a central meeting point that has also become a social and educational opportunity. The presence of small farms ringing large cities around the world makes this model scalable. There is little infrastructure required beyond roads to connect farmer with consumer, a meeting point for the distribution of farm boxes, and a method of reaching and attracting new customers. Participating growers are paid by check, with payments coordinated through the CSA's founder and leader.

## Results

**Revenues:** Farmers are able to charge a 20% organic premium for their products, while saving the cost of synthetic inputs.

### Environmental Impact:

- Use of organic fertilizers has cut costs and improved soil quality.
- Connections between consumers and farmer are strengthened and the farmer has a steady, reliable source of income.
- The CSA program has a waiting list of some 100 families (as of 2010) and requests for implementing the project elsewhere. While the growers hope to serve more poor populations in the future, the CSA's higher prices mean that for now, upper class customers are essential to the CSA's survival.

**Community-Level Impact:** Farmers are able to increase their profit margin by selling directly to end-consumer. Urban populations gain access to fresh, local food with attendant health and educational impact.

**Benefits:** National food security is improved as more of the growers' products stay within the country's borders.

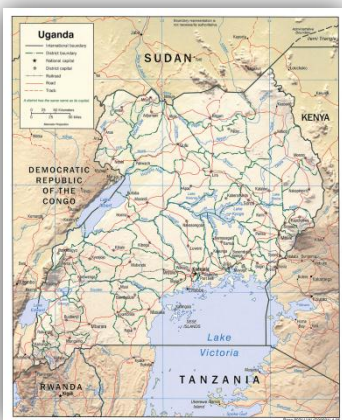
### Guidance for Replication

- While organic agriculture began in Morocco around 1986 with olive and citrus crops for export, the practice has been slow to catch on and has received little attention from the government.
- The organic produce of this CSA is some 20% more expensive than conventional, so the produce baskets appeal to affluent urban dwellers and foreign residents.
- Organic farming is a constant learning process that requires hard labor and adaptation to changing circumstances, so it is challenging to attract conventional farmers to switch.

*Further info:* <http://www.globalpost.com/dispatch/morocco/100213/moroccos-organic-farming-growing>

# Sustainable Agriculture: Loans

## Taking Money Out of the Equation: Non-Monetary Loans to Farmers



**Case Study:** *Fruits of the Nile*  
**Loan Type:** *Interest-Free Loan*  
**Country:** *Uganda*

*Even when an overseas market exists for local agricultural products, it remains a challenge to develop a coherent and reliable chain of growers and processors that can meet the overseas demand in terms of quantity, quality, and regularity of supply. Fruits of the Nile is a Uganda-based dried fruit company that needed access to capital in order to meet demand from overseas markets. The company received a grant for capital purchases along with a loan guarantee (not available through any local financial institution) to expand its business. In turn, the company entered into a series of contracts with producers to enable construction of solar-powered fruit driers with loans of materials and expertise, re-payable in product. As a result, nearly 1,000 growers have gained access to a reliable form of processing and selling their product, as well as increased and reliable revenue.*

### Financial Instrument

Businesses in developing countries that need to grow beyond the bounds of a microfinance loan face special challenges, particularly in the risk-prone agricultural sector. In response to demand from overseas, Ugandan dried-fruit company Fruits of the Nile received a \$200,000 grant for capital purchases and a \$100,000 loan guarantee to retain staff and implement a business plan. This effort has encouraged the distribution of solar-powered fruit driers to small farmers through interest-free loans in return for a contract for the fruit produced. In 2009 the company began the process of transitioning farmers to organic farming.

In order to receive the solar-powered fruit driers — and hence a lucrative relationship with Fruits of the Nile — farmers need to apply to become eligible for Fruits of the Nile membership; they are vetted, given training, and are subject to inspections from the organic certification agency (IMO Switzerland).

The low-tech solar driers cost \$300 and produce 5 to 12 kilos of dried fruit every two days, depending on conditions. No money is physically exchanged. The farmer contributes two-thirds of the cost (by purchasing wood, nails and other materials) and Fruits of the Nile extends the remaining one-third as an interest-free loan payable from sale of dried fruit; Fruits of the Nile carpenters construct the driers. Farmers are paid \$1.50 per kilo for dried bananas and \$3.00 per kilo for dried pineapple. Each time a producer delivers dried fruit to the factory, payment is made for the weight of accepted fruit, which has been delivered, less a deduction for any fruit from the previous delivery, which was subsequently rejected during sorting. A small repayment for any outstanding loan is also deducted. Repayment rate is described as “very high.” Quality control is essential; producers are paid as crops are delivered to the factory but may be debited later if part of the product is not of the required quality.

### **Support to Develop Financial Instrument**

Fruits of the Nile was able to expand and offer the loan program after receiving a blended support package of \$300,000 from Shell Foundation, which included technical assistance, a grant to upgrade computer systems, assistance with organic certification, and a leveraged loan of \$100,000 through a local bank for factory expansion and staffing. Fruits of the Nile established a reliable demand stream and distribution support. It exports almost exclusively through the British-based company Tropical Wholefoods, which was involved in Fruits of the Nile’s founding and sources nearly 80% of its products from the Ugandan company.

In order to maintain high product value and quality control, the producers must purchase only from other farmers who are registered with Fruits of the Nile, and have been trained to produce to organic standards. They must also keep a record of all fruit purchases. Producers and farmers are given regular refresher training and advice. The field officer makes regular unannounced checks as does the organic certification body.

### **Results**

**Revenues:** In 2007, each producer group sold an average of one ton of fruit to the company, earning a 50 percent profit. In many cases this revenue was an additional income stream.

**Environmental impact:** Environmental benefits are accruing from transition to organic production and through the use of solar energy to power the fruit drying.

**Community-Level impact:** By 2009, Fruits of the Nile’s network comprised 139 producer groups (some 70 percent female) and 930 farmers, of which 463 were certified as organic. A drought and the global financial crisis reduced production and income, but both are starting to recover. The factory where fruit is sorted, packed and shipped employs 37 (55 percent female). For most producers the dried fruit is a new source of income that is being used for educating children and/or expanding their farms. Fruits of the Nile is a Fair Trade certified company.

**Benefits:** Workers are less exposed to pesticide and other toxics in the transition to organic. In addition, waste from processing is composted, and the driers are powered by renewable solar energy. Fruit is dried close to the field, and shipping dried fruits uses less energy and causes less spoilage than transporting fresh product. In addition, because local demand is minimal and urban centers are over 300 km away, much of the fruit grown has traditionally gone to waste, particularly during the months of peak production. This difficulty in finding markets has made farm incomes unreliable, with prices collapsing when there is a glut of fruit. Because dried fruit lasts longer and is easier to transport, spoilage has been reduced and farmers can avoid price reductions during high season.

### **Guidance for Replication**

- Locally adapted solar-drying and other technologies need to be in place or accessible. Solar drying can be extended to many other products beyond fruit.
- Improvements to quality are essential for a product to appeal in high value markets; therefore extensive quality controls need to be in place before charging, for instance, an organic premium.
- Organic certification has been harder to gain because certifiers are wary of the large number of producers that need to be monitored. (If the company dealt with fewer, larger suppliers, certification would be easier to obtain, but small landholders would not be served.) The main certification body in Uganda, UgoCert, has a minimal staff.
- Many small farmers and producers are wary of the organic certification. They believe its purity requirements and supply chain complications could impede the success of the distribution company and its reputation with overseas buyers.
- Removal of money from the loan transaction lessens chances of default and places less burden on the poorest growers.
- Solar drying technology is only available during the dry season, so operations are subject to seasonal/climate variation.
- In landlocked Uganda, Fruits of the Nile depends on easy access to the Kenyan port of Mombasa. Political unrest in neighboring Kenya caused disruption in getting product to market, while inflation imposed further hardships on producers.

*Further info:* <http://www.fmfoods.co.uk/tw/fon.htm>,  
<http://www.ashdenawards.org/files/Fruits%20of%20the%20Nile%20full.pdf>



# Sustainable Agriculture: Loans

## Supporting Cocoa And Coffee Through Trade Finance Loans



**Case Study:** *Root Capital Trade Finance*

**Loan Type:** *Trade Credit Loan*

**Country:** *Peru*

*Root Capital's trade credit loans provide borrower enterprises with the capital required to purchase, process, and export goods. These loans typically hold terms of six to nine months and are used by clients to cover costs during the "cashless gap" between the time they purchase raw agricultural products from growers and when they receive payment from buyers. In 2006, the Peruvian cooperative Quinacho received Root Capital financing worth \$50,000 for coffee and cocoa production. By 2010, the cooperative had built up a strong credit history, and Root Capital extended a loan of \$1,000,000. Over this period, cooperative members have seen a more than six-fold increase in revenue.*

### Financial Instrument

Root Capital's trade credit is a form of value chain finance that allows cooperatives and private enterprises to cover the "cashless gap" between the time they purchase raw agricultural products from growers and when they receive payment from buyers.

Local banks typically do not provide credit to smaller, rural agricultural enterprises due to lack of collateral, distance from regional banks, and the perceived risk inherent in agricultural lending. In the case of Quinacho, the cooperative's location in a politically unstable coca-growing region further discouraged local lenders.

In order to overcome these challenges, Root Capital applied a value chain financing model. Quinacho's buyers in Europe wanted a reliable supply of high-quality cocoa and were willing to work with Root Capital to develop the value chain. The buyers' purchase agreements with Quinacho replaced the need for physical assets. Root Capital lent 60 percent of the value of signed contracts. The commitment of all parties to building a long-term, transparent relationship served as the collateral on which Root Capital based its lending.

Since 2006, Root Capital has provided trade finance loans to the El Quinacho cooperative. The loan repayment rate is 100 percent, and loan amounts have increased from \$50,000 in 2006 to \$1,000,000 in 2010. The \$1 million loan in 2010 made to

El Quinacho is over four times larger than the average Root Capital loan and reflects Quinacho's significant export volume, superior management capacity and financial performance, and strong loan repayment history.

Producers are paid by the cooperative in two installments; the first installment comes via the financing provided by Root Capital. Once the cooperative exports its coffee, it receives the second installment, net principal and interest paid to Root Capital. When the global price for cocoa or other commodities is high, local middlemen (who essentially perform the same function as the cooperative, in terms of finding buyers) may be able to offer more than the cooperative can afford to pay up front in the first installment. Cash-strapped farmers may be tempted to go with the higher upfront payment from the middlemen, even though growers would ultimately receive a lower price than they would from the cooperative. By increasing the percentage of the future sale price financed from 60 percent to 70 or 80 percent, Root Capital could help Quinacho and other commodity-producing cooperatives to secure more product from its producers while helping them receive a better price for their products. While financing a higher percentage of the future sale price up front would increase the risk exposure to Root Capital, it would also contribute to the wellbeing of both the cooperative and farm households by leveling their cash flow.

### **2006-2010, ongoing: Support to Develop Financial Instrument**

Root Capital's due diligence involved a site visit by a loan officer who assessed enterprise capacity and operations. While no formal technical assistance was required, the loan officer assisted management with its loan application and the presentation of financial statements. Purchase agreements provided by European buyers served as collateral against which Root Capital extended its loan.

Operational costs include formalizing loan documentation, servicing disbursements and repayments, and loan monitoring. Root Capital coordinates with the European buyers to ensure repayment of the loan through the fulfillment of the cocoa purchase contracts.

### **Results**

**Revenues:** El Quinacho's annual revenues have increased from \$771,000 in 2006 to an estimated \$5.5 million in 2010. Member-level income derived from cooperative exports has grown from \$1,258 to \$8,258 over the same period.

**Environmental Impact:** Of 1,308 hectares under cultivation by El Quinacho cooperative members, 1,124 (86 percent) are certified organic. Cocoa trees are shadegrown as part of an agroforestry system designed to preserve biodiversity.

**Community-Level Impact:** El Quinacho is Fair Trade certified. Beyond guaranteeing a minimum price for producers' cocoa, Fair Trade delivers an additional payment (a "social premium") to be spent on community-level projects. El Quinacho also holds UTZ certification, a market-oriented program dedicated to increasing producers' sustainable production. The cooperative's success has provided the community with an alternative livelihood to the illicit production of coca.

**Benefits:** Trade finance has allowed the enterprise to grow rapidly despite a lack of traditional collateral. Producers benefit from a more reliable market and higher prices from Fair Trade premiums. Cocoa buyers enjoy a more robust and resilient supply chain.

### **Lessons Learned**

- The organization or linking of producers into a cooperative or other agricultural enterprise is essential to making trade finance loans feasible, as dealing with individual smallholder growers is prohibitively expensive.
- When global commodity prices increase, it becomes difficult for an enterprise to compete with local middlemen who pay producers cash on delivery in the full amount. By increasing the percentage of the future sale price financed from 60 percent, to 70 or 80 percent, Root Capital could help Quinacho and other commodity-producing cooperatives to secure more product from its producers while helping them receive a better price for their products over the long term.

- There is a growing recognition on the part of global buyers of the value of robust and resilient supply chains. When a buyer and a supplier dedicate themselves to a long-term relationship, this commitment can be transformed into collateral against which financial enterprises can lend.

Further Info: <http://www.rootcapital.org/>

## Sustainable Agriculture: Loans

### Built To Last: A Long-Term Lending Relationship Leads To Sustainable Local Enterprise



#### Case Study:

Loan Type: Value Chain Finance

Country: Tanzania

*Organic cotton farmers in northwest Tanzania provide organic cotton (their only cash crop) to a Swiss textile firm, Remei AG, via a contract with BioRe Tanzania Africa's leading exporter of organically certified cotton lint. Remei was stretched thin from having to provide working capital to BioRe, and turned to Triodos Bank, which is focused on socially responsible investing. The relationship grew from a \$1 million loan from Triodos directly to the Swiss textile firm Remei in 2005, to a \$2.3 million loan disbursed directly to Tanzania-based BioRe. After five years, over 2,000 smallholder farmers have guaranteed income from premium-priced, organic cotton and are paid by a*

#### Financial Instrument

Organic cotton farmers in northwest Tanzania provide organic cotton (their only cash crop) to a Swiss textile firm, Remei AG, via a contract with BioRe Tanzania. [BioRe Ltd., was founded in 1994 as a project of Remei AG to work with local farmers; BioRe became a formal subsidiary of the Swiss firm in 2002 and then an independent, Tanzania-based company in 2006.] In order to cover the gap between planting and harvesting and to be able to pay farmers to produce, Remei turned to Triodos Bank for a series of annual loans based on future cotton contracts. There is no hard collateral; the loan is based on cash flow projections, rather than securities from assets. The only collateral is the sales contract between the Tanzanian supplier and the Swiss textile manufacturer, and loan amounts are set at 60 percent of the value of the forward contracts.

The lending relationship built slowly: a \$1 million loan in 2005 was made to Remei and repaid to Triodos that year. In 2006, drought precluded any lending activity. In 2007, Triodos made a new loan of \$1.2 million indirectly to BioRe through Remei. In 2008 a \$2.3 million loan was disbursed directly to BioRe, guaranteed by both BioRe and Remei.

In 2008, BioRe Tanzania needed \$3.5 million in cash to pay its contract farmers, but Tanzanian banks were unwilling to make the loans. Triodos' Sustainable Trade agreed to pre-finance up to 60 percent of the contract between BioRe Tanzania and Remei AG. In 2008, Triodos disbursed a loan of \$2,325,000 directly to BioRe. Both BioRe and Remei AG were jointly liable for the loan, and Remei AG repaid it. The loan period was extended from 7 to 10 months, and the dates of disbursement and repayment were adapted to better accommodate the trading season. The 2008 loan had a term of 10 months, with an 8 percent interest rate. The loan was disbursed to BioRe in 3 installments and repaid by Remei, on time, in 4 installments.

As of 2011, there is a one-month lag between loan application and payment. The loan period commences with the start of the cotton-harvesting season and continues until the last shipment of cotton leaves Dar-es-Salam. All payments on the contract go through a Triodos Bank account in the Netherlands, and Triodos Sustainable Trade Fund withholds part of each payment until the loan is paid off. This continues throughout the sales period, so that the loan is fully repaid by the time all the cotton has been sold. To qualify for the Fund, organizations must be registered with the Fairtrade Labeling Organization International (FLO International) or engaged in certified organic production.

At the ground level, there are no financial institutions that serve the farmers directly; all payments are made in cash. If BioRe did not pay in cash, the farmers might sell their crop to other buyers - even at a lower price. The money is brought under police escort to BioRe's office, where it is divided among the 15 village supervisors, who take it on their motorbikes to their villages. At night they come back to the office to hand in the purchase slips. The handling costs are high, and the risks of robbery are significant. Occasionally, payment slips are not backed by an actual delivery of seed cotton. BioRe has no alternative ways to pay the farmers.

BioRe bases its purchase price from the farmers on an average of the prices offered by competing traders in the area, and offers a fixed premium of 15 percent on the average market prices of the previous five years. There is audit oversight of the payment receipt forms, and a one percent loss rate.

### **2008-Ongoing: Support to Develop Financial Instrument**

To access the Triodos Sustainable Trade Fund, agricultural product exporters must be working with smallholder farmers and be dedicated to organic production and/or Fair Trade principles. The exporters must be financially sustainable, have access to export markets and a minimum annual turnover of \$550,000.

To apply for the loan, Triodos requires audited financial statements, a projected cash flow, and copies of the export contracts and certificates of organic quality, along with a detailed review of the operations, yield, and management of the previous season and projections for the future season. A one percent administration fee is charged by Triodos.

### **Results**

**Revenues:** Overall loans rose from \$2 million in 2005 to \$4.5 million in 2008, with half coming from Triodos in both years and the balance from Remei AG. The education consortium Business Minds Africa asserts that the partnership with Triodos has transformed the financial flows in the cotton chain from chain liquidity to a value chain finance triangle, i.e, relationships are based on trust, since forward contracts, not cash or goods, serve as collateral. Triodos projects 40 percent growth in trade finance activities.

**Environmental Impact:** BioRe's farmers get the organic price premium while also avoiding the cost of chemical inputs. They obtain higher yields on other crops through better-conditioned soil.

**Community-Level Impact:** With the additional finance from Triodos, BioRe was able to increase the number of farmers under contract and provide training in organic techniques.

**Benefits:** BioRe was set up in 1994 as a project of the Swiss textile firm, Remei AG. Begun with just 45 farmers, BioRe now serves over 2,000 farmers with a staff of 66; in 2006 it became an independent, Tanzania-based company.

### Guidance for Replication

- Triodos was attracted to the program due to high demand for organic cotton (in some markets) and to already established positive relationships with Remei AG.
- Scalability of the value chain finance model is uncertain, given the complexity and time frame involved to build trust and long-term trade relationships linked to stable market demand.
- This system would seem to favor larger producers and may not be accessible to small landowners, women, and other less influential producers.
- Alternatives to paying cash directly to farmers are needed. Currently, thousands of scattered famers are paid in cash, with a risk of theft. Accessible financial infrastructure would reduce risk and improve efficiency.
- The inherently risky nature of agriculture is a barrier to the involvement of local banks unless outside guarantors can be found.
- BioRe has invested time and resources in training farmers and building an internal inspection system, which has created a high overhead burden; the company is at risk from the vagaries of climate and fluctuating demand. Empowering farmers to take on more responsibilities would stabilize the company that buys their product.
- Since no hard collateral is in play, successful export financing depends on commitments to building trust over time among several partners.

*Further Information:* [https://triodos.com/com/international\\_funds/sustainable\\_trade/tstf/](https://triodos.com/com/international_funds/sustainable_trade/tstf/);  
[http://www.kitpublishers.nl/net/KIT\\_Publicaties\\_output/ShowFile2.aspx?e=1610](http://www.kitpublishers.nl/net/KIT_Publicaties_output/ShowFile2.aspx?e=1610)

# Sustainable Agriculture: Subsidy

## Input Insurance Program Grows with Shared Premiums and Mobile Technology



**Case Study:** *Micro-insurance premium share*

**Subsidy Type:** *Input*

**Country:** *Kenya*

*Farmer's insurance, while common in the developed world, has been difficult and financially unsustainable to launch in many developing countries with small growers. Kilimo Salama (Safe Farming) makes crop insurance affordable for farmers through a scheme of premium sharing with input providers. Farmers can insure as little as one kilo of fertilizer or seed by buying a premium at five percent above cost of the input; this payment is matched by the input provider (seed or fertilizer company). Twelve thousand farmers participated in the initial pilot; the program now has been expanded to cover harvest and livestock loss with a goal of reaching 50,000 farmers and, eventually, financial sustainability.*

### Financial Instrument

Kilimo Salama is an insurance program to protect farmers from losses due to drought or excessive rain. It is the first part of a joint partnership called the Agricultural Index Insurance Initiative, set up by UAP insurance and Syngenta Foundation for Sustainable Agriculture (SFSA) along with partner telecoms operator Safaricom. Farmers can insure as little as 1kg of fertilizer or seed. The cost to insure seed or fertilizer is 10 percent of the total input cost, however Kilimo Salama participating farmers pay only half of the premium. The other five percent is matched by participating manufacturers from which Kilimo Salama insured farmers must purchase their inputs. This premium-sharing consortium keeps the program affordable. Farmers who buy Kilimo Salama receive their premium match by purchasing fertilizer from MEA, seeds from Seed Co., and chemicals from Syngenta East Africa. The program's goal is to be self-financing once launched; administrative expenses are kept low through the use of mobile technology for premium purchasing, settlements, and weather condition monitoring.

In the commonly used indemnity-based insurance model, payouts are made based on on-site inspection and evaluation of crop damage. With Kilimo Salama, payouts are made automatically, based on comparing weather station data to past

trends and rainfall amounts. This index-based approach requires fewer personnel, thus keeping the premiums more affordable. Insured farmers also receive real time extension updates from the automated weather stations.

Year	# Farmers	Payouts
2009	200 farmers, 2 weather stations	100% of participants received payouts of 30% or 80%, depending on location
2010	12,000 farmers, 27 weather stations	10% of farmers received payouts between 10% and 50% of insured inputs.

### 2010 – ongoing: Support to Develop Financial Instrument

Agro-vets (small agricultural input traders) collect premiums via mobile technology and transfer these to the insurance company. The technology used allows transaction costs to be slightly more than the cost of an SMS (approximately US \$0.05). Payment of premiums and compensation is accomplished via a mobile phone application developed for the program. Participating seed stockists are selected and trained by an NGO, CNFA AGMARK. Data from weather stations is used to determine payouts, replacing costly farm visits with measurements from weather stations. Weather stations' rainfall measurements are compared to an agronomic model specifying crops' rainfall needs. If the needs are not met, all farmers insured under that station receive a payout. Local agro-vets register Kilimo Salama policies using a scanner with tailor-made software that allows for paperless registration and immediate confirmation to the farmer of the policy. At the end of the growing season farmers receive an SMS that informs them if they have received a payout. If payment is due, the compensation is transferred via mobile phone.

Premiums are calculated based on the area's drought cycle and currently average 10 percent of input costs.

In 2011 the program was expanded; Kilimo Salama Plus now offers insurance for harvest and livestock losses and is expected to reach 50,000 farmers. Many participants find the program through local microfinance institutions (MFIs), some of which make Kilimo Salama participation a requirement for receiving loans.

### Results

**Environmental:** A help line set up as part of the program has assisted 16,000 farmers with free advice on production improvement to protect their investments. Weather stations are solar-powered, thus reducing grid dependence.

**Community:** During the initial pilot period, average amount of seed insured per farmer rose from two kilograms to four kilograms. Also, traditionally many small farmers use poor-quality seed from previous harvests that may have been damaged due to drought or flood. This practice creates yields that remain far below their potential. By insuring seed, farmers are able to plant the best possible input on a yearly basis creating larger and better yields.

**Financial:** A drought during the pilot period resulted in severe crop loss; payments were disbursed to farmers up to 80% of premiums. While the program is not yet financially self-sustaining, the expansion to crop coverage should enable scaling to a point where long-term profitability can be achieved.

### Guidance for Replication

- The cooperation of input providers is essential, but may discourage farmers from moving to lower-input methods (e.g., organic farming) in the long term.
- Initially the program was offered for free, with Syngenta Foundation paying premium costs; cultural norms quickly indicated a distrust of free products, and the premium model was introduced.
- Mobile technology and the use of weather stations can greatly reduce overall insurance program costs once infrastructure is in place.
- The product is marketed to farmers over the radio and at group training sessions. The radio announcements were used since this is how most farmers get their information.

- This program allowed farmers to try out insurance, a product they have never bought before and which has a negative reputation in Kenya. Experience shows that as farmers learn to trust insurance, they expand their coverage and are comfortable investing more in their farm, raising their productivity and increasing their food security.

**Lead agency/project website:** <http://kilimosalama.wordpress.com/>



# Sustainable Agriculture: Subsidy

## Supporting Urban Agriculture with a Savings Scheme



**Case Study:** *Growers' Capital Fund*

**Subsidy Type:** *Startup Capital*

**Country:** *Philippines*

*In Marilao (a suburb of Manila) the landless urban poor population was spending 67 percent of their income on food. Human activity and sprawl had led to less available agricultural land, and pollution and soil degradation were harming yields of land still under cultivation. The local government implemented a policy to support improved productivity combined with access to financing for urban dwellers. The combination of sustainable, urban agriculture with formation of a growers' capital fund is designed to ensure the long-term financial sustainability of the project.*

### Financial Instrument

In 1997 the Marilao municipality started to produce compost from the biodegradable waste of 22,000 households, two public markets and some 350 small businesses. From 1998-2001, the municipal government invested human resources, time and logistics, in the form of land, guldung machinery, education campaign and a vehicle for compost collection. Startup funding from the municipality paid for initial purposes of plastic growing pots and seeds and for the management infrastructure.

Excluding costs for family labor and acquisition of compost, cost/benefit analysis of compost-based, homegrown vegetable production reveals that the cost of production amounts to \$ 0.24/month while benefits total at \$11.20/month.

Monetary value of the homegrown vegetables was calculated at \$11.20 per month. Cost/benefit analysis showed that operating costs could be recouped via a mandatory savings scheme of \$.02 a day, equivalent to roughly nine percent of average daily income of the target population. The savings plan involved a management system that included individual account ownership, on-site safekeeping, recording and accounting, and spot auditing among peers.

### 2006-2010,ongoing: Support to Develop Financial Instrument

Municipal collection did not involve additional fees for households involved.

Enabling framework for the project include numerous ordinances around the collection and disposition of waste. Republic Act 7160 requires municipalities to prepare solid waste management programs. Other decrees cover requirements for disposal, and integrated solid waste management. In addition, the federal Departments of Agriculture and Science & Technology encourage cooperatives, NGOs and private business to engage in commercial-scale composting.

## **Results**

**Revenues:** Potted vegetable production was expected to save urban families \$8-12 per month, or 8-12 percent of average monthly income for urban poor households.

**Environmental Impact:** Biodegradable waste is diverted and used for compost. Results include less land needed for landfill; increased recycling rate and reduction of methane emissions.

**Community-level Impact:** While pro-poor in intent, the program also involved middle class families' participation through segregation of their waste for pickup. Compost-based, homegrown production increased food security, increased consumption of green leafy vegetables, and increased household income. The project also introduced enforced savings programs.

## **Guidance for Replication**

- Urban agriculture investment has the potential to increase food security and household income, but up-front investment in infrastructure and social marketing is required, especially where composting is being introduced or diffused.
- Investment in promotional activities for the project was included in the municipal investment plan for 2003-2008.

Further Info: <http://www.marilao.gov.ph/default.asp>

# Sustainable Agriculture: Fees

## *An Organic Producers' Association Provides Marketing Assistance, but Member Fees Fall Short*



**Case Study:** Cambodian Organic Agriculture Association

**Fee Type:** Membership Fees

**Country:** Cambodia

**Cambodia's history of poverty and disruption left the majority of its agriculture as de facto organic, but farmers could not benefit from premium pricing associated with certified organic products in the absence of an organic certification agency. The Cambodian Organic Agriculture Association (COAAA), formed in 2006, has developed a certification and inspection scheme. COAAA assesses membership fees in return for extension services and organic certification of products. Participating farmers are the only ones that can be certified and thus charge higher prices for crops. Membership fees, assessed at \$20 to \$100 per organization annually, do not yet cover the organization's operating expenses.**

### Financial Instrument

Cambodia's history of poverty and disruption left the majority of its agriculture as de facto organic, crops were grown with organic processes by default, in the absence of synthetic inputs. This difficult history has left Cambodia with an opportunity, however, developing and maintaining an organic certification body is a challenge in developing countries. The Cambodian Organic Agriculture Association (COAAA) is a nationwide private sector organization founded in 2006 to promote organic agriculture in the country. COAAA has developed a certification and inspection scheme around "Standards for Organic Crop Production" and "Production Standards for Chemical-Free Crop Production". COAAA assesses membership fees in return for extension services and organic certification of products. Participating farmers are the only ones that can be certified and thus charge higher prices for crops. In addition to certification, COAAA members receive information, training, advocacy, market access (e.g., via trade fairs), inspection services, and promotion via the Association's website. Membership categories include: farms; farmers; farmer cooperatives; farmer associations; NGOs; companies and "other."

Current membership fees for companies and NGOs are \$100 annually and \$20 a year for farmers and farmer associations. The fees do not yet cover all of the organization's operating expenses, but that is a goal. Fee collection costs are minimal and are absorbed by association overhead. Administrative costs include invoicing, fee processing and issuing receipts.

There was minimal resistance to the membership fee structure from some members who did not immediately perceive the value of the Association.

## **2007 – Ongoing: Support to Develop Financial Instrument**

Begun with, and still supported by, government and NGO funding, in 2007 the Association introduced a fee structure for membership. Members can be small companies, cooperatives, NGOs and individuals; fees are set by organization (\$20 or \$100.) The fee took approximately a year and a half to develop. The fee system was not based on other models. The COorAA office invoices members who pay with cash or check. Auditing oversight is unclear, but a technical advisor is working with the program to clarify financial oversight.

The Center for Studies and Development of Cambodian Agriculture (CEDAC) was a charter member of COorAA, though now participates only as an observer. CEDAC has provided initial financing to support the development of an organic market in Cambodia through the Natural Agri-Product Marketing Project (NAP), which will support COorAA's members' needs for market development.

## **Results**

**Revenues:** In 2010, \$725 was collected in fees.

**Community-Level Impact:** Increased market access and access to certification allows producers to charge premium prices for organic produce.

**Environmental Impact:** The codification of organic standards incentivizes sustainable agricultural techniques. COorAA's Organic standard bans the use of chemical fertilizer and pesticides and fungicides. There is a three-year conversion period, after which the farm is certified organic. If the farmer does not wish to wholly convert to organic, specific fields/crops can be certified as "Chemical-Free" if, during the growing season, no chemical fertilizers, pesticides and fungicides are applied to the prospective 'chemical-free' crop.

**Benefits:** The project advisor notes an increased sense of ownership among members once the fee was established. Members become more involved in the management and activities of the organization.

## **Guidance for Replication**

- The fee could be improved by more careful structuring around annual members' annual revenues, or on number of members, in the case of farmer cooperatives.
- Income fluctuations due to climate are a barrier to consistent membership fees and thus a challenge for the Association's long-term budgeting.
- It is important to set member expectations on when and how benefits of membership will be realized. Once members pay fees, they expect services, however, it can take time for the organization to provide the expected services. The program head reports that most members have to wait for a year or more before they can realize benefits from the membership such as marketing support, awareness building, and lobbying.
- Success leads to word-of-mouth referrals for increased membership and therefore increased fee revenues.
- It is unlikely that membership fees alone will bring in enough revenue to support an organic association's operations. Current funders include the International Finance Cooperation (IFC) and the European Commission.

Further Info: <http://www.coraa.org/>

# Sustainable Agriculture: Fees

## Organic Banana Farmers Target Financial Independence in Senegal



**Case Study:** *APROVAG (Association de Producteurs de la Vallée du fleuve Gambie), Tambacounda*

**Fee Type:** *Membership Fees*

**Country:** *Senegal*

**Financial Instrument**

*APROVAG is a cooperative of over 700 farming households deep in the interior of Senegal that is self-funded by member dues with occasional grants from NGOs for special projects and growth. The annual dues provide for a professional staff of 14 to oversee the cooperative business. Recognizing that changing to organic production would result in increased revenue from higher product prices, the Cooperative embarked on an organic conversion project with technical assistance and a \$243,000 loan from the U.S. Africa Development Foundation. A pilot program was launched, but severe flooding and lack of training has set back the project significantly.*

APROVAG (Association de Producteurs de la Vallée du fleuve Gambie) is a cooperative of over 700 farming families (originally 13 groups from 7 villages) deep in the interior of Senegal that is self-funded by member dues with occasional grants from NGOs for special projects and growth. The annual dues provide for a professional staff of 11 to oversee technical, managerial and clerical aspects of the cooperative business. Growers are paid monthly by the organization's management, and a savings component is integrated into the payment system.

Member fees are based on size of area of land under banana cultivation. On average, male growers own plots of 2,500 square meters and pay annual fees of \$82; female growers have 1,200 square meter plots and pay annual fees of \$41.

Cooperative membership fee per plot is calculated by dividing the Cooperative's operating costs by the number of plots under cultivation. Fees are collected when the harvest is sold: dues are deducted from farmers' sales revenue by the member groups and remitted to the Cooperative in five monthly installments. Funds are maintained in the Cooperative's bank account; three members of the executive committee of the Board of Directors are signatories to the account.

The Cooperative is administered by a General Assembly consisting of 65 representatives from the 13 groups. (Following the flooding, the Cooperative is down to 11 groups from the original 13, cultivating 272 hectares.) Immediately below the General Assembly comes the Board of Directors, made up of 16 elected members. Seven technical commissions (Production, Marketing, Communication, Finance, Environment, Organization and Women) work with the growers' groups on

environmental, marketing and production issues. An Executive Secretariat, comprised of Cooperative employees, is in charge of the coordination of activities. The Secretariat includes an Executive Secretary, a program assistant, a marketing officer, a commercial agent, an accountant, a manager of the credit and savings union, one mechanic, two mechanic helpers, two drivers and three guards.

A hired accounting firm compiles APROVAG's financial statements. The Cooperative's accountant does not yet have the training to produce budgets and statements on his own.

Market development has been hampered by poor roads, lack of storage and processing facilities, and distance. Dakar (the major market) is 500km away by poorly maintained dirt roads, resulting in severe damage and loss of product en route.

The varying supply of bananas (highest production during October-March) led to frustration from customers whose demand was constant while supply was not. APROVAG is experimenting with a customer-quota system during low-yield periods to apportion available products as fairly as possible and to allow customers to plan more effectively.

## **1988 – Ongoing: Support to Develop Financial Instrument**

Founded in 1988, the members of this farmer-owned cooperative began the switch to organic production in 2005 for two reasons: they saw market potential growing in Dakar for organic products, and organic bananas last longer (thus compensating for the problem of spoilage in transit). APROVAG received a \$243,000 grant over five years from the US Africa Development Foundation in 2008 to acquire the organic materials, irrigation and training necessary for the transition to organic. APROVAG created 80 organic banana plots across 20 hectares with a view to gaining organic certification from an international body by the end of the project's second year and having 100 percent of the cooperative's income switched over to organic bananas by Year Three. Severe flooding combined with a lack of proper irrigation on unsuitable land and insufficient training in organic farming techniques has set the project back; a new target date for organic conversion has not been set. USADF continues to provide funding; the Cooperative has committed to up to \$52,000 (FCFA 25.6 million) per year from fees to support the project.

In June 2004 the national Agro-Sylvo-Pastoral Law (LOASP) was passed to increase food security, support sustainable development goals, increase income among rural populations, and agricultural and rural entrepreneurship. The law covers multiple aspects of agricultural support, including; giving legal status to professional agriculture associations; land reform; recognition of, and strengthening, agricultural cooperatives; and various educational, capacity-building and financing measures.

## **Results**

**Revenue:** Revenues from conventional banana production continue, but premiums from organic production have not yet been realized due to flooding and other project setbacks.

**Environment:** Lack of storage and processing facilities leads to enormous crop loss. Introduction of cardboard boxes in 2008 ameliorated the problem but added cost. The organization is investigating repackaging their product to maintain a market presence off season and/or investing in cold-storage facilities to extend product shelf life and compensate for gluts and drops in supply and consequently, in price, of their bananas.

**Community Impact:** As of 2010, APROVAG had 1,050 members (one-third of whom are women), and sold 5,000 tons of bananas annually in the markets of Dakar, Kaolack, and Touba. Scheduled organic conversion has been delayed due to flooding and lack of training, though USADF confirms that the farmers are in favor of the project and intend to pursue it.

## **Guidance for Replication**

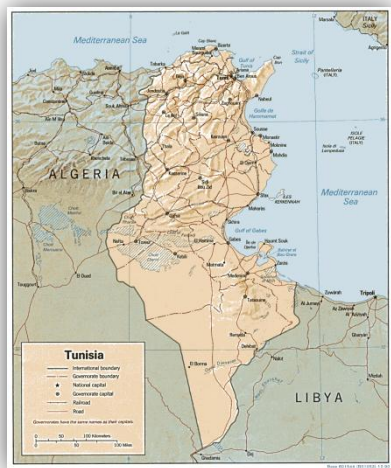
- A production system may be organic, but if there is not yet organic certification in place, the premium price cannot be charged.

- Member groups' vulnerability to weather and financial setbacks create risk for the Cooperative as a whole. Establishing an emergency fund would help to provide for unforeseen expenses and provide more stability to the Cooperative's structure.
- The funder recommends the Cooperative become less dependent on contribution from the member groups, which are vulnerable to fluctuating costs of inputs and variable market conditions.
- The Cooperative's website acknowledges that to improve diversification of income there have been some attempts at market gardening by coop members, but it has been hampered by lack of education on market gardening techniques and issues of management and irrigation.
- Accounting training and systems need to be in place to facilitate budgeting and long term planning.
- USADF notes that APROVAG's understanding of local conditions was essential to setting meaningful, appropriate goals for funded activities.
- Unscrupulous wholesale traders who didn't pay on time caused hardship; the cooperative instituted a "blacklist" of traders it will not work with, along with a discount for favored traders.

*Further Info:* <http://www.aprovag.org/>

# Sustainable Agriculture: Subsidy

## Applying Foreign Direct Investment Incentives to Organic Agriculture



**Case Study:** *Investment Incentive Program*

**Subsidy Type:** *Government*

**Country:** *Tunisia*

*In the mid 2000s, the Tunisian government identified organic agriculture for special support due to its high value export potential. Incentives for foreign investment in Tunisian organic agriculture come in the form of government grants and tax incentives, and duty and other exemptions. The government Agency for the Promotion of Agricultural Investment (APAI) encourages joint foreign/locally owned partnerships, and the national government provides “matching” grants of up to 30% of budget for organic agriculture projects for companies with up to 66% foreign ownership. As a result of these policies, Foreign Direct Investment (FDI) in Tunisian agriculture grew by 250 percent from 2005 to 2009, to \$11,450,000.*

### Financial Instrument

Tunisia has the largest area under organic cultivation in all of Africa. The Tunisian government has identified organic agriculture for special support due to its high value export potential, as part of a larger program of foreign direct investment (FDI) incentives. Incentives for foreign investment in Tunisian organic agriculture come in the form of government grants and tax incentives such as full or partial exemption from custom duties and value-added and consumption taxes on foreign companies operating in the area of agricultural exports. The government Agency for the Promotion of Agricultural Investment (APAI) encourages joint foreign/locally owned partnerships; the foreign investor can own up to 66% of the concern. The Tunisian government provides “matching” grants, which subsidize up to 30 percent of the budget for organic agriculture projects. The money goes to Tunisian companies that have up to 66 percent foreign ownership. It is disbursed via an application process. Oversight is at the internal ministry level.

The organic incentive program has been in place since 2005, as part of a larger program for other sectors. Foreign investors benefit from tax breaks and other incentives; Tunisian companies (e.g., exporters and other agribusiness) benefit from capital investment. The subsidy has not changed, but complementary government policies have further incentivized foreign investment.



In mid 2010 the government announced that it would lease 9,641 hectares of farmland to foreign investors in a bid to enhance production with the use of more advanced and sustainable technology and to diversify farm exports.

### **1995- ongoing: Support to Develop Financial Instrument**

A 1994 law encouraging foreign investment offered: use of state land virtually rent-free; tax reductions on reinvested profits; and duty-free import of capital goods for which there is no domestic equivalent. A 1995 law officially supporting organic agriculture put in place a framework of policies and incentives, including promotion and certification, with a view to growing the organic agriculture industry. Incentives for foreign investment in sustainable agriculture are further supported by fiscal policies, including full exemption from income tax for the first 10 years of a qualifying company, and a 10 percent exemption thereafter. Exemption is also granted from custom duties, value-added tax and consumption tax on: equipment (excluding private cars); raw materials, semi-finished products and spare parts, and consumables necessary for the realization of the project.

Since 1999 the government has integrated promotion of organic agriculture throughout its policy efforts, from pilot projects to an international marketing campaign to setting up organic certification bodies. Concurrent investments in irrigation infrastructure are part of government policy. In 2010, the maximum annual grant for the control and certification for producers in development groups, cooperatives and professional groups doubled, to \$7,100 per year.

In 2010, the President ordered the extension of financing breaks from large-scale farming to cover other agricultural activities and to extend to small and medium farms, applying the money market rate plus one point (TMM+1) to farmers who repay loans on time. This financing expansion was granted through 2014 to facilitate planning.

It is unclear how the political upheaval and change in government of 2011 will affect foreign direct investment incentive policies.

### **Results**

**Revenues:** Foreign Direct Investment in Tunisian agriculture grew by 250 percent from 2005 to 2009, to \$11,450,000. Foreign direct investment across sectors is an important part of the Tunisian economy; in 2009 FDI accounted for 13.7 percent of Tunisian investments, 4 percent of GDP and 37 percent of external capital inflow, and was responsible for creating 26% of new jobs.

**Environmental impact:** Environmental impact is not specifically documented, but the increase in area under organic (versus non-organic) cultivation has positive environmental impact for soil health and water use. In 2009 Tunisia ranked 24th out of 141 countries in terms of amount of land under organic production.

**Community-Level Impact:** Partnership projects to export organic aromatic and medicinal plants saw US \$1.8 million invested in recent years.

**Benefits:** Tunisia's organic agriculture exports increased from 1,100 tons in 2001 to 13,300 tons in 2008. In 2010, 285,000 hectares were under organic cultivation; the government's goal is to grow this to 585,000 hectares by 2014. Domestic food security has improved even as exports have grown. However the vast majority of foreign investment has not gone to the agricultural sector, and even less to sustainable agriculture programs.

### **Guidance for Replication**

- A barrier to implementation is insufficient knowledge of organic alternatives to synthetic inputs and access to equipment for composting.
- Concurrent government investments in infrastructure make foreign investment more attractive and feasible.

- Entry into the EU Free Trade Area in 2008 opened up opportunities, but also made the country more vulnerable to global economic pressures and developments.
- While policy climate encourages Foreign Direct Investment, an assessment of the country's agricultural resources and vulnerability (water dependence, e.g.) indicates that attracting FDI to the agriculture sector will be challenging.

*Further Info:* <http://www.apia.com.tn/>

# Sustainable Agriculture: Subsidies

## Community-Wide Conversion: Local Government Supports an Entire Township's Transition To Organic



**Case Study:** *Jiaoho township, Jianxi province*

**Subsidy Type:** *Input Subsidies*

**Country:** *China*

### Financial Instrument

*Conversion to organic production incurs costs in training, certification and, frequently, an initial reduction in yield. Government subsidies for organic pesticides and fertilizers can ease the conversion, particularly during the difficult transition period. In Jiaoho in remote and mountainous Jianxi province, subsidies accompanied by training and other support methods and strict regulation and prohibition of non-organic methods enabled the entire township to convert to organic production, leading to new and higher priced products, access to new markets, and a decrease in environmental degradation. Subsidies include the free provision of natural pesticide and a 50 percent subsidy on rapeseed cake, a natural fertilizer.*

The Jiaoho local government enacted a series of regulations, training, and incentives to enable the transition to organic agriculture on a township-wide basis. Part of the conversion process included enacting subsidies for organic inputs, including the provision of natural pesticides at no cost and heavily subsidized rapeseed cake for fertilizer. The rapeseed cost is \$146 per ton; it is sold to farmers at \$73 per ton. For a typical rice field, a farmer would need 1,500 kg of rapeseed cake per hectare. The organic farming office manages small-scale processing of indigenous herb pesticide, which is provided to farmers free of charge. Financing of the subsidy came from general government funds.

A contract between township and farmer prohibits the use of synthetic agro-chemicals and GMO seeds, and prohibits hunting and forest clearing.

Organic fertilizer use is strictly enforced; there are reports that cars are searched at roadblocks entering the township and any synthetic inputs are confiscated. The *China Daily* reported that some 70 households were fined the equivalent of half their annual income for smuggling chemical inputs.

### 2000 – 2003: Support to Develop Financial Instrument

The local government took the decision in 2000 to convert the entire township to organic production. While simultaneously encouraging farmers to create and use on-farm compost, the township is constructing an organic fertilizer factory.

## **Results**

**Revenues:** Wholesale value of organic products from the township grew from zero in 2000 to \$280,000 in 2003. Individual farmer income has increased thanks to the premium for organic products (amount not quantified) and risk has decreased with crop diversification and corresponding increased access to markets. Areas under organic conversion went from 3.3 hectares certified in 2001, to 400 hectares certified organic and an additional 400 hectares under conversion by 2003.

**Environmental Impact:** Improved soil quality was observed. Despite expectations of higher pest issues, organic pesticides combined with a program that encouraged the use of cats (rather than poison) has led to no increase in observation of rodent or other infestations. The increased agricultural input has led to a decrease in destructive mountain-area foraging, which had been a substantial problem prior to transition.

**Community-level Impact:** Anecdotal evidence indicates that more citizens are staying or returning to the farms once it is shown that sustainable agricultural methods result in higher crop prices and less risk through diversified production. The construction and operations of a local organic fertilizer factory will create local jobs.

## **Guidance for Replication**

- Local government commitment to organic transition is essential for effective organic transition in centralized economies.
- Subsidies must be accompanied by robust education efforts to maximize effectiveness.
- Farmers rated technical assistance as the most important success factor in the organic transition, with transition financing (including, presumably, input subsidies) as second most important.

*Further Info:* [http://www.ifad.org/evaluation/public\\_html/eksyst/doc/thematic/organic/asia.pdf](http://www.ifad.org/evaluation/public_html/eksyst/doc/thematic/organic/asia.pdf)

**Cover Photo:** Scott Wallace/World Bank

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