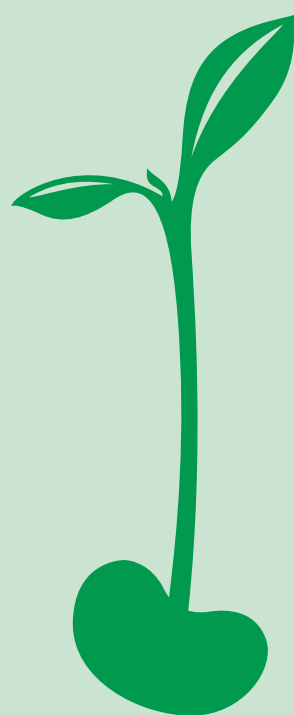




International
Labour
Organization



Horticulture Sector

Business Opportunities and Support Services (BOSS) Project

- Intervention Report -



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Abbreviations

- BOSS**
Business Opportunities and Support Services Project
- IADE**
Institute for Business Support
- ILO**
International Labour Organization
- MAF**
Ministry of Agriculture and Fisheries
- MECAE**
Minister of State, Coordinator of Economic Affairs
- MED**
Ministry of Economy and Development
- M4P**
Markets for the Poor
- MSEs**
Micro and Small Enterprises
- NDRED**
National Directorate of Rural Economic Development

Executive Summary

The International Labour Organization has a mandate to “help advance the creation of decent work and the economic and working conditions that give working people and business people a stake in lasting peace, prosperity and progress”¹. In Timor-Leste, the priority for the ILO has included enhancing youth employment promotion, integrating employment into rural economic development and improving labour market governance. These priorities work in concert with Timor-Leste’s Strategic Development Plan 2010-30, which emphasises the support and development of the private sector.

The key ILO project focused on advancing the development of the private sector is the Business Opportunities and Support Services (BOSS) Project - a private sector development project with its core objective to contribute to employment creation and income generation. The project draws on the Making Markets Work for the Poor approach, addressing underlying constraints in functions that support core market systems. The project has been operational for over 4 years and is in its final year of implementation. At this juncture, the project wanted to reflect on progress and document key learnings from the components of its work. This report is one in a series of intervention reports, with a focus on the development of the horticulture sector delivered in collaboration with the ILOs key counterpart, The Institute for Business Support (IADE).

In the horticulture sector, BOSS piloted a contract farming model, partnered with Mercy Corp to stimulate the inputs supply market, lobbied government for the development of public-private partnerships to operate key horticulture infrastructure and commenced stimulating “crowding-in” of the contract farming model with other emerging horticulture businesses.

- Key learnings from the BOSS Horticulture Intervention include:
- Shifting subsistence farmers to a more commercial oriented model is not a linear process.
 - Informal rules and norms affect markets and this cannot be under-estimated.
 - Contract or hire? Changing business models is sometimes necessary to underpin sustainability.
 - Thin markets affect support markets, such as inputs supply.
 - Market facilitation takes time and flexibility, but is considered more sustainable than direct interventions.
 - Systemic change is a shared phenomenon amongst a number of interventions.

¹ International Labour Organization: www.ilo.org

Introduction

The Business Opportunities and Support Services (BOSS) project is a private sector development project with its core objective to contribute to employment creation and income generation based upon a systemic approach to enterprise development. The BOSS project is embedded in the Institute for Business Support (IADE), under the remit of the Minister of State, Coordinator of Economic Affairs (MECAE) to address the needs of micro and small enterprises (MSEs) in Timor-Leste's severely under-developed private sector. Funded by Irish Aid and NZAID, the project started in 2011 and finishes mid-2016.

The project encompasses three main components:

Objective 1: Increased business opportunities for MSEs in target sectors (horticulture, cattle and tourism) and districts.

Objective 2: Nation-wide access to enhanced and innovative market / need oriented business development services.

Objective 3: Increased commitment and capacity to mainstream gender in all policies, programs and activities.

This intervention report will focus on Objective 1, specifically on the interventions in the horticulture sector, which aimed to support the improvement of livelihoods of horticulture farmers and others involved in the sector in Timor-Leste at both national and district levels. The BOSS interventions have been delivered using a "Making Markets Work for the Poor" (M4P) approach, avoiding direct intervention by working through key firms and agencies (market players) in the sector.

Section 1 describes the design, research and planning phase of the project, including the identification of core constraints and development of key interventions. Section 2

reflects on the realities of implementation, particularly adjustments to interventions based on the behavior of market players in the sector. Section 3 considers early signs of systemic change observed by BOSS and Section 4 summarises BOSS's key learnings in the sector.

In the beginning

Design and planning phase

The Business Opportunities and Support Services (BOSS) project was designed to respond to the local context of a private sector characterized by small, agri-based and informal business activities. 80% of Timor-Leste's population is involved in agricultural activities to support their livelihoods². Half of the population lives below the national poverty line and of these, two thirds live in rural areas³. Rurally based agri-enterprises are few and particularly weak. They are frequently small scale, near / almost subsistence farmers with low productivity, selling small surpluses at local markets. Despite employing a range of income generating strategies, these are generally insufficient for families to significantly reduce poverty levels. Businesses lack market access, while management and productivity – particularly on-farm – are weak. Market linkages between rural and urban areas are also limited. Few business development services exist and private-public dialogue to stimulate growth is poor. Furthermore there is a lack of information and analysis on available resources and areas for potential economic development.

The Timor-Leste government has acknowledged the importance of the private sector within poverty reduction strategies, including in its Strategic Development Plan 2010-30, and commenced movements towards creating a more favourable enabling environment to support private sector growth, such as the introduction of key regulations and reforms.

BOSS was, originally, embedded in two institutions, the Institute for Business Support (IADE) and the National Directorate for Rural Economic Development (NDRED) under the Ministry of Economy and Development (MED). Following the election and Government restructuring in 2012, the decision was made to merge the project

and to have one counterpart, IADE, which moved under the Secretary of State for the Promotion and Support of the Private Sector (SEAPRI). Another government restructure in 2014 saw IADE move to the newly created Minister of State, Coordinator of Economic Affairs, which reports directly to the Prime Minister. The 'embedded' approach aimed to promote close working relationships with government staff to build institutional capacity to undertake key roles in the future. Each component of the project had a key counterpart within IADE. BOSS designed a logical framework detailing objectives and outputs for each component, as well as indicators.

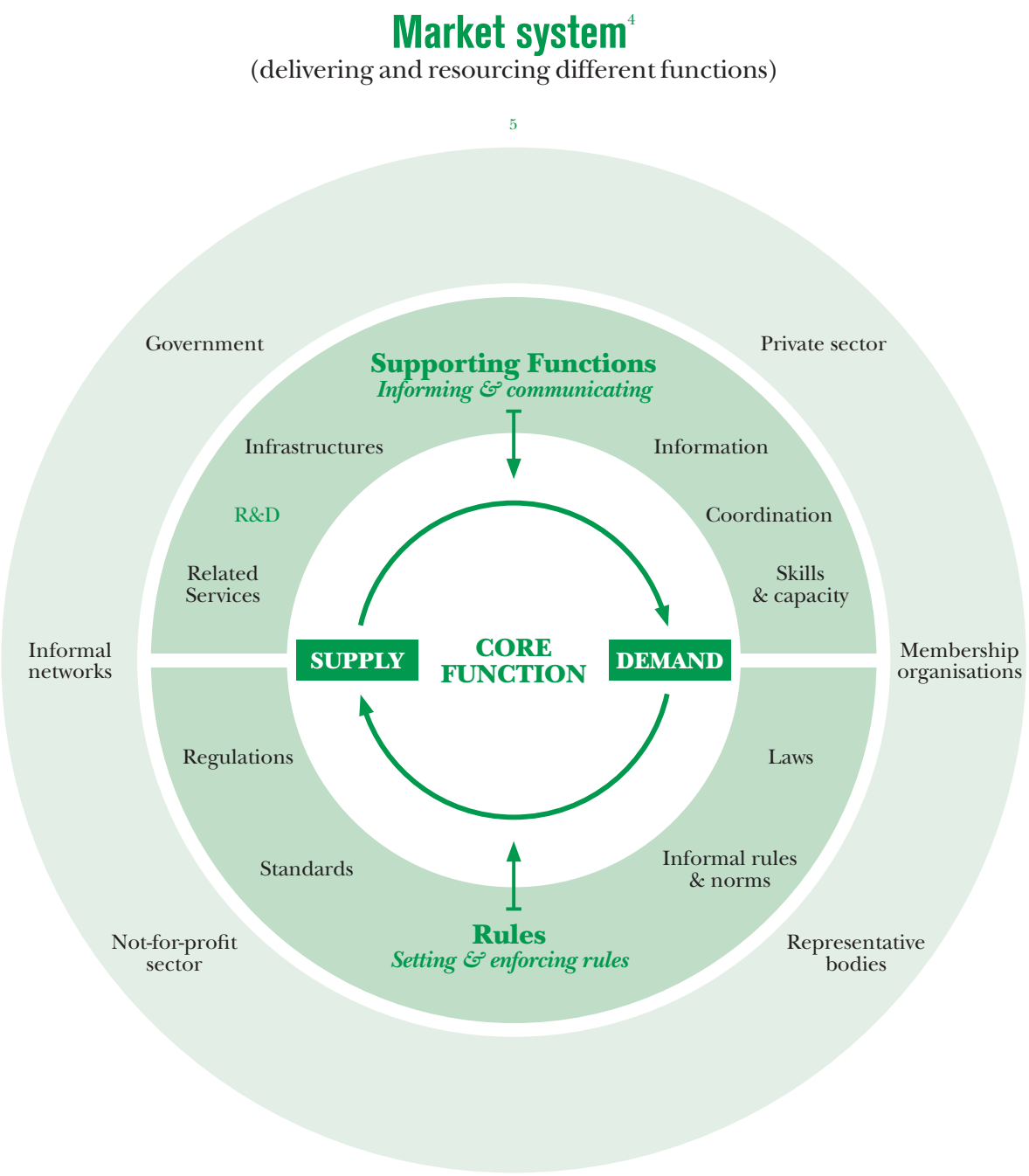
BOSS set out, under Objective 1, to strengthen market systems to benefit the poor, particularly around improving job opportunities and incomes. The approach within this objective drew on the Value Chain Development and Making Markets Work for the Poor (M4P) methodologies, seeking to address underlying constraints within markets and stimulating systemic change to create sustainable and widespread improvements. Figure 1 below depicts the market system which comprises the core function of supply and demand, also represented by the value chain, with supporting functions and rules / regulations part of the broader market system that strengthen or hinder how a market system is operating. BOSS interventions are predominantly focused on strengthening the supporting functions and rules to address these underlying market blockages, although has also assisted in the strengthening of the core of the market system (or value chain) itself.

Objective level indicators related to increasing sales for MSEs, net additional full time jobs in MSEs, increasing numbers

² World Bank: *Timor-Leste Expanding Near-Term Agricultural Exports, Diagnostic Trade Integration Study, 2011*

³ World Bank / National Directorate of Statistics: *Timor-Leste, Poverty in a Young Nation, 2008*

of MSE startups and public and private investment. These were further defined following analysis of selected value chains (see below) and some indicators were refined with project experience and to more specifically support monitoring activities, drawing on the DCED Standard for Results Measurement.



⁴ Springfield Centre: The Operational Guide for the Making Markets Work for the Poor (M4P) Approach
⁵ The Springfield Centre: Making Markets Work for the Poor – Operational Guide, Second Edition, 2014



M4P advocates to ‘facilitate’, rather than directly provide, services and support, thereby building solutions to constraints within market systems players themselves. For BOSS, this has meant working with private sector firms (frequently newly established) as well as through IADE itself as a BDS provider.

The project placed an emphasis on the considerable challenges for the private sector at the rural level, initially taking a Local Economic Development approach. BOSS structured the initial phase for Objective 1 around local engagement with key public and private sector stakeholders in 3 priority districts, selected due to their poverty rankings in the country and the need to keep a geographical balance between the regions. The pivotal aspect of this approach was the development of District Economic Forums (DEFs), through which socio-economic and value chain analyses were undertaken and decisions made around project direction, including developing and monitoring Action Plans. Stakeholders in the DEFs included district and local authorities, employer and worker associations, other private sector actors, NGOs and financial institutions. The DEFs were formed to support LED, enhance public sector delivery through relationships with the private sector and provide the private sector the opportunity to engage more effectively with government.

In one of the projects 3 target districts, Ainaro – in the country’s centre, the DEFs selected the horticulture sector on the basis of 3 key criteria:

- Considerable potential to reach the poor in terms of level of outreach and pro-poor growth potential.
- Pro-poor growth potential (through import substitution) and competitive advantage (land typology).
- Feasibility of BOSS supporting the intervention⁶.

NDRED and IADE staff, together with staff from the Ministry of Agriculture and Fisheries, the Chamber of Commerce and Industry of Timor-Leste and the Cabinet for Gender Equality were trained by BOSS and rolled out a participatory value chain analysis using the ILO approach to Value Chain Development for Decent Work to underpin the planning of interventions.

⁶ Annex 7: Potential Economic Sectors Selection Criteria, BOSS Progress Report #1, June 2011

The horticulture sector in Timor-Leste

Considerable demand exists at the national level for horticulture products, evidenced by the level of imported vegetables sold through supermarkets. In the mountainous regions of Timor, the altitude, temperate climate, soil quality and access to water lend the district to horticulture production. Against this backdrop, horticulture was selected by BOSS as having the potential to impact farmers at scale.

The sector is characterized by small-scale production on horticulture plots of less than a hectare, frequently subsistence in nature, with excess production sold at local markets. At the commencement of the BOSS project, access to inputs, particularly seeds, was extremely limited, with no dedicated input supply outlet even in the capital. Instead, inputs were being sold “on the side” in mixed businesses. While shops had government licenses to sell agricultural inputs, few staff in these outlets had embedded technical knowledge to provide to customers to improve application of inputs on farms. At the time, government extension services were limited by insufficient outreach staff and poor agricultural knowledge. Production techniques remained very simple and traditional with little use of fertilizers or pesticides or when used, applied incorrectly, causing erosion of soil quality or ineffectively, providing little benefit to yield. Moreover, there were challenges in encouraging a commercial incentive for input supply, when various government agencies and well-meaning NGOs were providing these at no cost to farmers through their programs.

Markets in the district are fairly small scale and farmers had limited access to more lucrative retail markets in the capital, Dili, due to the cost of transport and lack of established relationships with customers such as supermarkets and restaurants. While some farmers sold locally, or occasionally in Dili, often production was primarily to support the family’s subsistence. The cost to collectors of transporting vegetables from Ainaro to Dili was commercially discouraging and the lack of economies of scale of horticulture production or central collection points exacerbated this low incentive.

At the commencement of the project, only one wholesale company, Zero Star, was operating in Ainaro and seemed to offer an ‘embedded service’ with access to a greenhouse and inputs support. However, this approach faltered, with many plants succumbing to disease and eventually the arrangement with farmers seemed to cease altogether. A foundation working with farmers in Hatibulico subdistrict was also occasionally selling vegetables in Dili. Only two retailers offered a constant supply of district produced vegetables in Dili, neither working in Ainaro, the BOSS priority district for horticulture (Kmanek supermarket in partnership with USAID, sourcing from Aileu district and Pateo, who was partnering with farmers in Liquica district).

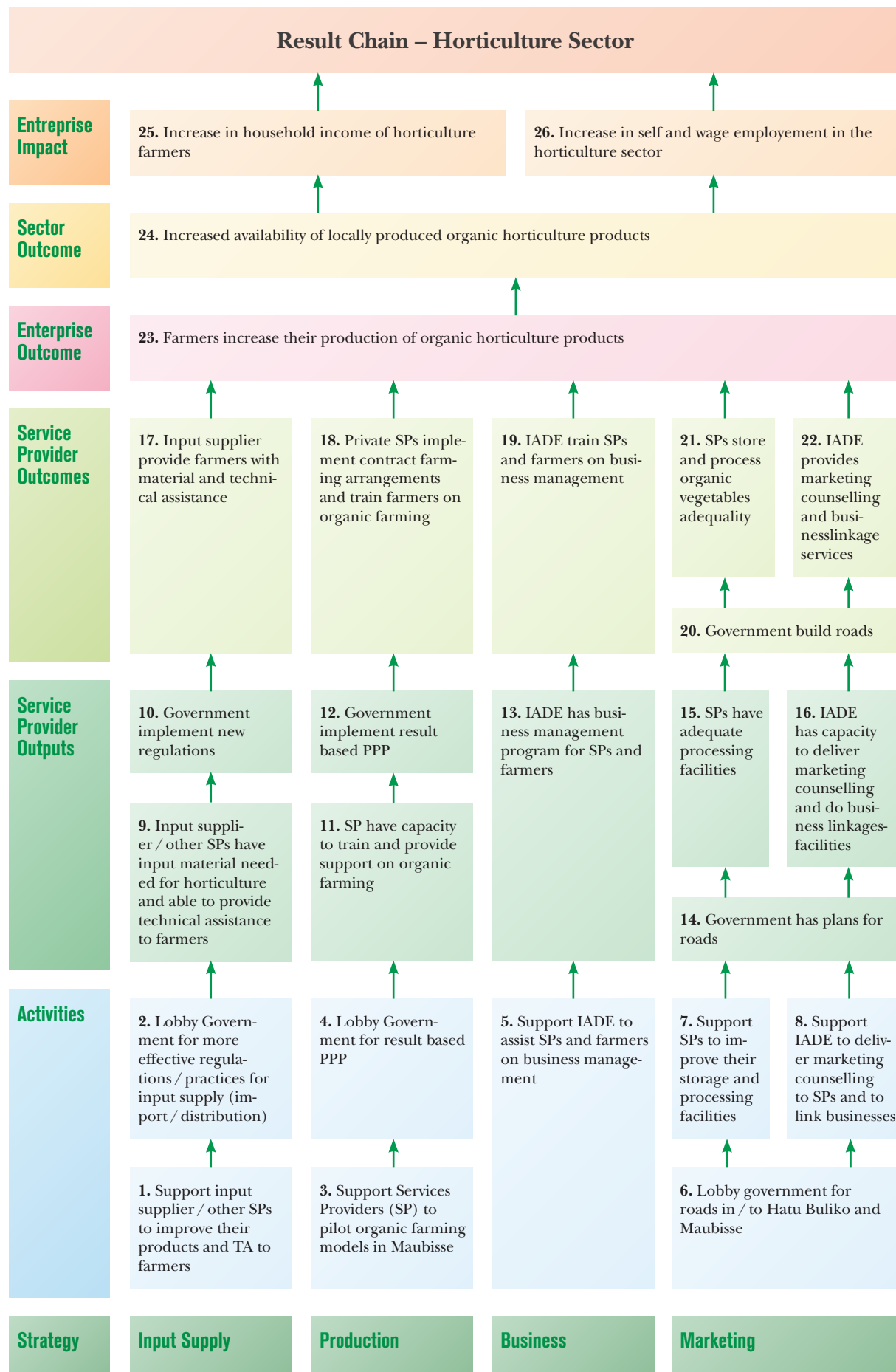
The VCA set out 4 intervention areas to address these constraints including:

- 1. Production:** Increase organic vegetable production in Maubisse and Hatubulico.
- 2. Input supply:** Improve availability and farmers access to agriculture input supply.
- 3. Business:** Improve basic business knowledge for farmers.
- 4. Marketing:** Improve the marketing process of locally produced vegetables.

BOSS developed “theories of change” through detailed results chains to describe anticipated change through the 4 interventions. The results chains provided the opportunity to check that the logic underpinning the theory of change held, and if not, whether the project needed to make adjustments. The original sectoral-wide results chain is shown below in Figure 2, showing impact ultimately that focused on increases in farmer income and in self and wage employment.



Green field in Brigada, Maubisse



Member of the Brigada farmers group, Maubisse

Market players (stakeholders or firms) within the results chains has cut across both public and private sectors, acknowledging the role allocated to government around horticulture. These include:

- **Input suppliers:** National and district level suppliers of agricultural supplies, including horticulture inputs.
- **Farmers:** Producers of horticulture products.
- **Contract farmer firm:** The firm responsible for inputs, training and sales of horticulture products form farmers included in pilot contractor farming model.
- **IADE:** The Institute for Business Support, delivering business development and information services in Timor-Leste.
- **Other relevant government bodies:** Responsible for regulations / practices surrounding importation of input supplies, responsible for road rehabilitation.

Market players are a critical aspect in the interventions and changes in their behavior are fundamental to whether impact at the farmer level can ultimately be achieved and sustained.

Against this background, Section 2 discusses implementation and adjustments to the original plans and framework for this sector, focusing on each intervention and particularly on changes in the behavior of market players.



Then what happened

Reality and tailoring interventions

Project structure

In mid-2012, following elections, the new government dissolved the Ministry of Economy and Development. IADE was transferred to the new Secretary of State for the Support and Promotion of the Private Sector, but the National Directorate for Rural Economic Development (NDRED) and the Cabinet for Gender Equality were dissolved with MED. It was decided to transfer Objective 1 and Objective 3 to IADE, with IADE becoming the main counterpart of the BOSS project in all activities. In 2015, the government underwent a restructure and IADE fell under the auspice of the Minister of State, Coordinator of Economic Affairs (MECAE), that reports directly to the Prime Minister.

After a year of implementation, the project began to understand that the LED approach initially proposed in the project document did not fit the reality of Timor-Leste. One of the main elements of LED is to make sure that the private sector has a platform to influence local planning and decision making to ensure that the Government creates an enabling environment for the private sector to operate in. Timor-Leste has yet to fully decentralize, hence decision making power is with the national level as well as budget allocations. It was felt that the established LED forums risked becoming a platform for discussion without follow on-actions, something Timorese are very wary about, the term NATO – *No Action Talk Only* was used. The only “budget” allocated to implement activities the Forums had decided on came from the BOSS project and since the decision about decentralization had been deferred indefinite, the chance that funding would come from local Government was unrealistic. It was clear that the forums would not continue past the close of the project,

so it was decided to discontinue the LED Forums and support value-chain specific public-private dialogue at both district and national levels.

Interventions

BOSS’s interventions in horticulture lay particularly with production and the establishment of the pilot contract farming model, as well as supporting the development of inputs supply. BOSS has also worked with IADE to tailor business development services to a level appropriate for farmers (basic introduction of business concepts) and horticulture businesses, with a particular focus on developing the business capacity of the contract farming firm, Josephina Farm. BOSS aimed to focus on the “capacities” and “incentives”⁷ of market players and the critical aspect of addressing systemic change to underpin the sustainability of improved market systems models.

Intervention: Production

Key activities to support the development of horticulture production included:

Contract farming model: Josephina Farm and Public Private Partnership for greenhouse management

BOSS facilitated the commencement of a contract farming model between Josephina Farm, a small horticulture company supporting farmers and re-selling horticulture products in Dili, and a group of originally 45 farmers (16 women 29 men) in Brigada village, Maubisse, Ainaro district in 2012. The company has since expanded to an additional two groups of farmers within Ainaro district and with one group in neighbouring district, Ermera. The contract farming arrangement was for the company to provide training on indoor and outdoor horticulture production, horticulture inputs (including seeds and farming equipment) and marketing support to farmers, with farmers reciprocating by growing and selling vegetables to Josephina Farm in the

quantity and quality specified and agreed, using updated techniques to improve their horticulture yield.

BOSS provided a range of further supports including expert inputs to undertake a technical assessment of Josephina Farm’s production, post-harvesting handling and marketing. BOSS supported two farmers from Brigada village to undertake study programs in Bali to develop knowledge on indoor and outdoor horticulture.

The development of the contract farming model was initially very positive, particularly in its first year of operation, with farmers anecdotally reporting income gains and Josephina Farm reporting regular sales to a range of clients in Dili. BOSS undertook an impact assessment in 2014 and found that farmers involved in the model were using better horticulture techniques than previously and that their involvement had resulted in Net Attributable Increases of around \$247 / farming enterprise per year, with 30% of those surveyed showing improved productivity as self-employed farmers⁸.

The agreement was significantly affected by the prolonged illness of the company Director during 2014, and the subsequent challenges highlighted the fragility of the relationships with farmers and considerable reliance on the Director for the arrangement to continue. Several issues with the company – both real and perceived – were raised by farmers in the original group during the collection of data for the impact assessment process, including reduced technical assistance from Josephina Farm. Following the promising start to the arrangement, the original farming group reverted to subsistence farming behaviours, including the use of alternative crops as a risk management strategy (swapping land which had been committed to horticulture cultivation back to maize). The Brigada farming group also presents an interesting case having received considerable support from development agencies over time and seemed to expect material support and also

⁷ The Springfield Centre: Making Markets Work for the Poor – Operational Guide, Second Edition, 2014

⁸ ILO BOSS: Horticulture Production Intervention – Impact Assessment Report, May 2015

significant practical assistance on the farm. When support from the company started to wind back, despite ongoing collection and sales of vegetables by Josephina Farm, they seemed to become de-motivated and switched crops. BOSS has also observed the weight of cultural obligations on farming communities, where farmers have, at times, been absent from their farms for several weeks at a time to attend cultural ceremonies. Notably, the other (smaller) farming groups working with the company have demonstrated a willingness and capacity to continue with stable production and sales to the company.

BOSS supported an expansion of staffing to underpin operations and growth in 2015. BOSS also facilitated the development of a public-private partnership for the operation of 3 publically built greenhouses in Ululefa, Maubisse, Ainaro district, to be operated by Josephina Farm. This will provide production and financial stability and expansion for the company.

Link Josephina Farm to other horticulture organisations / farmers

Relatively early in the production intervention, Josephina Farm also provided horticulture production training to a large farming group of 50 farmers in Liquica and a smaller group in Baucau, independently of BOSS support. Josephina Farm has also provided technical training to a group of 43 farmers in Gleno, Ermera. The group is supported by a local NGO called IMI. This farmer group is also receiving farmer field school training organised by the USAID / DAC project and Josephina Farm was approached by the project as potential buyer of the farmers' products. There is anecdotal evidence purchasing has commenced at a low level, signifying new relationships and ongoing growth for Josephina Farm. IADE provided support to this group to facilitate training of 40 farmers in organic horticulture production, including small equipment, irrigation, and plastic for tunnels, until mid-December, 2014.

More recently, the development landscape

in Timor-Leste has again evolved, with the introduction of a large USAID funded program to develop horticulture farming in the country. The key challenge here is to engage the program to recognize the critical role played by small companies such as Josephina Farm, and to prevent direct intervention activities from threatening their sustainability. BOSS has been proactive in facilitating a relationship between the new program and the company.

Intervention: Inputs supply

Support input suppliers to improve information to farmers

A strategic input by the BOSS project to strengthen the horticulture market has been improving input supply, which has been a critical bottleneck for the industry. International NGO Mercy Corps had been implementing an inputs supply pilot project in Ainaro and Manufahi, providing support to 4 shops in these two districts to stock agricultural products and information for farmers (recently extended to a further 5 shops and additional 2 districts – Lautem and Bobonaro). In 2012, BOSS partnered with Mercy Corps to further develop their model in inputs. This model moved BOSS to a more 'distant' relationship with the market player (i.e. working through a second organization), in comparison with its work through Josephina Farm.

Mercy Corps was supported to continue an existing program linking kiosks to an agricultural supplier in Dili, Loja Agrikultura. Loja Agrikultura received tailored training in horticulture production, and they were then to train kiosks in basic agronomy. More recently, Mercy Corps started working with two other suppliers in Dili, given a lack of active engagement from Loja Agrikultura in the process. The objective was to create embedded services to be passed onto farmers at district level to improve the use of inputs. Supporting the delivery of knowledge to kiosks, Mercy Corps created information sheets, developed by a horticulture expert, which provided simple, essential farming instructions to be shared with farmers. This program was later

extended to incorporate animal medicines as part of BOSS's work in the cattle sector (see the Cattle Intervention Report for further details) as well as providing training and information on agrichemicals.

Supported by ILO, Mercy Corps undertook an assessment of its work in the input supply market in 2015 and found emergent changes in the market system⁹. They found that farmers are recognizing that better quality inputs yield better results, and are becoming aware of the benefits of these products and an increased willing to pay more for these (farmers are reporting nearly double what they used to pay for seeds and also a diversification in the seeds they are buying). District 'lojas' are starting to diversify their supply points in Dili and are also being more proactive in asking for information and embedded services, to then pass onto farmers. This appears to be resulting in growing sales of agricultural inputs at the district level (growth of about 5%) and an incentive for them to continue.

However, they also found that at the district level, kiosks are not consistently attended by trained staff, reducing the extent to which information about inputs can be provided to farmers. Kiosks are unlikely to develop a stand-alone input supply business; sales of agricultural inputs is often a side business, and not emphasized by owners as revenue is still low. To some extent, the government and development partner donation of inputs to farmers are still distorting the inputs market, for example still contributing a considerable amount to sales of Dili input suppliers. At the national level, embedded services and capacity development (training) were not being provided by input suppliers to district kiosk customers as initially anticipated and therefore Mercy Corps itself had to fill this role. Gaps, therefore, remain in the functionality of the input market to more firmly embed information and services to ultimately benefit farmers. Mercy Corps has identified some potential strategies to start addressing this.

Lobby government for more effective regulations / policy on import and distribution of inputs

This aspect of the horticulture intervention did not progress as it became clear relatively early on that the government was not intending to reduce or halt the provision of free inputs to farmers (namely, seeds).

Contract farming model: inputs supply

As indicated above, the contract farming model with Josephina Farm incorporates supply of inputs such as seeds, basic farming equipment, compost (primary materials to assist with creation of organic compost) and irrigation.

Intervention: Business

Support IADE to develop business counseling for horticulture businesses

BOSS has assisted IADE to provide tailored business counseling to Josephina Farm over the duration of the production intervention, including on booking keeping and the development of a business plan. Financial tracking and reporting has remained relatively fragile and in order to strengthen this function in particular, BOSS has facilitated the placement of a VSA volunteer to assist with book-keeping once a week which will provide more accurate tracking of the business's financial situation.

Support IADE to develop tailor made, simple business awareness training for farmers



IADE providing basic business awareness training to farmers in Maubisse

⁹ Mercy Corps: Beyond Agricultural Inputs: A learning assessment - Lessons learned to improve rural Timorese farmer's access to basic farm inputs and services, draft September 2015

In 2011, IADE designed and delivered 2-days of training for horticulture farmers working with Josephina Farm in Maubisse subdistrict to explain the concept of contract farming and simple market and business principles. IADE has also adapted ILOs Start Your Business (SYB) programme for agriculture, including horticulture, as part of an effort to respond to the needs of value chain actors under Objective 1. In 2013, IADE repeated the basic business training to the new Josephina Farm locations, assisting their understanding of price setting IADE has also facilitated meetings between farmers and Josephina Farm to help solve misunderstandings that have arisen.

Intervention: Marketing

IADE: Business Matchmaking

As part of its new Business Matchmaking service, IADE conducted an event to link Josephina Farm to restaurants and supermarkets in Dili. The event offered the company the opportunity to reiterate the benefits of stocking or using organic horticulture produce, including the justification of its higher pricing compared with competitors. The company has also been involved in trade fairs organized through IADE providing further marketing opportunities, including TIFOBE, Timor-

Leste's first food and beverage trade fair, as well as supporting SEAPRI's IX Encontro de Empresarios China e Países de Língua Portuguesa, a business to business international trade fair during which Josephina Farm signed a Memorandum of Intent to undertake business with a Chinese firm.

Josephina Farm was operating at a small scale prior to its engagement with BOSS and as such, had existing relationships with several retailers and restaurants in Dili. These events allowed the company to strengthen and build on these relationships.

Support Josephina Farm to improve packaging and storage facilities

BOSS supported the company with the purchase of a small cold storage facility. Vegetables were transported from the mountain areas, washed, sorted and stored prior to sale. However, more recently the company has preferred to undertake this processing in Maubisse and deliver directly to customers.

Lobby government for roads into Hatubulico

BOSS facilitated the building of a rural road between Hakmatek guesthouse to Hatubuliko through a sister ILO project, Enhancing Rural Access (ERA).



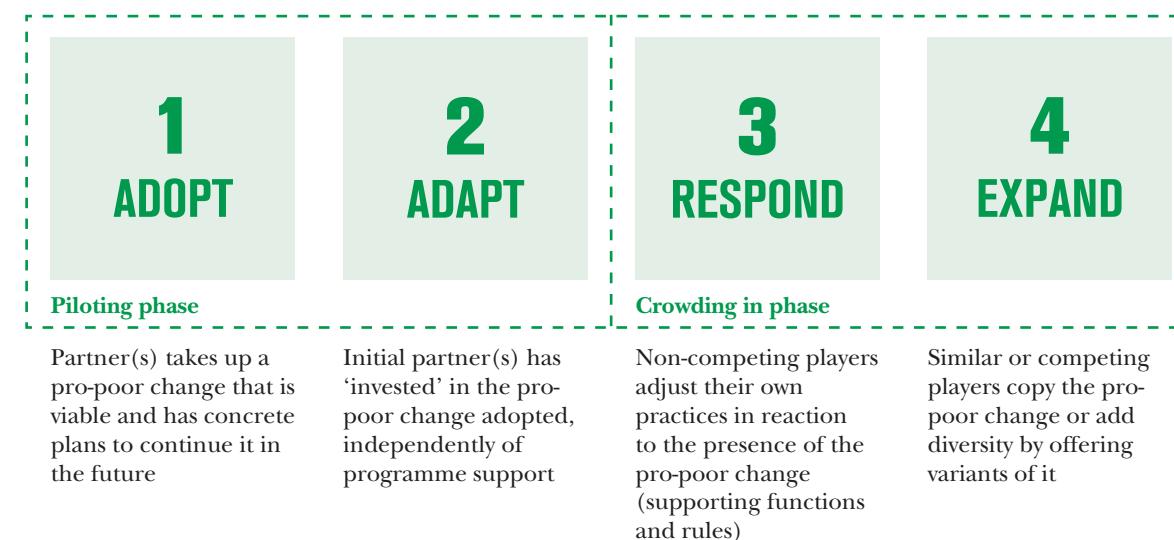
Weighting and recording vegetables, Maubisse

Systemic change in early signs of impact

Systemic change

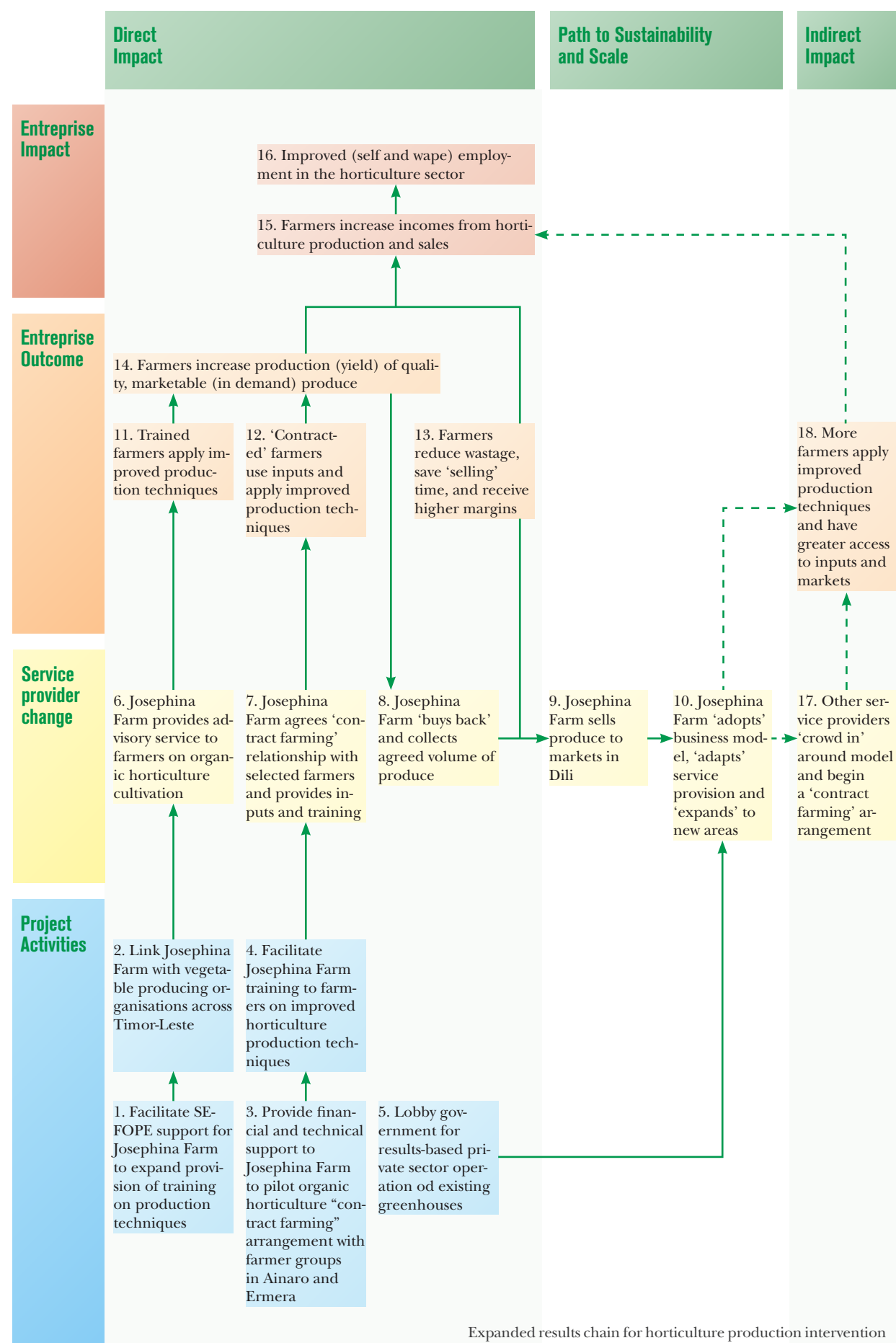
A key objective for BOSS is around creating systemic and lasting change through its value chain interventions. In the latter phase of the project, BOSS has commenced drawing on the Springfield Centre's 'System Change Framework', shown below in order to specify and recognize when systemic change is occurring.

Systemic change framework¹⁰



As the project progressed, BOSS realized it needed to specifically articulate and document strategies to address systemic change. To do this, and also as part of the impact assessment process, BOSS refined the results chains for horticulture production as in Figure 4 below. This approach was also applied to the inputs supply intervention to support Mercy Corps monitoring.

¹⁰ (Graphic adapted from The Springfield Centre: Adopt-Adapt-Expand-Respond – a framework for managing and measuring systemic change processes: Briefing paper, March 2014)



For horticulture production, BOSS supported and monitored Josephina Farm's adopt / adapt behavior as well as actively engaging other firms to 'crowd-in' to the sector. The company has shown its willingness to adopt the model. Josephina Farm has implemented the pilot, investing time over a period of 3 years and extended its operations to include 2 additional groups of farmers in the Maubisse subdistrict and a small group in Ermera district from late 2013.

The company remains fairly fragile and continues to receive assistance from BOSS in order to expand its staffing. In terms of 'adapting' the model post-BOSS support, Josephina Farm has not yet developed to a point where independent investment has occurred to a significant extent. The recent partnership with government to operate greenhouses in Maubisse district will provide more consistent and profitable production, which is anticipated to offset the less profitable outdoor production.

The impact assessment conducted in 2014 showed two examples of crowding-in by other firms, showing that the contract farming model was stimulating competition in the horticulture subsector. This was seen with the commencement of another horticulture farming business run by company Manelima Farm in Manatuto district, in the country's west, who cite Josephina Farm as one example

they drew from in developing their business model. The model is built around growing vegetable on their own land and employing farmers directly to undertake the vegetable production. They are also partly owned by a former staff member of DAC (USAID funded), who have an extensive horticulture production project linking to supermarkets in Aileu district. This group has commenced sales in Dili and has plans for expansion beyond the 1.5 hectares they are currently cultivating. BOSS subsequently provided the company with support for the development of facilities to create organic compost and rainy season production using tunnels. Additionally, an international input supplier / trader opened in Timor-Leste in 2013 and, after working closely with Josephina Farm, has adopted a similar business model.

From having no dedicated agricultural input suppliers in Dili, the landscape in Dili regarding agricultural inputs changed rapidly in 2013, with the opening of an additional 2 agricultural inputs stores – Rahun Diak, Comoro and Agi Agricultura, Balide (owned and run by horticulture group farming Manelima). These developments occurred prior to BOSS's intervention in inputs supply. In terms of the current intervention being implemented through Mercy Corps is still early in its implementation although it appears there is potentially some crowding in at the district level, between kiosks.



Manelima farmers in nursery, Laclubar Manatuto

What we learned

The horticulture production intervention provided BOSS with numerous lessons:

Development is not linear

After what was a very successful commencement of the intervention, the reduction in company support to farmers, largely precipitated by the extended illness of the company director, resulted in reduced engagement by farmers. BOSS then learned the challenge of transforming subsistence farmers to more commercially oriented farmers. Despite commercial gains, the trajectory of this assumed transformation did not hold. Given the complex income streams farming families manage (livestock, vegetables, coffee, maize and other field crops), expecting full time dedication to one crop subsector (vegetables) was probably unrealistic. Despite ongoing sales through Josephina Farm, farmers risk aversion tactics (i.e. reverting to maize production) were triggered once the company's technical support slowed. Moreover the main farming group demonstrated a high dependency on material and other support, a result of long standing direct development assistance, particularly from government. The need for market understanding, orientation and an underlying level of entrepreneurship is needed and, particularly for the farming group in Brigada, this did not exist. It became clear that the shift from subsistence farming will take considerably longer, indeed this is likely a generational change.

Informal rules and norms affect markets

BOSS also learned the considerable influence of informal rules / norms within a cultural context on farming behavior and the functionality of groups. BOSS observed numerous occasions in which cultural obligations superseded farming work, which affected Josephina Farm's supply of vegetables into Dili.

Farming "groups" are seen as homogenous, which is inaccurate both within and across groups, albeit seen as convenient for development agencies to engage with. Timor-Leste is culturally diverse, with very strong familial networks, and moreover suffers from a post-conflict context, where intra and inter community trust structures have been significantly damaged. Trust, therefore, is hard won and can be easily lost, as was found by Josephina Farm. This was not, however, a common scenario across the farming communities the company worked with, therefore demonstrating core differences even in proximate and small communities.

Contract or hire? Adjusting business models

In terms of a viable business model for horticulture, ultimately Josephina Farm needed to consider a variation to the contract farming model through the utilization of the three greenhouses allocated by the Government and the surrounding land for outdoor production. This model is likely to prove more profitable and sustainable, and operate with the labour of hired farmers rather than solely depending on farmers working their own land. Production and quality can be more closely monitored and controlled which would allow reliable supply to national markets. In comparison, the contract farming model has proven expensive, marred by relationship challenges and a lack of economies of scale. Some contract farming continues with those farmers showing the willingness to do so, in all four sites, but fewer than were previously engaged.

BOSS also learned it was appropriate to directly stimulate crowding-in by other firms, resulting in some limited assistance provided to Manelima Farm. This was particularly seen as a reasonable strategy in a thin market such as Timor and avoided the potential of distorting the market or being seen to be favouring only one company.

Timor is an extremely thin market in terms of private sector actors. BOSS found few alternatives to partner with than Josephina Farm. Contract farming, not innovative in any other part of the world, responded to three serious constraints in Timor-Leste – lack of input supply, traditional farm methods / low productivity and limited market access. BOSS knew 1) there would be limited outreach 2) it was risky to depend on one company / person for sustainability. However, now Josephina Farm has a more centralized model based around the greenhouses (explained above) which would not have been viable without the company proving its capability to the government.

Thin markets affect support markets

Inputs supply, as a support market for horticulture, remains problematic in Timor-Leste, given the small scale of horticulture farming and marketing, farmer's subsequent inability to purchase greater quantities of inputs and the resulting lack of market interest from significant international suppliers. There have been some local changes, new dedicated inputs shops opening in the capital and a dedicated shop run by a national supermarket but based in the mountains. On the whole, however, supply has not greatly improved. The inputs supply pilot supported through Mercy Corp shows the small volumes that are sold in the districts and the fragility of the market. In such a nascent market, however, it is imperative that other development agencies and programs do not undermine the supply chain that is very slowly emerging by providing inputs free of charge.

Market facilitation takes time and flexibility

The overall lesson BOSS learned is that it is extremely difficult to be an entrepreneur in Timor-Leste and as a result, emerging entrepreneurs need long-term and tailor-made support to succeed. BOSS developed close and responsive relationships with its key market partners and required flexibility to provide appropriate and timely support. That the project was able to do this in turn reflects on the maturity of the donors, Irish Aid and New Zealand Aid.

Going forward, this can form part of the role of government, in particular sharing some of the significant risk that entrepreneurs take on. At IADE, this is partially done with the Business Incubation Facility, where there is longer term business and technical support and shared financial "investment". Agencies must be prepared to facilitate development, rather than directly implement programs, allowing market actors to develop capacity as the key strategy towards sustainability.

Systemic change: a shared phenomenon

BOSS has contributed to systemic change in the horticulture, together with another significant development project USAID / DAC that has a considerable impact on markets in partnering with national supermarkets (Kmanek, W4, Dilimart). BOSS piloted the first contract farming model and today, sees much more local produced vegetables sold in supermarkets and served in restaurants than before the project.



Guido Sequeira director of Josephina Farm with farmers in Maubisse

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