

Timor-Leste and FAO

Achievements and success stories

FAO Emergency Office in Timor-Leste
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Introduction

As one of Asia's smallest and poorest nations, Timor-Leste is relying on international assistance to help build the capacity of the nation.

While 90 percent of Timor-Leste's one million people depend on subsistence farming and fishing to make a living, the country's infrastructure is poor and its agriculture suffers from frequent drought. The tiny half-island country – the other half belongs to Indonesia – has no industry to speak of and produces hardly anything for export. Annual per capita income is only US\$431, and one in three households live below the poverty line.

On a more promising note, vast offshore oil and gas fields in the Timor Sea hold great potential for the country. Natural gas could eventually earn as much as US\$180 million a year. At present the Petroleum Fund is about US\$6 billion.

But for now, Timor-Leste is ranked as a lower-middle-income economy. It continues to suffer the after-effects of a decades-long independence struggle that damaged its infrastructure and displaced thousands of civilians. The country ranks 120th out of 169 countries on the Human Development Index (HDI).

FAO has been implementing emergency relief and rehabilitation activities in Timor-Leste since 1999, and established an Emergency Coordination Unit in Dili in 2000. FAO's emergency activities include food security, bio-security, strengthening animal health services, nutrition, post-harvest management practices, forestry, fisheries and capacity development.

Timor-Leste also benefits from FAO's *Initiative on Soaring Food Prices* (ISFP), a global programme launched in 2008 to assist countries reeling from the rapidly rising prices of food commodities.

Total FAO support to Timor-Leste amounts to US\$38.5 million through 34 emergency and technical assistance national projects. In addition, Timor-Leste has been a participant in three regional and global programmes from FAO.

1. Analytical summary

Most of the support provided by FAO has been in the areas of emergency operations and early recovery, in response to recurrent crises and natural disasters that have affected Timor-Leste over the last ten years. Baseline data about all sectors are rather scarce and only partial. As a result, the impact of FAO interventions is assessed mostly based on qualitative information.

1.1 Providing the capacity to build a brighter future

A series of complementary programmes have been at work in Timor-Leste over the last 11 years striving to reach the large proportion of people in the country who are hungry. Food insecurity is rife in Timor-Leste with almost all households facing food shortages during the lean season – December to February – sometimes called the “hungry season” when most farmers have exhausted the stock of cereals, due to consumption, losses and utilization as seeds, and they have not yet harvested.

During this period, especially if the previous agricultural season was not productive, the percentage of households becoming “food insecure” may reach 60 to 70 percent of the total.

The vast majority of farmers grow food for their own subsistence and practice inter-cropping with maize as the main crop.

As recently as 2008, Timor-Leste had no agricultural extension workers, only non-government village animal



Animal health communications training Atauro Island, Dili District

health workers. Today, there are more than 400 agricultural extension workers – one for each village throughout the country. A passive surveillance system to report animal diseases has been significantly improved through a capacity building project. This will enable a rapid response to animal disease outbreaks at the village level, protecting countless subsistence farm families.

1.2 Boosting agriculture and fisheries production

There has been an overall increase in total food production since independence. From 2005 to 2009 alone, there was a 60 percent increase in maize production. Unfortunately, that level of production could not be sustained because of unusual weather, and in fact, production dropped by 20 percent in 2010. There was a 100 percent increase in rice production from 2005 through 2009, but again, because of weather, this decreased 25 percent in 2010. By 2009, Timor-Leste almost produced enough food for self-sufficiency. However, because of poor infrastructure, domestic distribution and trade are still problematic. As a result, imports are still needed to supplement the shortfall in national food production.

Overall, FAO support through the distribution of high quality farming inputs (seeds, tools and fertilizers) has resulted in increases of local food production, mostly maize and rice. On average between 20 000 to 30 000 rural households were reached by FAO seed relief interventions every year between 2007 and 2009 with an average annual increase in food availability estimated at 20 to 25 thousand tonnes. Since 2003, interventions to promote best practices to reduce post-harvest losses have reached approximately 10 000 households, and more than 10 000 silos, with a total generated additional storage capacity estimated between 6 000 and 7 000 metric tonnes, have been distributed. The impact can be calculated as a reduction of food losses of approximately 300 kg per 1 tonne silo per year for a 15 years estimated minimum life of a silo, thus 4.5 tonnes of extra food available per silo.

Finally, interventions promoting home gardens, school gardens and improved nutrition practices reached on average 5 000 farmers per year since 2006 and have

produced a relevant increase in vegetable production and consumption at the country level.

FAO, in partnership with UNICEF and WFP, is now implementing joint food security and nutrition programmes through which baseline nutritional indicators will be regularly monitored to measure the impact on malnutrition of the various interventions.

1.3 Strengthening animal health through better village outreach

Capacity-building projects for the veterinary services of the Ministry of Agriculture and Fisheries (MAF) have resulted in a significant improvement in the animal disease reporting system's passive surveillance operations. These operations enable a rapid response to animal disease outbreaks. Starting from zero, FAO worked with the MAF to set up national and district response teams that now rapidly investigate outbreaks anywhere in the country.

A Bio-Safety Level II Veterinary Diagnostic Laboratory has also been established. When it becomes operational in April/May 2011, it will be the only veterinary laboratory in the country with the potential to provide diagnostic services.

1.4 Building a farm extension programme to support Timorese farmers

The decentralization of the MAF led to the expansion of the Agriculture Extension Workers Service to all 13 districts in the country. There is now one agricultural extension worker for each village. As recently as 2008, there had been none at all.

Before 2008, Timor-Leste had a few non-government village animal health workers. FAO contributed to the expansion of this service by training all the agricultural extension workers in animal disease surveillance, and a number of other people in animal health communication. In the coming months, FAO will offer training in post-harvest practices, home gardening, and rice and maize production.

2. Selected successful FAO programmes

2.1 Emergency operations since 1999

In close cooperation with the Timor-Leste Ministry of Agriculture and Fisheries (MAF), FAO has been implementing emergency relief and rehabilitation activities in Timor-Leste since 1999, and established an Emergency and Rehabilitation Unit in Dili in 2000.

Emergency activities include:

- Distribution of agricultural inputs to vulnerable farmers to boost staple crop production and enhance food security.
- Promotion of crop diversification, improved farming and post-harvest practices.
- Support to Ministry of Agriculture and Fisheries in the set up and implementation of food security monitoring activities including crop-cutting surveys to improve food production estimates.
- Strengthening Capacity in Fisheries Information Gathering for Management (2004-2007); Regional Fisheries Livelihoods Programmes for South and South-East Asia 2009-2013).
- Urgent maize and Rice Seed Multiplication at Rural Community level 1999-2001; Emergency Seed Distribution to drought and flood affected areas (2003-2004); Emergency Seed Distribution and Reduction in Post-harvest losses Project (2007-2008).
- Technical assistance and operational support in monitoring, responding to and preparing for locust infestations – Locust Control project (2007) and Establishment of Locust Control Unit (2007-2008).
- Promotion of school gardens, nutrition education and improved utilization of locally grown foods – Home Garden programme for Food Security, Rural Livelihoods and Nutritional Wellbeing (2005-2006); Emergency Seed and Home Garden Project (2007-2008); COMPASIS (2009-2012); Promoting Sustainable Food and Nutritional Security (2010-2012); Post-Crisis of Food Security and Livelihoods Rehabilitation of most Vulnerable Populations in the Districts of Baucau (2009-2012).

- Input supply to Vulnerable Populations under the Initiative on Soaring Food prices (2008-2009 and 2008-2010)
- Strengthening Animal Health Services focusing on prevention and control of avian influenza and other animal epizootic diseases; (2008 to 2011) HPAI Awareness and Communication Project (2007 to 2008); Strengthening Avian Influenza Control through Improved Trans-boundary Animal Disease Information Management System in Asia (2005 to 2006); Control Highly Pathogenic Avian Influenza in Asia (2005); Co-ordination of the Emergency Centre for Trans-boundary Animal Disease Operations (2004 to 2006); Support to Diagnostic Laboratory and Surveillance Network Co-ordination for Control and Prevention of Avian Influenza in South-East Asia (2004 to 2006).



HPAI drama, Baucau District

Post-Harvest

Since 2002, the FAO emergency and rehabilitation programme in Timor-Leste has focused on reducing post-harvest losses largely through improving storage capacity by introducing locally manufactured metallic silos and simple post-harvest technologies and equipment. These projects have demonstrated the positive impact of improved storage on the household food security of vulnerable farmers.



Grain storage silo – food security, Baucau District

More than 30 percent of maize grain produced in Timor-Leste is lost every year due to insects and other pests. This equates to about 44 000 tonnes of staple food not being available to Timorese people, which is nearly the same amount of rice annually imported into the country. It is estimated that at least 100 000 silos should be built in the country to meet farmer's storage needs. In seven years, approximately 10 000 silos were produced by FAO projects.



Traditional storing of maize, Ermera District

Strengthening Animal Health

Due to the widespread occurrence of HPAI outbreak in South-East Asia and the endemicity of Avian Influenza in a neighbouring country, Timor-Leste is considered

a 'high risk' country. With under-resourced veterinary services, a multi-pronged approach to Avian Influenza and biosecurity was initiated in Timor-Leste. The programme has two major project components: Biosecurity strengthening and communications and public awareness to control Avian Influenza in Timor-Leste.



HPAI communication material, Covalima District

The programme aims at supporting rural development and livestock health and production through the coordination with international efforts to prevent and control Highly Pathogenic Avian Influenza and other infectious diseases in poultry and pigs. A myriad of activities have seen a number of MAF staff trained in various aspects of animal disease surveillance and reporting; laboratory techniques; communications; outbreak investigations; vaccination and cold chain; trans-boundary animal diseases and even English to facilitate communication.

Livelihoods of Small Fishers

The government estimates that over 5 000 fishers operate along the 730 km of coastline, mostly using small canoes for the coastal fishing and extracting the resources of the intertidal areas. The combined effect of low supply and high demand for fish pushes up the price, making the consumption of fish a luxury for most Timorese families. The lack of adequate means to preserve the product restrains the potential market development, deteriorates the quality of the product and its nutritional values, and reduces the profit margin for fishers. It also indirectly hampers the development of the fishing fleet, as fishers don't want to catch more fish than they can immediately sell.



Traditional fishing boat, Maubara District

The FAO *Regional fisheries livelihoods programme* (RFLP) in Timor-Leste aims to improve livelihoods opportunities and sustainable fisheries resources management. The project is assisting in the development of a cold-chain for fisheries products to allow improved market chains, the enhancement of post-harvest and handling practices, as well as the introduction of improved preservation techniques. The RFLP helps to improve co-management mechanisms ensuring a long-term conservation of the fisheries resource. Safety at sea is addressed through specific training and the development of an accident reporting system. Alternative livelihoods and micro-finances are planned to be addressed in the future. In 2005 and 2007 a project to gather information on the fisheries sector in Timor-Leste was implemented.



Fishermen, Maubara District

Food security

Timor-Leste is not self-sufficient in terms of food production. Staple food produced in country includes rice, maize, beans and root crops. Thirty to forty percent of all staple food consumed in the country needs to be imported, due to the shortfall and lack of market chain for domestic production.



Food Security

The *community mobilization for poverty alleviation and social inclusion in service delivery* (COMPASIS) is a UN joint project that seeks to protect extremely poor households in Timor-Leste. The focus is on women farmers, war widows, and unemployed youth, returning internally displaced people, children, and food insecure people. The project has two main objectives: 1) to reduce extreme poverty among vulnerable groups through community mobilization, promotion of agro-based micro-enterprises, skills training and post-training support; and 2) to promote social inclusion in the service delivery system.

As part of this project, FAO will be working on the promotion of agricultural-based livelihoods skills, including training on best farming practices, setting-up of home gardens, horticulture and food processing activities and nutrition education. In addition, FAO will provide technical support in post-harvest handling techniques and equipment, including silos for grain storage, and promote the diversification and integration of farming systems through training in Farmer Field Schools and the provision of farming inputs with the aim

of increasing staple crop production and expanding small-scale pig and poultry production.

The *Food security and livelihoods project in the district of Baucau*, aims to increase the variety, quality and quantity of food produced by the communities living around the Seical river basin in Baucau district. The project builds on farmers' capacity in order to promote a progressive transition from subsistence farming to a more market-oriented approach to production. The project focuses on integrating production of staple crops (cereals and tubers), legumes and vegetables and small livestock, by supplying farming inputs (seeds, tools and animals) along with training and new adapted technologies.



Rice growing, Baucau District

At present over 2 000 families from 15 Sucos (villages) are benefiting in the project. School gardens will be established in each of the communities with the aim of improving nutrition for students during school time by promoting the consumption of vegetables in the daily diet and teaching children how to produce vegetables at home. The project has 15 Farmer Field Schools in Baucau district with the engagement of the extension officers from the Ministry of Agriculture and Fisheries (MAF) and in collaboration with other partners.

Initiative on soaring food prices

As a response to the steep increase in food prices, FAO's launched a global Initiative on Soaring Food Prices (ISFP) in 2008. In the context of this programme, the government requested FAO assistance to boost domestic

food production through the provision of good quality agricultural inputs.

In the agricultural season 2008-2009, 225 tonnes of certified seeds of maize (var. Arjuna maize) and rice (var. IR 64), plus 70 tonnes of fertilizer were provided by FAO to 32 500 vulnerable farming households nationwide.

By increasing household food production, reliance on food purchasing in the lean season decreases, and income opportunities are generated by the surplus. At the same time the distribution of agricultural inputs is combined with training activities and technical assistance to improve sustainability.

Locust Control

In 2007, the border regions between West Timor and Timor-Leste faced a serious migratory locust (*Locusta migratoria sp.*) outbreak. Aerial surveys of the affected areas were carried out in both countries by FAO, to confirm the extent and location of the locust outbreak. A massive locust plague was identified, requiring immediate control operations. The plague was located on both sides of the border, resulted in an immense loss of crops (maize and rice) that severely affected people's livelihoods and caused food shortages.

FAO, in close collaboration with the Ministry of Agriculture and Fisheries, implemented locust control operations through aerial spraying of bio-pesticides in five western districts of the country. As soon as the locust outbreak was controlled, FAO refocused its activities towards capacity building in the high-risk areas around the border, including monitoring to enable early detection of potential outbreaks.

Moreover, as locusts and other pests do not respect borders, facilitating cross-border cooperation with Indonesia on this vital issue became an integral component for this project. To this end, two technical workshops, organized in 2008 and 2009, were attended by participants from Indonesia and Timor-Leste.

Due to new capacities built by the project and the vigilance of MAF staff, farmers and the community a potential plague was detected early in 2009 around the border of Timor-Leste and West Timor and successfully controlled.

2.2 Boosting food availability in a country emerging from crisis

With sharply increasing food prices on global markets since 2008, the government of Timor-Leste began subsidizing rice production and putting price controls on imported rice to ensure food accessibility for its people. The cost of rice subsidies have had a significant impact on the total government budget, resulting in less money being available for public investment and social services.

Food security was one of the top national priorities for Timor-Leste in both 2009 and 2010, with the government trying to sustainably boost domestic food production. The country is burdened by high population growth rates and multiple factors hamper increased food production and supply.

Working with its development partners, including FAO, Timor-Leste's government is trying to achieve food security for its people through initiatives that include assistance in land preparation, the provision of quality agricultural inputs and by building up the agricultural expertise of farmers through effective on-farm training delivered by the country's new agricultural extension services.

Timor-Leste is not self-sufficient in terms of food production. Staple foods produced in the country include rice, maize, beans and root crops. Of all staple foods consumed in the country 30 to 40 percent needs to be imported. Imported rice is being used to cover this deficit.



Tradinoal food market, Ermera District

The government is receiving assistance to boost domestic food production through the provision of good quality agricultural inputs under FAO's global *Initiative on Soaring Food Prices* (ISFP). In the 2008-2009 planting season, 32 500 vulnerable farming households nationwide received 225 tonnes of certified maize and rice seeds through the FAO initiative, plus 70 tonnes of fertilizer. By increasing household food production, hopes are that these households will spend less on food during the lean season and may even have a surplus to sell on the local market, reducing the amount of food the country has to pay to import. The distribution of agricultural inputs is being combined with training activities.

In 2009, the ISFP and favourable weather conditions saw domestic food production in Timor-Lest increase by more than 20 percent, according to a crop survey conducted by the MAF and FAO. Maize production for 2009 was estimated at 170 000 tonnes, and rice production was almost 70 000 tonnes, reducing the country's food import requirement to just 10 000 tonnes.

Unfortunately, unseasonable rains in 2010 led to an overall decline in production. Maize was down 20 percent and rice by 25 percent.

2.3 Animal health and strengthening outreach

FAO technical experts devised an animal disease investigation and reporting system that used the existing structure in the MAF to collect and report animal health information from villages. FAO trained all MAF extension workers and other relevant staff from the 13 districts of Timor-Leste on how to detect and report animal diseases. One national and 13 district animal disease investigation and response teams were also trained and equipped with the necessary surveillance and communication equipment.

The surveillance training and reporting system is now working successfully, and an outbreak of disease in poultry at Los Palos in late January 2011 brought a quick response by the MAF response team, which determined that it was an outbreak of Newcastle Disease.

Research has been made on HPAI (avian influenza) and Newcastle Disease in collaboration with Murdoch and

Queensland Universities. This found the continued absence of HPAI and the prevalence of Newcastle Disease in various parts of the country. Timorese graduate students carried out the studies and also contributed to local capacity building. The research looked at HPAI and the risk of introduction into Timor-Leste, as well as Newcastle Disease, a disease endemic in Timor-Leste that needs to be well differentiated from HPAI. Joint research collaboration between the National University of Timor-Leste and the MAF was supported by FAO to conduct a survey of the type of animal feeds available in six selected districts.



Native pig, Dili District

An experimental pig-feeding trial was also conducted in four districts of Timor-Leste. The findings suggest that the trial pigs, which were housed in low-cost facilities and fed diets derived from locally sourced protein, grew six times faster than traditionally raised pigs. If this could become common practice, people would benefit from a substantial improvement to their income and nutrition.

Other capacity-building training sessions have helped agricultural extension workers learn effective animal-

health communication techniques. More than 200 people in ten districts attended sessions covering food security monitoring, home gardening, post harvest processing, the use of bio-pesticides, composting and how to grow rice and maize.

FAO and the MAF have built a Bio-Safety Level II Veterinary Diagnostic Laboratory and a post-mortem room equipped with basic diagnostic equipment in Dili. The laboratory is the only veterinary laboratory in the country that can provide diagnostic services to the vast majority of the people. The veterinary laboratory will be a solid asset for properly understanding the type and distribution of animal diseases and will be operational in April/May 2011. This will provide the vital information needed to plan and implement prevention and control measures. Besides the basic training already provided to six MAF staff abroad, efforts are now underway to offer additional training using the facilities of the Dili laboratory and laboratory experts from abroad. The successful operation of the laboratory and the animal health information it will provide is also important for the international community. It will help ensure that only safe livestock and livestock products are exported to neighbouring countries.



Veterinary Diagnostic Laboratory

Success stories

1. Manuel's story

Manuel's story is one of both difficulty and success. He was born in 1965 into a blacksmith family in Baucau, the second largest town in Timor-Leste, perched on a hill in the east of the country. The town's architecture shows the long influence of the Portuguese, but it also shows the scars of a county that witnessed much violence and upheaval.

When Manuel was ten, his family along with most people from Baucau's nearby districts, escaped the violent unrest of the Indonesian occupation, taking refuge in the nearby mountains. They lived in the mountains for three years, moving every week or two to stay safe from the attacking forces. Food was scarce, so they ate wild roots, leaves and nuts. During this hardship, Manuel's sister died from hunger.

Manuel's family returned to Baucau in 1979. He had no formal education and like many of his friends, he had to start school from the beginning. He was 14. Manuel graduated from senior secondary school in 1992.

There were no job opportunities for Manuel after school, so he worked as an assistant in a *warung* (a small café) where he met his wife. Because of the small amount of money he was making, and with his family growing, he decided to try something different.

Manuel's grandfather was a blacksmith, as was his father. They set up the business to preserve the family trade tradition. During the occupations by Portugal, Japan and Indonesia, they learned to adapt their skills and diversify their products to meet ever-changing needs. From the time Japan invaded East-Timor in 1942 until the invasion by Indonesia in 1975, the kind of tools produced changed dramatically. From making only traditional implements such as knives, spears and arrows for hunting, and *aisuak* (digging implements), they diversified with new skills, materials and tools. Now they make machetes, adzes, large scythes, knives, agricultural tools, maize shelling and grinding machines, and swords.

When Manuel was a little boy he used to help his father and learned a little bit about the trade. After his senior high school education, and with an obvious eagerness to succeed, he joined his father and looked to modernise the business. He taught himself, and with his father they introduced new and more efficient ways and the business prospered.

More than 30 percent of maize grain produced in Timor-Leste is lost every year to insects and other pests. This equates to about 44 000 tonnes of staple food becoming unavailable to the Timorese people and is nearly equivalent to the amount of rice imported annually into the country. In 2001, FAO started a programme to build silos, bringing an innovative technology from South America to tackle this significant problem.

FAO approached Manuel's family business to see if they were interested in learning how to build silos. A small team from Bolivia then came to train blacksmiths in Dili in this new skill. Twenty people took the course in silo building, but unfortunately language was a big barrier – the Bolivians spoke Spanish and the trainees Tetun and Portuguese – so unfortunately only three people passed the training, but with Manuel's family background in blacksmithing, and a lot of hard work, he was one of the people who passed the final exam.



Blacksmith workshop, Baucau District

Ten years later, Manuel is the head of the Blacksmiths Community Production Centre, and the FAO programme is still continuing. Manuel is now the trainer, and he has trained 25 people from all 13 districts of Timor-Leste. As Manuel was sharing his life story with us, the sound of clanging and bashing echoed throughout the workshop. Manuel was training four more people from four districts and tomorrow would be their last day. Manuel's excellent reputation led to a request from the Indonesian government to train 20 blacksmiths on Sumba Island in Indonesia.



Manuel standing with silos

When Manuel was a boy he always dreamed of getting a good education, of maybe one day becoming a minister in the government. Because his father was poor he never had the opportunity to achieve his dream, but he is happy now being a blacksmith and a trainer of new silo builders.

His business is doing well – he has 18 permanent staff and 25 seasonal staff when demand increases. They have a great reputation with many NGO's and UN agencies and are always very busy. Manuel is happy with the programme because it has created many local jobs. It has also helped many people in the community to store grain, which results in better food security.

Manuel hopes to transfer his skills to his five children, but he is also thinking that one day he will change his profession if the opportunity arises. Perhaps one day he will realise his dream and become a government minister.



Participants of the Blacksmith workshop training

2. On the road with Sanggar Masin

It's late, and there have been generator problems. The audience is seated on the ground, wrapped in blankets to keep out the cold. Over 150 people, almost the entire village of Fatululik, are quietly waiting in anticipation.

The generator coughs once, and then dies again – the driver comes to the rescue and an hour later the generator comes to life. But we are too late. We were not prepared for the darkness, so the car is positioned and the lights blaze on the makeshift stage.

The band strikes a chord and starts to sing a reggae song about bird flu. People start clapping. Then the actors come out into the beam of the car lights with their prop chickens and cages. So begins the first of 33 drama performances around Timor-Leste on preventing highly pathogenic avian influenza (HPAI).

Sanggar Masin is a local drama and arts group composed of unemployed youths and students based in Dili. They creatively combined a series of short sketches about avian influenza with comedy and songs that are lively and fun. But, this is also highly educational entertainment for those living near borders, or for those who have close contact with neighbouring Indonesia where avian influenza is prevalent.

Drama has always been an effective form of communication and education in rural and remote areas. FAO, in conjunction with the Ministry of Agriculture and Fisheries is using this drama as part of a multi-pronged public awareness campaign focusing on avian influenza



HPAI drama, Covalima District

and other transboundary animal diseases in high-risk areas. Raising public awareness in this way is being considered for other animal health campaigns in Timor-Leste.

The FAO Avian Influenza campaign combined drama and music with posters, banners, flipcharts, t-shirts, radio, and communications training for extension workers, village chiefs and district livestock officers to get the message out about how to prevent avian influenza and control other animal diseases.

The Sanggar Masin, with FAO and MAF staff, went to some of the remotest parts of Timor-Leste. The roads were usually in such poor condition that flat tyres were not uncommon. Most of the villages had no electricity and had never seen a live drama performance. Drawn by the loud band playing popular Timorese music, people came from far and wide to be entertained and left happy and a little wiser about avian influenza. Hearing the laughter from the audience and seeing the interest in the issue was a reward in itself. It was a fantastic experience for all involved.

3. Pig production and disease control in Timor-Leste

There are about 400 000 pigs and 70 000 cattle in Timor-Leste. However, the productivity of livestock in general and pigs in particular, is very low, mainly because of poor animal nutrition and husbandry practices. Raising the productivity of these animals will play a significant role in tackling protein deficiency and combating food insecurity. Timor-Leste is a protein deficient country. People are poor and in the rural areas live a life of

subsistence. Hunger is a constant threat and a reality to many people. Promoting the consumption and marketing of animal products would offer Timorese a substantial nutritional improvement.



Cute pigs, Dili District

A demonstration conducted in four villages by the National University of Timor-Leste (UNTL) found that trial pigs, housed in low-cost facilities constructed with readily available materials and fed diets derived from local proteins, grew six times faster than traditionally housed and fed pigs. However, even with this knowledge, there remain significant barriers to better pig production in Timor-Leste.

Pig feed is expensive. For example, corn costs from 55 to 70 cents per kilogram. There are few protein crops and people eat what is available. Soybeans, green beans and red kidney beans are grown, but only in small quantities, so they are expensive and rarely fed to pigs. The only readily available protein feeds are those derived from plant leaves: *leucaena*, taro, cassava, kang kung, *sesbania*, rice bran and *gliricidia*. *Leucaena*, although high in protein, carries a toxin that affects the pigs when it is fed at more than 15 percent of the diet.

In addition to the nutritional barriers, Timor-Leste pig owners don't usually sell their pigs for meat. Pigs are slaughtered for ceremonial or cultural occasions, and are only sold when money is needed. Because of this, the growth rate and other performance characteristics for pigs are not always seen as important.

Essentially, pigs are used as a 'living bank'. The Timorese will only think about trading their pigs when they have confidence in the future. If they believe feed costs will go down and protein sources will be readily available, then they would consider producing pigs for market.

To encourage pig owners to begin changing their practices, they will need training on feeding, reproduction, husbandry, housing and disease control. To support these endeavours, UNTL and the MAF will need funding for public awareness and technology adoption training. If there is an extension to the current project, funds need to be made available for communication purposes with early planning.

Agronomic practices need to evolve to a stage where village households start reliably producing corn in excess of 1.2 tonnes per household. When this occurs, villagers can start to sell their grain or other crops "through" their pigs as they have done all over the world – meaning that the grain and crops become part of the end product in pig production and the financial benefits of the crops is through better prices for the pigs.

Once this starts, other protein crops can be embraced to supplement animal diets. A project focusing on improving reproductive output could be useful to villagers, as it would very obviously improve the value of the 'living bank'.

Underpinning development in pig production is a vaccination program against classical swine fever, or hog cholera, to remove the disease risk from pigs. The implementation of this programme is proceeding satisfactorily, and the MAF has greatly reduced the time it takes to vaccinate the pigs.

4. 2010 World Food Day model fisher from Timor-Leste – Domingos Pires

Nine year's ago fisherman Domingos Pires, found himself with growing business opportunities when, after more than 450 years of foreign occupation, Timor-Leste became an independent country. Domingos, the son of a fisherman, has been fishing since he was nine years old.

Domingos wanted to complete his schooling, but when his father died, leaving behind eight children, finishing school was no longer an option. He managed to complete primary school using some of the money he earned from fishing, saving any extra in the bank.

Sizing up the fishing business, between 1980 and 1985 Domingos began organizing some of the fishermen into a group of about ten. He began with five fishermen going out to sea to fish, and five remaining behind to clean and divide the catch. At the time, because of power outages and a lack of ice, there was no way to keep the fish cold for very long, so Domingos needed to find ready customers for the daily catch. Once the catch was landed and divided, group members would set off by bicycle, or on foot, to sell as many as they could.

"It wasn't long before we had many regular customers, including a number of very good restaurants and even a fish market," says Domingos.

He continued to expand the business, and in 1990 bought a motorcycle to deliver fresh fish into the upland areas of the country. Soon Domingos bought an ice truck and freezer to make ice and freeze some of his more high-value catch.

After the Timorese voted for independence in a referendum, Domingos re-organized the fishing group and opened a group micro-credit bank account. His business model is to share all profits above US\$100 among the group members.

His success was widely recognized in society, and other fishing groups have been formed and modelled on his own. Says Domingo, "We all work together for the good of the community. Sometimes we buy fish from the other groups and sometimes they buy from us when they are short.

"I'm happy to see how the whole community is benefiting from the availability of fresh fish," says Domingos. "It has also generated good incomes for us in the group. Now we can send all our children to school."

Domingos has eight children. One is studying at a university in Indonesia. Two others are in high school, one in junior high school and three in elementary school. Domingos says, "I hope we will be successful enough to afford putting all our children through university. That is my hope for the future."

Domingos not only counts some of Dili's top restaurants among his regular customers, but also delivers daily fresh fish to Prime Minister Xanana Gusmão, who has hosted Domingos and his group for Christmas and New Year's dinners every year since 2007.

Annex II

List of selected projects

Title	Symbol	EOD	NTE	Budget (\$)
Coordination of Emergency Agriculture Interventions in East Timor	OSRO/TIM/001/SWE	2000	2000	284 576
Urgent Maize and Rice Seed Multiplication at Rural Community Level in East Timor	OSRO/TIM/002/JPN	2000	2000	465 000
Urgent Maize and Rice Seed Multiplication at Rural Community Level in East Timor – Phase II – Reduction of Post Harvest Losses	OSRO/TIM/002/JPN	2001	2002	346 331
Agro-economic Study of Rice Pricing in East Timor and South East Asia	TIM/01/021/ /08/12	2001	2002	44 600
Microfinance Bank of East Timor	GCP/TIM/001/ASB	2002	2003	95 485
Ainaro and Manatuto Community Activation Plan (AMCAP)	TIM/01/007/ /01/31	2002	2007	250 865
Support to the Implementation of the National Development Plan in the Agriculture Sector	TCP/TIM/2902	2003	2005	261 496
Crop and Food Supply Assessment Mission – Recoded from TCP/TIM/2901	TCP/TIM/2801	2003	2003	29 260
Crop and Food Supply Assessment Mission (Recoded to TCP/TIM/2801 – Return Flow)	TCP/TIM/2901	2003	2003	5 740
Emergency supply of seeds and fertiliser to drought and flood affected areas in Timor-Leste	OSRO/TIM/301/EC	2003	2004	488 593
Reduction of post-harvest losses	OSRO/TIM/302/UNO	2003	2004	368 550
Development of an agricultural statistics system	TCP/TIM/3001	2004	2007	249 882
Supply of agricultural inputs for the economic and social rehabilitation of ex-combatants	TCP/TIM/3002	2004	2005	319 038
70 Sucos Home Garden Project in Timor-Leste	OSRO/TIM/501/EC	2005	2006	1 128 016
Communication and public awareness activities to support the prevention and control of avian influenza in Timor-Leste	OSRO/TIM/601/USA	2006	2009	842 000
Emergency Response to control a locust outbreak in Timor-Leste	OSRO/TIM/702/CHA	2007	2007	1 090 993
Emergency assistance to control the outbreak of locust in the affected communities in Timor-Leste	OSRO/TIM/706/AUL	2007	2009	209 516
Emergency Assistance to enhance Food security and Nutrition among IDPs and hosting families in Timor-Leste.	OSRO/TIM/704/SPA	2007	2008	684 900
Emergency Assistance to enhance Food security and Nutrition among IDPs and hosting families in Timor-Leste	OSRO/TIM/707/NZE	2007	2008	376 950
FAO Initiative on Soaring Food Prices (ISFP) – Timor-Leste Component	GCP/GLO/216/ SPA BABY 09	2008	2010	772 727

Title	Symbol	EOD	NTE	Budget (\$)
Improved food security and livelihoods of the vulnerable rural communities affected by the crisis and drought in Timor-Leste	OSRO/TIM/705/EC	2007	2008	670 000
Reduction of post-harvest losses in Ainaro and Manatuto Districts	TIM/07/001/ /01/99	2007	2008	49 603
Biosecurity Strengthening Program (BSP) for Timor-Leste	OSRO/TIM/701/AUL	2007	2011	4 687 660
TCP Facility	TCP/RAS/3106	2007	2008	224 832
Formulation of a Regional Fisheries Livelihoods Programme for GCP/RAS/237/SPA (RFLP)	GCP/RAS/239/SPA	2008	2008	200 000
TCP Facility	TCP/TIM/3201	2008	2009	199 790
Reduction of post-harvest losses for enhanced food security	OSRO/TIM/802/NZE	2008	2009	620 000
Input supply to vulnerable populations under ISFP (Recoded from Entity no. 605760)	TCP/TIM/3202	2008	2009	500 000
Regional Fisheries Livelihoods Programme for Southeast Asia	GCP/RAS/237/SPA	2009	2013	19 549 000
Post crisis rehabilitation of food security and livelihoods of most vulnerable population in the district of Baucau, Timor-Leste.	OSRO/TIM/801/SPA	2008	2010	696 379
Promoting Sustainable Food and Nutrition Security in Timor-Leste – MDGf-2040	UNJP/TIM/003/SPA	2010	2012	447 999
Post crisis rehabilitation of food security and livelihoods of most vulnerable population in the district of Baucau, Timor-Leste – Phase II	OSRO/TIM/902/SPA	2009	2011	836 820
Community Mobilization for Poverty Reduction and Social Inclusion in Service Delivery (COMPASIS)	OSRO/TIM/901/UNO	2010	2013	524 300
TCP Facility (ASEAN+)	TCP/RAS/3306	2010	2011	178 831
Post-Crisis Rehabilitation of Food Security and Livelihoods of the Most Vulnerable Population in the district of Baucau, Timor-Leste? Phase III	OSRO/TIM/002/SPA	2010	2012	732 601
TCP Facility	TCP/TIM/3301	2010	2011	80 41

Projects that have a component in Timor-Leste

Title	Symbol	EOD	NTE	Budget (\$)
Strengthening Capacity in Fisheries Information-Gathering for Management – Timor-Leste Component	GCP/RAS/199/SWE	2004	2008	830 351
Formulation of a Regional Fisheries Livelihoods Programme for GCP/RAS/237/SPA (RFLP)	GCP /RAS/239/SPA	2008	2008	33 333
Regional Fisheries Livelihoods Programme for South-East Asia	GCP /RAS/237/SPA	2009	2013	2 424 375

Timor-Leste has benefited from the support and Technical Assistance from these Regional and Global programmes

Title	Symbol	EOD	NTE	Budget (\$)
Emergency regional coordination assistance for the control of avian influenza in Southeast Asia	TCP/RAS/3004	2004	2006	384 231
Diagnostic laboratory and surveillance network coordination for control and prevention of avian influenza in South-East Asia	TCP/RAS/3006	2004	2006	394 668
EMPRES Emergency Centre for Transboundary Animal Disease operations (ECTAD) – Coordination	TCP/INT/3010	2004	2006	370 052
Strengthening avian influenza control through improved transboundary animal disease information management system in Asia	TCP/RAS/3014	2005	2007	350 000
Netherlands support to and collaboration with FAO to control highly pathogenic avian influenza in Asia	OSRO/INT/501/NET	2005	2007	629 238
Formulation of a regional capacity building programme on land tenure, land management related legal aspects	TCP/INT/3103	2006	2007	257 000
Regional Coordination of Avian Influenza Control and Prevention in Asia	OSRO/RAS/601/ASB	2006	2010	11 140 000
Capacity development on the integration of gender analysis in water and land tenure management	GCP/INT/052/SPA	2007	2010	700 001
Formulation of the Community of Portuguese Language Countries (CPLP) South-South/North-South Cooperation Programme for the Implementation of United Nations Convention to Combat Desertification (UNCCD)	TCP/INT/3201	2008	2011	496 000
Regional support to alleviate the impact of soaring food prices on the most affected vulnerable farming populations of Asia	TCP/RAS/3204	2008	2011	500 000

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