



TOMAK – To’os Ba Moris Diak

Farming for Prosperity

INVESTMENT CONCEPT

Abstract

Economic growth has been elusive for most rural Timorese. TOMAK is a new Australian Government program which builds on our current deep engagement with rural communities in Timor-Leste. It will help rural families engage in profitable agricultural markets and improve household food security and nutrition. TOMAK is proposed to commence in 2016 for an initial five years.

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Acronyms

Acronym	Meaning
<i>ACIAR</i>	Australian Centre for International Agricultural Research
<i>AS/FAS</i>	DFAT's Assistant Secretary and First Assistant Secretary
<i>AVANSA</i>	Integrated Food Security, Climate Change Adaptation, and Private Sector Competitiveness (USAID)
<i>BESIK</i>	Be'e Saneamentu no Ijiene iha Komunidade (Community Water and Sanitation Program – DFAT)
<i>DAC</i>	Developing Agricultural Communities (USAID)
<i>DAFF</i>	Australian Federal Department of Agriculture, Fisheries and Forestry
<i>DFAT</i>	Australia Department of Foreign Affairs and Trade
<i>EU</i>	European Union
<i>G4D</i>	Governance for Development (DFAT)
<i>GAFSP</i>	Global Agriculture and Food Security Program (WB)
<i>GDP</i>	Gross Domestic Product
<i>GIZ</i>	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Government owned development business)
<i>GPFD</i>	DFAT's Government Partnerships for Development fund
<i>ha</i>	Hectare
<i>HOM</i>	Australian Head of Mission in Timor Leste
<i>IEC</i>	Information, education and communication
<i>IFAD</i>	The UN's International Fund for Agriculture
<i>ILO</i>	The UN's International Labour Organisation
<i>KONSSANTIL</i>	National Council for Food Security, Sovereignty and Nutrition in Timor –Leste
<i>MAF</i>	Timor Leste Ministry of Agriculture and Fisheries
<i>MDF</i>	Market Development Facility (DFAT)
<i>MISP</i>	MAF Institutional Strengthening Program (WB)
<i>MTDP</i>	Medium-term Development Plan
<i>MTIP</i>	Medium-term Implementation Plan
<i>NGO</i>	Non-government organisation
<i>PNDS</i>	Programa Nasional Dezenvolvimentu Suku (National Village Development Program)
<i>R4D</i>	Roads for Development Program (DFAT)
<i>RDP</i>	Rural Development Program (EU)
<i>SIPI</i>	Suco Ida, Prioridade Produto Ida (One village, One priority product)
<i>SISCa</i>	Servisu Integradu da Saúde Comunitária - The Ministry of Health's Integrated Community Health Services
<i>TOMAK</i>	To'os Ba Moris Diak (Farming for Prosperity)
<i>UN</i>	United Nations
<i>USAID</i>	United States Agency for International Development
<i>WB</i>	World Bank

TOMAK – To'os Ba Moris Diak

Farming for Prosperity

INVESTMENT CONCEPT

A: Investment Summary

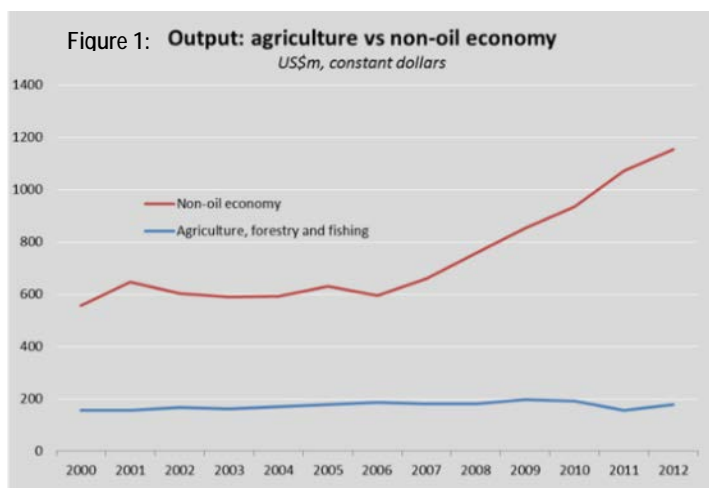
The Australian Department of Foreign Affairs and Trade (DFAT) is developing a new agricultural livelihoods investment for Timor-Leste to coincide with the conclusion of the existing Australia-funded *Fini Ba Moris* (*Seeds of Life*) program in mid-2016. This third phase of *Seeds of Life* commenced in 2011 as a \$25 million partnership between the Ministry of Agriculture and Fisheries (MAF), the Australian Centre for International Agricultural Research (ACIAR) and DFAT. TOMAK¹, Australia's new investment, will build off the foundation established by *Seeds of Life* and integrate with Australia's other rural initiatives in the country, including investments in market development, rural roads, water and sanitation, "deconcentration" and economic governance, as well as the important research initiatives being undertaken by ACIAR and the Australian Federal Department of Agriculture. It is expected that some transition activities may occur from mid-2015. However, the main investment will commence in mid-2016.

B: Problem/Issue definition and rationale for investment

Timor-Leste has benefitted from sizeable increases in Gross Domestic Product (GDP) over the last few years. However, this growth has not been broad-based. Rather, it has been driven by petroleum revenues and the resulting Government contracts for major and minor infrastructure. Figure 1 shows the rapid growth in the non-oil/non-agricultural sector, particularly in the wholesale, retail and construction sectors, following the surge in oil revenues since 2006. While growth in these sectors is welcome in a country experiencing rapid population increase and requiring employment opportunities, these sectors represent a small part of the economy and growth has benefitted only a minority of Timorese. Growth has also been strongly dependent on public sector investment decisions and is geographically concentrated in the capital.

Broad-based economic growth is essential to ensure sustainable reductions to the current high rates of poverty. The Government of Timor-Leste has recognised the need for this in its national *Strategic Development Plan*, and this priority is further reflected in Australia's draft *Aid Investment Plan*, and *Economic Diplomacy Strategy*.

¹ TOMAK is a Tetun word that means "whole" or "complete". TOMAK is also an acronym for To'os Ba Moris Diak (Farming for Prosperity).



As also indicated in Figure 1, performance in the agriculture sector, where the majority of Timorese work, has remained flat. The sector's poor performance suggests that economic opportunity for the majority of Timorese remains elusive. Yet, Timor-Leste is a largely agrarian society, in which the agriculture sector is the largest contributor to non-oil GDP, the foundation of the informal economy, and the basis of the nation's food security. It will be necessary to address underperformance in the agriculture sector and linked services, to provide greater economic opportunity and food security to the majority of Timorese people.

The challenge for the future is to expand growth in the Timorese economy in ways that are both sustainable and more equitable for the majority of Timorese. Yet this is no easy task, especially given that 75% of the Timorese population (about 137,000 households) live in relatively remote rural areas away from Dili or other urban centres². The difficulties facing these rural households are significant:

- High levels of poverty - 60% of farming households live below the national poverty line;
- High under- and unemployment - twice that of urban areas;
- High population growth rates and large family sizes - more than 50% of the population is under 19 years old³;
- A 63 - 75% dependency on largely subsistence agriculture;
- Food insecurity for significant periods of the year;
- Poor nutrition and dietary diversity – over 50% of children under five are 'stunted', while over 75% of infants have insufficiently diverse diets.⁴
- Limited access to land – an average of 0.9 ha of land per person for food and market production, while at the same time large areas of communal land remain undeveloped;
- Generally poor road access; and
- Poor market engagement other than for informal trade/exchange of primary products.

The above difficulties are experienced most acutely by women, compounded by large family sizes, high maternal mortality rates and unequal opportunity (Annex 8).

Two scenarios are easily imagined. The first is the *downward spiral*, in which agriculture is neglected, there is little development of domestic commercial value chains, yields remain low or decline, food is increasingly imported, and Timor-

Box 1: Agricultural Economic Opportunity

Recent examples demonstrate the real economic benefit that can be derived from profitable agricultural value chains and enable predictions. *Seeds of Life* has shown that pulse producers (mung bean, red bean, soy bean) can return \$1-2,000/ha per year.

USAID's DAC program has over 500 farmers now engaged in fresh salad vegetable production, averaging just under \$2,000/annum/household. Many communities are now replicating this model with the help of Government, NGOs and donors (including USAID's new AVANSA program)

Recent Australian economic modelling in rice producing areas shows households could increase their incomes from less than US\$1,000/ha to around US\$3,000/ha annually by diversifying and improving their farming systems.

Lastly, analysis shows that livestock are the major source of cash income for most rural families (66%) and that this can be significantly improved through better feeding and husbandry practices.

Overall, analysis shows that latent economic opportunity is available, but largely for non-staple products, and for those where a market demand currently exists, including:

- Crops: Legumes (mung bean, red bean, soybean), fresh salad vegetables, annual fruits (melons), perennial fruits (coffee, pineapple, papaya, mangoes and cashew), and spices (chilli, cloves);
- Livestock: pigs, cattle, chickens;
- Fisheries and high value timber species such as eucalyptus, sandalwood, teak, bamboo and rosewood.

² Timor-Leste Household Income and Expenditure Survey 2011. P.24

³ The Timor-Leste Demographics and Health Survey of 2010 shows a Total Fertility Rate of 6.0 for rural women compared with 4.9 for urban women (p49). Across Timor-Leste 55.1% of people are under 19 years old (p12).

⁴ The prevalence of stunting in children under 5 years residing in rural areas is 54.5% Vs 38.9% in urban areas; 22.5 % of children (aged 6-23 month) meet their minimum dietary diversity. (Source. Timor-Leste Food and Nutrition Survey, 2013)

Leste experiences a growing double burden of malnutrition and significant rural-urban inequality.

The second scenario is the *upward spiral*, in which domestic agricultural value chains are catalysed by increasing urbanisation and emerging growth. These commercial value chains, along with diversification of agricultural production, support increased rural incomes, enable healthier diets, and create opportunities for micro and small scale enterprises, as well as options for youth employment.

Scenario two is, of course, the preferred option, and the basis of MAF's *Strategic Development Plan*, its associated *Medium Term Development Plan* and *Medium Term Investment Plan*⁵. It is also integral to the five pillars of the Government's new *Zero Hunger Challenge* action plan⁶.

The experience⁷ of Australia's *Market Development Facility* and *Seeds of Life* programs shows that latent economic opportunity does exist in a range of Timor-Leste's agricultural value chains, some of which are already profitably developing (see Box 1). Strengthened and productive value chains will help Timor-Leste to achieve the upward spiral and enhance prospects for growth both on and off the farm.

A clear distinction must be drawn between Timor-Leste's large informal subsistence sector and its much smaller commercial agriculture sector. Much of Australia's work up till now, particularly through *Seeds of Life*, has focused on subsistence livelihoods - which remain important. Subsistence sufficiency and diversity are foundational to the stability of rural communities, as well as being essential for nutritionally balanced diets.

But subsistence production is very different from commercial production, and there is not necessarily a smooth continuum between the two. Links do exist, but it is unreasonable to assume that all subsistence farmers can be readily transformed into commercial farmers. The leap from subsistence existence and informal trade into effective and equitable engagement in a profitable value chain, is more challenging than the rhetoric usually suggests. Successful interventions require longer, deeper, systemic and more transformative engagements, which focus locally on farmers, engage with both men and women, and develop the linkages needed with the broader market systems. Moreover, only some rural households will be capable of incorporating commercial production into their livelihoods. Others will find economic opportunity elsewhere, often in the employment opportunities engendered by agricultural and broader economic growth.

In summary, the stimulation of broad-based economic development in Timor-Leste will not be easy. Both agricultural and non-agricultural options are limited. However, in the short to medium term, the establishment of commercial value chains within Timor-Leste's major Livelihood Systems offers the most significant opportunity to improve the engagement of rural households with the emerging economy. As such, there is solid argument underpinning Australia's ongoing engagement in agriculture in Timor-Leste – ongoing support would align with Australia's interest in strengthening the Timorese economy and building off Australia's significant contributions of the past.

Options

In defining the scope of Australia's engagement, three options were initially assessed (see also Annex 3). However, these are not mutually exclusive and, accordingly, the TOMAK concept adopts elements of all three.

Box 2: Timorese Livelihood Systems

Timorese households depend on a diverse mix of subsistence and economic activities that vary according to factors such as climate and location. DFAT has defined a simple typology that identifies the major Timorese rural Livelihood Systems by grouping Sucos based on the similarity of their demographic, productive, climatic, economic and agro-ecological characteristics (see Annex 6). TOMAK will target three to five of these Livelihood Systems across the country. Interventions (including value chain, nutrition and natural resource activities) will be tailored to address the specific opportunities and constraints of each Livelihood System. A focus on the major Livelihood Systems should ensure that Australian assistance remains both focused and scalable.

Clustering on a Suco basis will also allow the program to integrate with the sub-national services of Government.

Priority Livelihood Systems will include those:

- That engage the largest number of rural families – the aim will be to cover at least 50% of rural households.
- Where there is significant growth opportunity for the development of a wider range of economic enterprises.
- With capacity to significantly improve agricultural productivity by improving access to productive land and water resources.

⁵ Australia supported MAF to develop their MTDP and MTIP.

⁶ Action Plan for a hunger and malnutrition free Timor-Leste (2014).

⁷ Confirmed by recent studies including by Monash University, and other donor programs

OPTION 1: WORK AT THE LOCAL LEVEL WITHIN THE MAIN LIVELIHOOD SYSTEMS ACROSS THE COUNTRY TO IMPROVE COMMERCIAL VALUE CHAINS.

This option is solidly supported by the evidence of other programs. *Seeds of Life* has demonstrated the richness of Timorese Livelihood Systems, showing that these vary distinctively across the country (see Box 2). Opportunity exists to work with rural households, be they subsistence or partly commercial, to develop their productive capacity and link them with profitable markets in promising value chains. Rather than promoting a single national value chain, TOMAK should work within the chosen Livelihood Systems on those value chains that exhibit the most potential for economic growth. TOMAK should then address the production, market, logistics and enabling constraints faced by these Systems. It should also help men, women, families and communities in rural areas to make whatever changes are necessary to their norms and behaviours. Inevitably, however, this will be a long-term process of trust and confidence building. Approaches will need to be tailored depending on the status of each household and differentiate between: a) the poorest and most vulnerable; b) the economically active poor; and c) emerging private sector leaders (see Annex 6). It will also require specific interventions to promote women's engagement and economic empowerment (see Annex 8). There is agreement among major donors⁸ that significant effort is needed in helping communities to culturally adjust. Many initiatives have taken five to ten years to achieve appreciable change. Pleasingly, there is recent evidence that the rate of change within communities is increasing, driven by householder aspirations for economic growth, and the evidence of success by others. Furthermore, NGOs and donors alike have, over the years, gained significant experience in how to do this well.

As such, significant opportunity lies in:

Avoiding approaches that:

- *Work nationally and are insufficiently tailored to Timor-Leste's diversity;*
- *Put insufficient effort at the local level into helping subsistence farmers make the major behavioural transition to commercial agriculture;*
- *Fail to take into account the varying economic aspirations of men and women, be they youth or adults;*
- *Focus solely on local productive capacity while neglecting the essential market linkages.*

While focussing on:

- Expanding the currently successful approaches to cover the major Livelihood Systems across the country;
- Focusing on three to five of the major Livelihood Systems, defining up to four of the most promising commercial value chains in each;
- Assisting men and women commercial farmers to produce the quantity and quality necessary to meet value chain and market demand;
- Including focused activities for women's economic empowerment to improve their relative incomes, reduce their workload, and promote their position, both within the household and the economy (detailed in Annex 8);
- Building agribusiness and broader private sector capacity and linkages to ensure that markets function properly.

OPTION 2: FOCUS ON SUBSISTENCE FOOD SYSTEMS THAT BUILD THE SUSTAINABILITY, FOOD SECURITY AND NUTRITIONAL STATUS OF HOUSEHOLDS.

This option builds on the significant achievements of *Seeds of Life* in improving the productive potential of Timor-Leste's core staple food systems. Rural communities now have improved choices with which to meet their basic food needs. Yet despite this, the subsistence sector remains moribund – it is characterised by low agricultural productivity, uncertain access to land and water, and harsh working conditions. There is also very little incentive to increase the production of the staple commodities when the formal markets remain limited, and when government intervention in the staple crop sector has created price expectations (largely unmet) that have further undermined the already fragmented markets.

One of the significant lessons of *Seeds of Life* has been that simple improvements in the productivity of the basic food crops are insufficient, by themselves, to adequately address Timor-Leste's nutrition and food security needs. *Seeds of Life* attempted to address this issue by piloting "nutrition sensitive agriculture" approaches that provided IEC materials⁹ to help rural families better understand food production needs, as well as the need for a diversified diet.

Seeds of Life, along with other donors, have also demonstrated the economic, social cohesion and sustainability benefits to be derived by communities through the assessment, planning and capable management of their productive natural resources. Understandably, traditional 'custom' practice and customary law fails to encapsulate practices that maximise economic return while maintaining ecosystem services.

This gap can, however, be filled by community-based catchment planning, enabling householders to more confidently enter into commercial production of crops or livestock. The benefits of such catchment planning include community agreements/regulations that: categorise land use capability and access; improve water source management and water use

⁸ Confirmed by contacts in Seeds of Life, MDF, USAID, ILO, IFAD, EU, GIZ and other donors in Timor-Leste

⁹ A blend of information, education and communication tools.

planning; control free stock grazing; define boundaries; influence infrastructure planning, lessen conflict, improve social cohesion, and improve women's engagement in resource planning and economic enterprise.

As such, significant opportunity lies in:

Avoiding approaches that:

- *Focus on staple crop productivity without a complementary focus on the desired changes in household production and consumption;*
- *Assume that community custom practice is sufficient to ensure equitable and sustainable access to productive resources.*

While focussing on:

- Helping to promote year-round production and consumption of diverse and sufficient food, thereby enabling households to better and more confidently engage in the broader economy; and
- Helping communities to manage and access their land and water resources more productively, sustainably and equitably, thereby promoting sustainable economic growth.

OPTION 3: BUILD THE INSTITUTIONAL CAPACITY OF MAF TO UNDERTAKE ITS MANDATE.

Significant success has been achieved through the long-term partnership between *Seeds of Life* and specific MAF operational units. The exit phase of *Seeds of Life* is now focused on sustaining these achievements to ensure that the gains made will not be dissipated. MAF is, however, facing institutional, financial and other risks that are compromising its capacity to deliver effective services. Strong leadership is therefore needed to institute the necessary broad-based institutional reforms. To this end, the World Bank has developed a pilot *MAF Institutional Strengthening Program* (MISP). Donors have also formed a *MAF Development Partners* group to help synchronise and streamline assistance to MAF, in line with its *Strategic Development Plan*, as well as the MTDP and the MTIP. It is to be hoped that MAF will also be successful in its request for budget funding through the multilateral *Global Agriculture and Food Security Program* (GAFSP). At the national level, Australia would do best to continue to monitor progress - particularly the outcomes and opportunities arising from the MISP and GAFSP initiatives as these progress – while using its influence to press for change as opportunity arises.

At the District level, MAF is one of the few Ministries with an appreciable presence through its District Directorates and its network of Suco-based agricultural extension officers. MAF is committed to increasing local service delivery in line with the Government's "deconcentration" agenda. Pleasingly, the MAF Minister and the MAF Director General have instrumental roles in the cross ministerial *National Council for Food Security, Sovereignty and Nutrition in Timor-Leste* (KONSSANTIL), as well as the KONSSANTIL permanent technical working group. The primary responsibility of KONSSANTIL is oversight of the *Action Plan for Hunger and Malnutrition Free Timor-Leste*, part of which will involve the establishment of district KONSSANTIL councils.

As such, significant opportunity lies in:

Avoiding approaches that:

- *Only work with Government, while neglecting the range of dynamic service delivery partnerships needed at the local level.*

While focussing on:

- Broadening partnerships with District Administrations, district KONSSANTIL councils, agri-business, NGOs, churches, and civil society to innovatively improve services that support community engagement in local commercial opportunity; and
- Engaging with MAF nationally on a case by case basis to help forge national enabling policies that can stimulate local/regional economic growth.

THE WAY FORWARD

This analytical work thus confirms an opportunity for Australia to invest in a program that:

- Creates equitable economic opportunity in Timor-Leste by promoting profitable value chains within its priority Livelihood Systems; and
- Helps the rural population achieve better nutritional outcomes so people can live more productively, and better engage in commercial activity.

These opportunities would benefit from support that:

- Diversifies and improves the service partnerships that support local commercial opportunity;
- Encourages national enabling policy that stimulates local/regional economic growth; and
- Helps local communities access their natural resources in ways that promote sustainable economic growth.

Alignment with Australia's Program

The above agenda not only aligns well with, but is central to Australia's broader program. Australia's new *Aid Investment Plan* for Timor-Leste identifies "*addressing poverty and lack of access to income through improving livelihoods*" as the first of its three priorities. TOMAK will become Australia's principal investment under this priority, and a core investment in promoting broad-based economic development.

TOMAK will also integrate well with other Australian supported engagements at the local level, including:

- *Programa Nasional Dezenvolvimentu Suku* (PNDS) - a Ministry of State Administration-led program for village development. Links will focus on the harmonisation of planning mechanisms, and on helping improve the community management of water and land resources.
- *Be'e Saneamentu no Ijiene iha Komunidade* (BESIK) – a joint Ministry of Health and Ministry of Public Works program aimed at improving access to potable water, sanitation and hygiene. Links will focus on the broader planning of the water needs for irrigation, livestock, processing and WASH¹⁰ requirements.
- *Roads for Development* (R4D) – a Ministry of Public Works program to improve rural roads in Timor-Leste. Links will focus on the planning of roads to areas of economic importance, and on helping communities to realise the economic potential of these new roads.
- *Market Development Facility* (MDF) – a national program collaborating with the private sector, part of which is focused on agribusiness and rural distribution. Links will focus on building economic partnerships between local commercial farmers and broader agribusiness.
- *The Governance for Development Program* (G4D) - a national program, part of which focuses on helping Government develop key economic policy frameworks. Links will focus on improving the policies that enhance rural economic development.
- ACIAR's next phase of collaborative agricultural Research for Development initiatives. Links will focus on ensuring that value chain, catchment and nutrition initiatives both respond to, and influence, the research agenda. Already ACIAR has joined with the TOMAK Concept team to ensure that agency planning occurs in parallel.
- The Australian Department of Agriculture, Fisheries and Forestry (DAFF)¹¹. Links will focus on improving household nutrition and economic opportunity through poultry, as well as on potential policy issues related to cross border bio-security.

TOMAK, when established, would be Australia's principal program of support to the agriculture sector¹², as well as forming part of the broader rural/economic development portfolio through the linkages noted above. TOMAK would contribute towards Australia's target for *aid for trade* initiatives in Timor-Leste and boost DFAT's direct private sector engagement.

Integration with other programs of Government, donors, and NGOs

Work in the agriculture sector of Timor-Leste is currently supported by many donors. Of these, the direction proposed for the TOMAK program most closely aligns with:

- USAID's past DAC project¹³, and its proposed AVANSA program¹⁴ – AVANSA is to focus on horticultural value chains in the central uplands. DFAT and USAID have already undertaken discussions to ensure that their respective programs are delivered in close collaboration.
- The EU and MAF have long been supporting significant extension programs through the four stages of the Rural Development Program (RDP). RDP4 ends soon, and the EU's new indicative program suggests significant funding may be made available over the next six years for rural development. DFAT and the EU have already undertaken discussions to ensure the complementarity of their programs.
- In addition, the Government has a number of initiatives of direct relevance, including MAF's *Suco Ida, Prioridade Produto Ida*¹⁵ (SIPI) and the *Zero Hunger Challenge* Action Plan. Thus it is essential that TOMAK coordinates closely within Districts to ensure its alignment.

Of the hundreds of local and international NGOs present in Timor, approximately one third claim specialisation in agriculture or enterprise development¹⁶. Of these, eleven local NGOs and four international NGOs have been delivering significant

¹⁰ Potable water, sanitation and hygiene

¹¹ DAFF received funds from DFAT's *Government Partnerships for Development Fund* (GPDF) to implement the *Timor Leste Village Poultry Health and Biosecurity Program*.

¹² The remaining funding might co-support ACIAR's collaborative research program in Timor Leste.

¹³ Developing Agricultural Communities project

¹⁴ AVANSA (Integrated Food Security, Climate Change Adaptation, and Private Sector Competitiveness)

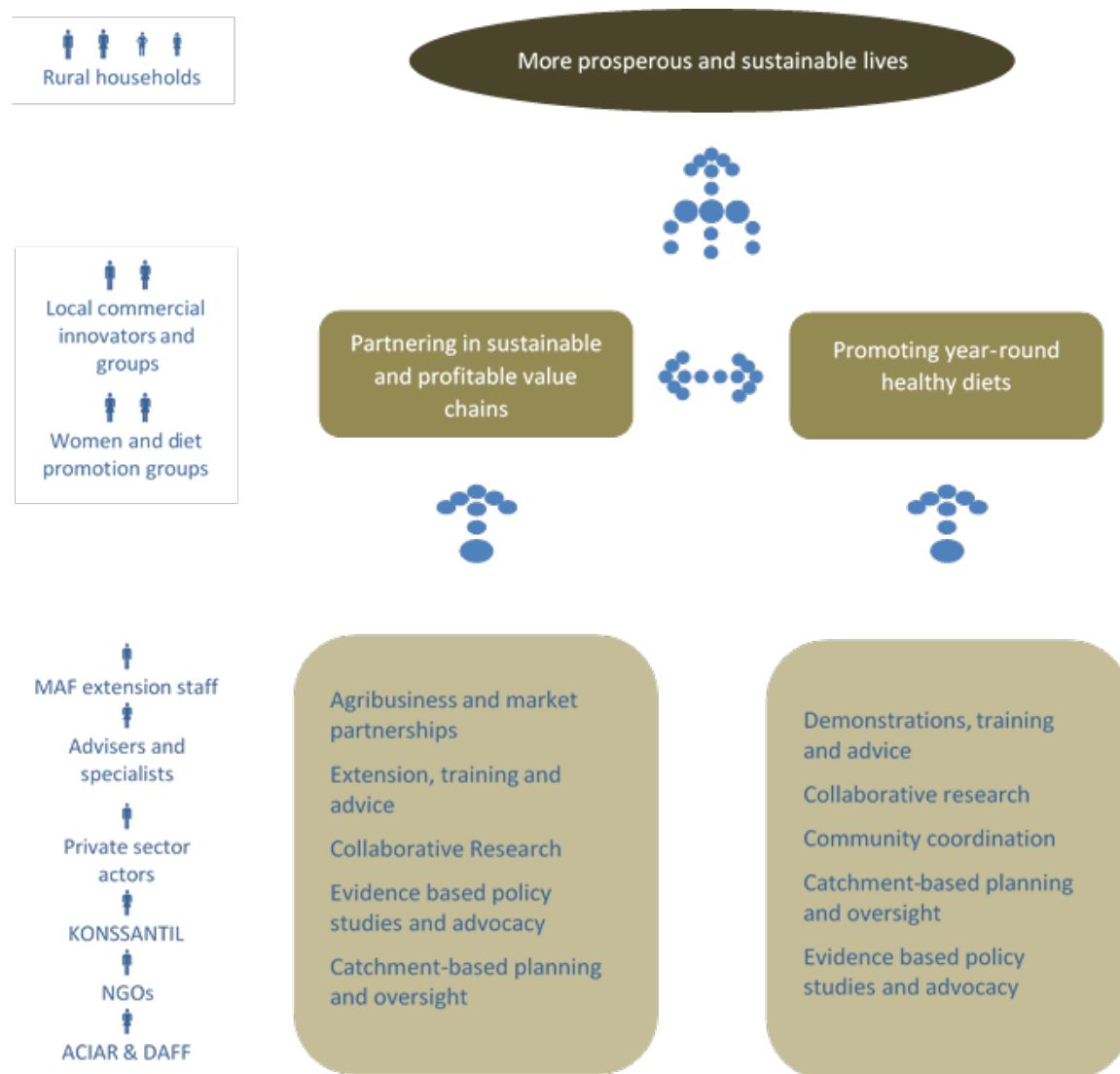
¹⁵ One Village, One Product

recent programs in commercial agricultural development¹⁷. These groups represent a unique skills base, and a significant opportunity for partnerships in the delivery of TOMAK.

C: Proposed outcomes and investment options

The following logic underpins the TOMAK program, while its underlying 'theory of change' is reflected in Figure 2.

Figure 2: TOMAK's Theory of Change



Goal: Rural households in Timor-Leste live more prosperous and sustainable lives.

The Goal appreciates that the lasting changes wrought by TOMAK must be evident for all people living rurally in Timor-Leste (men, women, youth and children). Economic growth at the local level will ensure that all are better fed, more prosperous, and less likely to recede into poverty when shocks happen. Economic growth will also improve the future prospects for

¹⁶ Based on the Timor NGO Registry.

¹⁷ BELUN; Chamber of Commerce and Industry – BFZ; Fundasaun Halarae; Leewincare; Hiam Health; IMVF; Knua Buka Hatene (KBH); Permakulture Timor Leste (PERMATIL); Raebia; Smallholder Agriculture International; Timor Aid; Unity Service Cooperation Canada Timor Leste (USCCTL); CARE International - Timor Leste; OXFAM International - Timor Leste; Mercy Corps; and World Vision.

youth and children by creating enterprise, employment and personal development options, both within and outside the agriculture sector.

The Goal will be realised through two interrelated Outcomes to be confirmed during the design process:

Outcome 1: Economic Opportunity

Local commercial producers and agribusinesses are partnering sustainably and profitably in selected value chains.

Outcome 1 appreciates that economic development programs must deliver significant increases in real incomes for farmers engaged in the chosen value chains. Donor experience shows that it takes time for commercial farmer groups and agribusinesses to develop the skills, trust, relationships and protocols necessary to ensure sustainability. Yet for these to be established the program must:

1. Identify those products and associated value chains with comparative market potential;
2. Improve the productive end of the value chains (inputs, production, harvesting, quality, scheduling, and on-farm storage) by enhancing the skills of commercial farmers/farmer groups. Opportunities for women's economic engagement must especially be provided;
3. Galvanize market partnerships between farmer groups and local, regional and national agribusiness (inputs, services, transport, processing, storage, handling, wholesaling, and retailing activities).

Outcome 1 contributes to the goal by delivering increased enterprise options and market access. This will not only benefit local farm enterprises and agribusiness operators, but also the wider communities through the stimulation of labour and value adding opportunities. It is proposed that TOMAK will focus on three to five of Timor-Leste's major Livelihood Systems, defining up to four of the most promising commercial value chains in each (Annex 6).

Outcome 1 could be delivered through:

- District agricultural extension staff and local NGOs delivering advice, demonstrations, and training to commercial farmers and farmer groups on inputs, production, harvesting, quality, scheduling, and on-farm storage. This work will be supported by a TOMAK agriculture value chain specialist, and link to ACIAR proposed collaborative research with MAF.
- Partnerships with agribusiness and the broader private sector to establish the most workable market systems for the targeted products. This work will be supported by a TOMAK market development specialist, or shared with another Australian program.
- Local NGOs and district agricultural extension staff to mentor new or existing commercial growers and producer groups (addressing, as necessary, the needs for: productivity, cooperative input and output marketing, value adding, and savings and loan mobilisation). Specific skills will be sought to increase women's engagement in enterprises, leadership and decision making. This work will be supported by a TOMAK local community development specialist.

Outcomes will be refined during the design, but those possible within five years could include:

- Six invigorated value chains from across the country's main Livelihood Systems deliver average annual returns of \$2,000 to \$3,000 to 7,000 households; and
- A range of private sector investment and employment opportunities in the selected value chains.

Outcome 2: Household Food Security and Nutrition

Community-based groups are promoting a healthy diet based on the year-round production and consumption of diverse and sufficient food.

Outcome 2 will help ensure that all people in the targeted Livelihood Systems have diets that are sufficient in quantity and quality to ensure optimal health, growth and development, and that all people (women, men, boys and girls) will therefore be in a better position to participate in the opportunities arising out of economic growth (be these on-farm or off-farm). Outcome 2 will work with existing community groups (rather than forming new groups), particularly targeting those involving/led by women. Outcome 2 also appreciates that activities targeting the improved productivity, diversity and safe

storage of food products must be combined with the promotion of appropriate nutrition for all age groups. Reliable data on production patterns, and household utilisation across seasons and years, is therefore essential.

Outcome 2 could be delivered by:

- KONSSANTIL District Councils, district agricultural extension staff, and NGOs working with local community groups. These will deliver demonstrations, improved crop lines and livestock, along with advice on food garden production, safe food storage, and food utilisation across the seasons. This work will be supported by a TOMAK agriculture specialist, and link to ACIAR proposed collaborative research with MAF.
- KONSSANTIL District Councils, SISCa¹⁸, Health Sanitarians, local NGOs, and local organisations such as the churches will develop and deliver IEC materials and activities on nutrition and related practices to all age groups, especially vulnerable groups such as mothers, pregnant women, adolescent girls and children. This work will be supported by a TOMAK nutrition specialist.

Outcomes will be refined during the design, but those possible within five years could include:

- Improved knowledge of the feeding and caring practices necessary to improve nutritional status, especially for women and children;
- Improved dietary diversity (measured by positive changes in the minimum acceptable diet for children, and food recall for adults); and
- Decreased rates of underweight women (Body Mass Index <18.5) and children (Weight for Age Z Score of -2)

Cross cutting issues

A range of factors will necessarily underpin the delivery of these two outcomes. However, the analysis has highlighted two that should receive particular attention and possible resources. These are:

- Catchment-based, community agreements on access to land and water; and
- Improved enabling policy

CATCHMENT-BASED, COMMUNITY AGREEMENTS ON ACCESS TO LAND AND WATER

The investment will need to ensure that the communities living in the targeted Livelihood Systems manage access to their productive land and water resources in ways that are both equitable and sustaining of economic growth. In particular, there is a need for community agreements on access to land and water by commercial activities. One proven way of achieving this is by communities establishing (or through the strengthening of already established) Catchment Management Committees to effectively undertake community-based catchment planning, with women's active engagement in these groups being particularly important. Community-wide benefits are known to derive from measures that define boundaries, stabilise water resources, control grazing, increase access to productive resources, and revegetate marginal lands. Taken together, these benefits help to sustain growth, improve local resilience, and reduce the impacts of disasters.

Delivery opportunities will be assessed during the design. However, this initiative could be supported by: District Administration planning units, local NGOs, and district extension staff helping new or already established Catchment Management Committees to assess their natural resources, and develop their own plans for equitable access and sustainable management. This work could be supported by ACIAR's proposed collaborative research with MAF. It will also need to integrate with the planning being undertaken by Australia's PNDS support, R4D, and BESIK programs.

IMPROVED ENABLING POLICY

Government of Timor-Leste agricultural policy could benefit from broader evidence-based research, particularly with regard to markets, private sector investment, food security and food sovereignty. TOMAK could therefore enhance its two outcomes if it were to incorporate some support to relevant national/local government agencies to identify and address those policy constraints affecting value chain, market, and/or staple food development. This work needs to be clarified during the design but could be supported by TOMAK and/or Australia's Governance for Development Facility.

D: Implementation/delivery approach

The implementation arrangements that underpin the program will include the multi-stakeholder partnerships as mentioned above. A summary of the delivery methods currently under consideration include:

¹⁸ *Servisu Integradu da Saúde Comunitária* - The Ministry of Health's Integrated Community Health Services.

	Coordination or Delivery Partnerships	Program Resources
Economic Opportunity	<ul style="list-style-type: none"> • District extension staff and local NGOs; • Agribusiness and the broader private sector; • ACIAR Research for Development in key value chains. 	<ul style="list-style-type: none"> • Value Chain Adviser; • TOMAK or other business advisers; • Community development specialist; • Local staff in each Livelihood System.
Household food security and nutrition	<ul style="list-style-type: none"> • KONSSANTIL District Councils; • MAF extension staff; • SISCa/Sanitarrians; • Local NGO/civil society groups. • ACIAR Research for Development in the key catchments. 	<ul style="list-style-type: none"> • Nutrition Adviser; • Agriculture Adviser; • Local staff in each Livelihood System.

The lack of strong partners to assist with delivery at the local level is a risk for the program. Testing the feasibility, functionality, sustainability and likely cost of these delivery partnerships will be a key focus for the design mission. However, evidence from Seeds of Life, USAID and local NGOs demonstrates that the development of effective delivery partnerships is possible, a considerable number of effective partnerships with innovative individuals and community based producer or nutrition groups having already been established.

Resourcing and delivery

The flexibility required by the program will be achieved through an ability to scale its resourcing based on the number of Livelihood Systems targeted. The new program will absorb the majority of these funds, although some activities (such as those focussed on economic opportunity or policy research) may be more appropriately delivered through existing contracts and partnerships. A co-investment with the relevant research for development activities of ACIAR would also be appropriate.

The current thinking is for an initial five year engagement, with the option of additional years based on performance, resource availability, and ongoing alignment with DFAT's priorities. A fluid transition should be managed between *Seeds of Life* and the new program, with an effective handover of relationships. At this stage, it is expected that the new program will require the engagement of a Managing Contractor - the engagement of a Managing Contractor plus the scalability of TOMAK should result in less demand on DFAT's resources. However, given that TOMAK will be adding to a diverse portfolio of activities, the design should consider the need for additional advisory support within DFAT's agriculture and rural development program to help with its technical management.

It is estimated that TOMAK will cover up to twenty value chains across three to five Livelihood Systems. This aim should ensure that the program delivers outcomes (including the stimulation of economic growth) to at least 50% of the rural population.

E: Risk assessment approach

The Concept Mission identified many of the broader risks confronting the TOMAK program (Annex 1), and adjusted the Concept to minimise these as much as possible. The remaining key risks will, however, need to be taken into account during the design. The major investment risks include:

1. TOMAK will not be embedded within the central Ministry, but will instead focus its collaboration on MAF District Directors and District Administrations. DFAT will engage closely with MAF throughout the development of the investment to discuss these new arrangements and consider MAF perspectives on this transition from current arrangements. Moreover, TOMAK may well find opportunities for national policy support, while the proposed support through the WB, and potentially the EU, also offer ongoing donor engagement with MAF.
2. Difficulties in defining the scope and scale: although TOMAK will not have the capacity to provide universal coverage, it still needs sufficient scale to impact broadly. Thus the design needs to ensure that its coverage is sufficient without being thin. A more focused and deeper program is therefore preferred. An appropriate selection of 3 to 5 major Livelihood Systems should ensure that over 50% of the rural community are targeted. Pleasingly, TOMAK is not alone, and by working with other similar donor engagements (especially USAID's AVANSA) it can broaden the base. Also importantly, TOMAK is scalable – able to increase (or decrease) as the need arises.
3. Timor's unstable macro-economy, along with the temporary nature of its petroleum revenues, could see the country face significant economic shocks - and reduced GDP - in the next five years. Yet reasonable stability is needed if economic growth and investment are to stimulate its agriculture sector.
4. The five year timeframe outlined for TOMAK is based on adoption rates seen for other economic development programs in Timor-Leste. However, TOMAK will be working in up to four value chains in three to five Livelihood Systems. Inevitably some will move faster than others, while experience suggests that only about one third will establish successfully. The TOMAK design will therefore not only need a long-term vision of nurturing change, but very clear exit strategies from failing value chains.

5. Government service delivery at the District level is limited, and will need substantial strengthening. Significant facilitation will also be needed to ensure that NGO and private sector partners are effective in supporting both communities and the value chains. There is a risk that insufficiently robust local delivery partnerships will be available. The design will need therefore to assess this issue carefully, and alleviate the risk especially by reviewing the approaches used by other donors and programs.
6. Lastly, the Concept predicts that TOMAK will be dependent on a reasonable level of contracted advisory support to assist with delivery and to mentor emerging partnerships. Such support has, however, attendant risks related to perception and sustainability. Collaboration with USAID (and others) will help. However, alternatives to contracting advisory support for the key roles are limited. Nevertheless, the Concept proposes that the majority of program funding be available for the direct support of communities and their economic growth.

The TOMAK design will need:

- A detailed risk assessment matrix, including appropriate mitigation strategies;
- Appropriate resources allocated to the monitoring and reporting of identified and emerging risks; and
- A requirement for TOMAK and DFAT staff to regularly review/update the risk profile.

The Safeguard assessments already completed (Annex 2) indicate a low risk of adverse impacts with regard to child protection, displacement, and the environment. The design will, however, need to ensure that procedures are in place to monitor these safeguards, both overall and specifically for each intervention.

F: Proposed design and quality assurance process

This Concept will be disseminated more broadly: within DFAT, with other Australian agencies, and most importantly of all, with the Government and other stakeholders in Timor-Leste. A public version of the Concept will also be published on the DFAT website. DFAT staff (at Dili Post and in the Timor-Leste Section, Canberra) will lead all government and stakeholder discussions - by basing these around an approved Concept, it is hoped that the discussions and responses will be more effective and thoughtful. The resulting comments will then be summarised, their design implications assessed, and all salient issues then incorporated into the Terms of Reference for the Design Team.

Pending the Concept's successful approval, the design mission is proposed for November-December 2014. Additional analytical work to support the design is either already underway or will be conducted during the mission. The major issues include:

- Clearer definitions of Timor-Leste's Livelihood Systems, and of appropriate selection mechanisms;
- Deeper assessments of proposed partnerships to ensure their capacity for efficient and effective delivery;
- A detailed assessment of proposed results, including monitoring and evaluation mechanisms;
- An assessment of DFAT's capacity to effectively manage TOMAK (given its other agriculture and rural development programs), including options for additional support if this is required; and
- In depth discussions with other Australian and donor programs to confirm linkages and synergy, especially Australia's Market Development Facility, the Governance for Development Program, ACIAR planned research, USAID's AVANSA project, and EU forward planning.

A draft Design will then be submitted for final appraisal by an independent technical specialist and an internal DFAT specialist. The team will then consider the appraisal comments, and agree to any modifications, before final Approval in DFAT.

Annex 1 Investment Risks

	Event	Impact	Mitigation	Responsibility	Rating after mitigation applied		
					Likelihood ¹⁹	Consequence ²⁰	Rating
Operating environment ²¹	Timor's unstable macro-economy and the uncertainty surrounding petroleum revenues.	The country could face significant economic shocks and reduced GDP in the next five years.	This will need to be closely monitored and the impacts on the effectiveness of the program assessed. If changes compromise the scope for economic growth Australia must consider the ongoing effectiveness of TOMAK.	DFAT	Possible	Moderate	High
	Insufficient rural households see their future in commercial agriculture, fail to engage with TOMAK, and seek other opportunities.	TOMAK appreciates that only part of the rural population will see commercial agriculture as a long term option. Initially many households may engage, but as assets improve, many families will see their future elsewhere. These alternative pathways	The Design should both upfront and ongoing assessments that generate a better understanding of the incentive structures driving rural households. Current commercial development pilot projects in vegetables demonstrates that rural households greatly value	Design and DFAT	Unlikely	Moderate	Moderate

¹⁹ 1=Rare; 2=Unlikely; 3=Possible; 4=Likely; 5=Almost Certain

²⁰ 1=Negligible; 2=Minor; 3=Moderate; 4=Major; 5=Severe

²¹ What factors in the operational or physical environment (political instability, security, poor governance, lack of essential infrastructure etc.) might impact directly on achieving the objectives?

	Government social protection payments and welfare may increase.	are to be encouraged. Additionally, Timorese families may rely on Government handouts and assistance rather than seeking to innovatively improve their livelihoods.	commercial production.				
	MAF's capacity to deliver services, particularly those related to an economic development program for the agriculture sector, is compromised by institutional, financial and other risks.	MAF would find it challenging to manage the program.	The program should link with and support the District level service delivery units of MAF, and work centrally with MAF on broader policy constraints. However delivery should also integrate the private sector, district administrations, local civil society and NGOs.	Design team should ensure appropriate MAF engagement at the local and policy level is complemented by delivery partnerships with other relevant stakeholders	Unlikely	Minor	Low
	Concerns within the Ministry of Agriculture given the shift in primary focus from the national Ministry to MAF District Directors and District Administrations.	Possible delays to implementation	Policy dialogue between DFAT and MAF to communicate benefits of new approach. Pleasingly, TOMAK closely aligns with all five objectives of the Zero Hunger Action Plan and will help KONSSANTIL achieve its goals. In addition, proposed support through the World Bank and potentially the EU, offers options for ongoing donor engagement with MAF centrally.	DFAT Team at Post and the Rural Development Adviser	Unlikely	Moderate	Moderate
Results	Adoption and uptake may be slower than anticipated. TOMAK will be working in up to four value chains in three to five Livelihood Systems. Inevitably some will move	TOMAK produces lower than expected results in early years	The five year timeframe outlined for TOMAK is based on adoption rates seen in other economic development programs in Timor-Leste. However, TOMAK predicts	Design Team and DFAT	Likely	Minor	Moderate

	faster than others.		that about a third of targeted value chains will establish successfully. TOMAK will not only need patience to nurture change, but will also need clear criteria to trigger exit strategies from failing value chains. The design will need to incorporate these mechanisms.				
	Lack of solid delivery partnerships at the local level	TOMAK may have insufficient capacity to influence community-level responses to commercial opportunity, basic food production, and household food consumption.	The Design process will need to assess this issue carefully and review approaches used by other donors and Programs to alleviate the risk. Currently, TOMAK will be dependent on a reasonable level of contracted advisory support to assist with delivery and mentor emerging partnerships.	Design Team and DFAT	Likely	Moderate	High
	The program is not able to identify sufficient commercial value chains within selected Livelihood Systems.	Program is not able to achieve the economic impact proposed within the timeframe.	The program design should ensure that sufficient commercial value chains are available and that preliminary analysis shows sufficient promise to deliver a sound economic return.	Design analysis should include assessments of likely value chains.	Unlikely	Moderate	Moderate
	Defining the anticipated scope and scale of TOMAK as it will not have the capacity to provide universal coverage.	Possible regional disenfranchisement due to some regions/areas not enjoying coverage.	Australia is a lead donor in rural development and thus its engagement should be of sufficient scale to have broad impact. The design will need to ensure that the coverage is sufficient without being thin. A more focused and deeper program is preferred. The appropriate selection of 3 to 5 major Livelihood Systems	TOMAK is not alone and can work with other similar donor engagements to broaden the base (especially the USAID AVANSA). Importantly, TOMAK is scalable – able to be increased (or decreased) as required.	Likely	Minor	Moderate

			should ensure that over 50% of the rural community are targeted.				
Safeguards²²	Economic growth delivered by value chain activities has unintended effects.	Activities of the program impact in ways that negatively affect children, communities or the environment	Although unlikely all activities must include assessments of their impact on children, women, communities and the environment.	Design team must ensure appropriate safeguards are incorporated based on DFAT and Australian standards.	Rare	Minor	Low
Fraud/Fiduciary²³	No unique risks identified. TOMAK does not propose to put funds through Government systems						Low
Reputation²⁴	No unique risks identified						Low
Partner relations²⁵	Delivery partners are either not available or of insufficient capacity to immediately implement TOMAK	Delays occur in TOMAK start-up and delivery.	Poor partner capacity at the local level is anticipated by TOMAK and will be addressed as part of the design. A key sustainability mechanism is to build capacity over time so that the initiatives of the Program can be maintained.	TOMAK Team	Likely	Minor	Moderate
Other²⁶	No unique risks identified						
Overall Risk Rating	Overall TOMAK is assessed as a LOW RISK program						

²² Do any of the activities involved in this investment have the potential to cause harm relative to safeguard issues (child protection, displacement and resettlement and environment protection)?

²³ Are there any significant weakness through which fraud could occur or funds not being properly managed by a recipient individual, organisation or institution? If partner government systems are being used, is there a risk of fungibility (replacement of funds)?

²⁴ Could any of the risks, if they eventuated, cause damage to DFAT's reputation as a service provider? Could any aspect of the implementation damage bi-lateral relations?

²⁵ Could a relationship breakdown occur with key partners/stakeholders and would this prevent the objectives/results from being achieved? Does the intended partner (if known) have the capacity to manage the risks involved with this investment? Could differing risk appetites affect the relationship?

²⁶ Are there any other factors specific to this investment that would present a risk (e.g. this is a new area of activity or it is an innovative approach), including potential opportunities? If yes, please describe and rate the risk.

Annex 2 Investment Safeguards Checklist

	Yes	No	Not Sure
Child protection			
Is the investment likely to involve contact with or access to children (0-18 years old) due to the nature of the activity or the working environment?	Yes		
Will the investment involve personnel working with children?		No	
Displacement and resettlement			
Does the investment involve construction on: exclusion from: or repurposing of land that is occupied, accessed to generate livelihoods or of cultural or traditional importance?		No	
Does the investment's success depend on other development activities that may involve construction on; exclusion from; or repurposing of land that is occupied, accessed to generate livelihoods; or of cultural or traditional importance?		No	
Does the investment involve planning for, advising on or designing the economic or physical displacement of people to make way for infrastructure development, disaster risk reduction or exclusion of the local population from land accessed to generate livelihoods?		No	
Environment			
Do all proposed investment activities fall within one or more of the following categories: procurement, report preparation, training, event (workshop, conference, and meeting), multilateral fund replenishment, trust fund, budget support, or communication? If the answer is yes, then (i) an environment analysis is not required; and (ii) there is no need to answer the below environment screening questions.		No	
Has any sort of environmental review, analysis or assessment of the proposed investment already been completed by an implementing partner or donor?		No	
Does the proposed investment include the use of Australian funds to conduct any activities (e.g. construction) that could directly affect the environment? This includes activities that create negative impacts on biodiversity, natural resources, pollution levels, heritage, health and safety of communities, workers, the economic conditions of women or vulnerable groups (children, ethnic minorities, and people with disabilities).			Unlikely, but to be clarified in design
Does the proposed investment include activities that support global, regional, national, local or sectoral planning processes that could impact negatively on the environment including people, natural or physical resources or heritage?			Unlikely, but to be clarified in design
Would the proposed investment indirectly lead to any development which could result in negative environmental impacts such as those described in the above two questions?			Unlikely, but to be clarified in design



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Annex 4 Monitoring and evaluation arrangements

The monitoring and evaluation (M&E) arrangements for the TOMAK program must appreciate the underlying complexity and dynamism of Timor-Leste's rural livelihood systems, and as such enable learning and responsive program management.

In line with established international practice and DFAT's M&E standards, TOMAK's M&E plan will involve the capture, analysis and use of four main types of information:

- **Impact:** data associated with goal-level changes to assess the program's ongoing relevance and likelihood of sustainability;
- **Outcomes:** data concerned with the realisation of the two program outcomes to assess the ongoing feasibility and success of approaches and tactics employed in implementation;
- **Deliverables:** data about the quantity and quality of key program deliverables that are critical to the realisation of the two outcomes to enable progress tracking and quality assurance;
- **Risks:** data concerned with the prevalence and consequence of key risks considered critical to each of the above elements of the program logic.

Each of these aspects of the M&E arrangements is elaborated below.

Impact

The significant and lasting changes anticipated by the TOMAK goal are the result of systemic changes in household and local economies. These changes are likely to take considerable time to emerge—beyond the life of the current investment plans. Nevertheless, the M&E arrangements must accrue evidence of changes at this level to test the ongoing relevance of strategies employed, capture lessons to refine and improve program performance, and support learning in other subnational engagements by DFAT.

TOMAK's M&E arrangements will employ multiple time-series datasets (using both primary and secondary data) to assemble a narrative about the program's impact. Methods will focus on capturing evidence of changes in the targeted livelihood systems.

An assimilation of **secondary data** (e.g. the GoTL's Household Income and Expenditure Survey; and Food and Nutrition Survey) will be used to compare changes in targeted livelihood systems with wider national changes. This assimilation will be conducted early in implementation to establish the pre-intervention baseline; and then subsequently as GoTL data is made available during the life of the investment. GoTL data may be supplemented with studies by other development partners as available.

Primary data to capture goal-level changes will involve annual case studies of selected households in targeted livelihood systems. The focus of this method will be to accrue nuanced information about social and economic changes emerging within households in target areas. The annual time-series data will inform program management decisions by identifying emerging risks encountered by households, and by allowing assessment of the efficacy of the key interventions employed by the program. Measures will especially focus on changes in income, risk resilience, diet/nutrition (especially in children and women) and access to sustainable natural resources.

From the broadest standpoint, these impact assessment methods will critically evaluate the fundamental hypothesis in the TOMAK design: that economic benefit to rural households can accrue (directly or indirectly) from the activation of social structures such as producer groups, food and nutrition groups, and catchment committees. Arguably, the establishment and functioning of these groups is the linchpin of the TOMAK design, and as such is the mechanism by which households are expected to realise economic opportunities.

Outcomes

The two TOMAK outcomes are each concerned with the establishment and functioning of community-based groups: producer groups, and food/diet groups. These groups, working in concert, are assumed to address binding constraints at household level in relation to knowledge, networks and support. Whereas (as noted above), measures of goal attainment will test the hypothesis that tangible economic and social benefits accrue in households as a consequence of synergies afforded by these groups, measures of outcome attainment are concerned with the level of functioning and 'success' of these groups on an individual basis.

While all community-based organisation are broadly expected to contribute to "*more prosperous and sustainable lives*", each group will support different aspects of what is necessary for the goal to be realised. As such, outcome measures will study

the peculiar role and functioning of each type of group. Further, the M&E arrangements will study inherent tensions between the purposes of the community-based groups:

- *Producer groups* that are wholly focussed on commerce and short-term gain, tend to be extractive and erode the basis for sustainable production—the concern of the *catchment management groups*.
- *Nutrition groups* will promote diverse diets and small-scale year-round production of household staple foods, but such commodities and production systems are unlikely to be commercially viable, thereby compromising the focus of *producer households*.
- *Producer groups* will identify and promote commodities that are viable within particular livelihood systems in order to maximise economic potential, but such production systems favour monoculture and land use that may be in conflict with the focus of household *nutrition groups*.

Studying both the level of functioning of the community-based groups, and the interactions between them will involve a mixed methods approach. Survey-based methods will be employed to track annual trends in the operation and performance of the various groups—perhaps employing a ‘composite index’ of group performance. These surveys will be supplemented by commissioned studies in agricultural value chains, household diet and nutrition and natural resource resilience—to variously assess attitudinal changes and technical issues.

The key outcome-level risks that will be monitored concern the extent to which community-based groups are operational with actively engaged members.

Deliverables

The program’s deliverables are designed to be the impetus for changes implicit in the two program outcomes. These deliverables will be the product of a coalition of TOMAK stakeholders bridging program advisers and specialists, GoTL staff (MAF extension staff, SISCa/Sanitarian staff, and KONSSANTIL committee members), agribusiness stakeholders, various local and international NGO staff, Catchment Management Committees and ACIAR researchers.

M&E of deliverables will be focussed on enabling efficient and meaningful tracking of progress and quality. Only the critical/core deliverables aligned with each of the two outcomes will be monitored. The focus of performance measurement will be on the achievements of the various technical advisers, GoTL counterparts and NGOs involved in program delivery. Risks in meeting quarterly delivery targets will be assimilated to inform management decision-making and to refine implementation approaches.

Annex 5 Stakeholder Engagement

Many stakeholders are associated with Australia's engagement in the agriculture and rural development sector in Timor-Leste.

The relationships between Australia's current programs and MAF are generally good. Australia's profile has largely been established through its SoL program, which has daily engagement with MAF.

SoL has contributed significantly to strengthening the relevant functions of MAF, including:

- varietal evaluation and release processes,
- the national seed system,
- GIS capacity,
- SOSEK, and
- some R&D capacity,

These are functions that, to an increasing extent, are able to be self-managed. Yet at the same time, SoL will continue to secure their sustainability as part of its exit strategy.

Nevertheless, as an overall institution MAF has its challenges – an unsurprising fact given that it is only eleven years since independence (and not dissimilar from other key Ministries e.g. *Public Works, Education and Health*).

Adding to the complexity of the situation is the lack of harmonisation between donors in the development of strategic and planning documents, and the supply of technical support that directly or indirectly affects MAF. For example, MAF is currently dealing with a range of strategic plans and policies led by a range of development partners.

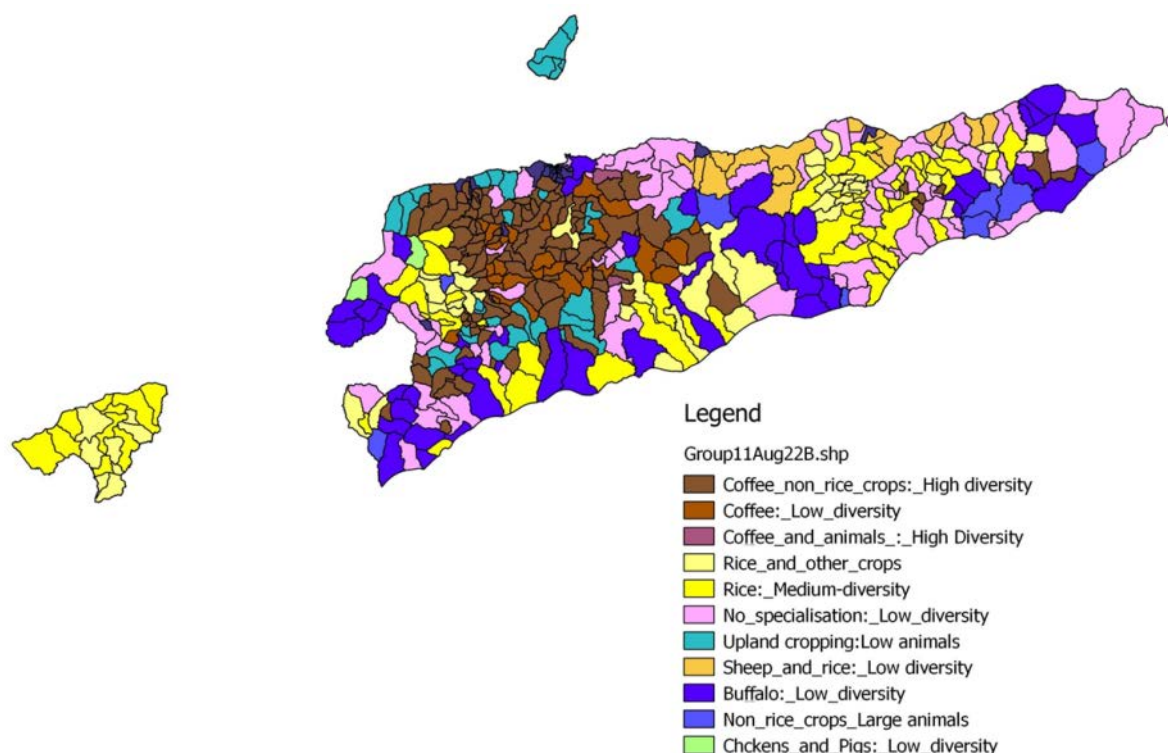
Australia should consider a program that innovatively assists farming communities through sub-national partnerships. The greatest opportunity to support rural growth in the short to medium term is to ensure that rural families can better access improved inputs, food security, nutrition, services and markets. This sub-national engagement should be complemented with the scope to engage nationally wherever policy constraints significantly impact on the enabling environment.

Australia should seek to establish partnerships with Government, Private Sector and Civil Society partners to deliver the outcomes.

Annex 6 Livelihood Systems and Beneficiary Engagement

Timorese households depend on a diverse mix of subsistence and economic activities that vary according to factors such as climate and location. The new program needs to therefore define a simple typology that appropriately groups the major Timorese rural livelihood systems. Planned interventions can then be tailored to each livelihood system, rather than - more conventionally, but less effectively - being defined by political/administrative boundaries. Initial work on a cluster analysis of current livelihood systems is already showing good results (Figure 4).

Figure 3: Clustering of similar suco livelihoods (based on census data)



The clustering of the sucos resulted in the definition of 11 groups that maintains 86% of the original variation. The largest group has 106 sucos and 187,000 people. There are two small groups, each of 2 sucos.

Each of the 11 groups has been given a description. In general the description includes the dominant feature of that group, and some comment on the level of diversity within that group.

Three of the 11 groups have the majority of households growing coffee, and includes 33% of the population. In these areas, more than 60% of households grow coffee, which is above the average of 44% of households growing coffee. The 3 groups can be further described as follows: one with relatively low diversity, the second with relatively high diversity, and the third is a very small group consisting of only 2 sucos. This small group is unique in having high levels of chicken, pigs and coconut also in the suco.

Rice cropping dominates another set of three groups with one group showing high diversity, another with medium diversity and the third with high sheep ownership level. All the 14 sucos with high sheep ownership are based on the north coast, in Manatuto and Baucau. This is the driest part of the country, and seems to be suitable for sheep production. Rice production is spread throughout the country, from the western border with West Timor, the Maliana plain, irrigation areas on the south coast, the Baucau-Viqueque transect and elevated areas in the district of Los Palos. Overall these three rice clusters cover 229,000 people (28% of the population).

Among the 11 groups, two seem to have higher numbers of large animals than other groups. One group (8 sucos) has more cows than average, and the second (48 sucos) has more buffalo than other groups. These sucos tend to occur in the far east end of the country, and are more common in non-rice areas on the south coast.

One of the groups (73 sucos) seems to have no specialisation, and below average participation in almost all commodities. In this group a low 32% percent of households grow maize, compared to the national average of 88%. Household in these sucos seem to have livelihoods that are not included in the census information and rely on non-agriculture sources of

income. For those households living on the coast, that would likely be fishing and firewood collection. Other income streams not collected in the data include production and sales of crops like tobacco and betel nut and palm wine.

A smaller group (32 sucos) has an average level of non-rice cropping, but has fewer animals than the average. These areas include the island of Atauro, and quite a few sucos bordering on coffee based sucos. The low number of households with animals is a major feature of this group.

Finally there is small group of 2 sucos (both in the north east of the country) that have very high chicken and pig numbers per household.

It is planned to now expand the initial data set used to develop the above classification. New statistics will include climatic, topographical, elevation, ethno-linguistic, income, expenditure and infrastructure data. Clusters of similar sucos should then become evident – and thus allow the new program to have a much more tailored/nuanced approach to its planned engagements. This typology should not only offer a unique targeting mechanism for Australia's future assistance, but - if found to be sufficiently robust – should also be a significant development tool for Government, donors and other partners.

The focus on the major livelihood systems - particularly those with obvious potential for significant growth - should ensure that Australian assistance remains both focused and scalable. This is especially necessary given that the scope of the interventions will depend on budget availability.

Further work is now needed to define the selection criteria for the target livelihood systems. Logic suggests, however, that such criteria might include the following:

- A significant percentage of rural families are engaged in the livelihood system;
- There is obvious capacity to significantly improve the system's resilience (especially production variability), by reducing its susceptibility to climate variability and disaster;
- There is scope within the system to positively influence the current status of family wellbeing and nutrition;
- There is also scope to significantly improve household access to resources, services and markets, and thereby stimulate greater agricultural productivity; and
- There is opportunity for significant growth in rural incomes through the development of a wider range of economic enterprises.

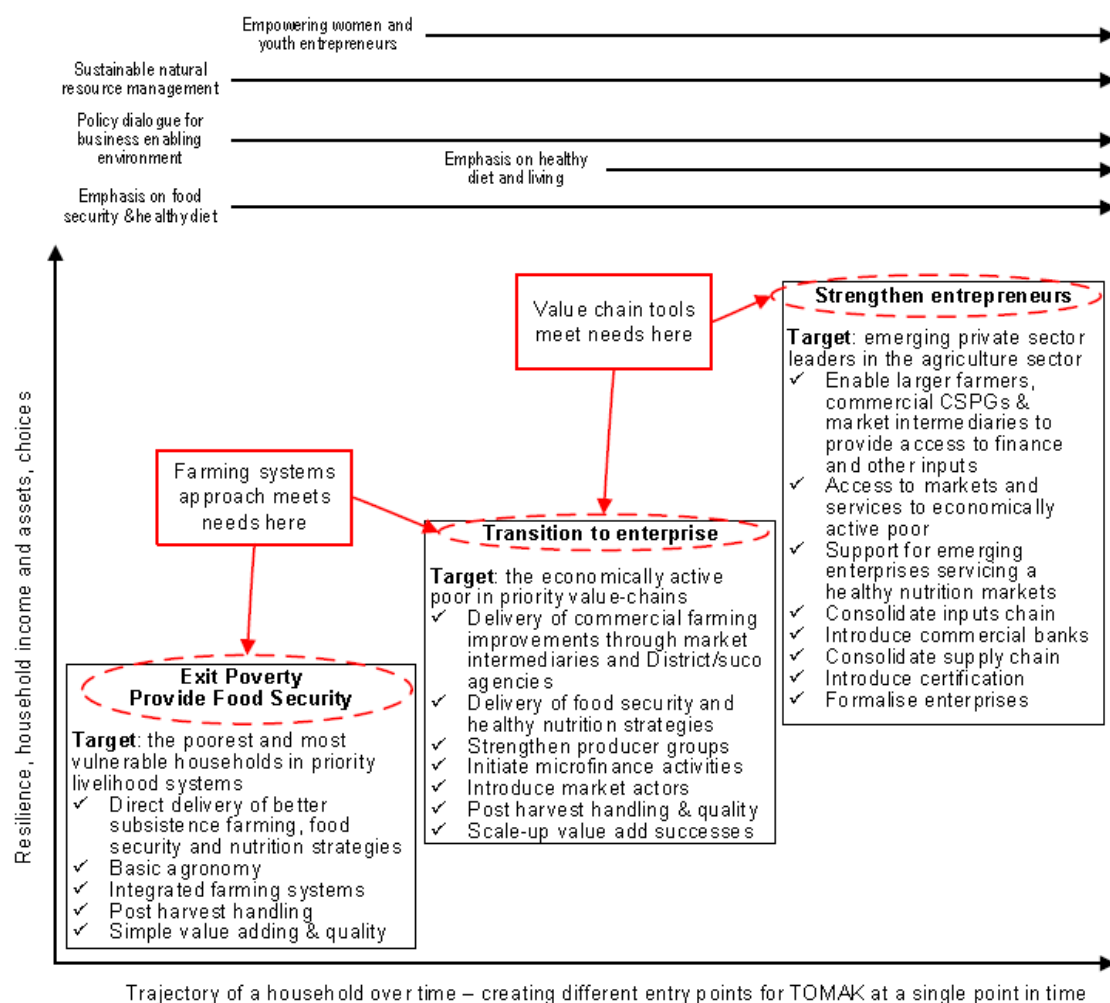
Household Engagement

Within each of the chosen Livelihood Systems TOMAK will identify the three to five most profitable agricultural value chains available. Target beneficiaries who wish to engage in these value chains will be categorised using the following broad typology:

1. The poorest and most vulnerable – these households will be formed into groups to receive the skills and capacity to commence small scale commercial production. However, this will occur in parallel with support under Outcome 2 (focused on better subsistence farming, food security and nutrition strategies).
2. The economically active poor: TOMAK will work with these households both independently and collaboratively to improve their commercial farming performance. They will also receive support under Outcome 2 related to healthy nutrition.
3. Emerging Private Sector Leaders: this will enable individual entrepreneurs, cooperative groups (e.g. *Seeds of Life* Community Seed Producer Groups), and those working as market intermediaries to develop commercial production and marketing partnerships and relationships. This group will be a key source of information and linkage for the economically active poor. In addition, as commercial enterprises evolve, employment opportunities will emerge for both the above groups.

The Design will develop a tailored approach to engagement based on these three beneficiary groups and ensure activities are focused on a logical development pathway for each, including advancement through each group.

Target beneficiary typology



Annex 7 Mainstreaming Nutrition

This Annex outlines the critical state of nutrition in Timor-Leste. It is essential that the TOMAK program effectively understand the issue of poor nutrition and develop ways in which its activities can address key concerns. By doing this TOMAK will ensure that all people of Timor are able to engage in and reap the benefits of their economic opportunities.

The Situation

Despite significant progress to combat under-nutrition in Timor-Leste, results of the Timor-Leste Food and Nutrition Survey (Part 1) (TLFNS, 2013)²⁷, indicate that under-nutrition (specifically, stunting, underweight and anaemia) in women and children continues to be a major development issue across all districts. The results also indicate that the prevalence of over-nutrition (particularly overweight) in women of reproductive age (WRA) has tripled since 2003²⁸, raising concerns of an emerging double burden of malnutrition (DBM) where over and under-nutrition co-exist within the same population.

Malnutrition is common throughout the entire population of Timor-Leste, independent of income. While the prevalence of those who are stunted and underweight reduces as incomes rise, the prevalence of stunting, even among wealthier quintiles, is still classified as 'very high'²⁹, representing a national public health problem³⁰ and in fact, the prevalence of anaemia and wasting is actually more widespread in the wealthier quintiles³¹.

CHILDREN UNDER 5 YEARS (U5)

WASTING /ACUTE MALNUTRITION (WHZ/WLZ<-2)

Wasting (termed '*krekas*' in Tetum) is a sign of acute malnutrition and often coupled with infection or disease. Severe wasting increases a child's risk of dying, their susceptibility to infectious disease and the duration and severity of the infection³². In non-emergency situations where endemic malnutrition is common, moderate wasting often co-exists with stunting in the same child³³.

With the exception of Bobonaro, Oecusse, and Covalima, the prevalence of wasting in children (U5) has declined from critical levels (above 15%) in 2009/10 to prevalence's classified as 'serious' (10-14%) in Liquica, Manatuto and Dili and 'poor' (5-9%) in the remaining districts. Lautem has the lowest prevalence (5.4%) while the highest prevalence is in Oecusse where nearly 1 in 5 (19.8%) children are wasted³⁴.

STUNTING/ CHRONIC MALNUTRITION (HAZ/LAZ<-2)

Stunting (termed '*sin-ki'ik*' in Tetum) is an indicator of chronic nutritional deprivation causing impaired skeletal growth and increasing the risk of delayed cognitive development, poor school performance and reduced intellectual capacity³⁵; affecting income earning ability and economic productivity³⁶.

A stunted child is more likely to become a stunted adult or a woman of short stature (<145cm). Women who are short are at greater risk of maternal mortality, dystocia (obstructed labour) and delivering a low birth weight (LBW) infant or a premature baby, which, in turn contributes to the intergenerational cycle of under-nutrition apparent in Timor-Leste³⁷.

²⁷ Timor Leste Food and Nutrition Survey, 2013

²⁸ Ministry of Health and National Statistics Office, Timor Leste and the University of Newcastle, The Australian National University, ACIL Australia PTY LTD. Timor Leste Demographic and Health Survey, 2003

²⁹ World Health Organization (2010) Nutrition Landscape information System (NLIS). Country Profile Indicators. Interpretation Guide

³⁰ Timor Leste Food and Nutrition Survey, 2013

³¹ Ibid

³² Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, de Onis M, Ezzati M, Grantham-McGregor S, Katz J, Martorell R, Uauy R; Maternal and Child Nutrition Study Group. Maternal and child under-nutrition and overweight in low-income and middle-income countries. *Lancet*. 2013 Aug 3; 382(9890):427-51. World Health Organization (2010) Nutrition Landscape information System (NLIS). Country Profile Indicators. Interpretation Guide

³³ Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? Prof Zulfiqar A Bhutta PhD, Jai K Das MBA, Arjumand Rizvi MSc, Michelle F Gaffey MSc, Neff Walker PhD, Prof Susan Horton PhD, Prof Patrick Webb PhD, Prof Anna Larley PhD, Prof Robert E Black PhD, *The Lancet* - 3 August 2013 (Vol. 382, Issue 9890, Pages 452-477) DOI: 10.1016/S0140-6736(13)60996-4

³⁴ Timor Leste Food and Nutrition Survey, 2013

³⁵ Prado E.L & Dewey K.G (2014) Nutrition and brain development in early life. In *Nutrition Reviews*® Vol. 72(4):267-284

³⁶ Hoddinott et al (2011). Consequences of early childhood growth failure over the life course. IFPRI Discussion Paper 01073 March 2011

³⁷ Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, de Onis M, Ezzati M, Grantham-McGregor S, Katz J, Martorell R, Uauy R; Maternal and Child Nutrition Study Group. Maternal and child under-nutrition and overweight in low-income and middle-income countries. *Lancet*. 2013 Aug 3; 382(9890):427-51.

Nationally, the prevalence of stunting in children (U5) has decreased from 58% in 2009/10 to 50% in 2013. Aileu is the only district which has not demonstrated a downward trend in stunting³⁸. Despite this progress, the prevalence of stunting across every district remains 'very high' ($\geq 40\%$)³⁹. Given the short term and intergenerational consequences of stunting, there is still an urgent need to prevent and control stunting in Timor-Leste. This is a national priority as outlined in Pillar 2 of the recently endorsed Zero Hunger Action Plan for Timor-Leste which calls for Zero stunted children aged 0-23 months by 2025⁴⁰.

Both the Demographic and Health Survey (DHS) of 2009/10 and the TLFNS of 2013 indicate that stunting is higher in boys than girls; more common in rural children than urban; more common in children of mothers who are underweight (BMI < 18.5) than mothers who are overweight (BMI > 25); and more common in women in the lowest wealth quintile and who have completed fewer years of education^{41, 42}.

Both surveys demonstrate that stunting is apparent in children less than 6 months of age and the 2009/10 DHS reports that stunting is more common in children who were reported to be small at birth (LBW) than normal birth weight babies, thus supporting the intergenerational nature of under-nutrition in Timor-Leste.

WOMEN OF REPRODUCTIVE AGE

UNDER-WEIGHT (BMI < 18.5)

Similar to trends in other countries in the region, the prevalence of under-nutrition in women of reproductive age (WRA) is decreasing in Timor-Leste. There are some districts however, where the prevalence has increased since 2009/10 (namely Ermera, Ainaro, Manatuto, Aileu and Baucau)^{43, 44}.

OVER-WEIGHT (BMI ≥ 25)

On the contrary and also following a similar trend to other developing countries in the region, the prevalence of overweight in WRA is increasing across all districts in Timor-Leste. Two in every 10 women in Dili are over-weight (BMI ≥ 25) and the national prevalence has tripled since 2003⁴⁵.

Preventing and controlling the growing burden of over-weight and subsequent nutrition related chronic disease and other morbidities is essential. The DBM is already an issue in many other developing countries in the region such as Indonesia where 33% of WRA and 12% of children (U5) are over-weight and under-nutrition in both groups still persists⁴⁶.

MICRONUTRIENT DEFICIENCIES

With the exception of iron deficiency anaemia, national data on the prevalence of micronutrient deficiencies is limited. Serum retinol samples were collected and analysed during the TLFNS in 2013 and this data will be publicly available at the end of 2014.

Preliminary data on anaemia in children (6-59 months) from TLFNS, 2013 indicates an increased prevalence across all districts except Manatuto, with prevalence values classified as 'critical' (>40%)⁴⁷ in all districts.

In all districts, again, except Manatuto, preliminary data indicates that the prevalence of anaemia in WRA has also increased since 2009/10⁴⁸.

Improving diet diversity to ensure that high and low bio-available (haem and non-haem) iron food sources are consumed regularly with each meal and that food substances that inhibit the uptake of iron (e.g. tannins) are not consumed with meals

³⁸ Timor Leste Food and Nutrition Survey, 2013

³⁹ World Health Organization (2010) Nutrition Landscape information System (NLIS). Country Profile Indicators. Interpretation Guide

⁴⁰ National Council for Food Security, Sovereignty and Nutrition in Timor Leste (KONSSANTIL), 2014 Zero Hunger Challenge. National Action Plan for a Hunger and Malnutrition Free Timor Leste

⁴¹ Timor Leste Demographic and Health Survey, 2009/10

⁴² Timor Leste Food and Nutrition Survey, 2013

⁴³ Timor Leste Demographic and Health Survey, 2009/10

⁴⁴ Timor Leste Food and Nutrition Survey, 2013

⁴⁵ Ministry of Health and National Statistics Office, Timor Leste and the University of Newcastle, The Australian National University, ACIL Australia PTY LTD. Timor Leste Demographic and Health Survey, 2003

⁴⁶ Shrimpton, Roger; Rokx, Claudia. 2013. The double burden of malnutrition in Indonesia. Washington DC; World Bank Group. <http://documents.worldbank.org/curated/en/2013/11/18599764/double-burden-malnutrition-indonesia>

⁴⁷ Timor Leste Food and Nutrition Survey, 2013

⁴⁸ Ibid

is important to prevent and control anaemia. However, because there are several other causes of anaemia, multi-faceted, integrated approaches are needed. Non-dietary prevention measures include regular deworming and appropriate hygiene and sanitation interventions to prevent helminthic infestations, preventing and controlling malaria through the distribution and use of insecticide treated nets (ITNs) and appropriate malaria treatment, delayed cord clamping, and preventative iron/folic acid supplementation for pregnant women and WRA.

DIETARY INTAKES

BREASTFEEDING

The World Health Organisation (WHO) recommends early initiation of breastfeeding within one hour of birth, exclusive breastfeeding until 6 months and continued breastfeeding until two years or more. The protection, promotion and support of breastfeeding is one of the package of ten interventions which if scaled up, can reduce child mortality by nearly 15 % (i.e. 1 million lives saved worldwide)⁴⁹.

EARLY INITIATION OF BREASTFEEDING

Breastfeeding within 24 hours of birth is associated with a 44-45% reduction in all-cause and infection related neonatal mortality and the earlier the initiation, the lower the risk⁵⁰. Timor-Leste has one of the highest rates of early initiation of breastfeeding (within the first hour of birth) in the region and since 2003 rates have increased from 47% to 93 % in 2013.

EXCLUSIVE BREASTFEEDING

Breastfeeding exclusively for the first six months is all an infant requires before complementary foods are introduced at six months. Exclusive breastfeeding (EBF) to six months reduces the incidence and mortality associated with infectious diseases. In 2013, 62% of children (<6 months) were exclusively breastfed in Timor-Leste, indicating an improvement of 10% since 2009/10 and similar rates to other countries in the region. However, by the age of 5 months the prevalence of EBF is only 37.6%, indicating that complementary foods are introduced too early for many children in Timor-Leste.

CONTINUED BREASTFEEDING

In addition to the timely introduction of complementary foods at six months of age, WHO recommends continued breastfeeding to at least two years of age. One third of a child's energy requirements are derived from breastmilk from 12 months of age and breast milk continues to provide protection against infections such as diarrhoea and pneumonia.

While 73.9% of children (aged 12-15 months) are still breastfed, the percentage drops significantly by 20-23 months when only 38.7 % are still breastfed. Compared with other countries in the region this is low and an area requiring improvement.

COMPLEMENTARY FEEDING

Complementary feeding refers to the timely introduction of safe, nutritious foods in addition to breast milk from six months of age to 23 months and beyond.

Significant associations exist between appropriate complementary feeding practices and reduced stunting. Analysis of DHS data from 11 countries used to create a dietary diversity score based on seven food groups, showed that improved dietary diversity was positively associated with stunting in 9 of the 11 countries⁵¹. A study of 14 DHS data sets from low income countries, indicated that improved dietary diversity reduces the risk of both stunting and being underweight, whereas minimum meal frequency was associated only with a lower risk of being underweight (WAZ<-2)⁵².

Anecdotal evidence and survey results indicate the imperative in Timor-Leste to find innovative and effective ways to protect, support and promote appropriate complementary feeding practices, particularly in the 6-23 month period when appropriate linear growth is essential to prevent stunting and wasting.

Results from the TLFNS 2013 indicate that 37.2 % of children (aged 0-23 months) are stunted and 63.5% of children aged 26-59 months are stunted when already some of the damage of chronic under-nutrition is difficult to reverse.

⁴⁹ Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? Zulfiqar A Bhutta, Jai K Das, Arjumand Rizvi, Michelle F Gaffey, Neff Walker, Susan Horton, Patrick Webb, Anna Lartey, Robert E Black, The Lancet - 3 August 2013 (Vol. 382, Issue 9890, Pages 452-477) DOI: 10.1016/S0140-6736(13)60996-4

⁵⁰ Owusu-Agyei and Betty R. Kirkwood Karen M. Edmond, Charles Zandoh, Maria A. Quigley, Seeba Amenga-Etego, Seth. Owusu-Agyei and Betty R. Kirkwood. Delayed Breastfeeding Initiation Increases Risk of Neonatal Mortality Paediatrics 2006;117:e380 DOI: 10.1542/peds.2005-1496

⁵¹ Airmond, M., and Ruel, MT (2004). Dietary diversity is associated with child nutritional status: evidence from 11 demographic and health surveys. J Nutr 134(10):2579-2585. Available at : <http://jn.nutrition.org/content/134/10/2579.full.pdf+html>

⁵² Marriott BP, White A, Hadden L, Davies JC, Wallingford JC. World Health Organization (WHO) infant and young child feeding indicators: associations with growth measures in 14 low-income countries. Maternal and Child Nutrition 2012; 8: 354-70. DOI: 10.1111/j.1740-8709.2011.00380.x Available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1740-8709.2011.00380.x/pdf>

The EBF and complementary feeding period (0-24 months) is the 'window of opportunity' to ensure adequate infant and young child feeding practices to prevent delayed linear growth and the subsequent long term and irreversible effects of stunting.

Similarly, even though data on low birth weight is not reliable (only 24% of birth weights are recorded), DHS data indicates that delayed skeletal growth is apparent even in children less than 6 months, indicating that poor nutrition and growth restriction in pregnancy and or suboptimal breastfeeding practices in the first 6 months is common. Without doubt, promoting nutritionally adequate diets for women, pre-pregnancy and during pregnancy and protecting, promoting and supporting appropriate breast feeding and complementary feeding practices in Timor-Leste is essential.

The TLFNS, (2013) indicates that grains/roots and tubers make up the bulk of the diet, with 99% of children receiving these frequently. 79% of children aged 6-23 months met the minimum meal frequency, whereas only 27.5 % met the minimum dietary diversity. Overall, only 17.6 % of children aged 6-23 months in Timor met the requirements of a minimum acceptable diet⁵³. Only 14.9% of children from rural areas met the criteria compared with 24.8% in urban areas.⁵⁴

Knowledge, practices and attitudes (KAP) about nutrition in Timor-Leste

Limited data is available on household nutrition knowledge and practices in Timor-Leste. However, anecdotal evidence suggests that the knowledge of nutrition, contemporary feeding practices and consequences of poor nutrition is low.

In 2013, Care International conducted a study on food habits in three Sukus (in the districts of Liquicia and Ermera)⁵⁵. The study was conducted to gain an insight into the social factors (including traditional and cultural practices, behaviour's and beliefs) that may affect nutritional status. Key results included:

- A full meal is a large quantity of rice or maize ('*hahan*'). Side dishes ('*modo*'), if available are not considered as important as '*hahan*'.
- Rice has a higher status value than maize which is often stigmatized to reflect 'lack of resources' or being 'rural'.
- Consumption of meat is mostly associated with traditional ceremonies and rituals.
- The 'convenience' of food stuffs is a strong determinate of food choice.
- The nutritional value of foods and/or their health benefit is not a strong consideration in food choices or linked to nutritional knowhow. Foods are classified in binary terms such as 'hot / cold foods' or 'soft/hard foods' and the binary system determines whether a food is appropriate for the particular age group or status (e.g. pregnant and lactating women).
- Animistic belief's and lineage systems are strong drivers of food choice.
- Women and children are recognised as vulnerable groups and in need of special nutritional care but the choice of foods consumed for these groups is not underpinned by a scientific or nutritional rationale.

Similarly, the results of the 2007 Timor-Leste Asistencia Integrada Saude (TAIS) community consultation on child health⁵⁶ revealed that the most common complementary food is watery plain white rice porridge ('*sosara*') because it is 'easier for children to eat' and that non-scientific beliefs influence infant and young child feeding practices. For example; dark green leafy vegetables cause diarrhoea in children, breastfeeding should cease during illness and 'nutritious foods are more expensive and difficult to prepare'.

In addition, a recent study conducted by Monash University in 2014 on poverty and the agricultural household in Timor – Leste⁵⁷ made the following conclusions:

- Income sources affect food intake and providing improved access to local markets for local produce is key to improving food consumption and dietary diversity:
- Understanding the influencing decision making powers within the household is critical to understanding the links between income and consumption. For example, with the emerging middle income class in Timor- Leste, there is a risk that imported, processed foods which often symbolise economic success are purchased at the expense of more nutritional local foods.

⁵³ Timor Leste Food and Nutrition Survey, 2013

⁵⁴ Ibid

⁵⁵ An approach to the food habits of three communities in Timor Leste- Final report (2013): Care International Timor Leste. Available at <http://www.care.org.au/document.doc?id=1400>

⁵⁶ Community Consultation on Child Health Practices in Timor-Leste (2007); Timor Leste Asistencia Integrada Saude (TAIS), United States Agency for International Development (USAID) and MoHTL Available at <http://www.cominit.com/?q=early-child/node/277361>

⁵⁷ Monash Centre for Development Economics and Sustainability. Research Paper Series on Timor Leste. RP-TL1. Poverty and the Agricultural Household in Timor Leste: Some patterns and Puzzles. Research Report June 2014

- For poorer families (in the bottom to the fifth income decile) increased income does not necessarily result in improved household intake of nutritional foods.
- When income increases in higher income households, more money is spent on food, and the diet changes from mostly staple foods to a diet with less staple foods and larger amounts of non-cereal foods such as other vegetables, meat and fish.

Key messages for a nutrition smart/sensitive approaches to rural development in Timor-Leste

- Improving nutrition is key to improving economic development and productivity. If not addressed, nutritional deprivation leading to chronic under-nutrition has intergenerational impacts, including poor cognitive capacity⁵⁸, low school performance, reduced productivity and economic opportunities as well as reduced GDP⁵⁹.
- Agricultural systems play a crucial role in the provision of livelihoods, food and income especially when agriculture is the main occupation of poor families in rural areas and women make up a large proportion of this labour force⁶⁰.
- Targeted agricultural development programmes can impact on nutrition positively and negatively through several pathways⁶¹, including:
 - Providing a source of food increasing household food availability and access;
 - Providing a source of income;
 - Affecting supply and demand factors, which can influence income and purchasing power;
 - Influencing women's social status and empowerment. This can affect women's access to and control over resources and assets and improve their power to make decisions about intra-household allocation of food, health and education etc.;
 - Time allocation between income generation activities and household and care giving activities, especially for women; and
 - The nutritional status and well-being of women. For example, agricultural activities require additional energy expenditure and increased energy expenditure increases nutritional requirements. If nutritional requirements are not met, there is a risk that agricultural activities can contribute to under-nutrition.
- Adequate growth and development requires not only sufficient calories but the right mix of essential micronutrients for each stage of life. Women and children are most vulnerable to nutrient deficiencies because of their increased requirements.
- Micronutrient deficiencies and long term chronic under-nutrition resulting in stunting is largely an invisible phenomenon and anecdotal evidence suggest poorly understood in Timor-Leste (e.g. a common perception is that 'stunting is genetic').
- Under-nutrition has short and long terms impacts on health, physical, and cognitive development in children with long-term effects on productivity and incomes in adulthood.
- The causes of malnutrition are multi-faceted and not just related to insufficient intake of food. Nutrition specific interventions need to be coupled with nutrition-sensitive approaches to prevent and control malnutrition across the life cycle as outlined in Figure 4

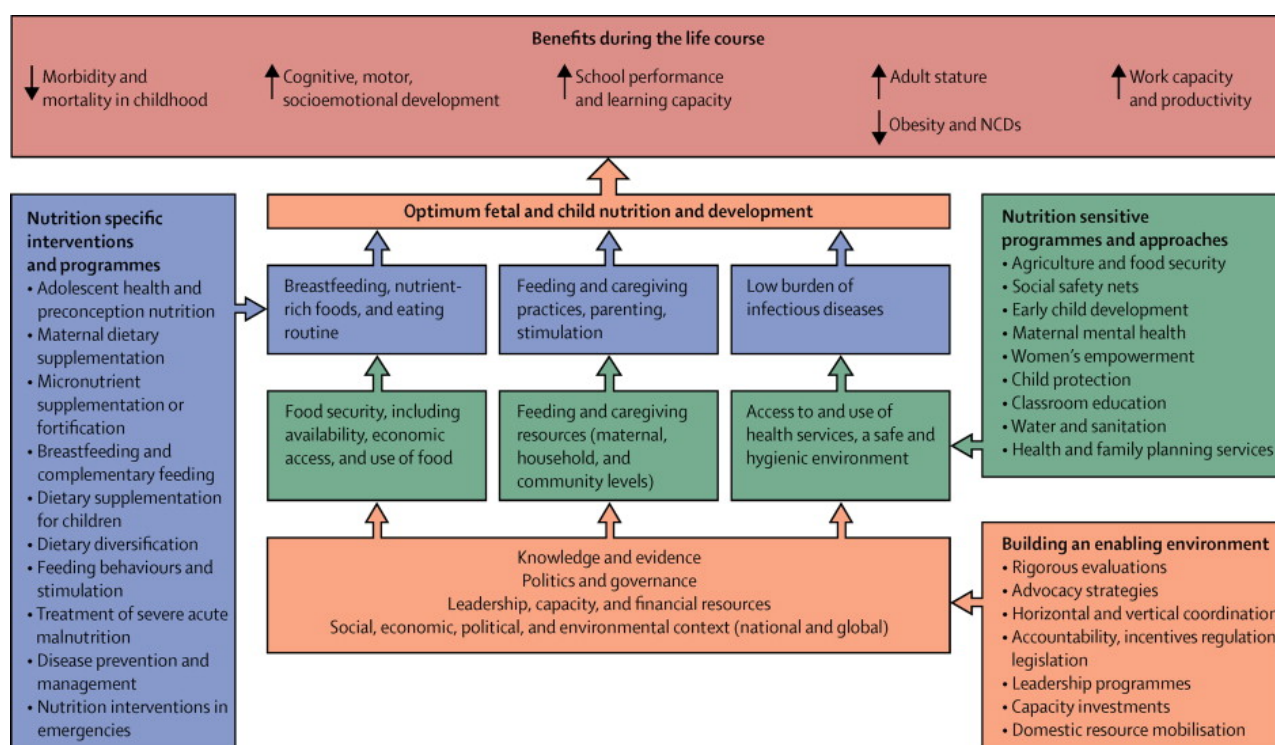
⁵⁸ Prado E.L. & Dewey K.G (2014) Nutrition and brain development in early life. In Nutrition Reviews Vol. 72(4):267–284

⁵⁹ Hoddinott et al (2011). Consequences of early childhood growth failure over the life course. IFPRI Discussion Paper 01073 March 2011

⁶⁰ FAO. The state of food and agriculture, 2010-2011. Women in agriculture. Closing the gender gap for development. Available at <http://www.fao.org/dorep/013/i2050e/i2050e00.htm>

⁶¹ Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition? Marie T Ruel, Harold Alderman, the Maternal and Child Nutrition Study Group The Lancet - 10 August 2013 (Vol. 382, Issue 9891, Pages 536-551) DOI: 10.1016/S0140-6736(13)60843-0

Figure 5: Framework for actions to achieve optimum foetal and child nutrition and development. (Reproduced with permission Black et al. 2013)



- Food and nutrition security is a global priority requiring multi-faceted approaches based on nutrition-sensitive landscapes.
- Despite increases in agricultural production in some areas in Timor-Leste, under-nutrition still remains a real issue with the prevalence of stunting in every district classified as 'very high' and the prevalence of anaemia in children (U5) classified as 'severe' ⁶² in all districts.
- Sustainable solutions should be developed to ensure year round food security and improved human nutrition through increased household income and dietary diversification.
- The bulk of the diet (particularly in rural areas) is made up of staple crops such as maize and white rice which are low in essential amino acids and micronutrients required for normal growth and development.
- Micronutrient and protein rich foods such as legumes, eggs, meat and vegetables are not given priority (with the exception of meats for traditional ceremonies).
- The understanding of the need for a more diverse diet to meet normal nutritional requirements appears to be limited, particularly in rural areas.
- Adolescent girls, pregnant women and children aged 4-24 months are key target groups for nutrition interventions and behaviour change.
- While the evidence of agricultural interventions to improve nutritional status of children is limited, this should not be attributed to the inefficacy of the interventions but rather the lack of power and or the design of the studies to detect any impacts ⁶³
- Changes in income do not necessarily translate into changes in the consumption of calories or improved nutritional status ⁶⁴.
- Targeted agricultural programmes, designed to boost production and increase incomes can be complemented by supporting livelihoods, enhancing access to a more diverse diet (particularly in rural areas), promoting the empowerment of women and providing a delivery platform to assist in the scale up of nutrition specific interventions such as breastfeeding promotion and the improvement of complementary feeding.

⁶² World Health Organization (2010) Nutrition Landscape information System (NLIS). Country Profile Indicators. Interpretation Guide

⁶³ Massett E, Haddad L, Cornelius A and Isaza- Castro J (2011), A systematic review of agricultural interventions that aim to improve nutritional status of children. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London. ISBN:978-1-907345-09-08

⁶⁴ Ibid

Opportunities for a nutrition smart/sensitive approach to rural development in the selected Livelihood Systems in Timor-Leste

- Give more prominence to the role of non-income related factors such as:
 - The provision of nutrition specific and nutrition-sensitive information and knowledge; and
 - Supporting individual and household health and care to reduce child and maternal malnutrition.
- Incorporate consistent and considerate interventions (e.g. key messages) that build the knowledge not just of sustainable food systems and markets but improved utilisation of local foods, improved hygiene and sanitation, and family planning etc that can, collectively improve nutrition at the household level. Opportunities may also exist to include this same package of key messages across other DFAT programmes (e.g. BESIK).
- Consider utilising and promoting local supply chains rather than relying solely on national markets e.g. through schools (e.g. school feeding), community centres and other local enterprises.
- Conduct more rigorous impact evaluation of future rural development programmes (selected Livelihood Systems) on nutritional outcomes or changes in food intake and behavioural practices.
- As a minimum, consider undertaking baseline/endline surveys on diet diversity/minimum acceptable diet in the selected Livelihood System.
- Utilise mechanisms such as district KONSSANTIL councils to ensure integration across sectors and comprehensive approaches/messaging to improving household nutrition security (including utilisation).
- Consider developing standard IEC materials across existing programs under DFAT and other programmes (e.g. AVANSA) to promote key nutrition specific and nutrition messages and to ensure malnutrition and its consequences are better understood at the community level. An opportunity may exist for these materials to be utilised by NGOs/ partners working in the selected Livelihood Systems and by programme staff and sectors.

Suggested approaches to address nutrition in TOMAK

- Undertake baseline /midline and endline surveys in the selected Livelihood Systems on dietary diversity and KAP about nutrition (e.g. using 24 hour recall/food frequency questionnaires/ minimum acceptable diet/ baseline knowledge survey etc.)**
- Develop and focus-test simple targeted information, education and communication (IEC) materials for community nutrition (outlining key nutrition specific and nutrition sensitive messages) which can be used across programmes and across sectors. Notably there has also been a recent request from His Excellency the President of the Republic of Timor-Leste for similar materials.
- Consider utilising a NGO or CBO to promote these resources in the Sukus through existing mechanisms.
- The DFAT Nutrition Advisor could be involved in providing technical inputs and oversight into activities such as surveys and the development and delivery of nutrition IEC materials across programmes

**Note: Measuring change in nutritional outcomes and other household sampling measures (e.g. micronutrient deficiencies, anthropometry, hygiene practices, knowledge, dietary diversity etc.) could be possible with additional resources and time under this project or in overlapping areas (e.g. sub-district/sukus) of this project and other DFAT projects. This approach would support the idea proposed in the Household food and Nutrition Security Assessment in Timor Leste 2013 ⁶⁵ of establishing sentinel sites to measure a range of nutrition outcomes and the impact of DFAT funded programmes on nutrition.

⁶⁵ Patrick Webb, 2013. Household Food and Nutrition Security Assessment in Timor Leste. A review of data quality , gaps and needs

Annex 8 Women's Economic Empowerment⁶⁶

This Annex looks at economic empowerment from a women's perspective. Across Timor-Leste's Livelihood Systems women play an essential role in all roles of life – not the least of which is economic development. Understanding the opportunities to enhance women's role in economic livelihoods will not only enhance the effectiveness of DFAT's TOMAK program but, more importantly, ensure women have a greater role and greater say in their development.

Introduction

All cultures are dynamic, and Timor-Leste is a society in rapid change – in 2012, over half the population had access to mobile phones, male and female youth literacy rates had climbed to over 80% and 78% respectively,⁶⁷ and oil income has led to some improvements in infrastructure such as roads and electricity.⁶⁸ It is yet to be determined how women and the poor will benefit, but there are positive opportunities for women in that can be leveraged to women's advantage and the well-being of their households.

Three main historical influences on the status of women in Timorese societies have been identified: "Portuguese colonial patriarchal elite committed to conservative Catholicism; the violent and militarised society under Indonesian occupation during which women's roles and responsibilities shifted radically; and the progressive international norms and gender policies of the UN administration and international agencies since 1999." Therefore, Wigglesworth notes that the current practices that are termed as "traditional" are cultural norms which have changed considerably over time and that are continuing to change in the post-independence era. Despite this, secondary sources often describe a static society where women are subordinate to men, and women's ability to advance economically is compromised by their status and barriers such as access to assets and opportunities, discussed in greater detail below.⁶⁹

UNDP's most recent human development report on Timor-Leste demonstrates that while gender inequality has narrowed in recent years, significant gaps remain. In terms of general development indicators, women comprise almost 50% of the population, the majority are illiterate (although this is changing rapidly as noted above), experience very high birth rates and significant incidence of maternal mortality, and score lower than men in terms of economic and political participation.⁷⁰ In fact, Timor-Leste was ranked between 125 and 126 in the United Nations 2004 gender-related development index (not reported in 2011) – much lower than many of its ASEAN neighbours with significant differences in earning power, standard of living, life expectancy, and overall status of women.

Timorese society is patriarchal, upholding traditional norms in rural areas that are "based on the clear distinction of roles and responsibilities of men and women, different patterns of the exchange of goods and services between household members, and arrangements regarding individual and collective decisions."⁷¹ Young rural Timorese women – due to age, location and gender – are considered the least empowered members of society. As a result of patriarchy and tradition,

*"Timorese women face pervasive structural discrimination and negative gender stereotypes, which dramatically impede their ability to participate in and benefit from education, employment, health services and political representation. A life of poverty and discrimination is the reality for many women in Timor-Leste, particularly women living in mountainous and highland areas, female heads of household, widows and older women."*⁷²

The constitution of Timor-Leste states that men and women should have equal rights, but at the same time stresses that the legal system should adopt customary law. Since customary law predominates in rural areas, and as it gives preference to men over women, the majority of rural women are highly disadvantaged.⁷³ For example, customary law impacts women's ability to own assets, and therefore borrow money, and develop economically.

⁶⁶ Prepared by Dr Linda Jones in conjunction with the Australian Market Development Facility (2014)

⁶⁷ UNICEF http://www.unicef.org/infobycountry/Timorleste_statistics.html

⁶⁸ Index Mundi http://www.indexmundi.com/timor-leste/economy_profile.html

⁶⁹ Wigglesworth, A. (2012) Dreaming of a Different Life: Steps Towards Democracy and Equality in Timor-Leste. American Portuguese Studies Association. p.35-36

⁷⁰ UNDP (2011) Timor-Leste Human Development Report 2011: Managing Natural Resources for Human Development – Developing the Non-Oil Economy to Achieve the MDGs.

⁷¹ Hedditch S. and Manuel C. (2010) Timor-Leste Gender and Investment Climate Reform Assessment in Partnership with AusAID. International Finance Corporation. P. 5

⁷² Carmona, M. (2012) Report of the Special Rapporteur on extreme poverty and human rights. United Nations General Assembly, May 24, 2012.

⁷³ State Secretary for the Support and Promotion of the Private Sector (2013) National Strategy and Action Plan for Gender and Private Sector 2014-2017, Timor-Leste, p.17.

There tends to be an emphasis on characterising women as victims that does not illustrate women's resilience and contributions, as well as the intergenerational shifts in education and opportunities. The following boxes promote a somewhat different view, as experienced by Timorese women:

Box 1: Pro-Active Women in Timor-Leste

Legacy of Resistance: There is a history of women organizing educational campaigns in rural areas throughout East Timor. I myself was involved in the early days of the OPMT (Organisaca Popular das Mulheres Timorese) when we organized women's literacy classes and daily political discussions. After Indonesia invaded and we fled into the mountains, women and men both discussed the political situation at hand and developed strategies for resistance together. We must remember this history and learn again from it.

Today, there are women's organizations and some NGOs that are truly working to support women's participation in the reconstruction of East Timor. Women have started new community literacy programs, community-based health initiatives, and small income generating projects for women. More and more, women in rural areas are organizing and demanding a voice in community decision-making and national policy. All these activities show that women have the strength and skill to take leadership and contribute significantly to the development of a new, independent East Timor.

Source: Mana Micató, also known as Maria Domingas Alves Soares 2001 <http://www.solidarity-us.org/node/999>

Box 2: Young Women Leaders and Agricultural Innovation

Young Women Leaders – Central Region Suco Asumao District Aleiu

Suco Asumao is located about half an hour off the road leading from Dili to Aleiu. We conducted a focus group discussion with about 12 women of all ages. However, unlike the other FGDs, it was younger women who spoke out and lent a dynamism to the group. They reported how they had themselves started savings groups and farming groups, had learned how to make fish ponds from television and how they were approaching the UNICEF with help to build greenhouses. When asked at the end of the FGD if they had any other questions or comments, they were full of other ideas: technical assistance and seeds for vegetables; irrigation or at least better buckets than the ones that they get from market and soon wear out; water taps that need to be fixed so that more harvests are possible in the dry season. Further, also unlike other groups, they share information with each other and men plant maize communally. This would be an ideal group with which to pilot something such as micro-irrigation.

Source: MDF Poverty and Gender Study

Framework for Women's Economic Empowerment

In order to understand the current status of and potential for women's economic empowerment (WEE) in Timor-Leste, the following framework has been adopted. The WEE Framework draws on a definition of women's economic empowerment that is compatible with pro-poor and market development initiatives,⁷⁴ enabling projects to articulate WEE objectives and opportunities, and to monitor if both income gains and empowerment have been achieved.

Box 3: WEE Framework

WEE Framework

WEE is a conceptual framework for women's economic empowerment (WEE) and focuses on:

- Economic advancement – increased income
- Access to opportunities and life chances such as skills development or job openings
- Access to assets, services and needed supports to advance economically
- Decision-making authority in different spheres including household finances
- Manageable workload

Source: Jones, L. (2012) Jones, L. (2012) Women's Economic Empowerment Framework M4P Hub paper for DFID, Sida and SDC.

The following findings, opportunities and monitoring recommendations are described in terms of the WEE Framework.

⁷⁴ Jones, L. (2012) Jones, L. (2012) Women's Economic Empowerment Framework M4P Hub paper for DFID, Sida and SDC.

ECONOMIC ADVANCEMENT – INCREASED INCOME

Reports commonly indicate that the majority of work in Timor-Leste – productive and reproductive – is performed by women. Timorese women are very active in the agricultural sector with approximately 88% of women contributing to the sector, as compared to 82% of men.⁷⁵ It has been found that most women's businesses are in agribusiness and food production, retail trade, restaurants and services (mirroring their role in the care economy). Women's businesses in these sectors are generally smaller in terms of size, turnover, and number of employees, and the majority of women entrepreneurs operate businesses alone, although family business prevails in the agriculture sector.⁷⁶ Women are particularly active in trading, selling agricultural products to the market and managing kiosks, and are estimated to own over 40 percent of micro-enterprises.

Box 4: Women and Formal Business

As business owners, women own only 16 percent of formalized businesses in Timor-Leste. The dysfunctional formalization procedure impacts disproportionately on women because women are more likely to be seen as 'soft targets' and therefore harassed by officials, and with their lower education levels, women are less able to navigate the system. And, women professionals and entrepreneurs face constraints that inhibit their full potential for economic growth, held back by the male dominated culture, double time burden and disabling legal framework. Despite this heavy workload, women are under-represented in formal labour markets. Women workers are concentrated in vulnerable forms of employment with low pay, poor working conditions and lack of protection.⁷⁷ Stemming from less education and restrictive social norms, less than one-third of wage workers are women in most sectors – fewer than 7% in industrial sectors. In the service sectors (wholesale trade, retail, restaurants, and hotels) women outnumber men, but these sectors tend to be lower paying.

Despite segregation in the formal economy, for smallholder farmers, the economic unit is the household and therefore all interventions, as they increase household income, will benefit both women and men. Where there is increased income from agricultural activities, the whole household benefits. And, contributions to such gains are made by both men and women; women work in the fields alongside men – often weeding, watering and harvesting – and men support women's activities through such tasks as preparing land for vegetable production and taking livestock to market for sales. In cash crops such as rice and coffee, women contribute but men are typically responsible overall including sales of the crop. In all cases, money earned from crops is pooled and decisions about expenditures are made jointly for the most part (more in decision making section below).

However, in activities where women take the lead, the actual total financial gain to the household is less, so the perception may be that men contribute more or control more. For example, if vegetables are grown in the fields as cash crops, they are considered to be the men's responsibility with women helping out. Conversely, if vegetables are grown in a smaller plot for consumption with some sales, then women take the lead with men providing support. Similarly, women manage smaller livestock (chicken, dogs and pigs) and men handle large animals (cows, buffalo and horses). Women often explain this as the need for men to be responsible for the heavy work – relating to sheer muscle power and not to time considerations or endurance. However, as women often carry heavy loads on their heads (for example, they carry the rice harvest) – this to some extent is an example of cultural norm versus actual behaviour, and solutions must take this contradiction into consideration.

When considering women's roles, we also need to be mindful of the subtleties behind lower involvement of women in a range of economic activities. MDF research has found that the reason behind women being less involved or more focused on working closer to home may be a function of the large reproductive roles that are played by them spanning taking care of the children and seniors as well as cooking, cleaning and feeding family members. These roles are unlikely to change thus we need to be innovative in finding solutions to income generation which work around these traditional roles.

Box 5: Complementary Roles of Men and Women in Agriculture

Complementary Roles of Women and Men in Agriculture – Central Region Suco Asumao District Aleiu – FGD #4

In Suco Asumao, about half an hour off the road leading from Dili to Aleiu, women and men both grow vegetables and rear livestock as main sources of income. Women grow vegetables in plots near the house for consumption but sometimes go to Dili to sell the surplus. They grow mixed crops – mustard, beans, eggplant, tomato, water spinach,

⁷⁵ Hedditch S. and Manuel C. (2010) Timor-Leste Gender and Investment Climate Reform Assessment in Partnership with AusAID. International Finance Corporation. P. viii

⁷⁶ Ospina, S. (2006) Participation of Women in Politics and Decision Making in Timor-Leste: A Recent History UNIFEM p 14

⁷⁷ The lowest rate of vulnerable employment is seen amongst men employed in urban areas (37 %) from State Secretary for the Support and Promotion of the Private Sector (2013) National Strategy and Action Plan for Gender and Private Sector 2014-2017, Timor-Leste, p.14

green beans – they get about \$100 per harvest from selling vegetables with two to four harvests each year. It only takes them about an hour each day to water their kitchen gardens as they are not large. Men cultivate black and white mustard as cash crops in fields further from the house, and sell the produce in larger quantities in Dili. The field crops take more work, and men have to haul water from the river to water them. Women help if they have time but are often busy with the household and children. Vegetables are the overall most important contributor to household needs, followed by the rearing of livestock. Women rear chicken and pigs – chicken are mainly for consumption (min 2, max 10-15) but pigs (minimum 2 up to 4) are sold in the rainy season to cover household needs when vegetables are not in season. They buy young pigs for \$40 to \$50 and sell them for \$200 - \$250, usually two per year. Women can sell the pig from their house or men will take to market and sell for women. Men rear cows and horse – horses are for transport and cows are sold. Cows can fetch up to \$500 and are sold for social obligations and education.

Women's economic advancement is therefore tied to the advancement of the household economy, as is men's. However, there are constraints to women making a greater economic contribution as discussed in the following sections on access to resources and opportunities, and women's workload.

Interestingly, while many households continue to indicate poverty attributes, there is often an intergenerational transfer of assets to ensure the well-being of children as they mature and enter the economic realm. In particular, we observed that education is a priority and parents will deprive themselves in order to send female and male children to school including university in Dili and Indonesia whenever possible.

ACCESS TO OPPORTUNITIES AND LIFE CHANCES

Secondary research shows that time is a limiting factor for women (due to reproductive work) and they do not tend to operate businesses fulltime or all day. Therefore work tends to be home-based, low tech, conservative in growth/small-scale and part-time, and limits women's opportunities to be integrated into dynamic market systems where greater income is possible.⁷⁸ This was supported by our interviews and focus group discussions. In fact, women emphasized that they preferred to stay at home to be with the children, and would rather not have to go to market or take on other responsibilities beyond the homestead.

Secondary sources also report that because of gender discrimination, early marriage and large numbers of children per household, Timorese girls and women, especially in rural areas, do not have access to secondary and tertiary education. However, primary research showed that there is a move to much more education for girls and young women, with many being set not only to secondary school but also to university.

Married women's mobility is restricted due to time constraints and household responsibilities. At the same time, they have limited access to information, innovation and new technology since very few government or even civil society programs reach them. Women – and men – especially in rural areas, lack access to information on government actions and programs, market opportunities, suppliers, competitors, technologies, financing sources and on how to start and run a business.

At the same time, women have a much lower rate of paid employment than men. Those who are employed are mostly found in low paying jobs and have not benefited equally from more recently created employment opportunities (with the Government, NGOs and the UN, for example).⁷⁹

There are gender differences in networking behaviours as women's networks tend to be smaller, more homogeneous and with less outreach. Women rely mostly on family and friends for support networks, proven to be less effective for business success than are business and professional networks. Constrained access to networks limits women's economic development on many levels – access to services, finance, training and so on.

Box 6: Access to Opportunities

Access to Opportunities: Fatu Keru in Emera District, West Region – FGD #1

Women in Fatu Keru while quite close to the market reported that they do not have access to new knowledge, skills, inputs or other supports. They observe in the market that others are growing better quality produce, but they do not know how to do this or where they can get the information. While they may buy fertilizer and seeds from the market, for example, they do not get information on how to use these inputs. The agricultural office can provide this information, but do not come to the village and provide training to women very often. The women reported that they were trained on

⁷⁸ State Secretary for the Support and Promotion of the Private Sector (2013) National Strategy and Action Plan for Gender and Private Sector 2014-2017, Timor-Leste.

⁷⁹ Ospina, S. (2006) Participation of Women in Politics and Decision Making in Timor-Leste: A Recent History UNIFEM p 14

mustard which was very helpful, but they need to know about other vegetables. They have received some training support from an NGO and continue to grow the same four crops: mustard, tomato, cabbage and lettuce. They do not know if others would do well in the market or how to grow them, but they expressed strong interest in accessing such knowledge.

ACCESS TO ASSETS

According to Timor-Leste law, an owner of property can write a will and leave his or her property to whomever he or she wishes. If there is no will, then assets must go first to spouse and dependents (if they exist) and are shared equally.⁸⁰ Customarily, however, land ownership and assets belong to men with resources passed from father to son or other male family members with women having little right over land.⁸¹ Land ownership is further complicated by issues around titling of land and the upheavals over the past several decades.⁸² This was not raised as an issue in the focus group discussions that we held, as the household functions as an economic unit. However, in cases of divorce or a woman becoming widowed, lack of access to land would have a negative impact on a woman's ability to care for herself and her children.

Lack of collateral, lack of literacy, poor business and management skills, and the favouring of larger businesses in the financial system combine to reduce women's access to finance. Women clients of micro finance institutions usually access small loans (50 up to 1000 USD on average) to support their activities such as agricultural production and marketing. In our focus group discussions, women did reference Morris Rasik, and many appeared to have loans. However, these loans were limited to enterprise activities (e.g., kiosks, buying and selling coffee cherries) since repayment had to start immediately and continue on a weekly basis. There appear to be no loan products that are suitable for vegetable growing or livestock rearing that are better suited to balloon payments at the end of a set term.

From our FGDs we learned that women lack assets that would contribute to reduced workload. Two key technologies that would go a long way to reduce work while increasing income are:

1. Micro-irrigation technologies for vegetable production – some women report up to 7 hours a day to go to their vegetable plots and water their plants for meagre returns. This is partly due to the distance to the plots as well as the need to haul water from the river or taps. With appropriate micro-irrigation, women would be able to visit their plots once a day, and decrease watering time while there. When discussed with women, they indicated that with such a reduced workload, they would be able to plant and sell more vegetables, while others would be able to increase the number of harvests during the dry season. Water sources and types of micro-irrigation that could be available in Timor-Leste require further investigation but could be a significant game changer for many rural women and their main contribution to household incomes and well-being.
2. Post-harvest handling technologies are also lacking – technologies that could reduce workload, improve quality and increase incomes. For example, in coffee processing, many households sell green cherries to immediately access income, whereas selling dried coffee beans is more profitable. However, peeling and drying is labour intensive, and often only part of the harvest is processed at home. Some households have access to a 'machine' that can peel and dry the cherries and they are able to keep more of their harvest for processing, and even take it to Dili (rather than selling at the farm gate) to realize even greater returns. Mechanizing coffee processing would reduce women's workload and allow the household to earn more money at the same time. Costing and pricing for such machines – and other post-harvest technologies – could be explored and promoted by the program.

In order to take advantage of such assets, access to finance issues must be understood and overcome. A discussion of access to finance is included later in this section.

CONTROL OVER INCOME AND DECISION-MAKING

Some reports indicate that increased income generation by women, for their families, does not appear to result in greater economic empowerment for women. The National Action Plan indicates that although in many cases women do the work, they lack control over the income generated and do not have decision-making power about the use of resulting income. It has also been suggested that in addition to economic activities, organisations must address gender relations in the community for women's empowerment to be achieved.⁸³

⁸⁰ USAID/The Asia Foundation/Stanford Law School (n.d.) Introduction to the Laws of Timor-Leste: the laws of succession.

⁸¹ USAID (n.d.) Property Rights and Resource Governance: Timor Leste. http://usaidlandtenure.net/sites/default/files/country-profiles/full-reports/USAID_Land_Tenure_Timor-Leste_Profile.pdf

⁸² State Secretary for the Support and Promotion of the Private Sector (2013) National Strategy and Action Plan for Gender and Private Sector 2014-2017, Timor-Leste.

⁸³ Trembath, Grenfell and Noronha reported in Wigglesworth, A. (2012) Dreaming of a Different life: Steps towards Democracy and Equality in Timor-Leste.

However, the Demographic and Health survey provides interesting statistics to the contrary with tables that indicate: ⁸⁴

- 36% of married women who receive cash earnings state that they decide themselves on how their earnings are used (tripling from 12% in 2003)
- 58% report that they decide jointly with their husband (decreased from 79%)
- 6% of those polled, down from 8% in 2003, report that their husband alone decides how their earnings will be used.
- 22% of men and 26% of women say that the wife mainly decides how the husband's earnings are used.
- 75% men and 68% women say they jointly decide about how to spend the husband's income.

Our primary research supported this latter set of findings. Men and women reported that women manage the money and that men turn income they receive over to their wives. Decisions about spending tend to be made jointly, although women can decide on household expenditures without consulting their husbands. For example, if a woman goes to market and sells vegetables, she can make household purchases while there without discussion with her husband. On the other hand, a few households indicated that the male head of household might make some larger financial decisions such as buying a car or building a house (but usually we were told that it is a joint decision).

The Demographic and Health Survey also reports that women's roles in decision-making change based on decision being made, identifying four main decision types: more women decide about daily household purchases; while joint decisions are more likely around health care, major household purchases, and visiting family or relatives, women are more likely to decide jointly with their husbands. This was also echoed in our interviews and focus group discussions with women.

Box 7: Household Decision Making

Household Decision Making – Central Region Suco Liurai in Aileu District – FGD #3

Women in the Suco Liurai in Aileu region explained about their role in household decision making. They grow vegetables and sell the surplus in the nearby market, spending the proceeds on school, household necessities and seeds for the garden. When they are in the market, decide what is needed, and will go ahead and buy without consulting their husbands. Whatever money she has left over, she will put into the household pool that she manages. Men will turn over their earnings to their wives for management, but decision-making is mainly joint. Typically, women decide on household basics, but make joint decision for schooling, social obligations and expenditures on agriculture. One woman admitted to hiding money from husband in case of emergency or visitors since if she didn't hide it, it would get spent on household items. And, it does happen that husbands take money for drinking – in fact, they might lie about why they need the money in order to get it and then buy alcohol. Overall, though, this is not a big issue and women admitted they also like to spend money on betelnut.

WOMEN'S WORKLOAD

Women suffer from the classic double burden of 'reproductive' and 'productive' work, reportedly logging many more hours than men when these are combined. ⁸⁵ In the reproductive domain, women are responsible for a range of work: they bear and raise children, manage the household, collect firewood, help other women in childbirth, take care of the sick and elderly, and perform ceremonial and ritual roles. ⁸⁶ This significantly impacts even very young women as there are high rates of teenage marriage, and these young women are expected to leave school to fulfil household tasks. ⁸⁷

It is frequently reported that women also contribute to 'productive work' by taking on the majority of unpaid agricultural work for the household, and by earning income from informal employment in paid agricultural labour, petty trading, and home-based production in traditional crafts and weaving⁸⁸ as well as kitchen gardens, poultry,⁸⁹ fishing and pig rearing. ⁹⁰ While

American Portuguese Studies Association. p.47

⁸⁴ National Statistics Directorate (2010) Timor-Leste Demographic and Health Survey 2009-10, Democratic Republic of Timor-Leste Ministry of Finance p.204-206.

⁸⁵ 2007 Living Standard Survey reported in Hedditch S. and Manuel C. (2010) Timor-Leste Gender and Investment Climate Reform Assessment in Partnership with AusAID. International Finance Corporation. P. 5

⁸⁶ Note also that "The very common practice of polygamy may undermine the position of women. Polygamy is an accepted practice although there is little data on its prevalence. Although it is not accepted by the formal law, it continues to be practiced and recognized by customary law. The practice of payment of bride price (barlaque) has also affected the status of women." Hedditch S. and Manuel C. (2010) Timor-Leste Gender and Investment Climate Reform Assessment in Partnership with AusAID. International Finance Corporation. P. 5

⁸⁷ Wigglesworth, A. (2012) Dreaming of a Different Life: Steps towards Democracy and Equality in Timor-Leste. American Portuguese Studies Association. p.36

⁸⁸ Hedditch S. and Manuel C. (2010) Timor-Leste Gender and Investment Climate Reform Assessment in Partnership with AusAID. International Finance Corporation. P. vii

our findings agree that women have a range of activities and responsibilities, and work long hours, we would disagree with this characterization of unpaid labour. Both men and women farmers are unpaid, until they sell their product, and then that income is pooled for household expenditures. There was little evidence that women did not benefit and that men controlled this income as discussed above.

Also, it was noted in our interviews, that although women do work hard and long hours, men will contribute to “women’s work”. In a few of the interviews men were found at home taking care of the children while the women were away at the market or visiting family. Men also help women in the kitchen gardens (mainly preparing the land), and they take livestock to market if requested.

Box 8: Snapshot of Men and Women’s Roles

Men and women’s roles – west #6

This example illustrates that men’s and women’s roles are not as clearly defined as many claim. In fact, in the case of West #6, the husband is at home caring for the household while his wife is in the market selling vegetables (and does so throughout the vegetable season). It is unclear if this is a poverty coping strategy, and if the household were better off if the ‘reversed roles’ would continue. West #6 was observed to be very poor, attributable to the fact that they do not own land and they have 8 people living in the household. They have been provided 1 HA of land by the church and they are able to make very good use of it – being self-sufficient in rice and vegetables, and still earning a net income of \$1255 on the vegetables that they sell from 1 HA. They are able to achieve this by planting vegetables on the same land after they harvest the rice. They have no other source of income and the annual per capita income of the household is \$156.88 or \$0.43 per day, not including consumption of home-grown products. This household is progressive in their farming techniques (multi-cropping) and in the use of fertilizers and purchased seeds which would account for their good vegetable yields, and they would also like to learn more about high value crops. However, rice yields are low (500 Kg for a HA) and this may be in part because they use their own seeds and could likely benefit from improved techniques. They do suffer during the lean season and cannot afford to purchase food. As noted above, the cash income of the household is from the wife selling vegetables in the local market.

So, although it is undoubtedly accurate that women have more and varied responsibilities – it is not one-sided. In fact, when one group was asked if they help in the fields they responded with a shrug “If we have time.”

There are two time-consuming tasks that women must perform that seem unnecessarily burdensome (which are described in greater detail above under access to assets):

- Watering small plots of vegetables for up to 7 hours a day: (that is up to an hour’s walk each way twice a day (four hours total), so two hours carrying water from the river in the morning, and one hour in the afternoon with the help of children after school).
- Manually peeling coffee cherries so that they can be dried and sold at a higher price as dried beans.

A third area where women work longer hours that they would prefer not to do is selling their produce in markets – for some women this can take from 0.5 to 2 hours per day, while for others it means a weekly trip and an overnight stay. Women explained that they go to the market because farm gate prices are much lower, traders don’t exist to buy at the farm gate, or traders come irregularly leading to spoilage. If they had some type of regular buying arrangement (see next section), they would rather stay at home and invest more time in increasing production.

Box 9: Women’s Workload

Women’s Workload – Umboa Suco, Ermera District – FGD #2

Women in Umboa Suco, Ermera District appeared to be poorer than in other sucos where focus group discussions took place – many were thinner and weather-worn, and they appeared to be illiterate with less understanding of our questions. Additionally, the amount of work that they undertook seemed to overwhelm them and they were not interested in additional income generating opportunities. As with many women in Timor-Leste, women in Umboa are responsible for child rearing and taking care of the home, cultivating vegetables, raising livestock and helping with cash crops and staples. Men help them with land preparation and in selling their livestock. Women help the men in the coffee plantation carrying out the weeding and harvesting. Women also travel to market to sell vegetables even though it is 45 minutes away and costs \$5 per bag to transport their produce. However, if they wait at home for traders, there is no guarantee

⁸⁹Kyeema Foundation (2006) Poultry Newsletter Edition Six .pp. 8-9. http://www.kyeemafoundation.org/content/userFiles/file/news/eNewsletter8_Apr06.pdf

⁹⁰ National Statistics Directorate General Directorate for Analysis & Research Ministry of Finance Timor-Leste (2012) Timor-Leste Household Income and Expenditure Survey 2011. P.32.

when they will come and the vegetables will spoil. Women were interested in learning more about vegetable production, and in accessing insecticides since they have a problem with pests pre-harvest. They would also like to have a regular buyer or more local market so they did not have to spend so much time going to the market.

The following table summarizes our findings with regards to women's contribution and economic empowerment on a sectoral basis:

Table 1: Sectoral Analysis Using the WEE Framework

Framework Area of Focus	Vegetables	Rice	Coffee	Livestock
Economic advancement – increased income	Women are mainly responsible for vegetable production and marketing	Women contribute to rice production – particularly planting, harvesting and some weeding.	Women contribute to coffee production – particularly harvesting	Women are mainly responsible for small livestock rearing and farm gate sales
Access to opportunities and life chances such as skills development or job openings	Women receive some support from NGOs but no support from extension services	Extension services often target rice and the male members of the household	Extension services often target coffee and the male members of the household	Extension services often target large livestock and the male members of the household
Access to assets, services and needed supports to advance economically	Women grow vegetables on small plots for consumption; field crops are men's domain	Field crops are men's domain and they control assets, supported by women	Coffee is men's domain and they control assets, supported by women	Veterinary services are sometimes available but inconsistently – there can be high incidence of poultry illness and death
Decision-making authority in different spheres including household finances	Women utilize money earned from vegetables for household expenditures - HH money is pooled	Men sell rice and often give the money to women to manage with the HH pool	Men sell coffee and often give the money to women to manage with the HH pool	Women utilize money earned from livestock for household expenditures including education and social obligations
Manageable Workload	Production and marketing of vegetables contribute to women's workload but men often take over at home to help out when women are working on the farm or at market.	Women assist men in the fields, and particularly add to their workload at times of harvesting and transporting the harvest.	Women assist men in the fields, and particularly add to their workload at times of harvesting	Livestock does not take much time and as such is a preferred livelihood activity but it takes investment of capital that is not available

Opportunities for TOMAK

Despite the rather dire statements about women's economic development in Timor-Leste, there appears to be opportunities for women especially in agricultural value chains, particularly in vegetable cultivation, livestock rearing, trading, and contributing to cash crops. Such opportunities are outlined in the table below.

Table 2: Opportunity Analysis Using the WEE Framework

Framework Area of Focus	Vegetables	Rice	Coffee	Livestock
Economic advancement – increased income	Women could increase income through better yields, expanded land cultivation (through time saving), and improved variety and quality of vegetables	Women are part of household unit and would benefit from increased income of the household; they would contribute to greater income if their own skills in post-harvest handling were improved.	Women are part of household unit and will continue to benefit from increased income; greater income would result not only from increased yields, but also from the mechanization of drying process and post-harvest handling	Women are mainly responsible for small livestock rearing and farm-gate sales; if they could access livestock loans and veterinarian services, they would be able to increase incomes.
Access to opportunities and life chances such as skills development or job	Women would benefit from increased access to training on vegetables as well as access to	Women would benefit from increased access to training on rice management and post-	Women would benefit from increased access to training on coffee management and post-	Women would benefit from increased access to training on livestock management

openings	information	harvest handling	harvest handling	
Access to assets, services and needed supports to advance economically	Access to seeds, fertilizers, chemicals, land, and labour saving devices particularly for irrigation would increase women's outputs while decreasing their workload.	This is men's domain and women do not access assets and services unless it is a women's headed HH. Significant work is needed to break down current attitudes.	Access to labour saving device for the mechanization of drying coffee (which would also be more profitable for the household) would benefit women and their workload.	Access to veterinary services would reduce incidence of poultry illness and death with resulting increases in income
Decision-making authority in different spheres including household finances	Women would continue to utilize money earned from vegetables for household expenditures while other HH money would be pooled	Men would continue to sell rice and give the money to women to manage with the HH pool; women will continue to sell smaller amounts of rice when they go to market.	Men would continue to sell coffee and give the money to women to manage with the HH pool	Women would continue to utilize money earned from livestock for household expenditures including education and social obligations
Manageable Workload	Women could save time through more efficient market linkages and labour saving devices (micro irrigation) made available through the private or public sector.	Not aware of any mechanization that would reduce the harvesting workload of women; milling is already done by millers.	Mechanization of drying process would free up time of women; women could access such technologies through the public or private sector.	Increased number of animals increases income without adding much to the workload of women; appropriate microfinance loans would be a benefit here

Timorese women are significant contributors to the household economy, and there is much more that they could do through practical means described above. At the same time, such activities will contribute to women's empowerment and the well-being of their households.