

1. Introduction to the trip

The trip to Timor-Leste between the 11th – 19th of June 2015 with CERES Global offered a unique opportunity to meet with various individuals and stakeholders from a range of backgrounds. This presented a valuable insight into a range of overlapping and cross cutting development directives, initiatives, programmes and projects being undertaken across scales.

The stakeholders relevant to a mutually aligned project between CERES Global and AwF - include:

- Aileu Science and Technology Institute (ASTI)
- Family Life Centre, Aileu
- Peri urban community garden, Dili
- Mercy Corps
- World Fish
- Hivos
- Permatil

2. Stakeholder descriptions

2.1. Science and Technology Institute (ASTI), a nationally recognised training institute, Aileu.

ASTI has a focus on education and capacity building in the areas of

- Eco tourism and environmental outdoor education
- Agriculture, permaculture and sustainable farming training
- Hospitality training and capacity building
- Capacity building, education and empowerment of young woman
- Collaboration on primary and secondary school projects
- Project partners also include: Permatil, Dili Rotaract, and Moreland City Council (Melbourne, Australia).

2.2. Family Life Centre, Aileu.

- The Family Life Centre is an established Catholic convent and health and family education clinic operated by the Maryknoll Sisters in partnership with the Timor-Leste government.
- There is a sizable block of land located on the main road of Aileu roughly ~12 acres in size. The parcel of land is positioned several hundred meters from ASTI. It sits next to the main primary school and the Family Life Centre. This parcel of land has been recommended (offered) as a site for a multi partner project. The

suitable project for this site would be inclusive of sustainable agriculture technologies and training, food security education, nutrition and wellbeing education and food supply for school meals.

- Given the size of the vacant block and its location - it is deemed suitable for a project that is both educational in its objectives with the added benefit of offering the potential for social enterprise and micro enterprise.
- It is important also to note – there is currently a major road upgrade adjoining this location with southern provinces for agriculture and other industrial economic development. Once complete it will create a major transit route providing the opportunity of a high contact project site for farmer and agricultural worker outreach and contact.

2.3. Peri urban community garden, Dili.

- This Community Garden is located on the peri urban interface of Dili, 10 minutes from the central promenade.
- The community garden is in the early stages of site development with planting underway and an active nursery (700+ papayas) (Appendix 1).
- The community garden group is organised, with key members affiliated to other NGO's and government.
- The founder and owner of some of the land being utilised, is interested to integrate an aquatic agriculture component into the garden. They are also currently growing Tilapia in a home system as breeding stock (Appendix 3).
- This site offers the potential for the integration of aquaponics or an agri-aquaculture system.
- It is also worth noting that a small fresh produce market is located very close to this site.

2.4. Mercy Corps

- Mercy Corps is currently implementing the Royal Norwegian Government funded *Combating Malnutrition and Poverty through Aquaculture in Timor-Leste* (COMPAC-TL) program. Mercy Corps is partnered with Hivos and WorldFish and works closely with the National Directorate for Fisheries and Aquaculture (NDFA) of the Ministry of Agriculture and Fisheries (MAF) and with the Nutrition Department of the Ministry of Health (MOH).
- The program promotes inland fish farming, and where feasible integrated aqua-agriculture systems (IAAS), as a viable means to increase both access to

nutritious food as well as income for an estimated 1,500 resource poor farming households in six rural Districts of Timor-Leste.

- Mercy Corps is implementing the program in Ainaro, Manufahi and Covalima, while Hivos focuses their activities in Lautem, Baucau and Viqueque.
- There is certainly interest to have an aquaculture training facility. The Ministry of Agriculture, Forestry and Fisheries (MAFF) is in the process of deciding on a location for a potential training facility.
- The primary method being employed by aquaculture farmers is green water Tilapia culture. Green water culture has been successful, however one of the big set backs or hurdles in this project has surrounded behaviour change and technical communication and training.

2.5. World Fish, Dili.*(Gay Marsden)*

- WorldFish are the technical consultants to the COMPAC-TL programme being undertaken by Mercy corps and Hivos, alongside the National Directorate for Fisheries and Aquaculture (NDFA) of the Ministry of Agriculture and Fisheries (MAFF) and with the Nutrition Department of the Ministry of Health (MOH). .
- Economic and access constraints exist on aqua feeds for most farmers. There is the impetus then for affordable and sustainable low cost aquafeed in Timor-Leste. WorldFish alongside MAFF and other NGOs are actively involved to varying degrees in the facilitation of industry development of aquafeed options especially utilising agri-wastes and resources.
- WorldFish is a valuable resource for understanding the scope of aquaculture in Timor-Leste, as it actively works at multiple scales with a magnitude of partners.

2.6. Hivos *(Raul De La Rosa)*

- Hivos are currently undertaking the construction of several Aquaponics systems. These Aquaponics systems were designed by an NGO from the Philippines.
- Back-up power for Aquaponics is also of concern. The use of Tilapia in these systems and the low oxygen requirements of the fish means that the system has slightly less risk than other potential Aquaponics fish species in the case of power outages.
- Training and capacity building of the staff to problem solve and get consistency in Aquaponic operations will be of importance to the immediate and long term success of the project.
- Aquaponics is a higher cost operation than the low input aquaculture that dominates and is currently being fostered across Timor-Leste. While it may be

cost prohibitive for most aquaculture farmers - as an educational tool for integrated aquatic agriculture it has a great deal to offer. It may also be an appropriate technology for community and small private fish hatcheries, which have the potential to offer slightly higher returns per unit of expenditure.

2.7. Permatil (*Ego Lemos*)

- Permatil is an established permaculture organisation that has international recognition in permaculture. Ego Lemos the founder and board director of Permatil is also one of the key players for the incorporation of permaculture into school curricula. Permatil is active across Timor-Leste.
- Aquaculture is a key component of permaculture design philosophy
- There is currently a Permaculture design manual being written that includes both a chapter on aquaculture and aquaponics.

3. Opportunity for synergy

During the visit there were three broad national initiatives that were focused on increasing: food access and sustainable food production through school garden programs (3.1); secondly, educating and increasing community capacity in sustainable farming and managing biodiversity and community resources through incorporating permaculture into the national curricula (3.2); and lastly, bolstering food security through increasing access to local and regional aquaculture products for school meals (3.3). These three initiatives offer a basis for potential projects that mutually align with the objectives of both CERES Global and Aquaculture without Frontiers. Further research and in country project scoping will need to be undertaken, although it seems that the right social landscape exists to support a successful project that is based in aquatic-agriculture and permaculture. The potential project site into the future could act or work in conjunction with a training facility of some kind, yet to be explored.

3.1. National school gardens initiatives to fight malnutrition and under nourishment.

Children are among the most vulnerable members in Timorese society: 58% suffer chronic malnutrition; 38% suffer from anemia, malaria, diarrhoea and other diseases of children do not reach their ideal weight. The opportunity for providing meals to children from school gardens and to further educate students in food production and good nutrition is a big part of the solution.

3.2. Initiative for the incorporation of permaculture into the national school curricula.

This will be the first country globally to incorporate permaculture into its national school curricula. This will be potentially a massive milestone for permaculture. It is also

important to point out that Aquaculture and aquatic agricultural systems or integrated water and resource management are key components of permaculture. There is the potential to work towards inclusion of aquaculture school projects, which build upon other initiatives or directives to reverse malnutrition and increase community knowledge and access to nutritious food.

3.3. National Aquaculture initiative to incorporate fish into school meals

The Ministry of Agriculture, Forestry and Fisheries is in the process of surveying and deciding upon multiple locations across Timor-Leste to establish aquaculture for the provision of fish for school meals. Total production scales are in the order of hundreds of hectares (total locations, areas and information on partners needs to be clarified). Aquaculture production will occur in provincial locations in proximity to schools.

4. Collaboration potential

There a range of over lapping objectives by various stakeholders that may be met through the selection and design of the appropriate project. The objectives across the various stakeholders cover: fighting malnutrition through education and supplying fish for school meals; increasing aquaculture knowledge, capacity and community agri-resource management through the use of permaculture and school gardens. While outside the scope above, a major component overarching the objectives of the various stakeholders is supporting community economic diversification alongside health and wellbeing.

The time spent in Timor-Leste was very brief, and to gain a more complete understanding of the potential for a project/s that mutually align with the objectives of CERES Global, AwF and potential future partners will require a follow up trip.

Appendix 1



Community Garden, Dili - Papaya plantation just before planting



Community Garden, Dili - Papaya Nursery



Community Garden, Dili - Vegetable propagation



Community Garden, Dili - Home fish system Tilapia brood stock and production



Feeding the Tilapia from Pigeon coupe integrated pond



Potential integrated permaculture aquatic agriculture site, Aeliu.
School can be see adjoining allotment



Potential integrated permaculture aquatic agriculture site, Aeliu.
Small Subsistence garden with Family Life Center in foreground.