



A Livelihood and Market Study of Resettled Communities in the Eastern Province

Assessing conditions in selected Grama Niladari Divisions
of the Batticaloa and Trincomalee districts

Mohamed Munas
Gayathri Lokuge

September 2013
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by

**Mohamed Munas
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The **Centre for Poverty Analysis (CEPA)** is an independent, Sri Lankan think-tank promoting a better understanding of poverty-related development issues. CEPA believes that poverty is an injustice that should be overcome and that overcoming poverty involves changing policies and practices nationally and internationally, as well as working with people in poverty. At CEPA our emphasis is on providing independent analysis, capacity building of development actors, and seeking opportunities for policy influence. We are influenced by a strong orientation towards service provision that is grounded in sound empirical evidence while responding to the needs of the market. CEPA maintains this market orientation through client requests, while pursuing a parallel independent research agenda based on five broad thematic areas: post conflict development, vulnerability, migration, infrastructure and the environment. Ultimately, CEPA strives to contribute to influencing poverty-related development policy at national, regional, sectoral, programme and project levels.

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Preface

After the end of the conflict in 2009, communities in the Northern and Eastern Provinces of Sri Lanka started rebuilding their lives and livelihoods. Many were displaced communities who were returning to their homes in the North and East. The livelihood needs of these communities, especially communities resettling in war torn areas, are different to those in other areas. As part of an initiative by the Agency for Technical Cooperation and Development (ACTED) to help these resettling communities, the Centre for Poverty Analysis (CEPA) was contracted to undertake a study in 2010, to identify potentially profitable economic activities in two conflict affected districts, Batticaloa and Trincomalee. The analysis aimed at providing an understanding of livelihood patterns and market opportunities and constraints in these regions. Part of this process included analysing the potential to target the most vulnerable people in the communities, such as female-headed households, the elderly and people living with disabilities. Findings detailed in this paper highlight the different livelihood areas which require support. Results from this study can be used to fine-tune and more effectively target livelihood development initiatives for communities in these and other conflict-affected areas.

The main objectives of the study were to examine the different forces affecting the economic environment in the target districts in order to identify the various factors that impact livelihood activities. Analysing the existing legislative and administrative structures for economic enhancement and identifying the major constraints and practical solutions adopted to access services in these areas (including strategies adopted by rural producers) formed part of the study objectives.

The study developed value chains, in a post-conflict situation, for the districts of Batticaloa and Trincomalee. It used a conceptual framework derived from value-chain analysis to identify the key aspects that contribute to increasing the profitability of existing and expanding livelihoods. In this analysis the key element is the end-market. Product markets, market trends, key components of the sub-sector, and an analysis of the relationship between the different stakeholders in terms of their role in the sectors formed crucial elements of the sub-sector analysis.

The farm and non-farm livelihood options of the study target group were identified and mapped as a first layer, and the most prominent livelihood types were chosen as sub-sectors for the analysis. The important sub-sectors identified for this market study were paddy, vegetables, livestock, inland fisheries, marine fisheries and non-farm livelihoods (brick making).

It was noted that producers were present only in the lower levels in the value chain (most of them were at production level), limiting their profitability, role and control in the value chain. General constraints to communities, and local producers in the areas were identified as the lack of capital, technology and supportive structures (in terms of connectivity – roads, electricity - and extension services/assistance from government departments) and also environmental hazards such as floods, drought and wild elephant attacks, which made them even more vulnerable within a post-conflict environment.

These communities were also more vulnerable to external shocks. Even during the conflict they had engaged in traditional livelihoods. However, these sectors have not reached their optimal potential and this already existing skill base is the biggest advantage these resettled communities have, and should be capitalised upon and made to be more competitive with the support of new technology. The following sectors were identified as potential income

generating activities in the target villages: high value traditional paddy cultivation; cash crop cultivation (vegetables and fruits) and processing (fresh fruit drinks, dill, pickle); value addition based on milk (curd, yoghurt); deep sea fishing, culture fishing (shrimp, sea bass, crab), support services for the fishing sector (ice plants, boat repairing/manufacturing, fish transport) and value addition (dry fish, canned fish); non-farm based livelihoods (maintenance and repair, ICT based services, retail trade, mini garment factories); support services to the tourism industry (accommodation, restaurants, adventure tourism).

Based on study findings, it is apparent that starting completely new livelihood activities in an environment that is in a stage of revival is risky. Thus, such initiatives need to be undertaken with alternatives that people can fall back on if these new livelihoods are not successful. Niche areas for support and growth were identified within the existing sub-sectors (such as cash crop cultivation or culture fishing) while also identifying niche areas where the traditional sectors can benefit using the same skill base – for example, the need to explore the potential for introducing high value traditional paddy varieties. The study also looked at areas where communities can be linked to expanding industries such as tourism in the region.

In addition, interventions do not always need to take place in the target communities. Interventions at a different point in the value chain can create positive backward impacts that can enhance the livelihoods of the target communities.

The possibility of linking up with the regional hubs where more trade and manufacturing enterprises are situated should also be explored in order to maximise spill over effects. In the studied areas, most of these enterprises were located in the more urban areas such as Kaththankudi Urban Council and Trincomalee and Batticaloa Municipal Councils as well as in popular tourist destinations such as Pasikuda, Kalkuda and Nilaweli. It is recommended that the development initiatives link target beneficiaries with these hubs to act as raw material suppliers of fresh fruit, vegetable and milk for processing enterprises and also to provide small garments and other small industries. This would also help overcome the lack of physical space for expansion in some of these hubs such as Kaththankudy.

An important point to take into account when designing/implementing livelihood interventions for recently resettled communities, is that a conflict sensitive approach is crucial throughout the project cycle. There should also be continuous monitoring, consultation and follow-up with the communities on the assistance given to them in order to ensure the sustainability of the support. It is also important to share the success stories of certain communities with other target communities so as to learn and replicate successful initiatives.

Conflict affects economic development and value chains in different ways – disrupting transport, destroying infrastructure, restricting mobility, and affecting relationships between actors in the value chain. The study found several cross-cutting issues faced by communities engaging in the different livelihood sub-sectors identified in this study. Farmer and fisher groups' roles in the value chain should be expanded and strengthened as they are the main producers in these communities and currently have limited power and roles within the value chain. Communities should be empowered to engage in value addition and marketing and trained in these areas as well as in quality control. Training on new and effective production technologies and methods of facing/coping with potential hazards and environmental issues should also be provided. The community level production groups should also be part of the village level SMEs formed to market the local produce to external markets. Infrastructure improvement is crucial – with the need for improved rural roads, public transport facilities, electricity supply, physical market centres and rehabilitation of minor tanks. Access to financial services should also be improved for the sub-sectors to be sustainable. Micro-credit

should be provided for farm-based as well as non-farm-based producers and enterprises, with customised micro-credit for the needy, productive poor farmers and vulnerable groups, and for community awareness raising efforts on the financial services available and application procedures.

Thus, there is considerable space and potential for livelihood improvement and expansion among conflict-affected, resettlement communities in the North and East. However, based on the assessment of this study, it will take a considerable time for recently resettled families to develop their capacity and venture into new areas of production. The study recommends that small producers are encouraged to build on their existing skills, and that they are supported to move up the value chain of their existing forms of livelihood. There is considerable potential to add value to their operations within the existing context, and also to make use of the potential changes that can be brought in through the development of tourism in the two districts.

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List of Abbreviations

ACAP	Assistance to Conflict Affected Persons
ACTED	Agency for Technical Cooperation and Development
AI	Agriculture Instructor
CBO	Community-Based Organisations
CEPA	Centre for Poverty Analysis
CFS	Consumer Finance Survey
DAPH	Department of Animal Production and Health
DCS	Department of Census and Statistics
DOA	Department of Agriculture
DOAS	Department of Agrarian Services
DOF	Department of Fisheries
DS	Divisional Secretariat
FAO	Food and Agriculture Organisation of the United Nations
FGD	Focus Group Discussion
FHHs	Female-Headed Households
GN	Grama Niladari Division
GoSL	Government of Sri Lanka
HIES	Household Income Expenditure Survey
IDMC	Internal Displacement Monitoring Centre
KPI	Key Person Interview
LTTE	Liberation Tigers of Tamil Elam
MFAR	Ministry of Fisheries and Aquatic Resources
MOP	Muriate-of-Potash
MPCS	Multi-Purpose Cooperative Societies
OFCs	Other Field Crops
PLR	Paddy Land Registration
PwDs	Persons with Disabilities
SMEs	Small and Medium Enterprises
TSP	Triple-Super-Phosphate

1. Introduction

The Centre for Poverty Analysis (CEPA) was contracted by the Agency for Technical Cooperation and Development (ACTED) to identify and study potentially profitable economic activities in two conflict-affected districts, Batticaloa and Trincomalee, with a special focus placed on the geographic areas in which ACTED worked. The study was conducted in 2010, one year after the end of the thirty year war. The analysis aimed at providing an understanding of livelihood patterns and market opportunities and constraints in the studied regions. This included the potential to target the most vulnerable people in these regions, such as female-headed households, the elderly and people living with disabilities.

The specific objectives of this study were to:

1. Examine the forces adversely or positively affecting the economic environment.
2. Identify the economic, social, cultural, technological, political, religious, and environmental factors which may impact livelihood activities.
3. Analyse the existing legislative and/administrative structures for economic enhancement.
4. Identify the major constraints and practical solutions adopted with regard to access to services (location specific), including strategies adopted by rural producers.

The geographical areas in which this study was conducted had been affected by conflict and had resettlement populations. The main livelihoods of the studied communities were paddy cultivation, fishing, vegetable and fruit cultivation and dairy and livestock. The study mapped out the different processes involved in the aforementioned livelihood sectors and carried out a value-chain analysis.

The findings would provide development organisations with insights into the specific livelihood-related challenges and needs of resettled communities.

The study comprises of five sections. This first, is an introduction to the study; the second section looks at the conceptual framework, methodology and limitations of the study; the third section describes the context in Batticaloa and Trincomalee Districts in studied areas; the fourth section provides a detailed analysis of value chains for key livelihoods in the target areas and section five provides policy and development intervention opportunities and recommendations.

2. Conceptual Framework and Methodology

2.1 The value-chain analysis: Approach to the study

A value chain refers to the sequence of activities that are undertaken in relation to a particular activity that creates value. It could include a set of primary and support activities that an enterprise performs to turn inputs into value-added outputs, taking note of consumer needs, and producer benefits. As the product passes through several stages of the value chain, the value of the product increases (Rengasamy, 2009).

“Value chains encompass the full range of activities and services required to bring a product or service from its conception to sale in its final markets—whether local, national, regional or global” these actors and stakeholders are supported by a range of technical, business and financial service providers (Saperstein & Campbell, 2007).

It is important to see the horizontal and vertical links of the value chain. The relationship between different players at the same level of the value chain is considered a horizontal link. Identifying horizontal linkages can help recognise joint constraints that require collective action and collective production which generates economies of scale for small scale producers. The vertical linkages through the value chain are visible. Vertical linkages are perceived as a combined effort to move the products or services along the different levels of the value chain until it reaches the final market. The aim is to benefit players at all levels along the chain. Value chains are often focused on creating market links or strengthening existing market links for the products along the supply chain (Research into use website¹).

The activities related to a value chain of a single livelihood can be contained within a single group or divided among different producers, either from a single geographical location or spread over wider areas, which can be linked to create synergies (Research into Use website). Each type of livelihood may have different value chains since the actors/stakeholders of the livelihoods vary for different sectors or sub-sectors.

2.2 Value chains in a conflict-affected context

Conflict affects economic development and value chains in different ways. Transport is disrupted, infrastructure is destroyed or inaccessible and security concerns restrict mobility. Power relationships also tend to shift rapidly as does the policy environment, affecting stability and the enabling environment for business and enterprise. Often, interventions of governments and donors target short-time horizons. Most importantly, conflict destroys the trust between different actors in the value chain.

Using a value chain approach in post-war settings requires the following: segmenting the market to make use of existing opportunities and generating early momentum, re-building the horizontal and vertical links in the chain, providing participants with access to support services such as transport, finance and marketing, and working to regain trust between the different actors. There is a need to work with government agencies to build the policy environment for fostering economic development and with different private-sector actors who can be encouraged to invest in upgrading different stages of the value chain. In contexts where economic activity has been severely constrained and institutions considerably weakened, strengthening value chains may have to be part of wider, multi-sector efforts.

¹Source: <http://www.researchintouse.com/nrk/RIUinfo/valuechain/valuechain.htm>

This study takes a post-conflict approach to developing the value chains in the focus districts of Batticaloa and Trincomalee. These districts, together with Ampara in the Eastern Province and all of the Northern Province have been affected by almost three decades of war between the Liberation Tigers of Tamil Elam (LTTE) and the Government of Sri Lanka. Cessation of overt hostilities in the East in 2007 led to a post-war situation prevailing in the region, even before the war ended in May 2009. ACAP (Assistance for Conflict Affected Persons) was the ACTED project which selected sites in which to work in the North and East, mobilised communities and identified infrastructure which were priority for reconstruction. The study was part of the process of identifying the livelihood sectors of the selected recently resettled communities and areas for support and value addition.

2.3 Conceptual framework

A conceptual framework derived from value-chain analysis to identify key aspects that contribute to increasing the profitability of existing and expanding livelihoods was used here. Interventions to create a value-chain market system need to link producers to the market. They should work with the intermediaries (in other words the processors, marketing and sales personnel, etc.) to produce the goods that are in demand, in a way that enhances the profitability and market power of the producer and benefits all the stakeholders along the chain.

In this analysis, the key element is the end-market - local, national, regional or global. Each sub-sector is analysed using the value-chain approach. Product market, market trends, key components of the sub-sector, and an analysis of the relationship between the different stakeholders in terms of their role in the sectors are crucial elements of a sub-sector analysis. These stakeholders may vary for different value chains. The constraints and opportunities in terms of technology, market access, institutional policies, finance and credit, and input supply also form a part of the sub-sector analysis.

Although adapted by many, the underlying concept of the value chain remains the same. The value-chain analysis for the paddy sub-sector, undertaken by Oxfam GB with the Agrarian Services Department, takes a conventional approach to value chain development by considering all the relevant stakeholders of the paddy value chain. This study was localised to the Batticaloa District so that specific livelihood support and improvement recommendations could be provided. Another study on the fisheries sector in Sri Lanka, conducted by USAID uses the value-chain approach to understand how conflict can influence the fisheries sectors' ability to compete (Arunatilake et al., 2008). The Livelihood Gap Analysis conducted by ILO in 2008, provides detailed information on livelihood needs and infrastructure gaps of the selected resettled Divisional Secretariats (DS) in the Batticaloa District.

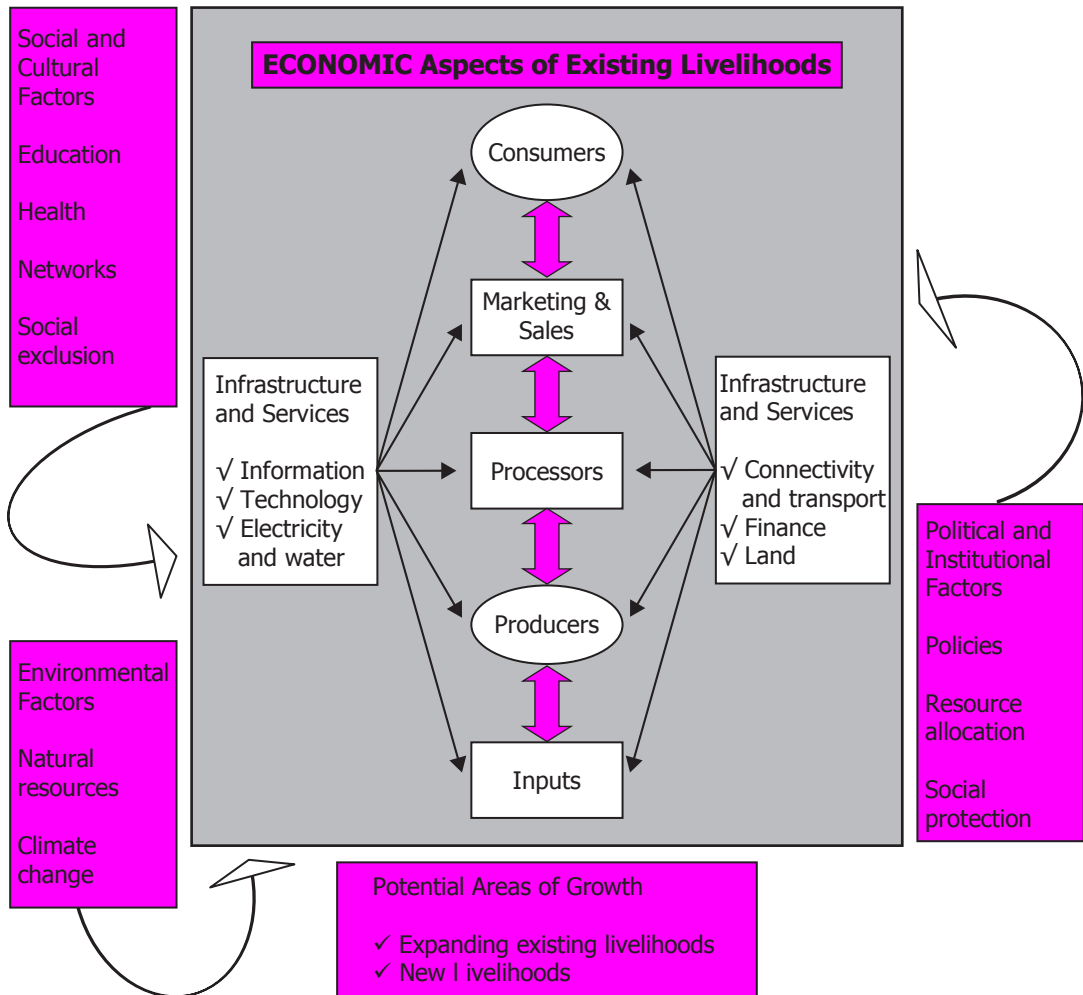
Available literature (including literature on the aforementioned research) was used to map the stakeholders and their functions along the value chain, to identify some of the constraints and opportunities discussed in Section 5 and to frame the recommendations based on the study analysis.

Sub-sectors for the value-chain analysis of this study were identified using the information gathered through existing secondary and primary data. The farm and non-farm livelihood options of the study target group were mapped as a first layer and the most prominent livelihood types were chosen as sub-sectors for the analysis. The important sub-sectors identified for this market study were paddy, vegetables, livestock, inland fisheries, marine fisheries and non-farm livelihoods (brick making). At the time of the study the tourism

sector was a growing, but not the prominent livelihood sector and most survey respondents did not identify it as a livelihood option. However, the study does point out the links the identified sub-sectors could have to the tourism sector for market expansion and diversification.

Value chains exist within particular contexts, and the framework in Figure 2.1 describes the contextual factors that can influence the operation of the value chain at all levels. There are social, cultural, environmental, political and institutional factors, which are critical to consider when enhancing the livelihoods of vulnerable groups in a conflict-affected area. The participation of vulnerable groups will also be affected by their own human, social, financial and physical assets, and their level of motivation.

Figure 2.1 Conceptual framework of the study



2.4 Methodology

The market analysis largely used a qualitative methodology which was complemented by secondary quantitative data and resources. Published data from government websites, and agencies as well as ACAP data were used and a short literature survey was also conducted with the purpose of collating background information relating to value-chain analysis. Sampling was undertaken using quantitative data both from the ACAP project and District Secretary Statistical Information sheets (Section 3 provides the criteria used for sample selection).

The initial data collection phase focused on gathering district level data - respondents were representatives of the government departments of agriculture, agrarian services, fisheries, livestock, and at the provincial and district level, administrative officers such as the DS and ACTED and Sewalanka staff.

The second, more extensive data collection phase included multiple steps. As a first step, the district level workshops were structured and conducted in a way that information was gathered for each livelihood sector (sectors which had been identified earlier through secondary data and initial field work). Focus Group Discussions (FGD) guiding questions were designed to capture the in-depth issues related to various farm and non-farm livelihoods in the study locations. Key Person Interview (KPI) tools were used to obtain information from the state institutions and identified stakeholders at different stages of the value chains from different livelihood sectors. In addition, an Open-ended Case Study tool was used to obtain data on issues of vulnerability.

Due to time constraints, it was not always possible to triangulate information obtained from one source that was specific to study locations. The multiple layers of data collection, i.e. the district level workshops, key informant interviews and community level discussions, did help bridge this gap to a certain extent. The rapidly changing context of the communities that had recently resettled at the time of the study warranted a level of intense primary data collection.

3. The Context: Batticaloa and Trincomalee Districts

This section of the study profiles the two districts - Batticaloa and Trincomalee - that are the focus of this market analysis. It provides the background to the following sections in the study and raises contextual specificities that are relevant when dealing with livelihoods and livelihood reconstruction in these regions (such as issues of well-being, vulnerability, availability of physical infrastructure and impact of conflict on various livelihoods).

3.1 Implications of the demographic characteristics of the study districts

The population demographics have changed considerably over the decades as a result of the conflict. This has had implications on the number of people and ethnic groups within the region. In a post-conflict situation, as is presently faced, returnees could change the demographic profile of the regions and impact on how livelihood groups can function within these changing demographics.

A special enumeration in 2007 by the Department of Census and Statistics (DCS) after the cessation of hostilities revealed a total population of 334,363 in Trincomalee; representing a 30.6% increase in population since the last Census in 1981 (DCS, 2007b). This was comparatively lower than the increase in Batticaloa District during the same period which experienced a 56.2% increase in population and had a total population of 515,857 (Department of Census and Statistics, 2007a). In the 2012 Census, the total population in Batticaloa was 525,142 and 378,182 in Trincomalee. This shows an increase of around 1.76% in Batticaloa and a 0.11% increase in Trincomalee since the end of the conflict.

Despite both districts being conflict affected, the ethnic composition has only changed significantly in the Trincomalee District over the past five decades; the Muslim population in the Trincomalee District has increased by 16% (2007) since 1981 (*ibid.*) becoming the most ethnically predominant group in the district, even though this percentage fell marginally from 45.4% in 2007 to 40.41% in 2012. In the Batticaloa District, the Sri Lankan Tamil ethnic group has remained the predominant group. The percentage of Sinhalese in the population has fallen in the Batticaloa District over the past 5 decades from 3.4% in 1963 to 1.19% in 2012, while increasing marginally in both districts from 2007 to 2010 by 0.69% in Batticaloa and 1.56% in Trincomalee. The Sri Lankan Tamil population has increased marginally by 1.56% and 2.60% in Trincomalee and Batticaloa Districts respectively from 2007 – 2012. This is very different from during the war when the population count for all ethnicities in Batticaloa had been significantly low. This shows increasing resettlement activity in Batticaloa after the cessation of fighting. Though all populations have returnees post war, the Sinhalese who have been resettled in majority Tamil areas in the East have resulted in the rise of ethnic tensions. These population movements indicating resettlement have created a complex situation where some Internally Displaced Persons (IDPs) have conflicting claims to the same land and property. Tables 3.1 and 3.2 provide information on the ethnic mix of the studied districts, providing a pre-war and post-war perspective.

Table 3.1: Population by ethnicity in Trincomalee District

Year	Total Population	Sinhalese (%)	Sri Lanka Tamil (%)	Indian Tamil (%)	Sri Lanka Moor (%)	Other (%)
1963	138,553	28.8	36.9	2.4	29.4	2.5
1971	188,245	29.1	35.4	2.7	31.8	1.0
1981	255,948	33.4	34.3	2.1	29.3	0.9
2007	334,363	25.4	28.6	0.1	45.4	0.5
2012	378,182	27.0	30.6	1.7	40.4	0.3

Source: Department of Census and Statistics, 2007b, 2012

Table 3.2: Population by ethnicity in Batticaloa District

Year	Total Population	Sinhalese (%)	Sri Lanka Tamil (%)	Indian Tamil (%)	Sri Lanka Moor (%)	Other (%)
1963	196,189	3.4	71.1	0.8	23.5	1.2
1971	256,721	4.5	69.1	1.7	23.7	1.1
1981	330,333	3.4	70.8	1.2	23.9	0.7
2007	515,857	0.7	74.0	0	25.0	0.5
2012	525,142	1.2	72.6	0.2	25.5	0.5

Source: Department of Census and Statistics, 2007a, 2012

The change in population compositions as discussed above could be explained in many ways. The impact of the war and the resulting displacements of minority communities within these districts could explain these changes. The influx of IDPs into these regions could also have changed the composition of the population.² Other aspects, such as some ethnic groups (for example Muslims) showing a higher annual population growth rate in general could also be another contributing factor.

Despite these changes, settlements particularly in the East, are clustered along ethnic lines. In many regions settlement patterns and communities reside in distinct ethnic enclaves with interaction seemingly taking place in more urbanised environments within the districts. Engaging in various types of livelihoods increases the inter-ethnic interaction across the region. This study alludes to this as well, where groups that have been known to harbour tensions work together along various components of the value chain, seemingly in harmony.

*'Our milk goes to three hands before the market. The Tamils engage in milking and they sell the milk to Muslims. The Muslims sell it to Sinhala shop owners'.
(FGD, Eravur pattu)*

These population changes and the potential for it to keep changing as a result of the end of the war and the returning population is a point to note in relation to rehabilitation work in the East. However, at the same time, resettlement of Sinhala populations in both districts has also fuelled minority insecurities regarding the protection of land rights. In terms of livelihoods, managing of inputs and production activities as well as engaging in meaningful market linkages will be affected by changes in population and population flows, which in turn affects the groups that can access resources and those who are excluded.

² The lack of data on displacement and resettlement by ethnicity makes it difficult to draw conclusions on causal factors in the two districts.

The importance of understanding the local context and dynamics in terms of inclusion and exclusion of main identity groups (such as ethnicity) and incorporating this understanding into project designing has been highlighted in a study conducted by CEPA in collaboration with Oxford University. It argues that the most contentious dimensions of development policy design and programming is in the targeting - which groups are included and excluded in the projects - and how these aspects affect local dynamics and community interactions and can increase tensions between groups if not managed (Diprose *et al.*, 2010). Thus, this study considered the local context and socio-economic and demographic dynamics which existed in Batticaloa and Trincomalee when forming the methodology and carrying out the mapping exercises.

Based on the survey carried out by the Department of Census and Statistics in 2007, in Trincomalee, people in 24 GN divisions (belonging to 7 DS divisions) were displaced while in Batticaloa, people in 23 GN divisions (belonging to 3DS divisions) were displaced. This was mainly due to conflict; 74% and 85.8% of the displaced people in Trincomalee and Batticaloa respectively were displaced due to conflict. The rest had been displaced due to the tsunami disaster (DCS, 2007a, 2007b).

Table 3.3: Displaced population in Trincomalee District, 2007

DS Division	Total Population	Population Displaced due to conflict	Population displaced as a % of total population
Padavasiripura	10,666	16	0
Kuchchaveli	26,327	531	2
Gomarankadawala	5,879	6	0
Morawewa	5,563	886	16
Town and Gravets	89,046	5,391	6
Thambalagamuwa	27,572	467	2
Kanthale	42,861	287	1
Kinniya	61,558	379	1
Seruwila	11,142	787	7
Muttur	47,132	2,714	6
Verugal	6,617	0	0

Source: Department of Census and Statistics, 2007b

Table 3.4: Displaced population in Batticaloa District, 2007

DS Division	Total Population	Population Displaced due to conflict	Population displaced as a % of total population
Koralai Pattu North	21,263	1,093	5
Koralai Pattu West	20,985	27	0
Koralai Pattu	24,589	2,702	11
Eravur Pattu	75,886	17,276	23
Eravur Town	25,024	84	0
Manmunai North	88,459	9,081	10
Kattankudy	39,523	237	1
Manmunai Pattu	30,747	874	3
Manmunai S-W	23,988	357	1
Poratheevu Pattu	38,282	442	1
Manmunai South and Eruvul Pattu	57,917	1,967	3
Koralai Pattu Central	24,510	582	2
Koralai Pattu South	19,659	6,107	31
Manmunai West	25,025	4	0

Source: Department of Census and Statistics, 2007b

More than five years after the cessation of conflict in the East, many people displaced at various stages of the conflict have returned to their home areas. However, the problem of sustainable resettlement is still a crucial problem for many of the conflict-affected population. Resettlement of all ethnic communities after the war has created multiple complications such as competing land claims, boundary disputes, the inability to provide legal documents and landlessness. Public information on IDPs and returnees is not easily available and no comprehensive profiling has been undertaken since 2007 making it a "hidden crisis". Many who have returned have difficulties accessing basic necessities such as food, water, shelter and sanitation and in exercising their civil rights.

Displacement and resettlement has also been one of the reasons for migration, more so in Trincomalee than in Batticaloa. In 2012, the Batticaloa District had a migrant population of 22,975 people, 3,034 of whom had been displaced and 1,153 who had been resettled after displacement. In Trincomalee, these figures and proportion were higher, with the district having a migrant population of 73,640, with 3,476 being displaced and 28,225 resettled after displacement.

Quite often large scale economic projects (that the local population does not have the skill to help implement/directly benefit from) are given precedence over much needed infrastructure assistance that would benefit individual households, including IDPs and returnees. Some relocations were also regarded with suspicion among the local and international organisations as having been forced. The Eastern Province remains highly militarised, though relatively less than the Northern Province. The military continues to be an economic player, competing with the IDPs, returnees and others affected by the conflict and hampering economic independence from aid. However, this condition is more prevalent in the North than in the East.

Those who were displaced from the Trincomalee high security zones (Sampur area) had not been able to return to their homes at the time of the study, and had often been resettled in areas close to their lands of origin among host communities. Most of the time this was under dire conditions and returnees have consistently voiced a demand to return to their own lands.

Continued government restriction on the humanitarian community meant that no comprehensive needs assessment had been conducted in the conflict-affected areas of the North and East, and the difference between needs and available resources continues to plague these people. In addition, humanitarian and development aid in the North and East is heavily monitored and controlled by the military. Therefore, the distribution of aid to the displaced and their adequate resettlement is by no means universal. The Lessons Learnt and Reconciliation Report and its subsequent recommendations in 2011 have not been included in the action plan of the government (IDMC, 2012). These recommendations were crucial to achieving a durable solution for the displaced.

3.2 Poverty and income inequality

Determining well-being is important in trying to understand the choice/lack thereof to engage in certain types of livelihoods over others, particularly in relation to income availability and sources, welfare transfers, access to physical infrastructure and other inputs. These aspects are also important in relation to decisions regarding the target population, specific project intervention (such as type of livelihood assistance or type of infrastructure needed) to name a few.³

A paper written by Sarvananthan (2005) provides an overall understanding of the poverty situation in the North and East. He concludes that in terms of per capita income the North and East Provinces are the worst-off in the country. He concludes that deprivation is significantly higher than the national average on the basis of proxy indicators for relative poverty such as borrowings, commodity loans and income transfer. The Consumer Finance Survey (CFS) data collected in 2003/2004 show that the income inequality in the Eastern Province is highest among all the provinces and inequality remained in 2009/2010.

According to the 2009/10 Household Income and Expenditure Survey (HIES) data (DCS, 2011), the Eastern Province shows one of the highest levels of poverty in comparison to other provinces, with an income of only Rs. 5,663 mean per capita income, with only 1.5 income earners per house. This is, by far, the lowest income earned in any of the provinces for a month (DCS, 2011).

It is important to note, however, that this survey has not covered some of the remote areas of the Batticaloa and Ampara Districts and has completely excluded the Trincomalee District due to the security conditions that prevailed. Given that some of the poorest areas have been left out, it can be assumed that the poverty levels were higher during these periods than what was recorded for the province.

³. The Household Income and Expenditure Survey (DCS, 2008) was not conducted in the Trincomalee District, so the district level poverty information is not available for Trincomalee. However, this information is available for the Batticaloa District.

Table 3.5: Head count index by province

Province	Head Count Index'	
	2006/07	2009/10
Western	8.20	4.20
Central	22.30	9.70
Southern	13.80	9.80
Northern	-	12.80
Eastern	10.80	14.80
North-Western	14.60	11.30
North-Central	14.20	5.70
Uva	27.00	13.70
Sabaragamuwa	24.20	10.60

Source: Department of Census and Statistics, May 2011

The poverty headcount index in the Batticaloa District, as stated in the HIES 2009/10 is 20.3% in other words, 20.3% of the total population (Table 3.5) is below the official poverty line (Department of Census and Statistics 2011). According to the poverty gap index, the poor households living below the poverty line in the Batticaloa District are clustered closer to the poverty line as opposed to the national figure. The calorie consumption of the poor households in the district is higher compared to the values of national as well as Eastern Province (*ibid*).

Table 3.6: Poverty head count index and poverty status

Year	Sri Lanka	Eastern province	Batticaloa	Trincomalee
2006/07**	15.2	10.8	10.7	-
2009/10	8.9	14.8	20.3	11.7

Source: Department of Census and Statistics, 2008, 2011

** Data excludes the Northern Province and the Trincomalee District in the Eastern Province

3.3 Poverty and welfare in study divisions of Trincomalee and Batticaloa

Levels of poverty in the Batticaloa and Trincomalee districts are well above that of the rest of the provinces in the country. Most of the households included in this study earned a lower monthly average income compared to the average household income of the Batticaloa and Trincomalee Districts. Approximately 50% of the target households in the Batticaloa District earned less than Rs.1,500 per month which shows a high level of income poverty among the target population. The situation was slightly different in the Trincomalee District where there was only around 28% of the target population who earned below Rs.1,500 per month, but the majority (40%) still earned only between Rs.1,500 – Rs.3,000 per month. Thus, it was clear that poverty affects a large proportion of the population in both districts and based on information collected there was a sense of deprivation and inability to gain sufficient income to meet basic needs among the studied population.

"We don't have the money to carry out the funeral even. We collect the money among us and do it."

FGD, Vaharai

"I don't have a permanent house. We live in a small cottage. I don't have money to build a house of my own."

Case study, disabled, Kiran

Based on study data, it was clear that the low income levels in these areas highlight the need for livelihood support to generate both short-term and long-term results. Low income levels point to a pattern of day-to-day survival - mostly dependent on livelihoods that are affected by seasonality; and the potential for saving and investment for these groups is very low. This in turn hinders their ability to come out of poverty and the lack of assets (and therefore collateral) pushes them towards informal financial services which binds them in a vicious cycle of debt (analysed in the following sections). The high levels of deprivation suggested that any project intervention would have to provide funds for starting up traditional livelihood activities and also support diversification in order to provide multiple income sources for the target families.

Basic needs also need to be considered when planning development initiatives as these are communities which have faced the destructive forces of conflict for over three decades. However, when moving beyond the monetary poverty aspects and analysing the basic infrastructure available, the communities provided a more comprehensive picture of the well-being status of the target population and provided some insights into the nature and scale of interventions which were planned for that area.

The following section presents the situation regarding basic needs within the study sample and period.

3.4 Vulnerability

As discussed in the previous sections, the target population could be considered vulnerable to external shocks as a whole, but specific attention should be given to the groups that are introduced in this section in terms of project design and deciding the type of intervention. A set of criteria such as number of dependents, female headed households, disability, elderly and orphans have been considered within the context of displaced and recently resettled communities in ACAP targeted areas. This section provides a brief profile of the vulnerable groups.

A large number of people living with disabilities are reported from Mylawewa, Gomarankadawela DS Division. In general, there seems to be more men with disabilities than women, which could be explained by the extent to which they were affected by the war as well as accidents that they have had to face when engaging in their livelihoods.

Vulnerability is also characterised by the high number of widowers/widows in all target GN divisions. Nalloor GN Division in Muthur DS division is an exception, reporting fewer widows. Tables 3.7a and 3.7b show the vulnerable groups in the GN divisions targeted by the ACAP projects, and hence this study.

Table 3.7a: Vulnerable groups in studied GN divisions by sex, Trincomalee, 2010

GN Division	People with disabilities		Widowers/ widows		Orphans	
	Males	Females	Males	Females	Males	Females
Sumethankarapura S	8	2	0	24	0	0
Nalloor T	10	12	0	62	0	0
Kadakarachenai T	40	17	62	6	5	8
Ailiyadi M	28	18	0	72	4	5
Naduoothu M	20	8	0	85	0	0
Vilgamvihara	9	5	0	10	4	0
Thiriyaya S, T	22	12	4	27	0	0
Kithuluthuwa S	11	6	5	26	5	1
Milawewa S	46	18	1	17	0	0

Source: Assistance to Conflict Affected Persons data, 2010

Table 3.7b: Vulnerable groups in ACAP targeted GN divisions by sex, Batticaloa

GN Division	People with disabilities		Widowers/ widows		Orphans	
	Males	Females	Males	Females	Males	Females
Punanai - East	23	21	nil	98	nil	nil
Mathurankernykulam	8	5	2	40	nil	3
Perillavelly	4	7	16	64	nil	nil
Poolakkadu	6	5	3	52	nil	2
Kithulwewa	8	6	nil	84	14	31
Koppavelly	4	1	10	59	nil	9
Ayithiyamalai North	43	23	nil	53	nil	1
Nediyamadu	9	3	nil	12	nil	nil
Pandariyaveli	8	4	11	51	15	31
Ambalanthurai - West	5	10	3	53	20	18
Navakirinagar	5	5	9	15	nil	nil
Paalaidivaddai	13	6	4	83	49	42
Vilanthoddam	4	4	15	29	1	5

Source: Assistance to Conflict Affected Persons data, 2010

In terms of connectivity, Mylawewa in Gomarankadawala GN is the most remote, being about 45km away from the main town centre. In contrast, Kuchchaveli in Thiriyaya GN and Vilaathottam are the closest to the main bus route. The need for using multiple modes of transport such as ferries and buses and the resulting loss of quality of the produce and productive time was highlighted in the focus group discussions as connectivity issues that affect livelihoods. (Tables 1 and 2 of Annex 1 provides more data on infrastructure access).

"If we go to the town early morning we will return evening 6 o'clock."

FGD, Vaharai

"We carry on our head the vegetables and paddy that we produce up to the river crossing, cross the river using the thoni (raft) which costs about Rs.10 and head from there to the market in Valaichenai."

(Case study, FHH, Kiran)

Connectivity issues also hinder people's access to basic services such as education and health. More importantly from this study's point of view, connectivity bottlenecks will mean that the communities have to incur extra costs to transport their produce to the markets and access town centres for their input supply. Alternatively they have to depend on suppliers and buyers, which reduces their bargaining power and this ultimately means that the profit the producer makes is reduced.

"We do not have bus services. We should walk by foot 12 km to Kadjuwatta Junction. If we go by auto (three-wheeler) they will charge Rs.300/-"

(Case study, disabled, Vaharai)

The lack of electricity supply in the communities is important to note. Apart from Kuchchaveli, which is partly connected to the main grid and mainly powered by solar panels provided by an INGO following the tsunami, none of the other communities in this study had access to an electricity supply. This has constraining implications for starting up value addition processes such as paddy milling or milk based products.

"We don't have the electricity to produce the yoghurts. If we produce the curd we cannot market it due to the lack of vehicle."

(FGD, Eravur Pattu)

Some of the communities felt a certain level of marginalisation given the fact that some of the villages that adjoined their village of other ethnicities were electrified while theirs was not.

"There are electricity lines going over our village into the next village which is a Sinhala settlement. We were resettled in 2007 but still we don't have electricity."

(FGD, Eravur Pattu)

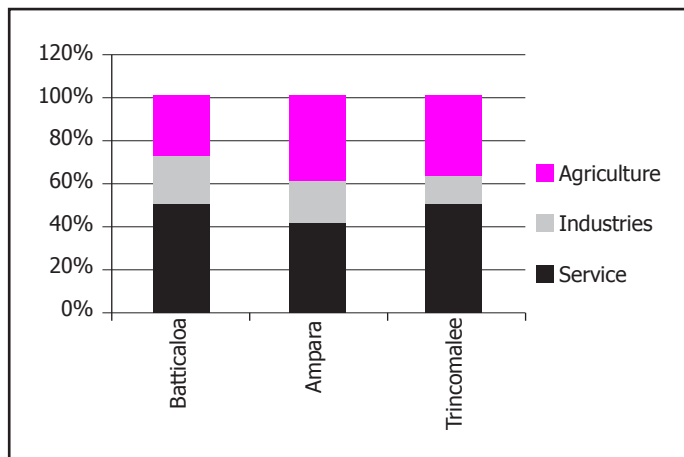
Except in the Ayiliyadi GN division in the Kinniya DS division, all the other communities in the study had access to a supply of drinking water, mainly through tube wells and ground wells. However, water for livelihood purposes (especially crop cultivation) was identified as a critical constraint at the community level. Although most of the communities had access to at least a minor tank, these were in dire need of rehabilitation and the only other option they could depend on was rain water. This sole dependence on rain water was a constraint in reaching an optimal level of productivity from the available agricultural resources such as land and labour.

In addition to the acute income poverty levels discussed above, when one adds the other dimensions of poverty related to well-being such as connectivity and the availability of water and electricity, it is clear that the target communities need multi-pronged approaches in terms of project interventions to improve their livelihood conditions. For example, while rehabilitating the tank is a pressing need, the provision of other support structures such as availability of transport facilities, also need to be considered. The project activities will have to look to innovative methods of getting around the infrastructure bottlenecks such as, the provision of mills that can be operated on other types of fuel or organising and strengthening producer groups in order to promote collective transport of farm produce.

3.5 Impact of conflict on livelihoods in Trincomalee and Batticaloa

The Batticaloa District employs the highest percentage of people in the services sector, followed by industries. Trincomalee also employs the highest proportion in the service sector, followed by agriculture (see Figure 3.1).

Figure 3.1: Employed population by major industry



Source: Derived from Labour Force Survey, 2010

Paddy, vegetables and other field crops are the main agricultural crops grown in the province, including the Batticaloa and Trincomalee Districts. Marine fishing is an important part of the fisheries sector in the two districts, which includes coastal and deep sea fishing. Batticaloa has the largest coastal lagoon ecosystem in the country, which largely contributes to the inland fishing industry in the district (Diprose *et al.*, 2010)

Even though the Eastern Province is recovering from the conflict at a faster rate when compared to the Northern Province, the impacts and signs of conflict remain. Conflict has negatively impacted both production and productivity in the agriculture and fisheries sectors. Limited access to agriculture lands and restrictions on transport worsened this production and productivity loss. The lack of physical security has also led to a great deal of disinvestment in agriculture, as a result of conflict. The destruction of basic infrastructure linked with farming was also a major constraint to the sector (Diprose *et al.*, 2010).

In Sri Lanka, the classification of strategic areas as high security zones has had a significant negative impact on agriculture. It denies access to productive land for farming and livestock grazing. It is estimated that 2,500 acres of paddy land have been declared as a high security zone (at the time of the study this was referred to as an 'Economic Zone'⁴) in the Trincomalee District alone (based on information gathered from KPIs and the District level workshop). During the conflict, there were large amounts of land which was under the high security zone and inaccessible.

Military restrictions on fishing during certain times of the day, and other restrictions preventing landing on certain sites affected the productivity of the fisheries sector. Significant progress has been made in rolling back these restrictions, following the end of the conflict (KPI, Trincomalee).

⁴ The change in terminology when referring to areas (from security zone to economic zone) is positive as it implies a change in focus and continued peace.

Most of the coastal infrastructure (especially roads, bridges and power lines), fisheries settlements and fishing equipment (including boats) were destroyed leaving most fishing communities affected and requiring assistance. Destruction of fisheries infrastructure such as ice plants, landing sites and harbours hampered the fisheries sector in the two districts. The Batticaloa District was able to keep production levels high despite the presence of restrictions. The destruction of major, medium and minor irrigation tanks affected production by the inland fisheries sub-sector (CEPA unpublished study on agriculture and fisheries livelihoods in the North and East, 2009). However, as shown in Table 3.8, production levels in the Trincomalee and Batticaloa Districts did suffer during the height of the conflict (from 2005–2007). Subsequent to the cessation of hostilities, production levels recovered and improved.

Table 3.8: Marine sector fish production by district, 2004-2009

Fisheries District	2004	2005	2006	2007	2008	2009
Puttalam	16,520	11,670	14,910	17,130	16,960	20,010
Chilaw	14,220	9,360	18,720	24,180	22,060	21,950
Negombo	22,780	16,940	29,070	35,710	35,820	37,490
Colombo	1,640	560	590	510	1,030	830
Kalutara	20,690	11,560	30,520	39,950	39,580	33,100
Galle	17,530	11,210	15,530	17,820	14,800	24,930
Matara	27,990	17,090	38,480	48,460	47,810	44,180
Tangalle	21,960	6,220	15,590	20,990	20,850	20,990
Kalmunai	19,790	7,940	11,480	12,810	22,050	16,260
Batticaloa	16,160	7,650	8,930	11,710	21,850	24,530
Trincomalee	16,540	6,790	6,270	8,150	17,980	27,690
Mullathivu	2,200	780	850	360	260	-
Jaffna	33,980	12,790	11,220	5,130	5,830	13,080
Kilinochchi	3,130	1,460	830	590	360	-
Mannar	17,060	8,380	12,990	9,170	7,390	8,130

Source: Department of Census and Statistics, 2009, extracted from Table 5.34

The transport of farm inputs such as chemical fertilizer and fuel were also restricted during the war, which led to low productivity of the land and increased cost of production. The positive side of not using chemical fertilizer on these lands was that there is an opportunity for these farmers to produce organic foods which have a growing demand. However, unfortunately, as discussed at the district level workshops, usage of chemical fertilizer has increased in the Batticaloa and Trincomalee Districts due to increased accessibility to fertilizer. However, there is still a potential to use uncultivated and abandoned land for chemical-free organic farming.

Repeated and protracted displacement of communities has greatly affected the skilled agriculture and fisheries labour pool of the North and East. Renewed stability following the end of military operations has created conditions that are conducive for the return of displaced persons. The increase in the skilled labour pool will help revive agriculture and fisheries in these provinces.

Destruction of physical market centres and market networks during the conflict also hindered the agriculture, fisheries and livestock sectors. As discussed in the documents of "Eastern Revival", the government strategic plan for the development of the Eastern Province⁵, lack of marketing and storage facilities discouraged the farmers from engaging in production since it always leads to high wastage, especially during the harvest glut. Storage and processing infrastructure were also damaged and traditional marketing networks lost. The livestock sub-sector, especially the dairy sector, was negatively impacted due to loss of milk collection networks (District level workshop, Batticaloa).

The non-viability of agriculture and fisheries as a result of conflict-related constraints led generations of young people to seek other forms of employment, eroding the traditional knowledge base that existed in these areas before the conflict. Hereditary employment patterns have changed and attracting a new generation of producers to this sector remains a challenge. As a result of migration, remittances to the areas have also increased and can be harnessed to develop the region (CEPA unpublished study on agriculture and fisheries livelihoods in the North and East, 2009).

3.6 Institutions

The Ministry of Agriculture Development and Agrarian Services (MADAS) is the key government institution charged with the implementation of agriculture related policies and issues. The mandate of MADAS covers policy, planning and implementation, through its departments and statutory bodies.

The Department of Agriculture (DOA) under the Ministry of Agriculture Development and Agrarian Services has the infrastructure to provide services to the different provinces. Agriculture is a devolved subject, and there are provincial agricultural offices with agricultural instructors in every Govi Jana Kendra / Centre (De Silva, 2009). These centres are found at the divisional level in all farming districts and provide agriculture support services and extension services throughout, from cultivation to marketing. A number of research and training institutes support the functions of the DOA. The Provincial Department of Agriculture implements agriculture extension and communication and research activities in relation to crop sector development under the devolution of power to the provincial council. The capacities of these institutions have decreased in the war-affected areas when compared to other parts of the country due to the lack of human resources because of increased migration of officers and destruction of physical infrastructure (such as buildings, vehicles and other assets).

The Ministry of Livestock Development has the primary responsibility for the livestock sector with Departments of Animal Production and Health located in each province providing services related to animal livestock development. Milco and Nestle are the most prominent private sector agents are engaged in the dairy sector in the country.

⁵ The Eastern Revival development programme by the government, the website for which is www.neweast.lk, included a wide spectrum of social outreach programmes such as resettlement of internally displaced people, landmine clearance, rehabilitation and awareness programmes as well as massive infrastructure development projects such as new road networks, bridges, ports, power plants, electricity distribution networks, hospitals, and schools. This 3-year programme which was to end in 2010 had a total budget investment of Rs. 197,219 million (US\$ 1840 million). (Source: Permanent Mission of Sri Lanka to the United Nations in New York, 2008)

The following are areas of responsibility in the fisheries sector with their respective overseeing/implementing institutions in brackets; the fisheries sector is led by the Ministry of Fisheries and Aquatic Resources (MFAR) in charge of policy design, implementation (Department of Fisheries and Aquatic Resources and Coastal Conservation Department), research (NARA), education (NIFNE), development and extension (NAQDA). Many of the government's regional research and development establishments (NARA and NAQDA) are now in a serious state of disrepair and in some cases, requisitioned by the military (FAO, 2007).

There is a host of other service providing institutions that are related to the agriculture, livestock and fisheries sectors. The Department of Irrigation at the national level and provincial level play a significant role in developing the agriculture sector in these recently resettled areas.

However, there is a marked lack of presence of these institutions in the North and East due to the conflict which prevailed until 2009. In the rehabilitation process these institutions should be provided incentives to start operating in these areas. A range of donor funded and local NGO programmes such as Sarvodaya, SANASA and some commercial banks provide micro finance whereas insurance related to livelihoods are less common. These efforts could be further extended and expanded to help provide capital to farmers and fishermen to invest in income earning ventures.

4. Value-Chain Analysis for Key Livelihoods in Batticaloa and Trincomalee

A value-chain analysis looks at the chain of activities and relationships that allow producers to get their goods to market, and the constraints to moving through the chain and adding value. This study looked at several value chains of farm and non-farm products that form the livelihoods of the target groups in the Batticaloa and Trincomalee Districts. This section identifies the factors that constrain the target communities from moving up the different value chains and also the opportunities that exist to do so. It concludes with identifying means of overcoming the constraints and capitalising on the opportunities. For each product, it was observed that the target group produced primarily for the local market, identified as the local consumer or the local trader. The middlemen dominate. There was very little value addition taking place. Value addition was constrained by the destruction of all capital resources during the conflict and the deterioration of infrastructure (for example, roads and power supply). Lack of financial capital and inadequate access/availability to financial services is an acute problem for a population whose asset base has been so strongly eroded. Livelihoods are also threatened by natural disasters such as flooding.

People in the East have the traditional skills, interest and enthusiasm to engage in agriculture, fisheries, animal husbandry and in non-farm activities such as brick making. Institutional support, particularly the support of livelihood activities at a micro level, is minimal. There is space to provide the necessary infrastructure and create a livelihood-conducive environment which will improve production, support value addition and develop less exploitative relationships with the middlemen.

4.1 Paddy

The value-chain analysis based on primary and secondary data highlights that the farmers in the studied GNs are predominantly at the production level of the value chain. In order to obtain a higher value for their produce they need to move up the value chain or be introduced to new methods of increasing profitability of produce within the same stage of the value chain.

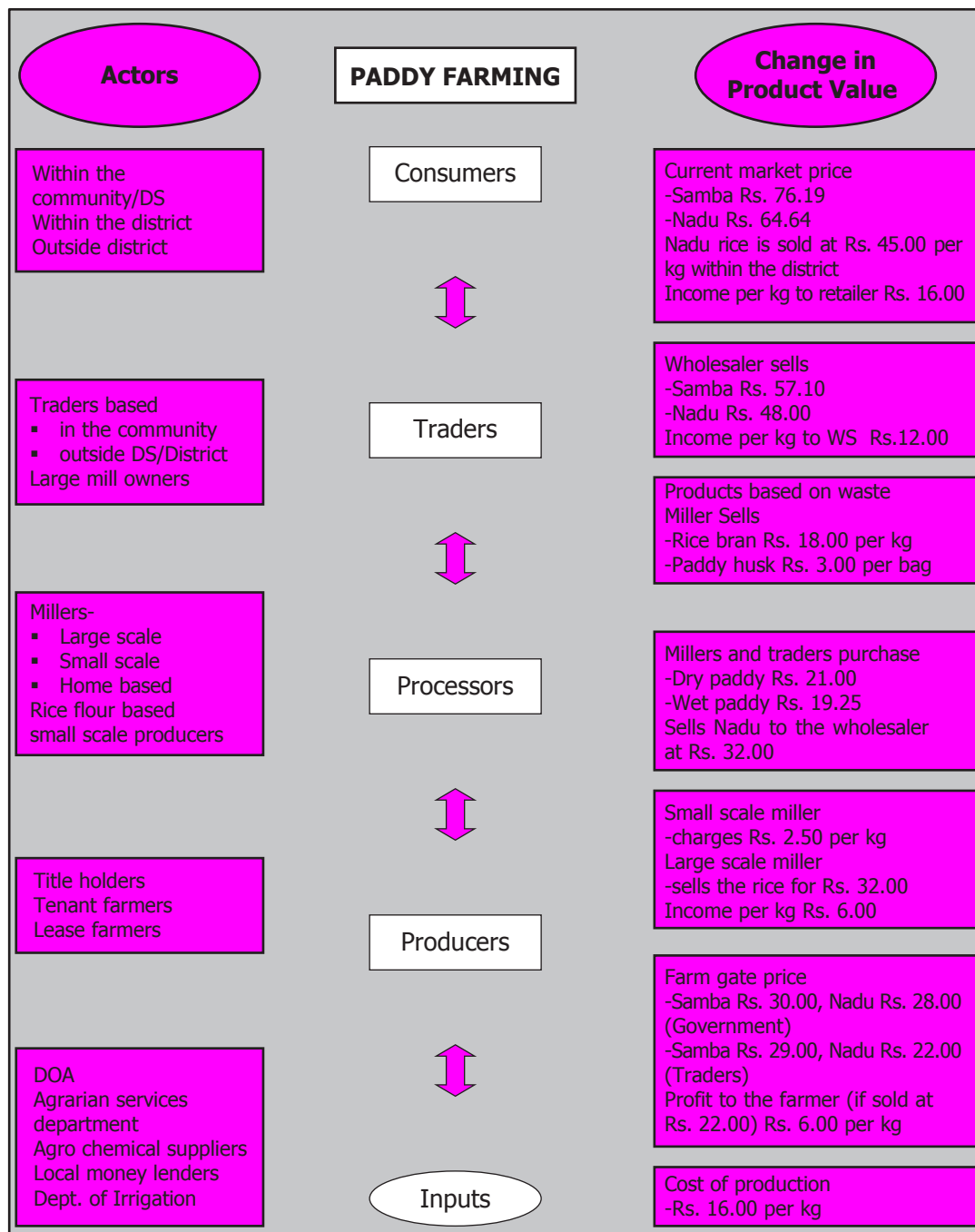
The main constraints identified are those regarding **low productivity, low value addition and low marketability**. **Productivity** related constraints can be resolved mainly by regularising access to land, crop diversification, ensuring water supply and improving access to inputs; fertilizer, seed paddy and machinery.

It is proposed that **low value addition** is resolved by increasing space for value addition at the local level so that the profit that is diverted elsewhere is retained by the producer and the target communities. Promoting the local rice mills by providing support to establishing and strengthening existing small and medium enterprises (SMEs) will increase the selling price. The possibility of creating products out of paddy waste such as paddy husk and bran can also be linked to the promotion of SMEs. Also proposed is the sale of rice-based products at the local level and in the long term for export out of the districts to improve value addition. There is also a need to improve the infrastructure, such as electricity and farm roads, in order to sustain the value addition process at a competitive market level.

Targeting external markets, which are mainly the districts with a production scarcity, by promoting collective marketing and encouraging private sector partnerships is one possible method of improving low marketability. Increasing storage facilities and product diversification to tap niche markets (such as selling traditional varieties of rice to urban centres and within the tourist sector) will generate higher returns. Facilitating more formal

financial services and providing off-season income generation activities to reduce debt will give the producer more bargaining power and increase marketing options.

Figure 4.1: Mapping of actors and value of the product along the value chain



Source: Department of Census and Statistics, Department of Agriculture, Central Bank, HARTI, Primary study data
 * Sale prices and profits are based on primary data collected during the study

The above figure maps the actors along the paddy value chain and shows how the value of the product changes as it moves along the value chain to the final consumer. All the service providers at the input level, the large scale and small scale millers and the traders are predominantly men according to the data collected for the current study. There were women who produced paddy mainly as tenant farmers, lease cultivators and most commonly, as wage labourers. The vulnerable groups - female-headed households (FHHs), persons with disabilities (PWDs) and the elderly that were among the employed category were mainly engaged in paddy cultivation for daily wage or for payment in-kind and in tenant farming. There were FHHs that engaged in processing paddy into rice and selling it within the community or in neighbouring villages.

As represented in Figure 4.1, the profit the producer gets from his produce is the least amount of profit along the value chain even though he/she puts in the most amount of effort. Apart from the profit that millers gain from selling the rice, they also gain additional profit by selling the by-products of paddy milling, such as rice bran and paddy husk. As clearly stated in the diagram above, the wholesalers and retailers, who are at the highest level of the value chain gain more value from a kilo of rice than those below them in the value chain⁶. It should be noted that this value chain presents only the immediate value addition of milling. Those engaged in other forms of value addition to rice could gain even more profit from a kilogram of rice. The studied communities did not engage in value addition except for small scale milling at local level, which does not provide the highest possible return.

The traders, the middlemen and the large scale mill owners outside these communities held the most powerful positions along the value chain. They were the price givers and the other actors along the value chain had little bargaining power. The vulnerable groups - such as tenant farmers, FHHs and PWDs - had even less bargaining power due to their dependency on other actors in the chain, lack of awareness about subsidy schemes and their entitlements and the temporary nature of their employment as wage labourers. The fact that some of the labourers were paid in kind, rather than in cash, is a clear indication of their position.

There is a clear need to introduce a more equitable negotiation process along the value chain. The discussions with the relevant experts highlighted that the influence and dominance of the traders and the middlemen cannot be eliminated at once, but need to be integrated into intervention designing in such a way that the more vulnerable groups can benefit from their ventures. For example, if the middlemen are provided support to start up a SME for paddy milling in the community, the paddy producers in the community should be directly linked to him.

Increasing productivity

As mentioned before, resettled communities in both districts are engaged in paddy cultivation. Tables 4.1 and 4.2 show the changes in the production and extent sown as a consequence of the heightened military activities and the destruction of irrigation in the two districts (during 2006 and 2007). By 2008, close to the end of the war, with the cultivation of both uncultivated and abandoned lands, paddy production and the extent sown shows

⁶ The costs associated with transport, labour and storage for the wholesalers and the retailers should be deducted in order to compute the exact profit gained by the two players. Unavailability of these data restricts further analysis on the profitability.

an increase. With the increase in the extent sown in both districts and the increase in production, at present both districts, as shown in Table 4.3, produce more paddy than is consumed within the district. The returns from paddy to the producer can be increased by expanding the extent cultivated and/or increasing the productivity, keeping in mind external factors (such as market prices). While community level interviews and key person interviews reveal that there is more land to be used for cultivation, there are many constraints to productivity that also need to be addressed. Farming families could benefit more from a strategy that increases the productivity of existing paddy land, and uses hitherto uncultivated land to grow other crops (depending on the technical feasibility of soil and other conditions), which would then diversify their agricultural livelihoods.

Table 4.1: Paddy production in the Batticaloa and Trincomalee Districts

Year	Production (MT)			
	Batticaloa		Trincomalee	
	Yala	Maha	Yala	Maha
2004	50,594	112,951	29,109	90,300
2005	50,882	94,394	62,603	89,880
2006	49,031	131,830	43,370	85,439
2007	49,039	37,476	42,147	63,039
2008	61,609	55,020	NA	73,505

Source: District Secretariat - Batticaloa and Trincomalee, 2008

Table 4.2: Paddy extent sown in the Trincomalee and Batticaloa Districts

Year	Extent sown (Ha)			
	Batticaloa		Trincomalee	
	Maha	Yala	Maha	Yala
2004	46,050	46,182	25,022	7,795
2005	46,182	16,719	23,743	16,321
2006	46,772	15,498	16,287	11,027
2007	18,469	2,705	18,987	10,368
2008	19,134	17,728	25,022	7,795

Source: District Secretariat - Trincomalee, 2008 and Department of Census and Statistics

Table 4.3 shows the average yield for the 2 districts against the national average and Batticaloa is significantly below the national average, whereas Trincomalee is closer to it. However, this is district level data and it would be safe to assume that the average yield of the target communities is much less given the constraints that they face.

Table 4.3: Paddy average yield (Kgs/Per Ha)

Year	Trincomalee	Batticaloa	National
2004	4,050	2,997	4,086
2005	4,131	2,654	3,963
2006	4,104	3,316	4,137
2007	4,306	2,991	4,386
2008	4,440	3,805	4,184

Source: Department of Census and Statistics (various years)⁷

⁷ Department of Census and Statistics website, www.statistics.gov.lk/agriculture/Paddy%20Statistics/PaddyStatsPages/Production.html

Irrigation

Both Batticaloa and Trincomalee Districts have access to water resources for paddy cultivation, with both districts having both major and medium irrigation tanks. (Table 4.4) However, this does not ensure that all areas have sufficient access to water sources throughout the year. Many areas were noted as facing problems when trying to access water and were being affected by droughts/floods periodically.

Table 4.4: Major and medium tanks in the Batticaloa and Trincomalee Districts

Major and Medium Irrigation Schemes Batticaloa District		Major and Medium Irrigation Schemes Trincomalee District	
DS Division	Number	DS Division	Number
Koralai Pattu North	3	Kantalai	3
Koralai Pattu South	2	Seruvila	2
Manmunai South West	3	Morawewa	4
Manmunai West	2	Padavisripura	1
Manmunai South & Eruvil Pattu	1	Town & Gravets	1
Porathivu Pattu	2	Kuchchaveli	5
		Thampalakamam	2
		Muthur	2
		Gomarankadawela	5
		Kinniya	1

Source: District Secretary, Batticaloa and Trincomalee, 2008

Some of the tanks functioned throughout the conflict, but were not maintained properly during the height of the conflict. The irrigation infrastructure that was destroyed by the fighting needs to be renovated and irrigation maintenance and management needs to be re-introduced if the irrigation system is to reach its full capacity and irrigate all the paddy land cultivation in the districts. Both government and non-government organisations are engaged in improving irrigation capacity, but the smaller tanks are not as likely to be rehabilitated as the larger ones. The irrigable area of a small tank is around 50-150 acres of land, and will benefit a few villages or GN Divisions. These tanks are the responsibility of the local government authorities, and even though they need much less investment for rehabilitation, the local government authorities are not always able to allocate the funds.

Another issue is the lack of coordination. Where tanks are functioning, lack of coordination between farmer organisations and officials in charge of releasing the water for land preparation can cause delays, and affect seed sowing and harvesting.

Paddy cultivation in the Eastern Province is done during both the Maha and Yala seasons, with the highest extent of land being cultivated in the Maha Season as rain-fed paddy. In flood prone areas, however, the cultivation of paddy and other crops takes place only during the Yala season when there is less rainfall. This is the case in the Kiran DS Division in the Batticaloa District where farmers who cannot cultivate paddy during the rainy season choose to engage in other alternative livelihoods such as wage labour in non-farm enterprises, or in wage labour on agricultural lands outside of the DS Division. Access to irrigation allows households to cultivate paddy during the Yala season. If the irrigated water is insufficient farmers will cultivate vegetables and other field crops that use less water. While this helps diversify the agricultural portfolios, it also increases the productivity of the paddy lands and this practice should be strongly encouraged.

In some areas where irrigation facilities are not available, communities use agro wells and cultivate vegetables and other field crops that have a low water requirement. Agro wells are not suitable for all areas, and especially not for areas like Kithulwewa in the Eravur Pattu division where the water table is extremely low.

Availability of skills and experience in paddy farming

One of the main factors strengthening the potential for paddy production is the availability of skilled and experienced farmers who are interested in continuing paddy cultivation. The skills of paddy farming have remained with the communities throughout the conflict, with some farmers being able to engage in cultivation even during the conflict. Young people are also showing an interest in investing in agriculture. The skilled and experienced labour can be used to maximize the productivity levels in the two districts.

"There are wage labourers who are continuously working in one paddy land for a long time so their availability is assured."

(FGD, Kinniya)

Improving access to inputs

Improving access to quality seed paddy and fertilizer at the correct time and access to machinery will increase the productivity levels of paddy. Lack of awareness about the government subsidised schemes and lack of financial capital result in the use of low quality seeds and fertilizer.

Seed paddy

Seed paddy is one of the key inputs of paddy cultivation. Different communities source their seed paddy from different places. Some get it from the government farms; others use their own, or purchase from individuals who cultivate using government seed paddy and maintain uniform paddy fields (uniformity in terms of paddy produced from using the same quality seeds). Seed paddy can be purchased from the government for cash or by providing paddy that meets the quality standards. Thus, if the farmer can store a portion of the paddy production for a season, he/she can exchange it for government seed paddy. The availability, accessibility, quality and cost of seed paddy in the studied districts have shortcomings (described below), which has resulted in many constraints to achieving the maximum potential in terms of production and productivity.

The seed paddy provided by the government is of a better quality than that of the farmers'. The farmers own paddy is often mixed with weed seeds and the use of combined harvesters can damage the seeds, reducing the rate of germination and lowering productivity. Even though the quality is better there are some constraints to accessing seed paddy from the government. It is only available to farmers cultivating their own land and tenant farmers need to get a letter from the land owner before they can obtain government seed paddy, delaying the process. Many small-scale farmers are also not aware of the process for purchasing seed paddy from government farms. The price of the seed paddy provided by the government is not affordable for some poor farmers. Therefore, they use their own seed paddy and this leads to loss of productivity. The DOA's extension services have been curtailed (due to resource issues), and this has constrained its ability to make farmers more aware of what services are available to them.

Fertilizer

The fertilizer subsidy for paddy farming is a big incentive for farmers to engage in paddy cultivation. This is particularly the case for those farmers who were affected by the conflict, were resettled and had to begin to initiate paddy cultivation. The subsidised selling price of a 50kg urea fertilizer sack is Rs. 350, but the price to the farmer varies depending on the transport cost.

"The government subsidy is Rs.350. With the transport costs included one sack of fertilizer costs about Rs.450 - Rs.500."

FGD, Gomarankadawala

As with seed paddy, tenant farmers with no paddy land registration are unable to get the fertilizer subsidy. Many are not aware of the procedure of getting a letter of consent from the landowners, and so end up purchasing fertilizer at higher prices. The farmers without the Paddy Land Registration (PLR) are unable to access the subsidised price scheme. Given that most of the farmers in the studied communities are tenant farmers and some do not have the PLR, awareness creation about the available facilities and support to access good quality fertilizer is crucial.

Other constraints include the quality of the fertilizer, which seems to be deteriorating, and the location of the fertilizer stores, which tend to be some distance away from the farm lands.

"The quality of the fertilizer that was given by the government used to be very good. But now it has gone down a bit. The Urea fertilizer that is manufactured locally, at the Fertilizer Corporation is of good quality but the fertilizer that we get now is brought from Malaysia and it's not of very good quality."

FGD, Gomarankadawala

In Batticaloa and Trincomalee, there were no facilities to store fertilizer. Most of the storage facilities have been affected by the war and this affects the farmers in these two districts. The use of organic fertilizer for cultivation was minimal among the farmers even though they had the knowledge about the advantages of using organic fertilizer and about the ill effects of inorganic fertilizer. Extension services and trainings are provided by the DOA on the usage of organic manure for paddy and vegetable cultivation. However, high water requirement for the production of organic manure and slow returns are the main reasons preventing farmers from using organic manure for cultivation.

Delayed delivery, high transport cost and deteriorating quality are some of the other aspects preventing the achieving of desired outcomes of the fertilizer subsidy. Financial mismanagement, corruption and direct or indirect bribes are the alarming factors hindering the effective implementation of this national policy. Better monitoring is essential as this policy initiative directly deals with cash handling.

Agricultural Machinery

The relaxation of the restrictions on transport after the war has gradually supported mechanisation of agriculture in the two districts. Large scale machinery, such as combine harvesters is now available in the district, and the use of machinery has helped overcome labour shortages and increased efficiency. In areas where paddy cultivation had just begun (e.g. Gomarankadawala) farmers did not have sufficient capital to purchase machinery for ploughing and harvesting.

Although machinery usage can increase the productivity of paddy land, the farmers were aware that it can also have negative impacts. Paddy harvested with a combine harvester is of lower quality than that harvested manually, and can damage seed and make it unusable as seed paddy.

"We don't have any tractors in this village. Sometimes, in an emergency, we use the combine harvester; for example, if the rains are coming and we need to finish the harvesting before that we would hire a combine harvester, but the quality of the paddy is not good if we use a combine harvester. We have to hire one from Madawachchiya"

FGD, Gomarankadawala

Poor connectivity to the farm land restricts the usage of machinery, as well as the transportation of inputs to the farm and produce out of the farm. Most roads were damaged during the conflict and need to be reconstructed. Poor road conditions add to the cost of production too by incurring additional transport costs.

Environmental factors

The most common threat in all the studied communities came from wild elephants, which destroy the paddy fields and other agriculture crops. Farmers use less effective traditional methods to chase the elephants in the absence of electric fencing which has had more positive impacts in other parts of the country that faced the same problem. The compensation schemes available from the government, such as crop insurance, were seen as futile by the farmers due to the delays and costs in processing.

"There is an insurance scheme introduced through the Govi Jana Sewa to compensate for damage to the harvest. The process to claim compensation is long, difficult and expensive. They need proof of the incident to claim compensation, so we need to submit photos. For the photos the people from the Studio in Horowapothana wanted Rs.7,000. Compared to the cost that we have to bear, the compensation is not adequate."

FGD, Gomarankadawala

Floods and droughts are also a problem. Kiran DS division is the most vulnerable to flooding. During the rainy season the entire paddy land gets submerged and makes paddy cultivation in the Maha season almost impossible. Flooding damages the drains and bunds, so land preparation becomes difficult, which in turn requires more time and resources to be invested in land preparation each season.

Access to land

As discussed at the district level workshops and the key informant interviews, the availability of land for cultivation in the Batticaloa and Trincomalee Districts can be identified as an opportunity not only for expanding paddy cultivation but also for the cultivation of other field crops.

Access to these lands, however, has been restricted due to factors such as lack of proper legal entitlements, demarcation of high security zones and uneven topography. The farmers in the study locations felt that the increasing extent of land sown was not resulting from greater land ownership by the poor farmers who are engaging in paddy cultivation. The owners of the paddy lands located in these communities are outsiders and only a limited amount of villagers owned paddy lands.

Land has become a contentious issue in both the Batticaloa and Trincomalee Districts. Some landowners had abandoned their paddy lands and migrated outside the district during the conflict. Other people have begun farming these lands without informing the owners. There is also another group of farmers in the lands of those who have migrated either locally or overseas, cultivating the lands in a tenant capacity. The end of the conflict saw owners returning and reclaiming their land and displacing those who thought they would have the opportunity to cultivate these lands for a long period of time. There is also the danger that lack of ownership will prevent farmers from investing in the productivity improvement of the land they are cultivating and it also has implications for accessing the state sponsored input subsidy schemes discussed earlier (such as for fertilizer). In the Trincomalee District a large portion of the land was declared as a high security zone. 2,500 acres of paddy land has also been alienated for the construction of a coal power plant and now forms an 'economic zone' encompassing five GN divisions, including Sampur. This has created a problem of landlessness in the area.

Batticaloa faces the problem of uneven topography, which necessitates considerable capital investment for the required levelling. Unevenness in land reduces irrigation efficiency and leads to diminished productivity. Productivity is also affected by salinity in the soil in some areas of the Batticaloa District and the Kinniya Division in Trincomalee. The lack of crop rotation and continued cultivation of paddy has exacerbated the problem.

Increasing value addition

Paddy is largely marketed as paddy, with little or no value addition. Where paddy is milled, for example in Ayilady and Kinniya, it is done in small scale village-based rice mills for a fee and used for consumption rather than for selling on the market. 98% of the farmers in the study locations were selling raw paddy without any processing (based on key informant interviews) and only 2% were capable of storing the paddy and processing it later.

Value addition at the local level as rice, rice-based products and paddy waste such as bran and husk will give higher returns to the producers. This will also provide them with additional sources of income that will help them move out of their debt cycles. The main constraints for the value addition are the lack of initial capital, the distance to the existing value addition centres and the lack of an assured market for the value-added products.

One of the main reasons for the lack of value addition at this level is the unavailability of large mills with new technology in the region. The large mills are located far from the communities (the nearest commercial scale mill to Gomarankadewela is in Horawapothana, 2 hours away) and farmers were not interested, nor able to incur the transport costs.

"If there are mills close by we can save the time that we spend on going for milling and use that time for some other productive activity."

FGD, Gomarankadawala

The situation is exacerbated by poor road quality. For instance, there is a large mill located at the border of the village in Ayilady, which is not accessible due to poor road conditions.

"There is a small mill in this village. They are not doing milling on a large scale. This milling is done only for consumption purposes. It is done for a fee. We pay Rs. 5 per kg of paddy"

FGD, Ayilady, Kinniya

There are also no facilities for making rice flour on a commercial scale. There is no private sector guarantee to buy the value-added products even if there is any value addition done. In addition, there is a need for training and technology transfer in making rice-based products. The government is willing to provide extension services if there is an attempt by the private sector or NGOs to conduct contract farming (based on information from the DS level workshop). The technology to make rice-based value-added products is not available locally. The lack of electricity in most of these target communities (as discussed earlier) also acts as a constraint

In comparison to the general producer groups, certain vulnerable groups such as the FHHs engage more in value addition processes linked to paddy, albeit on a very small scale. As presented in Table 3 of Annex 1 (table profiling vulnerable groups), the FHHs in Kiran either buy the paddy during the harvesting season or collect the paddy that they receive as payment for the paddy wage labour activities and store it at home. They boil it and mill it at home and sell the rice in the neighbouring villages during the off-season.

These value-addition activities can be strengthened and improved further by promoting SMEs within communities for rice milling, rice based production and for paddy waste-based production, or by supporting individuals further up on the value chain (e.g. medium-sized mill owners) to develop their activities and to integrate with actors below them in the value chain through the sourcing of labour and paddy from farming households. Community based SMEs could be managed and made to function through producer groups on a profit sharing basis and could include the producers from the vulnerable communities who already have the experience of rice milling and making rice flour-based products such as string hoppers. Collective production can be introduced where, according to the type of vulnerability/disability, different groups engage in different activities along the process.

SMEs should be linked with better supply and market routes and integrated into the overall production and value-chain process in order to be sustainable in the short term within the target communities with the aim of expanding into urban centres in the long term. There is a potential market for the rice-based products and the paddy waste-based products from poultry mash buyers and biscuit manufactures, who will have to be identified and linked with the SMEs.

Increasing paddy marketability

The study's target group comprised of small farmers who produce paddy, largely for consumption but also with a view to selling the surplus. However, the market is largely a buyers' market, and farmers have little control in determining prices and/or accessing alternative market opportunities. The many reasons for this are elaborated below, leading on to potential recommendations for livelihood and value-addition interventions.

Most farmers in our target group in Batticaloa and Trincomalee sell their paddy within the district. There are two main buyers: the Multi-Purpose Cooperative Societies (MPCS) purchase for the government under the Guaranteed Price Scheme (purchasing only about 5-10% of the total production of the district and buying only from the registered farmers) and local traders. There is little involvement of the large-scale private sector in paddy marketing, even though many of them are involved in marketing agro-chemical inputs.

Even though the paddy producers within the district prefer to sell their paddy within the district, there was an excess of paddy production in both districts at the time of the study (Trincomalee 74,293 Mt and Batticaloa 157,335 Mt) and at the national level, as shown in

Table 4.5. However, there are districts that show a scarcity and with the state driven road infrastructure development, connecting the Eastern Province to the rest of the country, the excess paddy from Trincomalee and Batticaloa can be supplied to these areas, such as the Western Province and the Central Province.

Paddy marketing outside the district can be promoted by encouraging the private sector to play a bigger role in the marketing process. Even though the private traders and individuals are involved in purchasing paddy, they do not provide long-term sustainable support to the sector. They are perceived as exploiting the paddy sector rather than supporting it. They have access to a good network of farmers and this partnership can be promoted to be more equitable and profitable to both the producer and the buyer. The farmers should be encouraged to engage in collective marketing to these private sellers and this would increase their bargaining power while also ensuring a continuous supply to the private sector.

Table 4.5: Excess/scarcity of paddy for 2010 by district (Mt)

District	Maha 2009/10	Yala 2010	Total for the Year 2010	Annual requirement of paddy for human consumption	Total
Trincomalee	106,727	39,752	146,479	61,965	74,293
Batticaloa	193,274	74,563	267,837	90,421	157,335
National Total	2,629,566	1,559,493	4,189,059	3,443,419	473,718

Source: Department of Census and Statistics, 2010

Due to a lack of storage facilities and the need to settle debts incurred the producers are obliged to sell the paddy immediately following the harvest, which gives them a lower price due to the high supply during that time period. The prices paid by the MPCs are higher than the prices paid by private traders (except in the case of Samba rice for which the MPCs offers a very low price), but they demand a much higher quality of paddy. Payments from the MPCs take about a week to 10 days to be effected. For these reasons, many producers prefer to sell the paddy to the local traders even at a lower price. Providing storage facilities closer to the community and facilitating more formal and accessible financial service schemes will give the producer the opportunity to store the paddy and sell it during the off season when the prices have picked up.

The physical market infrastructure that existed in many communities prior to the conflict were destroyed by the war. Farmers felt that they had more bargaining power when their produce was sold at the local market centres, because these allowed them to get price information from outside markets. Some physical markets, for example the 'pola', still exists but they are more focused on selling products from outside the area within the community rather than linking the community's produce with the outside market. Promoting these local markets will give the producers a chance to directly market their products in their localities.

"There aren't any local market centres in this area that may connect the local market to the wider marketing network. Only Pola type markets are available where the vegetables can be marketed."

FGD, Kinniya

Producers find it difficult to reach the market because there is a lack of good transport facilities. Agricultural lands are not connected to the main motorable roads in most areas and there is a dearth of vehicles for transportation.

"It costs Rs. 50 per sack to transport paddy from here to Gomarankadawala. There aren't any tractors in this village except small tractors."

FGD, Gomarankadawala

The lack of proper infrastructure was seen as a constraint for the marketing of the produce by the vulnerable groups. The problem of transporting the produce out of the village was discussed at the district level workshops and at the community level as a constraint for marketing their produce. For FHHs, because of the extra physical effort needed on the part of these women to carry their produce (on their heads) to the locations outside their community, this is particularly problematic. The lack of proper roads and public transport makes it practically difficult for the women to transport the produce and financially it is not feasible to hire transport; the women in Kiran carry their home garden produce on their heads to Valaichenai and travel by foot and on the ferry. The people living with disabilities also face the same constraint given their limited mobility. Encouraging collective marketing and strengthening the farmer organisations and the marketing networks would reduce the transport-related constraints to a certain extent.

Access to financial services

Local traders are often the suppliers of credit to the farmers for their cultivation, and the indebtedness forces some farmers to sell their produce to the traders at whatever price is offered. Other traders arrive at the farm-gate and pay a spot price for the paddy, which eliminates the farmers' need for storage and/or transport. Farmers find it difficult to move out of these seller-buyer relationships which are exploitative rather than supportive of the producers. Introducing more accessible formal financial sources and alternative livelihood options would help mitigate this constraint.

Even though there are formal sources of finance that farmers can access - such as commercial banks, microfinance institutions and NGOs - the cost of credit, delays due to cumbersome documentation, lack of proper awareness about the process and the requirements, and the need to provide collateral, force farmers to access informal sources. These informal sources range from boutique (small shop) keepers, fertilizer retailers, buyers, and middlemen to local traders. Obtaining financial services from these informal sources tend to lock farmers into marketing relationships with local traders that can be exploitative. The Samurdhi programme provides livelihood loans that have a credit limit between Rs. 10,000 to 20,000 depending on the type of activity in which the borrower is engaged. Small farmers in the study areas were more confident of obtaining this loan rather than loans from the more conventional formal financial sources such as the state and commercial banks. The process does not require much documentation (merely a six-month record of savings by a group of Samurdhi beneficiaries). The interest rate is 10% and the payback period is 6 months. However, timely disbursement is a problem.

"We cannot get government loans at the proper time. If we apply for one season, they give loans for the other season. It is very difficult to get the government loans also, because of too many regulations before the approval time"

FGD, Kinniya

Facilitating more formal credit sources and providing group loans could be a means of breaking the vicious cycle of debt that seems to bind the producers. Parallel to this, as stated earlier, introducing alternative income sources through crop diversification would give the producers an income in-between the paddy seasons and also during the low yielding Yala season.

High value varieties

There is a trend, mainly among the paddy producers in other parts of the country, to cultivate traditional varieties. The yield is low compared to the hybrid varieties that are currently more commonly cultivated, but as a result the prices of these varieties are much higher. Some of the traditional varieties found in Sri Lanka are Dahanala, Devaraddiri, Heenati, Hondarawalu, Mawee, Murunagakayam, Patchaipermal, Suduwee and Suwandal. A brief inquiry into the market potential of these traditional varieties highlighted the niche potential in the more urban areas and the tourist industry in the country. The general market prices of the more traditional varieties such as Suwandal, Madathawalu and Kaluheenati were as high as Rs. 170 -185 a kilo at the time of the study. These traditional varieties are more nutritious, rich in taste, pest-resistant and need no artificial, petroleum-based fertilizer and the higher value will mean more profit for the producer. However, the market linkages will have to be facilitated in partnership with the private sector and given the risk factor of a new crop, it can be introduced on a small scale with the view to expansion in the medium term.

Storage

The lack of physical storage infrastructure adds to the paddy farmers' problems of limited access to markets and limited opportunities for value addition, and depresses the price of paddy on the market. The provision of storage at the local level will eliminate this constraint. The data collected by ACAP also states that there are no storage facilities available in any of the target GNs except the paddy storage available in Naduoothu, in the Trincomalee district. Areas such as Poolakkadu in Eravur Pattu had large paddy storage facilities before they were destroyed by the war. At the time of the study, there had been no attempt made by the government or NGOs to reconstruct these paddy storage facilities.

"We store about 1 bushel of rice only, which is what we need for consumption for the week. We don't have separate storage for paddy in our houses, there is very limited space. We store in the rooms of the house."

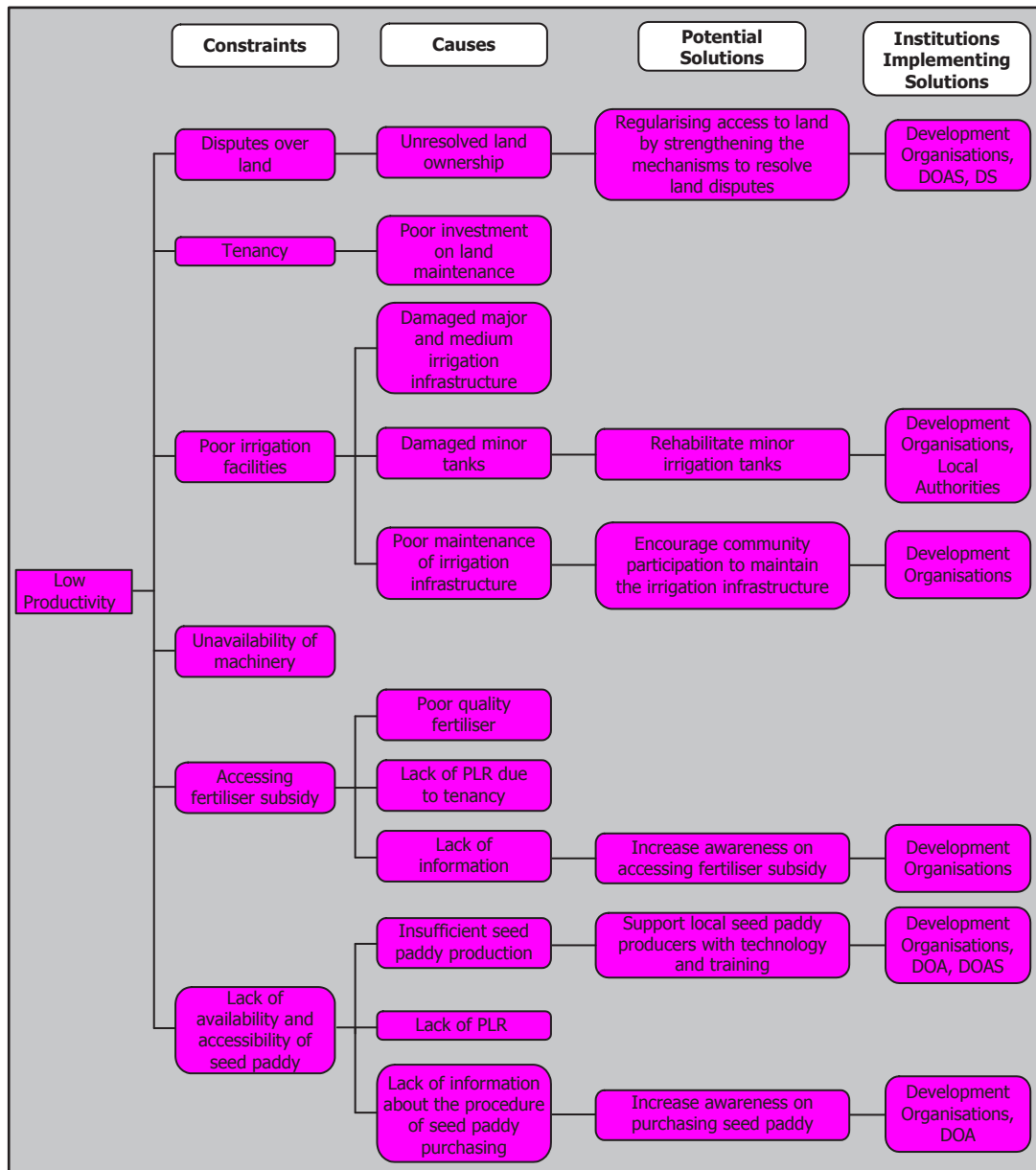
FGD, Gomarankadawala

Farmers are reluctant to store paddy at home for fear of being attacked by elephants. Lack of storage is a critical problem, because there is an excess of paddy production in the East at the moment (as shown in Table 4.5). The lack of storage facilities also means that the farmers cannot store the seed paddy that is required for the next season. Discussions held with the production groups revealed that the establishment of storage facilities at the local level would help to protect the producers from price shocks. Individuals at the community level could be identified for establishing common storage facilities.

In conclusion the above detailed analysis proposes a multi-pronged approach in designing the interventions for these vulnerable communities. Constraints at all the levels of the value chain as discussed in the figure below, should be addressed in parallel for positive impacts to be felt by the beneficiaries. For example, while implementing interventions to increase productivity, financial services and technology should also be made available to the communities along with functioning infrastructure and market linkages.

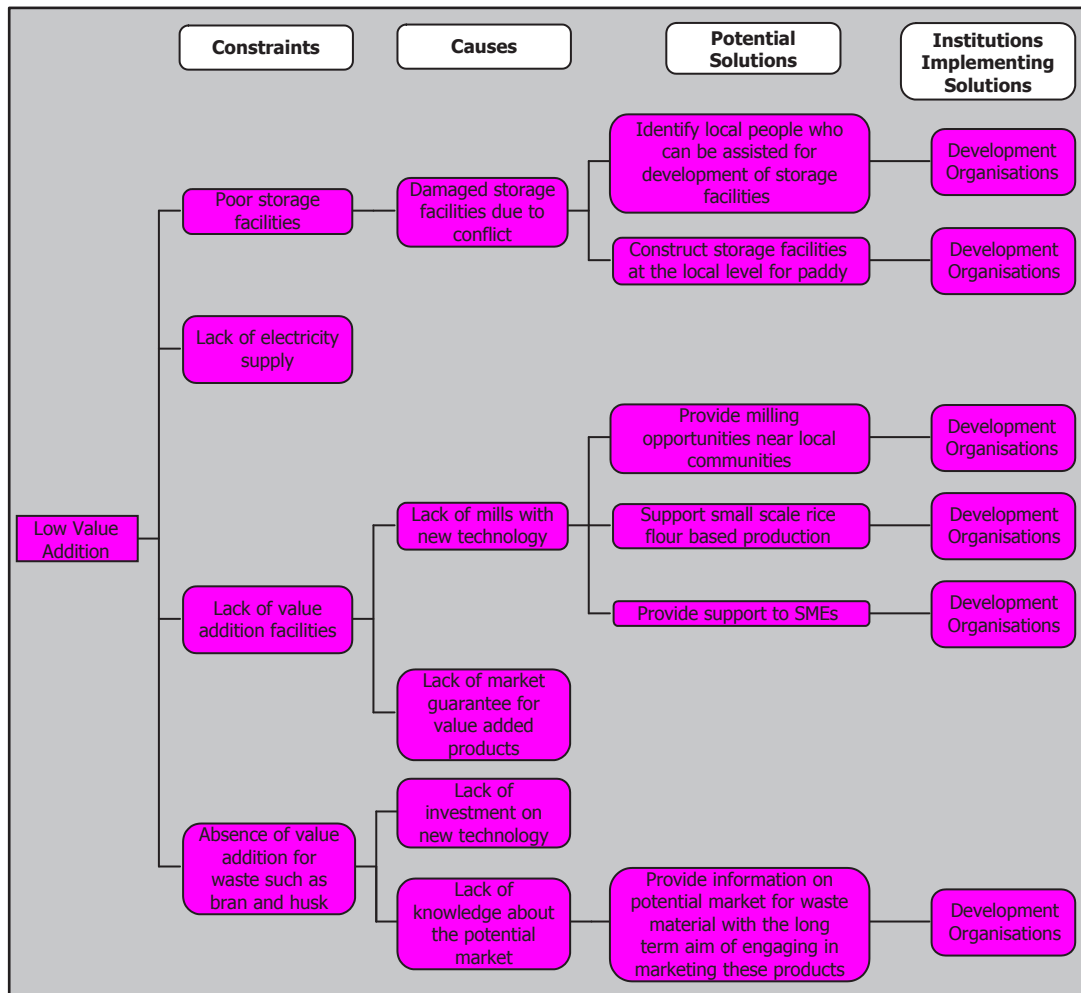
The following diagrams map the constraints, causes, potential solutions and the institutions for implementing these solutions.

Figure 4.2: Mapping of constraints and potential solutions for low productivity of paddy sub-sector



Source: Study data

Figure 4.3: Mapping of constraints and potential solutions for low value addition of paddy sub-sector



Source: Study data

Figure 4.4: Mapping of constraints and potential solutions for low marketability of paddy sub-sector



Source: Study data

4.2 Vegetables and fruits

The Batticaloa and Trincomalee Districts produce other field crops (OFCs) such as chilli, cowpea, green gram, kurakkan, maize and sorghum. Low land vegetables such as brinjal, beans, okra, bitter gourd, snake gourd, and red onion are grown in the Batticaloa District. These OFCs and vegetables are mostly produced in home gardens during the Yala season when there is no water for paddy cultivation. Red onion, big onion and chilli were mentioned as priority crops by the experts considering the potential marketability and the returns compared to other fields crops grown.

Other field crops are also produced in Chena cultivation in the Yala season. Fruits such as mango, banana and papaya are cultivated on a large scale and show potential for expansion in the area. In Trincomalee, pineapple cultivation was started as a pilot project and it has continued with the aim of expanding to other areas. The study found that, vulnerable groups, especially FHHs in the target communities engaged in vegetable cultivation at the home garden level. The lack of irrigation facilities and lack of capital to invest in the land preparation and the purchasing of quality seeds were identified as the constraints faced by farmers. Facilitating micro credit would help overcome some of these constraints and enhance their income.

Substantial investment is needed for **improving the production and productivity** of vegetables and fruits cultivated in the two districts. The existing data shows that fruit and vegetable cultivation is not competitive enough in terms of production (see Table 4.6 below) compared to other districts. The lack of opportunities for value addition is also a constraint. **Marketing the produce** during the harvest glut of low country vegetables is a concern that needs to be addressed as production expands.

Table 4.6: Selected vegetables as a percentage of national production

Crop	% of National Production		Crop	% of National Production	
	Trincomalee	Batticaloa		Trincomalee	Batticaloa
Manioc	2%	6%	Chilies	1%	1%
Ground Nut	3%	4%	Ash Plantain	1%	1%
Okra	3%	4%	Kurakkan	1%	0%
Red Onion	4%	2%	Gingelly	1%	0%
Snake Gourd	3%	2%	Green Gram	1%	0%
Brinjal	2%	3%	Red Pumpkin	1%	0%
Bitter Gourd	2%	2%	Cucumber	1%	0%
Maize	1%	1%	Ash Pumpkin	1%	0%
Sweet Potato	1%	1%	Black Gram	0%	1%

Source: Samaratunge, Sommers and Varley, 2009

Table 4.7: Selected fruit crops as a percentage of national production

Crop	Trincomalee	Batticaloa
Oranges	1%	2%
Mango	1%	2%
Plantain/banana	1%	1%
Papaw	1%	1%
Limes	1%	0%

Source: Samaratunge, Sommers and Varley, 2009

The issues of production and productivity could be overcome by increasing access to quality inputs such as seeds and planting material, fertilizer, financial services and technology. It is also important to maximize the usage of land and water by increasing the cropping intensity. Cropping intensity can be increased by introducing intercropping methods and crop diversification. Extension services also need to be improved in terms of quality and coverage.

Improving production and productivity

Seeds and planting material

The lack of availability of hybrid vegetable seeds was mentioned as a reason for lack of interest in engaging in vegetable farming. The productivity of the seeds supplied by the Agrarian Services Centre is low compared to the hybrid varieties, and the centre cannot keep up with the demand in supplying the seeds. The farmers purchase the imported hybrid seeds from the private sector. The negative side of using the hybrid seeds is that the harvested planting material cannot be used for cultivation in the next season. However, farmers are willing to buy hybrid seeds at a price much higher than local varieties because of higher productivity.

Farmers show a reluctance to cultivate fruit because of the slow returns. The first harvest of the mango cultivation takes approximately 3 years from the planting time. New hybrid varieties with high productivity should be introduced so that the returns are faster. Intercropping fruits with other cultivations will also help to overcome this constraint. Fruits providing quick returns, such as banana, can be introduced with other perennial fruit crops.

Fertilizer

There is no fertilizer subsidy for vegetable and fruit cultivation unlike paddy cultivation. The cost of purchasing Triple-Super-Phosphate (TSP) and Muriate-of-Potash (MOP) fertilizer is high. The high cost discourages farmers from using chemical fertilizer. This may be seen as an opportunity for organic cultivation in which case the availability of organic fertilizer should be increased. Organic farming can be promoted at a home gardening level for vegetables and short-term crops such as pineapple, banana and papaya. The smaller scales of cultivation will make it more viable and the producers could tap into the growing market demand for organic fruits and vegetables within the tourism sector as well as among urban consumer groups. Training on organic cultivation and market linkages should be facilitated. Lack of transport facilities affect input supply, access to farm land and transportation of the produce to the market. Poor road conditions, lack of suitable vehicles and containers to transport perishable vegetables are the main transport-related constraints affecting vegetable production. Using public transport leads to heavy post-harvest losses of perishable vegetables.

Under-utilisation of land and insufficient irrigation

There is potential to undertake vegetable cultivation on available land (uncultivated and abandoned land) in the two districts. The initial investment needed for vegetable cultivation is lower than paddy, the profitability higher and the risk lower. While water scarcity is an issue and limits the use of land during the Yala season, the study noted that vegetables that do not require much water were being cultivated since irrigation facilities were not available in most of the study communities. Agro-wells either do not recharge for a long time once the water is taken out, or have been abandoned because they have been constructed in areas where the water table is too low.

Modern micro irrigation technologies such as drip and sprinkler irrigation are not used in any of the communities. These modern technologies are the solution for water scarcity because the efficiency of water usage is higher compared to flood irrigation. Cultivation of chilli and onion need micro irrigation technology in order to achieve the maximum potential of the land. The lack of capital and low awareness about these modern technologies constrain the farmers from investing in them.

Crop diversification

Crop diversification is another solution to cushion the price shocks of one type of vegetable. It is less risky than growing one crop and will help to maintain better nutrient management of the soil. After harvesting, paddy lands can be used for cultivation of vegetables without much irrigation. The remaining moisture in the soil is sufficient to cultivate drought resistant crops such as cowpea, green gram and sorghum. This practice provides higher return from the land and these crops improve soil fertility by nitrogen fixing.

Extension services

The lack of extension services is a constraint to the vegetable sector. There is only one Agriculture Research Production Officer available for a DS division. These services and officers are important in terms of providing latest technology and assisting the producers in treating crop diseases. Extension services are also important when introducing and promoting vegetable farming to new producers. Strengthening the extension service officers by providing them with training on new technology as a means of exposing them to modern advancements in the relevant sectors would provide sustainability to livelihood interventions in the long run.

Processing, storage and value addition

Local production does not require storage facilities since there was no large scale production in the communities at the time of the study. However, as the extent of agriculture increases in the Eastern Province, storage facilities will be needed.

Seed separating machinery is necessary for crops like maize. Maize at present is sold only as green cobs due to the lack of machinery. Even though there is a demand for maize grain from the poultry industry, unavailability of suitable machinery to split the seeds from the cob restricts the processing of maize cobs. Green cobs were being sold between Rs. 5 to 6 at the time of the study (based on primary data collection), whereas the value of it could be increased when the seeds are separated. The technology currently used to split the grain results in much damage to the seeds and leads to high wastage. Private companies at present engage in maize cultivation in the East and use their produce as animal feed.

Processing of vegetables at the basic level such as red chillies, chilli powder and traditional pickles can provide added value to vegetable cultivators. Local level small-scale grinding mills can be introduced. This will help to overcome the wastage of produce during the harvesting season and generate off-farm employment opportunities. SMEs could be promoted at the community level with technology and initial capital being provided. Training on labelling, packaging and quality control would also have to be facilitated.

Fruit processing is another area that has future potential and needs attention and support. As discussed above, the initial effort is to expand the cultivation in terms of improving the production and productivity. The efforts of the Department of Industries in Trincomalee for fruit processing is constrained by the lack of supply of fruits from local producers. Fruits are currently supplied either from the Dambulla or Colombo market. Technology from the

Department of Industries can be shared with SMEs at the community or DS level and with the provision of initial capital the producers can get higher returns for their fruits. The marketability of natural fruit drinks is higher within the district since the suppliers are very limited.

"There is a high demand for natural drinks. Government departments and the schools demand large quantities, but we are unable to supply at the moment. We can also supply for the seminars, workshops, and meetings taking place in the area."

(KPI, Trincomalee)

Market

There is an unmet demand for vegetables and fruits in the Batticaloa and Trincomalee Districts. This demand is met by importing vegetables and fruits from outside the districts which are more expensive than vegetables produced locally. Up country vegetables are supplied from the Dambulla market. The increase in the supply of low country vegetables to the local markets is expected to change the consumption patterns within the district because of their lower prices and freshness as they are produced locally.

Seasonality of production affects the price of the vegetables. Many farmers produce similar kinds of vegetables during the Yala season, and the excess supply brings the price of the produce down drastically. Farmers in Kalavanchikkudy, in the Batticaloa District engaged in crop rotation, so price fluctuations during the harvest glut did not affect this community. In crop rotation, the decision regarding the crop cultivated is taken based on the demand in a particular time period. The 'one village one crop' approach was introduced by the government with the intention of eliminating price fluctuation and involvement of middlemen. Both fruits and vegetables are cultivated under this programme. It can be replicated in other vegetable and fruit producing areas as well. The 'one village one crop' approach involves crops that are cultivated according to the season and farmers can cultivate several different crops during a year (but only one at a given point in time).

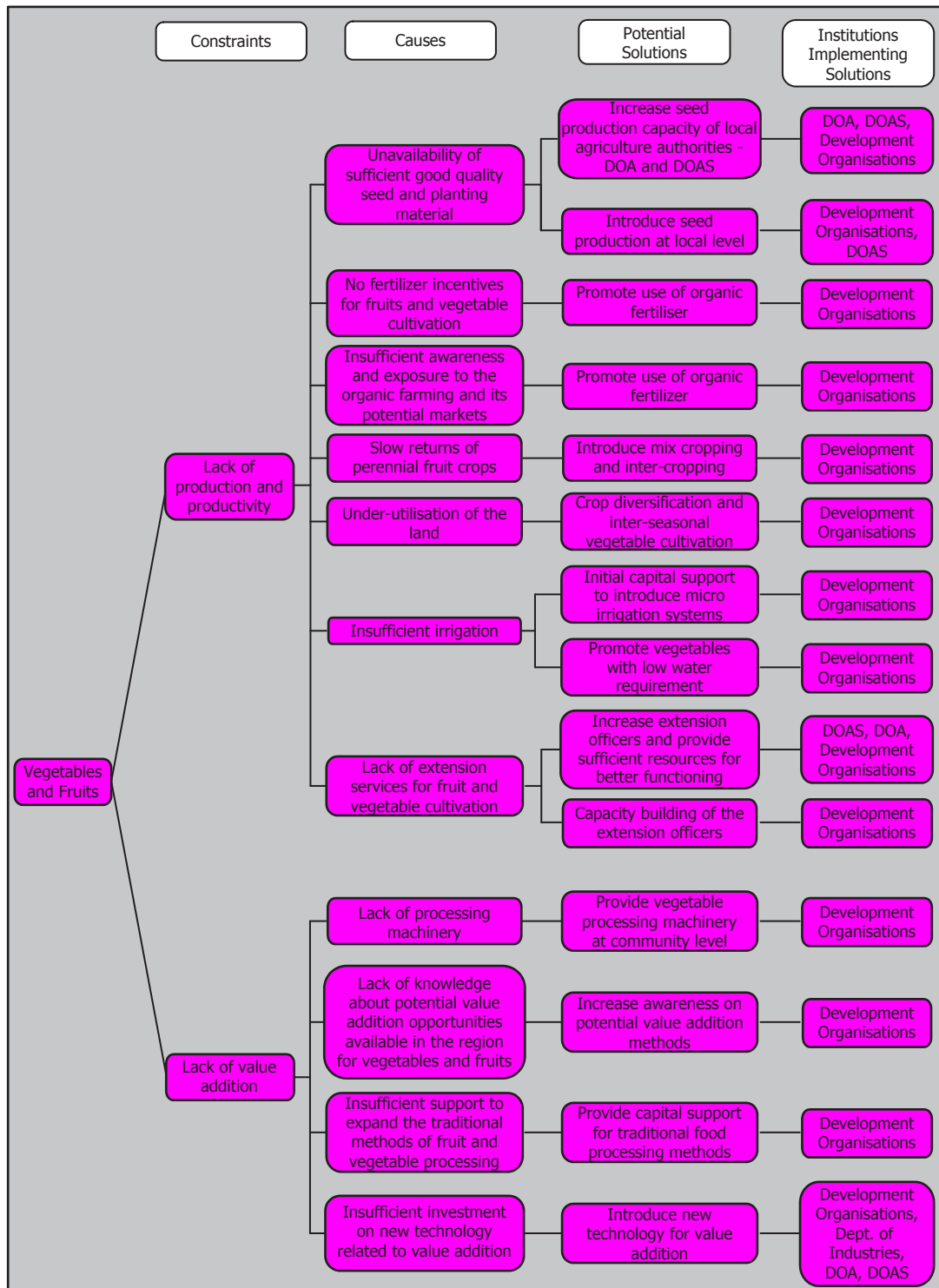
The vegetables and fruits produced within the district are marketed in village level markets. Creating regional economic centres would enable products from different areas of the province to be centralised and marketed through more formal channels, reducing the exploitative involvement of the middlemen and increasing producer bargaining power. It would also facilitate a better market information process and bring higher returns to the producer.

Encouraging private sector involvement in the vegetables, fruits and other crop sub-sectors is strongly encouraged. Most of the USAID-CORE on-going projects, at the time of the study, were conceptualised around private sector buy-back systems⁸ and it will be useful to see the experiences and lessons generated from these private sector partnerships. Supermarket chains such as Cargills are also encouraging fruit production in Trincomalee, and linking up with these ventures will broaden the market for the producers. In addition, the expanding tourism industry should be considered as a potential market for organic produce.

In conclusion, the vegetables and fruits grown in the two districts are not sufficient to cater to the demand. Therefore, it is important to invest more in increasing the production and productivity in the short run, while looking for value-addition options and market linkages.

⁸ Details on the projects, etc. can be found on the USAID-CORE website www.core.zunepile.com/ .

Figure 4.5: Mapping of constraints and potential solutions of the vegetables and fruits sector

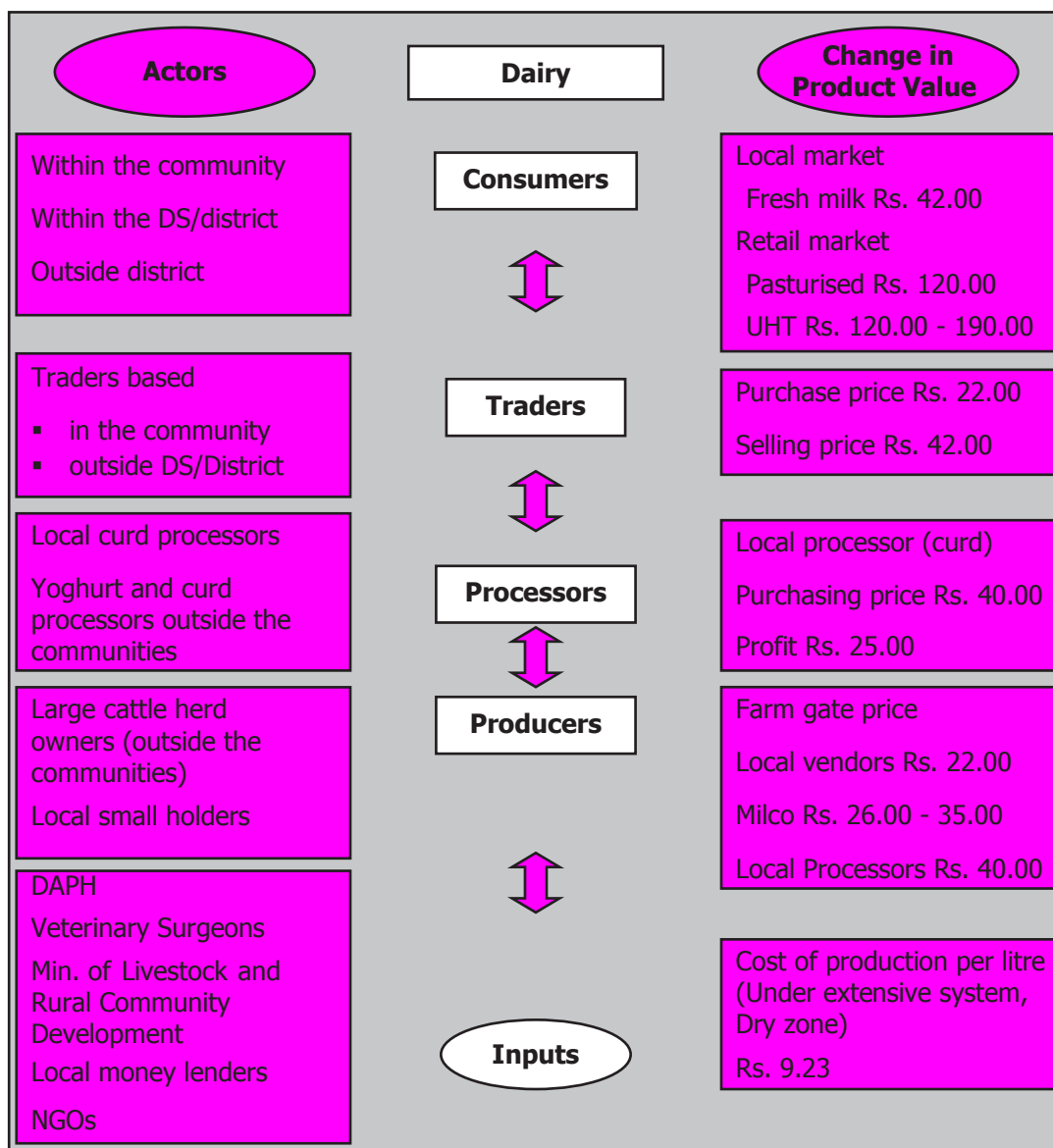


Source: Study data

4.3 Dairy and livestock

Livestock and poultry are undertaken as a subsidiary livelihood activity, often serving as a supplementary activity to paddy production. Cattle rearing is the most common livelihood source, although goat rearing and poultry is also undertaken by a significant number of producers. In the Batticaloa District, livestock rearing is an important source of income in all the target GNs but it has a relatively low presence in the Trincomalee District. Cattle are reared mainly for dairy, and most poor households rear two or three head of cattle as a subsidiary activity. In Eravur Pattu, large herds belonging to wealthier householders are looked after by villagers for a wage during the paddy cultivation season.

Figure 4.6: Mapping of actors and value of the product along the dairy value chain



Source: Department of Census and Statistics, Department of Agriculture, Central Bank, HARTI, Primary data
 * Sale prices and profits are based on primary data collected during the study.

The main actors involved in the dairy value chain are mapped in Figure 4.6. The input and service providers are mainly men, however, women play a significant role in production and local level processing. None of the vulnerable groups in the sample were directly part of the dairy value chain, but the present engagement of women in the sub-sector shows that the FHHs can be targeted in promoting the sub-sector. The lack of engagement of FHHs can be due to the current free ranging cattle management system, but the introduction of improved breeds can target FHHs as well.

The dairy sector is currently constrained in terms of both supply and demand. The supply of milk is restricted because of the low productivity of local breeds, limited knowledge of management and the absence of institutional support such as extension services. Competition with powdered milk products and the lack of facilities for value addition constrain the demand for fresh milk.

The farm-gate price for milk is mainly decided by the government through MILCO. However middlemen or the local vendors pay a lower price per litre and given the lack of easily accessible collection centres, the producers sell the milk at a lower price. The local vendors seem to make a smaller profit than the producers. The local processors seem to give the highest farm-gate price to the producers, but the quantity that they buy is usually low.

Improving the supply

Production

The availability of human resources interested and able to engage in livestock rearing is an opportunity to develop the sector in Batticaloa and Trincomalee.

The average herd size is 9.5 and the average milk yield of indigenous breeds is 1 litre per day. The average yield for improved breeds in the Eastern dry zone is 5 times greater (Ibrahim 2000, p.188). However, in the studied communities, most livestock farmers were smallholders with 2-5 animals and the average milk yield of a cow was 2-3 litres per day. There are a few owners of large herds, with 25-150 animals, but none of them are in the study communities. The subsistence nature of dairy farming does not yield high profitability to the farmers. According to the study conducted by N.F.C. Ranaweera (2009), 15 litres of daily milk production is necessary for a smallholder farmer to earn a reasonable income from dairy farming. Three upgraded animals and 20 perches of fodder land are required to produce this amount of milk.

The conditions prevailing in the studied communities constrain their ability to achieve this level of production. Well-to-do farmers can usually afford high yielding breeds that they bring to the area from Polonnaruwa, but the improved breeds are beyond the reach of the smaller farmers. The low numbers in a herd and the inability to access improved breeds bring low returns to the farmer. The lack of breeding centres and a high level of natural breeding prevents upgrading of the cattle stock in the two districts.

"We get the quality cattle from Polonnaruwa for Rs. 80,000. These cattle give more milk than the ones we have at the moment. Everyone in this village is not capable of buying these good quality animals."

(FGD, Eravur Pattu)

However, providing improved breeds will mean changes in the management systems and cost of production per litre. It will necessitate intensive or semi-intensive management systems and a higher cost of production per litre in comparison to extensive management systems as shown in the following table. The main reason for this is the higher labour and feed cost in the intensive systems. The increase in yield will be 2-5 times greater which makes the introduction of improved breeds more profitable for the producers.

Table 4.8: Cost of production of milk (per litre) in the dry zone by management system

Zone/District	Management System		
	Intensive	Semi-intensive	Extensive
Dry Zone	23.3	14.51	9.23

Source: Department of Animal Production and Health, 2009

Milk yield can be increased by improving the traditional methods of management practices of the herds, and the quality of the feed in terms of fodder and pasture land. Monitoring of these new management practices to see whether the recommendations are implemented is imperative for increasing the yields. Existing stock can be upgraded with good quality cross-breeds and the increased productivity would in turn encourage the smallholders to engage in dairy farming.

Pastureland

Improving the pasture land will increase the availability of feed. The pasturelands in the two districts were destroyed by the war, and in some areas abandoned without proper maintenance. There is a need to introduce good quality grass into these areas to increase the productivity of animal husbandry. Growing improved varieties of grass requires drip or sprinkler irrigation and good management practices.

Farmers tend to allow the animals to free range and look for feed and water, which is a waste of energy and can reduce the amount of milk being produced. The lack of sufficient drinking water for animals is exploited by the milk collectors who bring water in bowsers to ensure that the milk is then sold to them, and not to anyone else, which limits the options of markets available to the producer and reduces their bargaining power.

Extension services

The institutional support for animal husbandry is insufficient due to the shortage of human resources in the Department of Animal Production and Health (DAPH), the only government department providing services to livestock producers. There are a limited number of veterinary surgeons and field officers in the department. A livestock development officer is in charge of 2-3 DS Divisions in the Batticaloa District.

The shortage of personnel has implications for the care of animals, as well as for meeting the demand for improved breeds. For instance, lack of a timely artificial insemination (AI) service means that natural breeding has already taken place before the department can provide the AI service.

Training and capacity building of livestock producers does take place through the government and NGOs, but it is not followed up by the provision of the necessary capital inputs to invest in improvements. The targeting for the training programmes is also not clear, since many of the poorer farmers were unaware that they were eligible to participate.

Financial services

Currently, the milk collectors are the easiest source of credit for small farmers. Thus, even though these loans tie the producers to the collectors, and they have to sell their milk to them at lower prices, the producers feel that in the long term they are better off than obtaining financial services from formal institutions.

There are many constraints to getting financial services from either the government or the formal banking sector. The government provides loans to support animal husbandry in the East. However, because all applications need to be certified by the veterinary surgeon, and because the veterinary surgeons are not always accessible to the producers, accessing government financial services is difficult. The state and commercial banks also provide loans for animal husbandry, but the procedures are so complicated that small producers cannot access these loans.

Market

Batticaloa produces more milk than is consumed in the district, while in Trincomalee, the reverse is true. These differences also exist within the district where certain divisions have an excess production and others a short fall.

In this context, improving the quantity of milk produced, finding a local market for it, and for other milk-based value-added products is an important means of improving the livelihood options for poor households.

Milk is currently purchased by government departments, the government-owned company, MILCO and private companies such as Nestle. The companies purchase milk through farmer organisations and the milk is brought to the local collection centres where the companies collect it. However, the network of collection centres is insufficient to collect all the milk produced: there is often only one collection centre for a DS division. The problem is exacerbated by poor connectivity and limited transport. These factors discourage farmers and result in low milking frequency.

"Milking is done only in the morning whereas it can be done in the evening too if the farmers can market the milk."

District level workshop-Batticaloa

The milk collection network was not expanded due to lack of security during the conflict and at the time of the study some milk collection centres were malfunctioning due to lack of maintenance.

In addition to formal milk collection, middlemen/local traders also engage in purchasing milk. Providing spot payment and credit support in difficult situations attracts the producers to sell the milk to the local collectors even though the price given by these collectors is lower than the rate paid by the government, NESTLE or MILCO. The Tamil farmers in Batticaloa felt disadvantaged being at the production stage as the players at the higher level of the value chain represent other ethnicities.

In the absence of value addition, trading is the step in the value chain which can provide higher returns. The lack of capital to invest in the trade prevents the producers from engaging in trading.

"The milk we produce passes through three hands before it reaches the market. The producers are mainly Tamils and the milk is sold to the Muslims. The Muslims traders sell the milk to the Sinhala shop owners."

FGD, Eravur Pattu

In Trincomalee, the government is expanding the milk collection centres and carrying out a minimal level of processing with the aim of preserving the nutritional level of the milk. A lack of capacity of these processing centres to deal with large quantities of milk makes the producers sell the excess milk collected to private companies such as NESTLE or MILCO. But increasing the capacity of the centres requires a continuous supply of milk and a strong market link, because the processed and packeted milk needs to be consumed within 48 hours of production.

Demand for fresh milk

At present, the increasing trend of powdered milk consumption has led to poor demand for fresh milk/liquid milk even though the nutritional value of the latter is higher. Awareness about the benefits of consuming liquid/fresh milk is essential to change the attitude and consumption pattern of the rural and urban communities.

"When we visit the farm families, they give us powdered milk for us to drink even though they have fresh milk at home. They think that it is a dishonour if they give the visitors fresh milk"

KPI, Batticaloa

It should be noted, however, that in the future, the demand for fresh/liquid milk consumption will increase when the income of the households increases over time. This is an opportunity that the smallholders in the dairy industry at the domestic level can take advantage of.

Value addition

Traditional forms of curd are made and marketed locally. It is not transported outside the region mainly because of the lack of a good transport network. The lack of capacity to invest in technology and the lack of electricity within the recently resettled communities are seen as bottlenecks for value addition.

"If there is value addition for the milk, it is possible to sell the Rs. 40 worth of milk at Rs 100."

District Level Workshop, Batticaloa

Yoghurt production was not being done in any of the studied communities but it is one of the value-addition techniques which requires minimum capital support. This can be introduced through the SMEs/farmer organisations at the community level. Private sector individuals outside the community who are capable of investing are engaged in producing flavoured milk, but it is not done at the community level.

Private sector involvement is seen only in milk collection and marketing of fresh milk. Large scale value addition such as making yoghurt and cheese and flavoured milk is done beyond the reach of the target communities. The following quotation reflects the present level of value addition at the community level.

"Sometimes that middle man collects 5,000 to 7,000 litres of milk during the day and makes the curd and sells it back to us in the evening."

FGD, Eravur Pattu

Other livestock

Both backyard poultry and free ranging goats are found in the two districts. Farmers with higher capital engage in broiler production, for which there is a high demand that cannot be met by the current production.

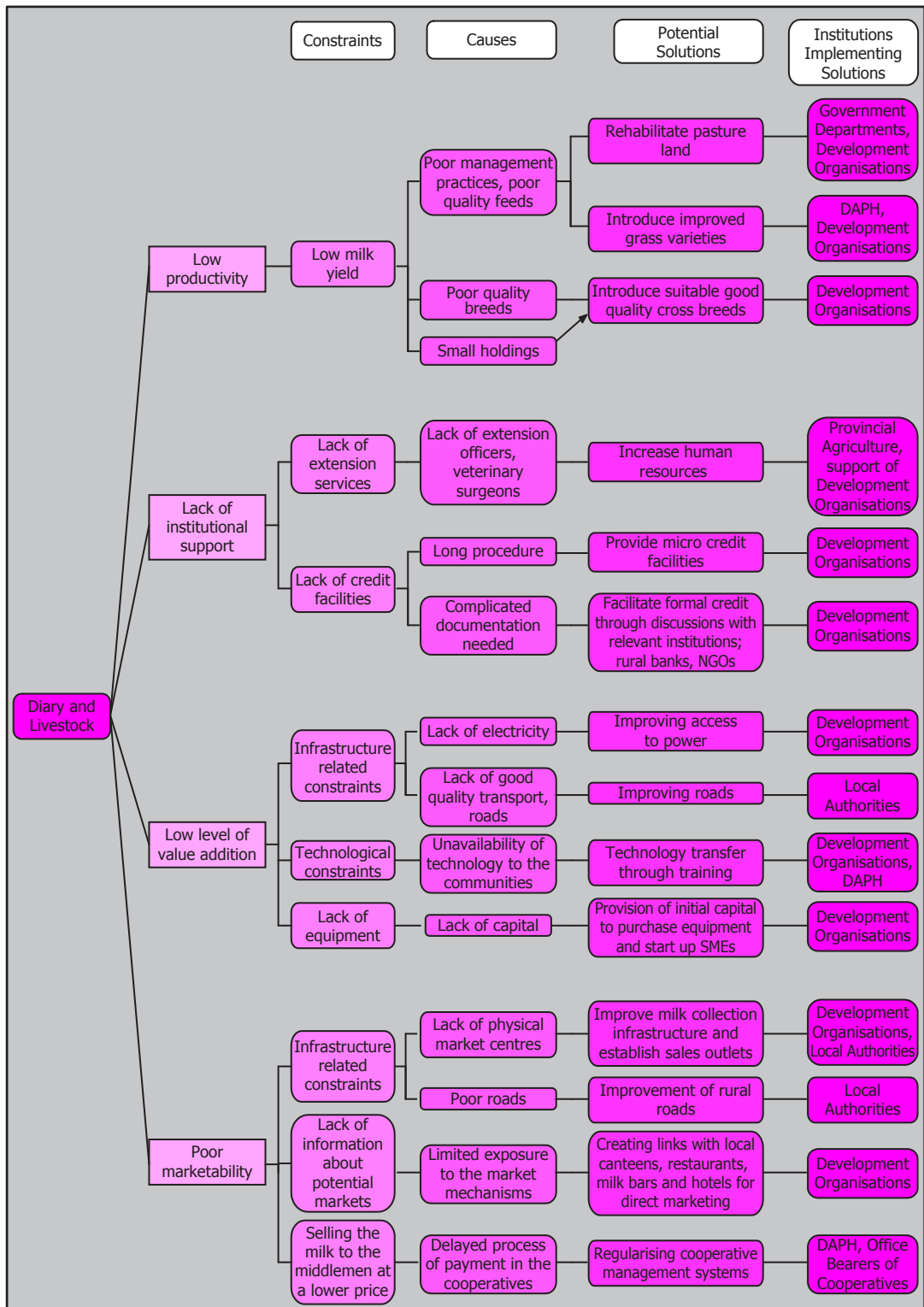
Poultry is imported into the two districts, from areas where production is on a large scale and prices are cheaper. This depresses the prices and discourages poultry farming on a commercial scale in the studied districts.

DAPH and NGOs are encouraging poultry production in the two districts, by interventions to increase the availability of young chickens, and by providing micro credit for poultry keeping, especially among families that have been recently resettled, as a secondary/temporary income source. Young chickens are more readily available in Trincomalee where there is a hatchery at Uppuveli, even though this is also insufficient to meet the demand for birds if poultry is done on a commercial scale. In Batticaloa, the DAPH is aiming to provide mini hatcheries to identified producers.

There is a high demand for mutton in the local market, so goat rearing takes place as a supplementary activity in most households and provides continuous income for families and reduces the impact of seasonality of crop cultivation. The main constraint to goat farming is the lack of improved breeds.

In conclusion, removing constraints related to productivity, value addition and institutional support and marketability would increase the returns to farmers. The diagram mapping constraints in the sub-sector summarises the constraints discussed above and points towards interventions that could be potential solutions.

Figure 4.7: Mapping of constraints and potential solutions of the dairy and livestock sector



Source: Study data

Fisheries

Inland fisheries and marine fishing are two very important livelihood activities in the two districts. Within the fisheries sector, the majority of people are engaged in the marine fishing sub-sector. The topography of the Batticaloa District with its tanks and lagoons makes it more conducive to inland fishing in comparison to Trincomalee.

4.4 Inland fisheries

Inland fishing is an all year activity-dependent on the fish stock, while marine fishing is seasonal. Families engaging in both inland and marine fishing supplement their incomes through secondary livelihood activities such as livestock rearing and the cultivation of paddy and other crops. For example, Kunjhaankukulam in the Madurankernykulam GN division in Batticaloa was studied to build the inland fishing value chain. The division has 60 households that are engaged in inland fishing who also engage in secondary livelihood options such as paddy cultivation, bee honey collection and home gardening.

Among the studied GNs the most number of fishermen engaged in inland fishing are from Ailiyadi and Nadoothu in Kinniya DS division and Kithulwewa and Madurankernykulam in the Batticaloa District. In Punanai East and Poolakkadu in Batticaloa, inland fishermen engage in fishing throughout the year. Kithulwewa employs a number of fisherman; as high as 101 in inland fishing from April to September, during the off season for paddy cultivation.

Fresh water capture fishing has been identified as a potential area for support to enhance the livelihoods of the rural poor by both state and non-state entities in the conflict affected areas of the country, due to its nature of providing quick returns and nutrition value as a protein supplement. Fishing provides the communities with a secondary source of income, which in turn helps them maintain a mixed livelihood portfolio which is more capable of mitigating the impact of external shocks to income. Inland fisheries can be integrated with the agriculture system and can be promoted as a rural livelihood option, working through the already existing government structures of agriculture and irrigation. These factors and the presence of a large percentage of inland water bodies in the provinces suggest that the inland fisheries sub-sector has potential to grow in the East.

Table 4.9: Number of tanks by type in the East

District	Perennial	Seasonal		
		Functioning	Abandoned	Total
Batticaloa	18	206	96	296
Ampara	53	181	87	268
Trincomalee	10	428	196	624

Source: Statistical Information, North East Provincial Council 2005 and MFAR, 2007 and DS Batticaloa, 2011

In these recently resettled areas of the country, fresh water capture fishing is practiced in seasonal tanks, using basic techniques for both home consumption purposes as well as for an increasingly expanding local market. In other words, subsistence is the main objective with excess catch being sold, thus it is mainly traditional/indigenous small scale techniques which are used in fishing. Among the 3 districts in the East, Batticaloa has the highest percentage of freshwater fisher folk whereas Ampara has the highest percentage of production, which makes the labour productivity of Ampara higher. The use of better fishing techniques as an outcome of training programmes given to the freshwater fisher folk under the Gal Oya scheme and the possibility of fishing during the dry season because of the

presence of a higher number of perennial tanks could be a reason for the higher productivity rate in Ampara. The example of Ampara could be applied to the fresh water fishing in Batticaloa and Trincomalee and apart from enhancing the productivity through technology transfer, infrastructure development and institutional strengthening, overall strategies such as balancing of resources through environmental conservation and reducing gender imbalances within the sector should also be considered in order to develop the sub-sector.

The current market analysis identifies the potential to increase the production and productivity of the fresh water fishing sub-sector through a better supply of quality high demand fingerlings, improved irrigation and connectivity infrastructure, resource management through collective decision making regarding the tank and the fish stock and provision of fishing equipment mostly to the identified vulnerable groups. The sub-sector shows a demand for certain types of traditionally processed dry fish which seems to have an assured market and this could be further developed by increasing the quantity of fish that is processed and introducing the product to markets outside the district in the longer term. Fresh fish also seems to have a high demand locally, but exploring markets outside the district should be facilitated to ensure long-term sustainability of the sub-sector.

Fish production

The price of fresh fish is about Rs. 100-200. The cost of input is minimal given that the producers use traditional non-motorised methods of fishing. In a context where the buyer comes to the village and offers them the retail price, there are minimal costs (in terms of labour and transport) and almost the whole income could be counted as profit. Given the high market demand, increasing the production and productivity of the sub-sector should be encouraged since it would give higher returns to the producer. However, resource management mechanisms should also be encouraged; otherwise competition and damage to natural ecological systems could result from the drive to increase production.

The main constraints identified for increasing productivity and production were the malfunctioning tank and unavailability of quality input. Fingerlings, fishing craft, fishing equipment and labour are the main inputs in inland fishing.

The poor quality of the tank is an impediment to continuous fishing. Currently the tank in the studied community contains only about 100 acres of water, but rehabilitated, could expand to 600 acres. It dries up during the dry season, and the villagers control the flow of water using sand bags as there are no sluice gates. Responsibility for the maintenance of the tank rests with the Provincial Council, not the Department of Irrigation. As discussed at the DS level workshop and in the interviews with government representatives, at present, the government and NGOs are providing support for tank rehabilitation as part of the resettlement plans for these communities. The tank rehabilitation should integrate the producer groups as well so that they, through the fisher societies can contribute towards tank maintenance and management. They should be made aware of water resource management systems and be included in the strategising and planning of these interventions so that the ownership remains with them in the long term.

It has been observed that the most common management measures adopted in seasonal village tank culture consists largely of stocking with fingerlings and their subsequent harvesting. At present, the community claims that they have been informed by the relevant authority that the stocking rate is 100,000 per season (6 months) and they claim that they harvest 1,000kg per season, which could be considered average according to the records. Supplementary feeding of the fish is not practiced. According to research done by the FAO,

it has been demonstrated that, by the addition of inputs (such as fertilizer and feed) and employing higher stocking rates, productivity can be improved (FAO, 2004). However, supplementary feeding can only be considered in the longer term for these communities, given their lack of capital and new technology.

There are issues with the supply of fingerlings and stocking. The Department of Fisheries supplies the fingerlings, and the funds to purchase them are provided by the Provincial Council. Farmers are still not able to produce their own or even start up nurseries due to lack of technology and capital, so all the fingerlings are imported from outside the district i.e. from places such as Dambulla, Puttalam or Ampara. The distance and the mode of transport result in a high fingerling mortality rate.

"We do not have good quality high demand fish like Viral and Sungan. The dried fish of these kinds are expensive."

(Case study, PWD, F, Vaharai)

Producers feel that stocking is insufficient, stocking frequency is too slow and they are dissatisfied with the types of fish that are placed in the tank, because they are not the breeds that are in high demand and have a high value. The breeds that are currently being placed in the tank are not the most suitable to the prevailing conditions. These breeds are not capable of breeding naturally and they eat the fingerlings and eggs of naturally breeding traditional breeds. The growth of the fingerlings needs to be managed carefully, without which inland fishing cannot be sustained. Promotion of seasonal tank aquaculture with easy low-cost start ups, the presence of high nutrients due to water retention and human activity, and land-based mini nurseries such as in Rajawewa and Kirawana in Ampara, are potential solutions for the lack of good quality fingerling closer to the communities.

Inland fisheries are usually organised around fisheries societies that try to ensure that benefits accrue equitably, the use of inappropriate fishing equipment is controlled, over fishing is prevented and marketing is facilitated. The societies also engage in maintaining the tank. The 60 families in the Kunjaankatkulam village are registered with the society. The society had 25 boats, so fishing was a joint activity and only one member from a family was permitted to participate in fishing. This controlled over-fishing and resource depletion. The presence of a strong well-functioning fisher society can be an opportunity for implementing new strategies.

Resource depletion caused by over-fishing is a major constraint for inland fishing. In the absence of regulation and regulatory bodies controlling the type of fishing equipment being used, communities have adopted their own regulatory mechanisms. In the Kunjaankatkulam village, the fishing society regulates the use of equipment, and the police and army posts in the area are also alert about the use of illegal fishing gear. During the time the communities were under LTTE control, the LTTE took measures to regulate fishing practices.

The vulnerable groups and the close relatives that support them are engaged in the production stage of inland fishing at a basic scale. They seem to be at the lowest end of the value chain with regard to the quality of equipment they use and the quantity of fish they can catch. The constraints that were discussed in the above sections with regard to the quality and quantity of fingerlings and the dilapidated status of the minor tank were reiterated by these vulnerable groups as well.

There are FHHs, PwDs and those that support these vulnerable groups that use basic fishing methods such as fishing with a rod and small nets mainly to supplement their income. In addition to the constraints mentioned at the community level, the lack of capital to purchase fishing gear was mentioned as a constraint by the respondents and they did not have access to boats.

"I cannot do any work because of my pain. Husband engages in fishing but he does not have proper fishing gear. He has an old net which he continues to repair and use. He does not have a boat, if he has a boat; he can increase the quantity of fish that he catches. Our lake is not deep enough and we do not have quality fish. If the tank is rehabilitated, we can increase our profit."

(Case study, PWD, F, Vaharai)

FHHs that engage in fishing are members of the fishing society, but paying up the membership fee was not strictly required of them. They use the same marketing methods as the rest of the fishing community, selling the fish catch to the highest bidder through the fishing society.

Using the zonal plans drawn up for the East by the MFAR in line with the 10 year plan for the fisheries sector, culture fishing can be developed beyond the model farms that have already been created. The water bodies available in these areas increase the potential for culture fishing. The export demand for cultured high-value breeds would mean a higher price for the fishermen. Demand for high-value fish and fish products such as lobsters, sea cucumber, sea bass, oysters and shrimp exists in the international market and local production could be geared towards supplying these products. However, the quantity of exports of shrimp and prawn in the country has decreased and this presents an opportunity for culture-based fisheries to be developed in these areas.

The culture-based fisheries suit the vulnerable groups such as FHHs with the initial capital costs financed either through micro-credit systems or livelihood assistance projects. The amount of heavy manual labour required for culture fishing is relatively less, which makes it ideal for vulnerable groups. Awareness creation with regard to the profitability of the culture fish industry should be undertaken among the private sector encouraging them to invest in these coastal regions. However, culture fishing should be introduced and managed with caution, using clear resource management mechanisms in order to minimise the possible damage to the environment.

Value addition

Inland fisher folk can make more money by processing certain types of fish. The fish producers who participated in this study have identified the type of fish that can bring them higher returns and the method of processing fish which is in more demand. They have found out that there is no demand for salted dry fish, so they use the traditional method of smoke drying fish using firewood, which incurs minimal cost and can last for about 3 days. The fish that has a high demand is Sungan and Viral dry fish, which gave producers (at the time of the study) Rs 800 and Rs 600 per kilo respectively.

"If we dry 3 kilos of fish, it becomes 1 kilo of fish. Therefore, we only process the fish for which there is a good demand and a high price. A kilo of dry fish normally sells at Rs. 300 per kilo. It is more profitable to sell this fish as raw fish"

(FGD, Vaharai)

Because of the high demand there is little need for storage. However, during the peak season, the non-existence of ice plants limits producers' ability to send fish to markets outside the region, which results in certain fishing communities processing the fresh fish irrespective of the value that they get for their efforts. At the time of the study, producers were selling normal salted fish to middlemen at half the market price. Dry fish is produced in remote areas and where accessibility is a problem. Lack of awareness on the part of the fishermen in marketing and in choosing the types of fish that have a good demand in the market, coupled with poor transport facilities forces producers to sell the dry fish to the middlemen and they cannot demand a good price for their produce.

Vulnerable groups are part of the value addition process with fresh fish using the same method of smoke drying fish. Those that cannot engage in catching fish due to their physical disabilities prefer to engage in processing fish.

"I have experience of making dry fish since my childhood. So, I can do that work. Sometimes my husband will bring fish to make dried fish. But our village tank does not have enough fish."

(Case study, PWD, F, Vaharai)

The existence of a good market for smoke-dried fish and the technological know-how they have acquired through experience and traditional knowledge can be capitalised on, especially for the vulnerable groups because value addition requires little mobility.

"If I catch the fish I will not sell them. If I sell that, the profit is less. I will make dry fish. That brings more profit. The traders come to my home to buy dry fish. Sungan and Viral are good for dry fish. But these fish are less in the tank."

(Case study, PWD, M, Vaharai)

Introducing higher value freshwater and brackish water products and supplying the technological and initial financial support will move the fishers away from the less profitable traditional freshwater fishing sector. The existing knowledge and experience of capture fishing such as crabs and brackish water prawns can be seen as an opportunity to expand this sub-sector. As highlighted in the livelihood sector study for USAID funded CORE project (May 2009), Tilapia, Milkfish and Carp species are seen as easier and less expensive in the growth phase and less prone to diseases in comparison to prawns, although they fetch a lower price in the market than the prawns. The local market which prefers fresh fish without ice should be targeted for these types of aquaculture. These methods of higher value culture fishing was, at the time of the study, already in their pilot phases throughout the Eastern Province, mainly in the Batticaloa District, and steps should be taken for scaling up and incorporating the lessons learnt from the pilot phases.

Markets

Freshwater and brackish water capture fish as well as culture fish is seen to compete with the marine fish in the local market and has shown export potential. Tilapia and Milkfish without ice should target the local market, with transport from the eastern districts to the more urban areas taking minimum time. The culture fish such as shrimp and crab could target the tourism industry and also the export market. Private sector involvement in buy-back systems should be encouraged and the links should be facilitated where possible into systems where the company would supply the fingerlings and the feed and buy back the produce from the farmers at a competitive market price.

Due to the lack of market centres, and because of the lack of transport facilities and connectivity, producers tend to sell their produce to middlemen or collectors at a lower than optimum price. The exception is in Kunjaankatkulam, where there is a fisheries society, and where producers are able to sell their fish to the buyer who offers the highest price. Here the buyer offers them the market price and also pays an additional Rs. 10 per kilo to the fisheries society. The strengthened fisheries society in turn can look to start up seasonal tank fish culture.

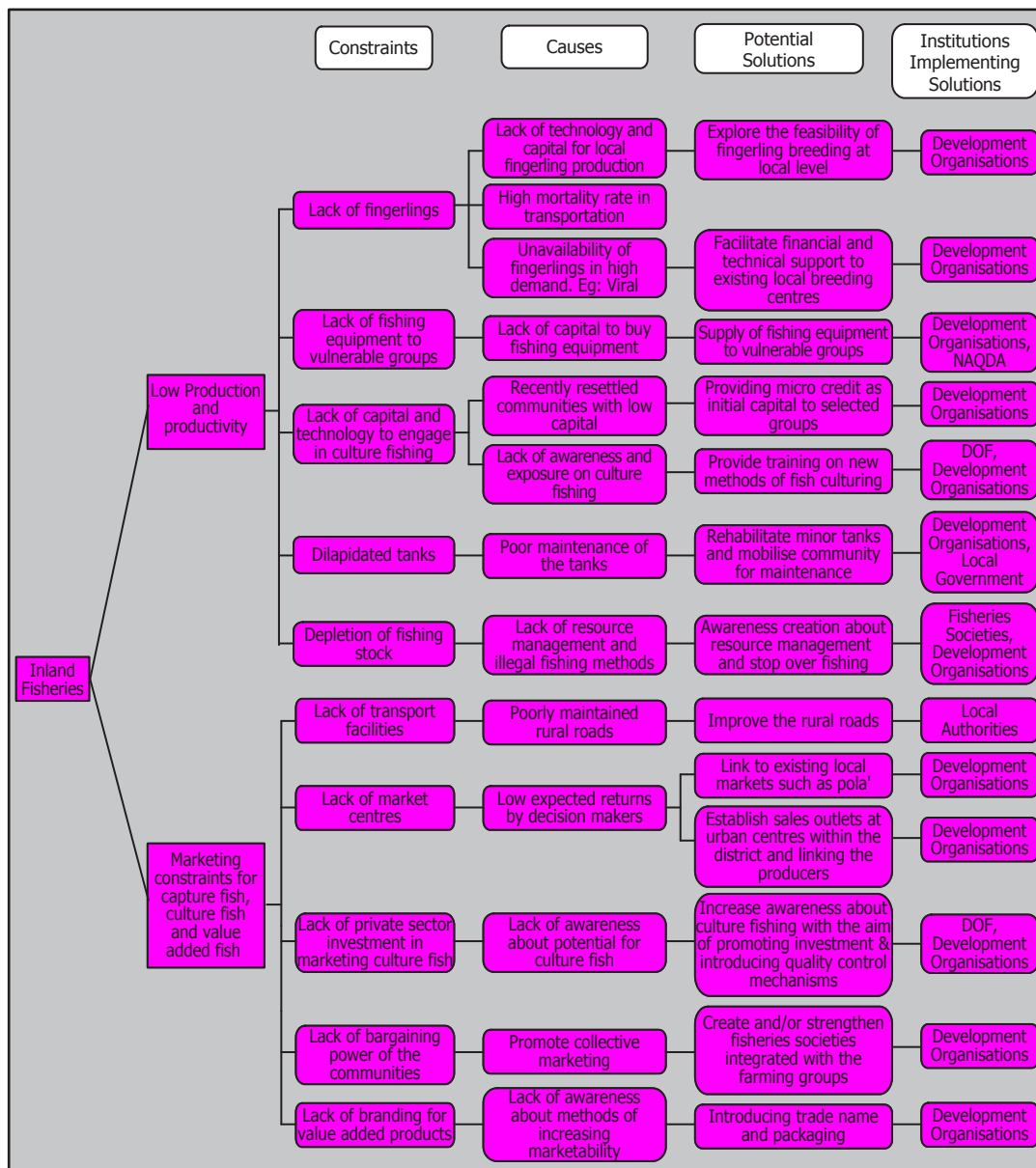
Discussions at the district level workshop revealed that, the middlemen buy the fish from the fishermen for Rs. 90 and sell it to the retailer for Rs. 190 and the retailer charges Rs. 290 from the consumer. Similar to the marine sector value addition process, the middlemen are seen to be involved in the input supply and they also purchase the harvest at the end. Middlemen bring the ice boxes; store the fish in these boxes and transport the produce to the market. The lack of the producer's understanding of the market, the lack of market centres in close proximity and the lack of connectivity in terms of transport infrastructure make the producers sell their produce to the middlemen or the collector at a low price.

There is a high (and increasing) local demand for inland fish, prawns and dry fish that is not salted. A local level market centre integrated into a regular market for the other crop produce as well could be a potential intervention to replace the *ad hoc* fresh fish sales that are taking place by the road side. The rapidly developing tourism industry was seen as a potential market for these products. Quality assurance mechanisms for potential partnership with the private sector should be introduced and branding strategies such as a trade name and labelling will be essential in the longer term in targeting niche markets.

Strengthening the fishing societies to identify new markets, improving market linkages, and collective marketing of fresh fish as well as dry fish will bring higher returns to the producers.

In summary, the attached diagram maps the constraints, causes and potential solutions for the inland fisheries sector.

Figure 4.8: Mapping of constraints and potential solutions for inland fisheries sub-sector



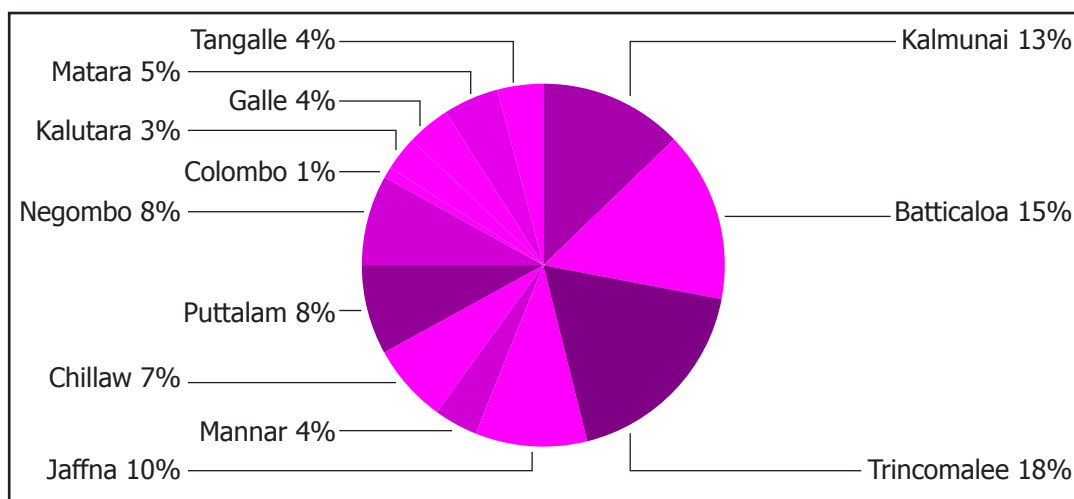
Source: Study data

4.5 Marine fisheries

The marine fishing sector in Sri Lanka comprises of two sub-sectors- the coastal sub-sector and the deep-sea sub-sector. The country's coastal fishing sub-sector is facing constraints related to resource depletion. On the Eastern coast the fishermen are facing this, albeit to a lesser degree, than the fishermen from the Southern coast because the Eastern and Northern coast have not experienced as much over-fishing as other regions due to the restrictions on fishing during the war. However, the lifting of fishing restrictions in these areas will see more and more people getting into the industry.

As shown in the following graph, the highest percentage of fisher folk in the country are from Trincomalee and Batticaloa, 18% and 15% respectively, and they produce 8.36% in Batticaloa and 9.44% in Trincomalee, out of the total national fish catch. The productivity levels in these two districts are not as high as in other districts in the country. This, combined with the threat of resource depletion should discourage more people from getting into the sub-sector and encourage moving into other parts of the fishing value chain such as processing and also moving into other livelihood options such as high value cash crop cultivation.

Figure 4.9: Percentage of fishermen by district, 2009



Source: Ministry of Fisheries and Aquatic Resources, 2009

The 10-year strategic plan for the fisheries sector (MFAR,2007) encourages the development of the deep sea fishing sub-sector in the long run for various reasons, such as higher returns based on the demand in the export market for certain fish types (such as tuna) and availability of resources. The coastal sub-sector is considered important within the current state policy dialogue because it employs and supports the bulk of the people engaged in the fishing sector.

The peak fishing season on the Eastern coast is from February to July. The lack of a secondary form of livelihood which can cushion them during the off-season for marine fishing makes fishermen more vulnerable and leaves them with no other alternative but to take credit at high interest rates trapping them in a debt cycle. During the off-season for marine fishing, they engage in fishing in the lagoon and the estuary; catching prawns, crabs and fish. These fisherman claim that they are unable to make a profit out of brackish water fishing because the catch is too small, caused by resource depletion and the filling up of the estuary. Introducing culture fishing as discussed in detail in the value addition

section could be an alternative/secondary livelihood for these communities. Further, introducing cash crop cultivation such as vegetables and cereals and fruit could also provide them an income source during the off-season.

Determining the returns to the marine fish producer or the cost of production could not be done in this study due to the lack of data at the secondary and primary level. The reason could be the unpredictability of the amount of fish caught and the income depending on the type of fish caught, which in turn depended on the time of the month, the type of fishing equipment and craft used and the number of people that are engaged in the craft.

In this analysis, the study focused on coastal fishing, and illustrates the value chain with examples from the Kallarawa fishing community in the Kuchchaveli DS Division of the Trincomalee District. The primary data from the current study also shows that the highest income for the communities is generated through deep sea fishing.

Inputs

Non-motorised boats are owned by the fishing families, but much of the other inputs (fishing equipment and fuel) are financed by the wholesaler. For fishing to happen at an optimum level, fishermen need to have multiple fishing gear to catch different types of fish. Fuel is purchased at the nearest filling station, or illegally from retail suppliers closer to the community. Trincomalee and Batticaloa show the highest numbers of traditional fishing craft throughout the island and Trincomalee is the third highest in the multi-day boat category, but there is a question whether these boats operating off the Trincomalee shores are owned by the locals or whether they belong to the migrant fishers from the North Western and Southern coasts. The target communities should be linked to the deep sea sub-sector if not directly as boat owners, at least as support service providers.

The fishing community is locked in a relationship with the wholesaler, not only because he finances the inputs, but also because he provides advances during the off-season when fishing families' secondary income sources are not sufficient for their subsistence. Fishing yields a reasonably high income during the peak seasons but seasonality and weak financial management and saving habits of the fisher communities create financial difficulties for them during the lean period. They do not approach formal financial services because of the lack of collateral and guarantors. Their only way of accessing formal financial services is through pawning jewellery.

There was little assistance being provided to the fishing community from the government. The officials of the Ministry of Fisheries do not engage at the community level. Many fishing communities are organised into fishing societies, and many external agencies channel their support to the community through these societies, but where they are not truly representative (as in Kallarawa) and where there is little trust between the community and the society's office bearers, their role becomes limited.

Based on the secondary data available, both districts showed an excess in production in marine fish which is expected, given the resources available in the two districts. The high amount of excess production necessitates a marketing network that can send fish directly into inland areas that are at least adjoining the districts, such as Anuradhapura and Polonnaruwa, without sending it to Colombo. There is a clear opportunity for transporting fresh fish out of the districts using cooler trucks, but the capital constraints of the target communities and also the perceived monopoly of the wholesalers, restrict them from expanding their market and services.

Marine fishing is seasonal with the peak fishing season being from February to July. The highest income comes from deep sea fishing, but most of the fishing families in the target communities own non-motorised boats and engage in one-day fishing, which is in the coastal sub-sector. The net income distribution of the coastal sub-sector when compared to the offshore sub-sector is low. The number of people engaged in a given coastal fishing activity is high and the harvest is low compared to the offshore sub-sector. These fisher folk are constrained by the large capital requirement of purchasing and maintaining a multi-day boat. Without substantive initial capital support, the resettled communities that are targeted in this study cannot take up deep sea fishing. It seemed that although the state policy is encouraging the development of the deep sea fishing industry, it cannot target these producers at the lower ends of the value chain and instead is targeting the fishers that have stronger initial capital. The higher prices of deep sea fishing craft and fishing equipment has meant that the non-government organisations who are working within the sector also cannot justify providing these on an individual basis.

However, in Batticaloa, several one-day boats have been converted into multi-day boats. This trend should be encouraged through technology and capital transfers. The offshore sub-sector provides a large amount of indirect employment opportunities. These include construction of boats, boat cleaning and maintenance, fish net manufacture, ice production and supplying of other services required by the industry such as transport, food provision and mechanical parts for boat engines. Given the decreasing trend of direct youth participating in the fishing activities - due to unwillingness, given the nature of the industry or lack of skills - they could be encouraged to participate in these indirect employment opportunities. Skills development could be provided through the National Institute for Fisheries and Nautical Engineering, already established in the regions and the growing sub-sector can directly absorb the youth.

Beach seine fishing also happens in Batticaloa and Trincomalee, but many beach seines are owned by people from the Northwest coast. Local people can obtain employment on the beach seines either as temporary workers (where they are given fish as payment) or as permanent workers with cash wages. However, most of the permanent workers on these beach seines are outsiders. Women also engage in the last phase of the beach seine activity, "the illippu" and are paid in kind with 2-3 baskets of fish. Being employed in the beach seines was seen to bring less returns and most of the time they were paid in kind, so the fishermen from the community preferred to go to sea in their traditional crafts and engage in fishing.

Value addition

There is very little value addition taking place in the marine fishing sub-sector, mainly because of the need to supply fresh fish to the collectors. Producers also feel that dry fish production is less productive. Sprats are, however, dried and sold, because it is not always profitable to sell fresh sprats.

"Dry fish making is unprofitable because we lose one third of the weight. We don't engage in dry fish making at the moment, only if we catch a lot of sprats we make dry fish, because it is not profitable to sell fresh sprats"

FGD, Kallarawa

Close to 45% of the fish imports to the country are canned fish. Therefore, there clearly is a demand for canned fish, especially in the hill country and in the areas where there is low refrigeration facilities for fresh fish. However, whether small scale producers can compete with the multinational companies is a concern. If market linkages can be established

through the private sector and if a brand name can be created with quality assurance systems, canned fish as a value added product of the marine sector has potential. However, it should be introduced on a small scale. Previous attempts to introduce this industry failed because of the lack of a steady supply of wet fish in Mannar. Manual, low capital canning plants/fish processing factories could be a viable alternative to larger scale mechanised plants for which the raw material supply cannot be ensured.

Given the increasing resource depletion in the coastal sub-sector and the inability of the fishers to immediately move into the deep sea sub-sector, engaging in high value culture fishing could be introduced and facilitated. The export demand for the high value culture fish would mean a higher price for the fishermen. Demand for high value fish and fish products such as chilled and frozen tuna and lobsters, sea cucumber, sea bass, oysters and shrimp exists in the international market and local production could be geared towards supplying these products. However, the quantity of exports of the shrimp and prawn in the country has decreased with the failure of prawn farms in the North Western coastal line, and this presents an opportunity for culture-based fisheries to be developed in the East. Venturing into culture fishing should be based on the lessons learnt from the experience of the North Western prawn farms and their failures and should therefore be implemented with risk minimising mechanisms in place, such as for the early identification and treatment of diseases.

Introducing high value fishing will mean that the supporting services and infrastructure have to be properly in place. The collection and assembling chains will have to be functioning smoothly and the producers need to access transport and ice plants fairly quickly. In addition, training on cleaner fish handling practices and quality maintenance will have to be provided along with initial market linkages in order to maintain the sustainability of the ventures. The fishers engaging in coastal fishing that yields lower productivity could be targeted for this, as can vulnerable groups such as FHHs and youth. Cage culture for example, needs relatively low levels of heavy manual labour and can target FHHs.

Storage and transportation

At present, there is little need for storage of marine fish products within the communities because the catch is sold to the buyers within hours of coming ashore. Cooler trucks are used for transportation in the peak season. Often fish is packed in rigid foam boxes and transported to the wholesale markets. Transport providers are not from the fishing community, they are outsiders who have an agreement with the wholesalers, and who transport the fish from the community to places in Colombo and Negombo. The closest ice plant to the Kallarawa is in Trincomalee and the cost of ice at the point of fish purchase is 25% higher than in Trincomalee. This is, however, a hidden cost, deducted as an expense by the buyer when purchasing the fish.

However, as explained in the above section, moving into culture fishing will necessitate better transport and storage facilities and if the expected higher returns are to go to the producers, the supporting services will also have to be made more accessible to the producers, if not solely owned/managed by them. At the time of the study there were 3 ice plants in Batticaloa. Given the isolation and connectivity constraints in the target GNs, these ice plants clearly will not serve the purpose and the need for smaller scale ice plants closer to the communities should be stressed.

Investments along the value chain such as post-harvest handling; sorting, cleaning, packaging and support services would create more regulated employment opportunities for the people at the producer level and would bring in higher returns.

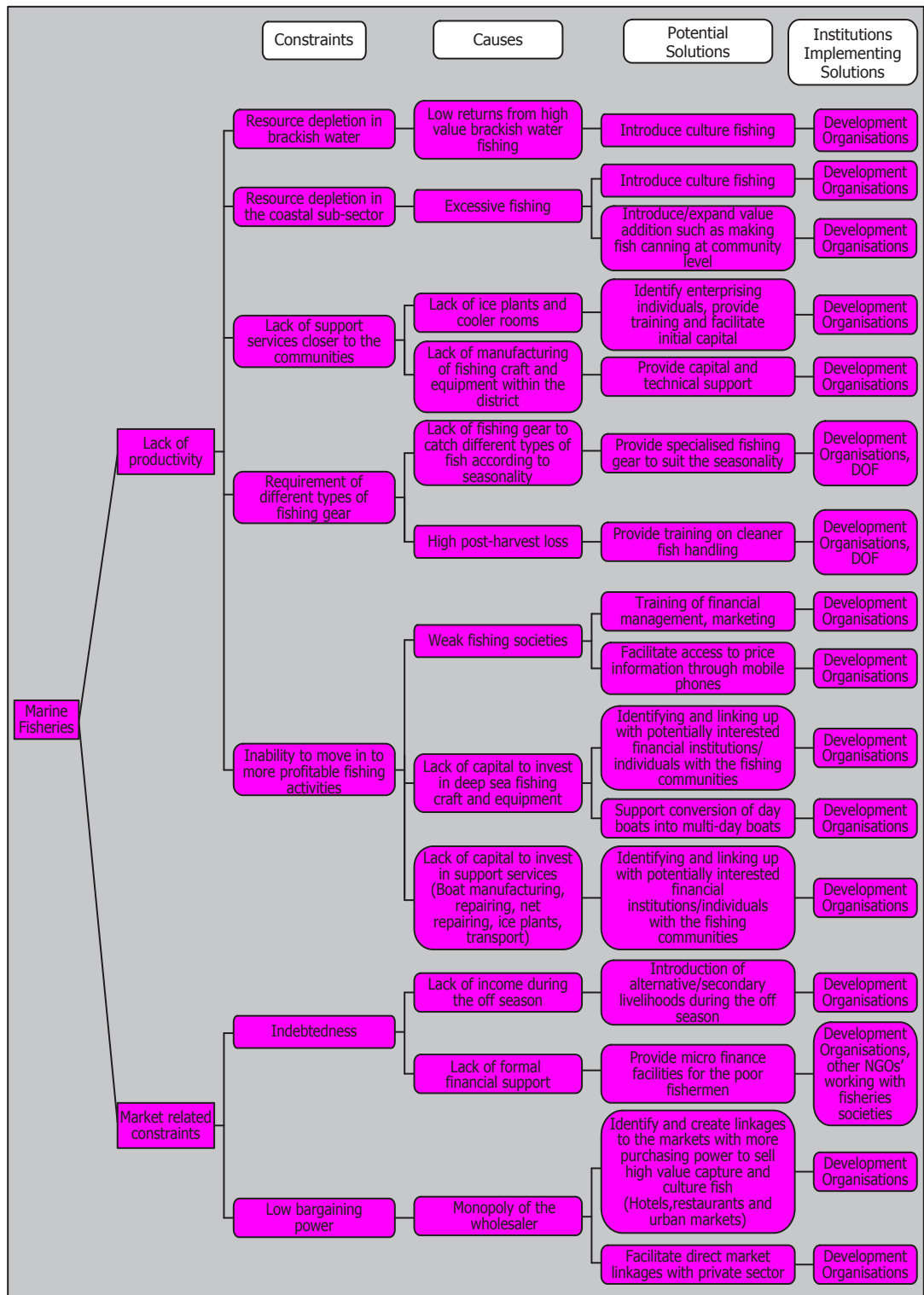
Market

The market for fish is dominated by wholesalers in Colombo and their local collectors, who purchase the fish to be transported out of the district to the leading fish sale centres in the country (mainly St. John's market) and also for export. The wholesalers, who are at the highest level of the supply chain, play a key role in determining the market price for fish. The dominance of the wholesalers in coastal fishing, especially in beach seine fishing is derived from their hold on producers through cash advances given during the off-season, and for purchasing inputs such as fuel and fishing gear. This cycle of dependency should be broken by providing the producers with alternative livelihood options during the off-season and also increasing awareness on alternative financial sources.

There is a high demand for fish within the district, and if the cycle of dependency on the fish wholesalers and their local collectors can be broken, producers should be able to trade fish in their locality. Currently, there are small retail sellers on bicycles who also purchase fish, but they buy it from the representative of the wholesaler and not from the fishermen.

Identifying the markets with more purchasing power such as hoteliers and urbanized populations for high value niche products such as lobster and crab and promoting either direct market linkages through collective marketing at the community level or through the private sector should be strongly facilitated. Exporting is 100% dominated by the private sector mainly based in Colombo or in the North Western coast and these exporters will have to be linked up with the producers in the east so that they can increase their revenue by supplying to these more lucrative markets. These exporters usually send a representative to the fish selling centres to ensure quality and this would automatically bring in better handling systems.

Figure 4.10: Mapping of constraints and potential solutions for the marine fisheries sub-sector



Source: Study data

4.6 Non-farm livelihoods

The working definition of the non-farm livelihoods refers to those activities that are not primary agriculture, forestry or fisheries. In certain cases, agro-based processing is also classified as a non-farm activity. For the purpose of clarity of this market study, agro-based industries are not included in the non-farm sector and they are discussed under the value chain of each sub-sector.

The industry survey conducted by the Department of Census and Statistics (2004) provides an indication of the range of industries present in the two districts. Food processing of locally grown agricultural produce and the apparel industry dominate the non-farm sector in the two districts, both in terms of percentage of establishments as well as a provider of employment. Manufacturing of furniture and non-metallic mineral products such as clay based industries, are also relatively high in the two districts.

Table 4.10: Industrial establishments in the Trincomalee District - 2003-04

Industry Division	Trincomalee		Batticaloa	
	Units	Persons Engaged	Units	Persons Engaged
	%	%	%	%
Mining and quarrying	2.6	9.9	4.3	4.4
Manufacture of food products and beverages	50.8	33.3	40.8	32.5
Manufacture of tobacco products	0.4	0.7	0.3	0.3
Manufacture of textiles and yarn	0.7	0.9	1.3	2.8
Manufacture of apparel	12.8	31.2	10.3	18.3
Manufacture of leather products	0.2	0.1	1.3	1.2
Manufacture of wood and products of wood and cork	1.4	0.8	2.9	3.7
Publishing, printing and reproduction of recorded media	0.5	0.5	0.7	1.2
Manufacture of basic chemical and chemical products	0.2	0.2	0.9	0.6
Manufacture of non-metallic mineral products	8.6	9.7	0.5	0.5
Manufacture of fabricated metal products	8.4	4.4	12.9	12.7
Manufacture of furniture	12.7	7.3	6.5	5.4
Collection, purification, and distribution of water	0.4	0.7	16.9	10.3
Other	0.5	0.4	0.3	6.0
Total	100	100	100	100

Source: Department of Census and Statistics, 2004

These statistics include large, medium and small industries present at the district level. These industries were present to a lesser extent in the studied communities and there were no large or medium scale industries within the target GNs (ACAP, 2009). The main forms of small industries present in the target DS's are handloom, coir, carpentry and pottery. Study communities are also engaged in basic levels of food processing such as making lime pickle. The present status of food processing and possibilities of expanding agro-based industries is discussed under the value-chain analysis for each sub-sector.

The tourism industry was also identified as a potential form of non-farm industry, especially in the coastal areas, which could bring direct returns to the community through small scale retail establishments and by providing accommodation and other services to tourists.

"These villages can get involved in tourism in the future when the sector expands. They can get involved in providing support services to the tourism industry such as accommodation."

District level workshop

The indirect manner in which communities that live away from the popular tourist destinations in coastal areas can benefit from the rapidly expanding tourism industry in the east was discussed at the district level workshops and in the key informant interviews. The potential of linking up producers with the service providers of the tourism industry, in the form of supplying vegetables, dairy and also handmade products with ornamental value was highlighted in these discussions.

With the strong state drive towards increasing electrification and connectivity related infrastructure in the region, the Small and Medium Enterprises (SMEs) show potential in bringing income to the two districts. Qualitative Assessment of the Local Enabling Environment For Private Enterprise in the Eastern Province of Sri Lanka, conducted by Asia Foundation (2009), highlights some of the constraints private enterprises (large scale and small scale) encounter. High unofficial 'fees' and charges by public officials when obtaining permits, licenses, registrations, lack of motivation and business-friendly attitude, lack of information and knowledge on core activities (business registration, laws and regulation), opaque and cumbersome procedures for business registration and licensing/permits are the main points highlighted in the study. The Batticaloa Municipal Council had come out on top with the most favourable indicators out of the local authorities reviewed and this success story should be shared with the other local authorities as well.

The issues highlighted above have two direct implications for the improvement of the livelihoods of the people in the recently resettled communities. The large-scale business ventures will be hesitant to invest in the region and in order to attract more of these players steps need to be taken to improve the services at the local authority level. Also the promotion of SMEs at the local level will prove cumbersome given the 'unfriendly' business environment, especially at the registration and licensing levels and extra support/consultations will have to be provided to these SMEs through the project.

The district level workshops with government officials identified reed-based production, the handloom industry, small-scale garment factories and footwear manufacturing as the main sources of non-farm based livelihoods in the districts. Small-scale garment industry and footwear manufacturing present in Kathankudy could be further explored for the potential of replication initially on a pilot scale. The available skill base and the market demand for these products are opportunities for expansion, replication and further improvement of the industry. Handlooms, which falls under the category of garment, has the highest presence in the Batticaloa District, and has a well-established supply and market network. The investment on technology transfer and linking the communities with the markets outside the district are the reasons for the stability and presence of the industry.

The studied communities are not engaging in the coir industry and the industry is phasing out due to unavailability of the input - coconut husk. Small-scale carpentry, masonry and pottery are also present to some extent in the studied communities. The main clay-based industry available in these communities is brick making. The constraints of this industry and the potential opportunities are discussed in detail in the following section.

Table 4.11: Small industries section in the two districts

	Handloom	Coir	Carpentry	Pottery
Batticaloa	27	9	4	2
Trincomalee	8	0	1	0

Source: District Secretariat, 2009

Brick making

Clay brick making, cement brick making and reed based production were identified and discussed as non-farm activities at the community level, when speaking to community members. Pirambadithivu, Mylawewa and Pannichchaiyadiyaru communities engaged in these activities but only as an alternative livelihood activity which would cushion them when their main livelihood was affected by seasonality changes.

Table 4.12: Population engaged in Brick making in the studied GNs in the Batticaloa District

GN Division	No
Punanai East	29
Ambalanthrai W	7
Vilanthoddam	01

Source: DCS Batticaloa, 2011

The clay needed for brick production is obtained from the paddy lands close to the village. Most producers tend to locate their production site close to the land to avoid the cost of transporting clay. According to the FGDs, the clay is obtained only from certain identified lands to avoid an environmental impact. At the time of the study, there were no restrictions on clay mining imposed by the authorities.

Brick making is one of the main livelihoods in Pirambaditheevu, in the Poolakkadu GN division in the Kiran DS division. About 25-30 families were directly engaged in brick making. The community level interviews highlighted that brick making also provided opportunities for casual labour, for those who did not have capital or land. Those who owned the land produced bricks on their own.

Production

There is considerable traditional knowledge on brick making in the region. The conflict limited access to the clay supply and to marketing networks, but new marketing networks have been established, and access to clay supply is no longer a problem. The nature of this industry provides space for both men and women to engage in this form of family labour or hired labour.

Brick making provides the communities with a stable and assured income, since the risk of involvement is low compared to crop agriculture. Bricks are usually produced parallel to cultivation, and the producers use traditional technology for the processing of the clay and for burning the bricks. The technology is wasteful of energy, time and resources, and the quantity produced is low. However, the quality of bricks is very good.

Based on the collected data, the initial cost of establishing a traditional brick making site is Rs.25,000, including the construction of a kiln. Labour cost is the main component of the

cost of making a brick and it is Rs. 2 per brick. Other inputs required are water and power (paddy husk). Paddy husk is usually sourced from the paddy free of charge. The firewood is sourced from the forests nearby. The market price of a small brick was Rs. 5.50 without the transport cost. The profit ranged from Rs. 2 to Rs. 3 depending on the cost of inputs. The profitability of the industry motivates many producers to engage in brick making.

There is a need to enhance the brick industry through improving the technology. There is little formal assistance to brick makers. Credit is obtained through the collectors, or through pawning family valuables since the return to investment is assured. The main threats to brick making are extreme weather patterns, such as increased rainfall or floods.

Market

Bricks have a good market in the East at present, given the levels of reconstruction taking place. Insufficient supply within the districts leads to the importation of bricks from other districts. There is an active brick making industry in Batticaloa and Trincomalee that is meeting this demand. Unlike other products, the producers get the accurate price and market information relating to the bricks due to the dynamic nature of the market. Despite the bad condition of the transport infrastructure, collectors come to the different brick-making villages to collect the products and pay the market price for the bricks. They also tend to pay in advance.

Existing strong market linkages and opportunities of production need to be capitalised on in order to make brick making successful. In the long run, it is also important to take into account the sustainability of the sector and the potential negative environmental consequences of expanding this industry.

5 Policy Opportunities and Recommendations

The final section of this study presents the larger policy framework within which livelihood projects involving resettled communities in the East have to operate, particularly in relation to the two districts studied. It also highlights the environmental hazards to which the target locations are prone. Finally, it presents the recommendations; in general for project-based decision making and in detail by specific livelihood sectors (summarised in Table 5.3).

5.1 Policy and Institutions

The core state policy documents that indicate the development thrust for the East are the Mahinda Chinthanaya and its associated Ten- Year Horizon Development Plan (GoSL, 2010). The comprehensive three-year development plan for the Eastern Province has been incorporated in the overall “Mahinda Chinthana” – a Ten-Year Horizon Development Framework 2006-2016 for Sri Lanka. The programme is steered by the President’s Office and the Ministry of Nation Building and Estate Infrastructure Development. The provincial authorities, relevant District Secretaries and a wide spectrum of grassroot level communities in the Eastern Province play a pivotal role in the formulation of sectoral strategies. This section draws from the information available on the website dedicated to the “Eastern Revival”⁹.

The immediate areas of focus of the Three-Year Plan as outlined in the Eastern Revival website include agriculture and irrigation, roads, power and energy, livelihood support, fisheries and livestock development, education, civil administration, health and sanitation, etc. This programme is an integral part of the National Development Plan, including mega infrastructure projects which are aimed mainly at improving connectivity with other regions. The strategy covers the development of major sectors including: resettlement of Internally Displaced Persons (IDPs), Revitalising Productive Sectors and the Regional Economy which include Crop Agriculture, Irrigation, Fisheries, Livestock, Industries, Tourism and Minor, Small and Medium Scale Enterprises (MSME), Improving Economic Infrastructure such as electricity, roads, transport (roads, railways), ports, water supply and sanitation and Rural Infrastructure Development. Rural Infrastructure includes programmes under Gama Naguma, the decentralised budget, Gam Pubuduwa, Gami Aruna and the Rural Market Development Project.

The following policy environment creates opportunities for different sectors that development projects can harness. The main issues of the policies related to the study areas are discussed below and can be fine-tuned for development initiatives.

⁹ Easter Revival official website www.neweast.lk accessed on September 2010

Table 5.1: Analysis of relevant policies to the project

Policy Strategies	Relevance to development initiatives based on the findings of the market study (the support from government policy makers to implement the recommendations)
Agriculture	
Crop agriculture, production and productivity will be enhanced by increasing the cultivated area and the cropping intensity.	Production enhancement is necessary for the crops that are produced in low volume and with high value addition and market potential. Different types of crops require different strategies. For instance vegetables, other field crops and fruit cultivation in the two districts should have a production expansion focus due to low volume of local production, to meet the consumption demand within the districts. On the other hand, crops such as paddy should have a market focus due to market saturation.
Farmers will be encouraged to diversify their crops mainly through home gardening, fruit crop and perennial crop expansion.	It should be noted that home gardening is one of the important income generating activities in which FHHs and PwDs engage in. They should be linked to any potential assistance coming from the government. Expanding fruit crop cultivation needs to take into account seasonality and marketability. Value addition opportunities for fruit needs to be put in place so that there is high return received from the cultivation. Mixing cropping perennials with short-term crops will generate income for the producer until the perennial crop becomes economically viable.
Industrial crops such as grasses, maize, soybean, groundnut, sesame, sunflower and sorghum will be introduced to the low yielding areas in the Province to accelerate the local production of raw materials for animal feed and mixes.	The expansion of the private sector and projects of development institutions in the East provides an opportunity to invest in these cash crops. The producers should be linked to the potential markets in the region for the cultivation to be sustainable.
Marketing of agricultural produce will be increased by providing access to markets through the provision of improved market facilities, and the facilitating of farmers to engage in the identification, production and marketing of high value commodities.	The sectoral analysis of the study finds the lack of a market close by, poor access to markets and market linkages, constrain the agriculture sector as a whole. The support from the government creates an enabling environment for implementation of the project. It is also important to facilitate the government's cooperation to create a regional market centre where the produce from the East is consolidated at one location and distributed to a wider market.

	<p>Collective marketing of agricultural produce is another way of increasing the bargaining power of the producers.</p> <p>It should be noted that there is a policy drive by the government to promote high value crops. It backs the study recommendation of introducing high value paddy varieties as a pilot effort.</p>
<p>Special emphasis will be placed on the development of agriculture research and extension systems in order to identify and cater to a dynamic crop sector in the east.</p> <p>Having identified the lack of properly functioning irrigation schemes in the East as a reason for low productivity in the area, the policies in the irrigation sector envisage 'improvement to water quality and irrigation efficiency, operation and management, rehabilitation of existing canals and head works, drainage and flood protection, salt water exclusion and the development of new irrigation schemes.' The on-going mega irrigation development projects in the two districts are Allai in Trincomalee and Rugham scheme in Batticaloa and rehabilitation of the Kurangupanchankulam scheme, Puluganawa tank, and Boroppola and Unichchai tank.</p>	<p>This is an opportunity to address the issue of lack of extension support for animal husbandry and vegetable cultivation. Livelihood development initiatives can consider resource transfer to facilitate sufficient extension support. The resource transfer can be in the form of capacity building or financial support for administrative infrastructure such as office space and vehicles.</p> <p>The implementing agency for irrigation facilities at the central level is the Department of Irrigation. The focus of irrigation improvement at the moment is on the major and medium tanks. Most of the study locations benefit from the minor tanks. If development projects are unable to rehabilitate all the minor tanks, lobbying is necessary for the improvement of minor tanks. Community participation on the maintenance of tanks is equally important.</p>
<p>Introducing drip and sprinkler irrigation systems, regulating ground water regulatory mechanisms and strengthening the capacity of the provincial irrigation department are some of the steps envisaged for the development of the irrigation sector.</p>	<p>Micro irrigation is necessary in order to increase the irrigation efficiency and productivity of vegetable and fruit cultivation. This will help to reduce the cost of production and increase the competitiveness of the farmers.</p>

Livestock	
Increasing farm returns to livestock keepers by improving the productivity of the livestock sector.	The productivity improvement areas that development initiatives should focus on are, upgrading and increasing availability of the cattle breeding stock and improving quality of feed.
Providing necessary infrastructure facilities, which are vital for the production and marketing of livestock produce, introducing value addition to diversify the livestock sector.	<p>Rehabilitation of rural roads and farm roads should be given priority. Awareness needs to be created on this issue.</p> <p>Dairy value addition such as local level curd and yoghurt production should be supported by providing necessary training and equipment. The technical support from the relevant authorities could be obtained for training related to value addition, packaging and also marketing.</p>
<p>Promoting extensive management of cattle for meat and intensive management for milk production.</p> <p>Organise the livestock farmers into Producer Co-operatives and similar Farmer Organisations for collective marketing of farm produce and enhancement of farmer returns.</p>	<p>It should be noted that intensive management is not practiced in the East and the farmers should be given necessary exposure on this management practice before it is introduced. A special effort should also be made to link the capable farmers with this effort and facilitate gaining knowledge on modern farming techniques.</p> <p>Breeds that are suitable for different management systems need to be introduced.</p>
Fisheries	
Improving infrastructure such as constructing anchorages, improvement and construction of landing sites, provision of ice plants.	Large state-driven investment in fisheries infrastructure is an opportunity for non-governmental development organisations to focus on improving other areas of the fisheries sub-sector such as facilitating market linkages. The target communities should be linked with these large infrastructure projects.
Provision of other services such as electricity, drinking water, toilets and improvement of access road networks for the fishing communities.	Electrification is a cross-cutting constraint for most of the target villages. Provision of electricity for these communities by the government will enable development projects to initiate more value addition (fish processing) and introduce more non-farm based livelihood activities such as ICT-based small businesses such as mobile phone and computer repairing and three-wheeler/motorbike repairing.

Support for the inland sector such as free fingerling stocking, supply of cages for sea bass culture and establishment of community based mini-hatcheries are some of the areas that have been prioritised within the fishing industry.	This policy aspect helps address productivity related constraints discussed in the analysis of inland fisheries. The local level fingerling production through mini hatcheries should target the villages in this study as well, and development projects should look at ways of facilitating community access to these activities.
Improving marketing through efforts such as construction of a fish market and fish retail outlets.	It is also necessary to provide capital support for the poor fisher folk to come out of the vicious cycle of credit and become more independent in marketing their produce.
Industries	
Revitalisation of the textile industry	The industries such as small localised garment industries can be replicated with support from government departments as well as non governmental organisations.. The handloom industry can also be supported with new technological inputs.
Establishment of industrial zones and providing concessions with a view to improving public-private sectors	In the long run, the promotion of large level industries will benefit the target populations by providing formal employment opportunities in the region.
Provision of infrastructure facilities	Provision of infrastructure facilities such as electricity, roads and water will improve the competitiveness and reduce the cost of production.

5.2 Natural hazards and coping methods

The North and East are susceptible to several kinds of natural hazards. Table 5.2 provides an outline of the natural hazards which impact specific livelihood sectors and the potential coping mechanisms which communities can use to mitigate the impacts.

Table 5.2: The Impact of natural hazards and possible coping methods

Sector	Natural Hazard	Impact on livelihoods	Potential coping mechanism
Crop sector	Increasing salinity	Loss of soil productivity, degradation, arable coastal land	Development of salinity tolerant cultivars
Crop sector	Rainfall regimes and resulting droughts and floods	Reduction of productivity of agriculture land	Development of seeds/ cultivars with low irrigation requirements by introducing desirable characteristics of traditional rice varieties (such as pokkali) to high yielding rice varieties in order to produce new varieties, some of which may help meet the impacts of climate change, early warning systems
Inland Fishing	Rainfall regimes and resulting droughts and floods	Drought leads to lower yields in seasonal tanks and loss of freshwater and brackish water resources which affect inland/aquaculture	Introduction of secondary livelihoods, proper planning of aquaculture activities such as cage culture
Crop sector	Rise in sea level	Reduction in land extent available for cultivation	Land zoning to identify areas for cultivation Introduction of secondary livelihoods
Fishing	Rise in sea level	Reduction in beach area available for beach seine activities Adverse impacts on fish breeding grounds which will lead to increased resource depletion	Better resource management practices and awareness creation among the fishers

Source: Ministry of Environment, 2010

According to the vulnerability profiling undertaken by the MoE, Eravur Pattu has been identified as a highly vulnerable DS division for droughts and floods which will have adverse effects on paddy and livestock rearing. Porativu Pattu and Kinniya have been identified as moderately vulnerable. Kuchchaveli has been identified as highly vulnerable to sea level rising and Muttur as moderately vulnerable. Future project planning, in these areas will have to be aware of these adverse effects and try to incorporate the mitigation measure mentioned above. For example, construction of fish landing sites or anchorages in the areas

that are susceptible to sea level rising is not advised. Interventions in Eravur Pattu will have to include introduction of drought resistance varieties of crops and livestock breeds. Further, this mapping exercise has been conducted only up to the DS level and might have missed the potential vulnerabilities at the GN or community levels and these specific cases will have to be considered in intervention planning.

5.3 Recommendations

Recommendations have been organised into four main areas. The first section provides general recommendations for development projects aimed at benefiting these communities. The second section goes on to provide recommendations to overcome the cross-cutting issues for different types of income generating activities. Recommendations for each sub-sector are discussed next. Finally, specific recommendations are made for the communities in this study which can be replicated in other target communities based on the livelihood profiles (see Table 5.3).

5.3.1 General recommendations

The producers in the study group are mainly mapped on to the lower levels (most of them are at production level) of the respective value chains as discussed in the previous sections, limiting their profitability, role and control in the value chain. Given their multiple and diverse conflict-related experiences in the past three decades, they are severely constrained by the lack of capital, technology and supportive structures (such as connectivity, extension services) and also environmental hazards like floods, drought and wild elephant attacks which make them even more vulnerable within a post conflict environment.

The target group of this study is in a transition state following the end of the violent conflict and is vulnerable to external shocks as discussed throughout this study. Even throughout the conflict time period, they have engaged in traditional livelihoods but the analysis shows that these sectors have not reached their optimal potential and there is a need for support with the end of war and resettlement. The existing skill base is the biggest advantage and should be capitalised upon with the support of new technology so that these producers become more competitive. Based on the analysis, the study team feels that strengthening the already existing sub-sectors will provide relatively stable incomes to the target group, in the short and medium term. The analysis also recommends cash crop cultivation, culture fish, non-farm activities related to maintenance and repair, retail trade and agro-based products as potential future trends for the target group. Training on enhancing existing skills and management practices would also be important.

The current study and experience gathered in conducting this research shows that starting completely new livelihood activities in an environment that is in a stage of revival is risky. Thus, such initiatives need to be undertaken with alternatives that people can fall back on if these new livelihoods do not take off. However, the market study clearly highlights gaps in the production, productivity, value addition and marketing levels within the existing sub - sectors, which need to be filled in order to increase the income of the target communities.

The study also identifies niche areas for support and growth within the existing sub-sectors. The indication that people are engaged in, and open to, alternative forms such as cash crop cultivation or culture fishing, creates the space for niche sectors to spring up within these value chains. The study also highlighted some niche areas where the traditional sectors can benefit using the same skill base – highlighting, for example, the need to explore the potential for introducing high value traditional paddy varieties that bring in higher market potential and returns to the producer. The study also looked at areas where communities can be linked to expanding industries like tourism in the region.

Interventions do not always need to take place in the target communities. Interventions at a different point in the value chain can create positive backward linkages that can enhance the livelihoods of the target communities. For instance, even if the target communities do not have the resources or the infrastructure to invest in an ice plant, support to a more entrepreneurial individual in close vicinity of the community could increase the shelf life of the community's fish catch considerably and enable them to command a higher price.

Given the recently resettled context of the target communities, a conflict sensitive approach throughout the project cycle is crucial. A recently concluded study undertaken by CEPA in collaboration with the University of Oxford through three case study programmes (Diprose *et al.*, 2010), stressed the importance of programmes responding to the social contexts that they are dealing with and managing the ways the programmes interact with social dynamics so as not to exacerbate the tensions present into overt conflict. It identified the importance of understanding the heterogeneity of the target population and targeting all ethnic groups but to varying degrees (for more 'privileged' ethnic groups in particular areas this means focusing attention on the poorer members) and considering local group divides such as IDP-host community tensions, inter-regional tensions (some areas are consistently prioritised for aid over others following complex emergencies) and recently resettled-local group tensions and attempting to provide a level of equitable distribution between the relevant communities.

A considerable number of projects: state, international donor and private sector funded projects and investments are in operation in the two districts focusing on livelihood enhancement and restoration¹⁰. The experiences and the lessons from these projects should be factored into future development initiatives in order to avoid duplication, to find and strengthen synergies among the projects and most importantly not to repeat the same errors and to incorporate the learning of these projects in order to optimise the returns from the resources allocated for development activities. A working document by the Institute of Policy Studies (IPS) highlights that some of the experience of the large scale private sector in investing is not very positive (Wijesinghe, 2009). "CIC, for example, noted that heavy bureaucratic burdens meant that it took nearly 3 years to obtain some basic approvals, counting nearly 20 successive steps. Hayleys Agro, which operates under an out-grower model with Eastern farmers, noted that at times local commitment is a challenge as forward contracts have been breached by local farmers. Education of local communities is essential to meet these challenges. They need to be sensitised to the entry of the large formal private sector into their regions and made aware on how to form successful partnerships instead of perceiving it as a threat."

The possibility of linking up with the regional hubs where more trade and manufacturing enterprises are situated should be explored in order to maximise spillover effects. Most of these enterprises are located in the more urban areas like Kaththankudi Urban Council and Trincomalee and Batticaloa Municipal Councils and popular tourist destinations such as Pasikuda, Kalkuda and Nilaweli. The target population of development projects in the study areas can be linked up with these hubs as raw material suppliers of fresh fruit, vegetable and milk for processing enterprises and also for making small garments and other small-scale industries. The lack of physical space for expansion in some of these hubs like Kaththankudy can be also overcome with these initiatives.

¹⁰ USAID (CORE) Livelihood Assessments undertaken for Trincomalee and Batticaloa (May 2009) provide a list of donor projects funded through international organisations and their local partners (available at www.core.zunepile.com).

It is important that there is continuous monitoring, consultation and follow-up with the communities on the assistance given to them in order to ensure the sustainability of the support. Past lessons from NGO support proves that projects fail when there is no follow-up and monitoring. It is also important to share the success stories of certain communities with other target communities. For example, the high demand for smoked dried methods of fish processing in Kurinjankatkulam in Vaharai should be shared with other communities that are engaging in inland fishing.

5.3.2 Cross-cutting issues

Strengthening farmer/fisher producer groups

Production groups such as farmer organisations and fisher societies need to be strengthened/created in an environment where livelihoods are resuming after the war. It is important to make sure that these groups are empowered to be able to engage in value addition and marketing. Training related to value addition, marketing, and quality control, should be provided through farmer organisations. New simple technologies on branding, packaging and storing should also be included in this training. This type of training is necessary for the paddy, fruits, vegetable and dairy sector. In addition, there should be more awareness and training given to facing/coping with potential hazards and environmental issues such as floods, droughts and animal threats. Members of these production groups should also be part of the village level SMEs formed to market the local produce to external markets.

Infrastructure

Infrastructure improvements are crucial in all the target communities. Lack of connectivity due to lack of roads, mode of transport, poor public transport facilities, poor electricity supply, lack of physical market centres and dilapidated minor tanks are cross-cutting infrastructure-related constraints that all the sub-sectors are facing. Large development programmes are present in the East to improve the class A and class B roads. However, the rural roads need to be reconstructed if the connectivity of the communities is to be improved. The roads connecting the farmland with the main roads need to be reconstructed. Tank rehabilitation will remove bottle-necks for agriculture and provide the opportunity to engage in crop cultivation during both seasons and also optimise inland fishing. Value addition possibilities are limited in communities where there is no electricity or where the electricity supply is fluctuating. Some interventions such as providing milling opportunities, machinery for value addition cannot be done without the necessary power supply. The ways of providing electricity for these villages need to be explored.

Financial services

Access to financial services should be improved for any of the sub-sectors to be sustainable. This will help producers to come out of the vicious circle of credit dependency. Micro credit should be provided for farm based as well as non-farm based producers and enterprises. In the case where micro-credit is provided by development projects, it is important to provide a customised micro-credit for the needy, productive poor farmers and vulnerable groups. Awareness raising should be undertaken at the community level on the available formal financial services and the procedures and documentation process for accessing formal financial services. Where specific development interventions do not provide financial assistance, potential beneficiaries can be directed towards the other government and non-government organisations providing micro-credit facilities.

5.3.3 Recommendations by sub-sectors

The following recommendations highlight interventions that can be undertaken to improve the position of vulnerable men and women in the traditional agricultural and non-farm value chains. Table 5.3 maps out the potential solutions based on the main components of the value chain, and identifies the types of organisations that can implement them. This section then goes on to describe in more detail the different solutions proposed for each sector.

Table 5.3: Solutions mapped against the value chain and possible implementing institutions

Potential Solutions	Inputs	Producers	Processors	Marketing & Sales	Institutions
Paddy sub-sector – solutions for low productivity					
Regularising access to land by strengthening the mechanisms to resolve land disputes					Development Organisations, DOAS, DS
Rehabilitation and regular maintenance of minor irrigation tanks and other irrigation infrastructure					Development Organisations
Increase awareness on accessing fertiliser subsidy					Development Organisations
Increase awareness on purchasing seed paddy and support local seed paddy producers with technology and training					Development Organisations, DOA, DOAS
Paddy sub-sector – solutions for low value addition					
Provide milling opportunities near local communities					Development Organisations
Support small scale rice based production and SMEs					Development Organisations
Identify local people who can be assisted for development of storage facilities, construct storage facilities at the local level					Development Organisations
Provide information on potential market for waste material (such as bran and husk) with the long term aim of engaging in marketing these products					Development Organisations

Paddy sub-sector – solutions for low marketability						
Improve farm roads						Local Authorities
Link communities with other micro credit providers and provide customised micro credit						Development Organisations
Provide support to diversify livelihoods						Development Organisations, DOA, DOAS
Introduce traditional rice varieties high market value						Development Organisations
Provide market information on prices and potential buyers						Development Organisations
Create market linkages with outside districts						Development Organisations
Facilitate private sector partnerships (e.g. Cargills, CIC) to help market paddy						Development Organisations
Vegetables and fruits sub-sector						
Increase seed production capacity of local agriculture authorities – DOA and DOAS – and at community level						DOA, DOAS, Development Organisations
Promote the use of organic fertiliser						Development Organisations
Initial capital support to introduce micro irrigation systems						Development Organisations
Increase extension officers and provide sufficient resources for better functioning						DOAS, DOA, Development Organisations
Capacity building of the extension officers						Development Organisations

Provide capital support for traditional food processing methods						Development Organisations,
Introduce new technology for value addition						Development Organisations, Department of Industries, DOA, DOAS
Provide vegetable processing machinery at community level						Development Organisations
Promote low country vegetables with low water requirement						Development Organisations
Introduce mix cropping and inter-cropping						Development Organisations
Crop diversification and inter-seasonal vegetable cultivation						Development Organisations
Increase awareness on potential value addition methods						Development Organisations
Dairy and livestock sub-sector						
Improved access to power (electricity) and improve roads						Development Organisations to lobby for electrification of these areas
Rehabilitate pasture land to increase milk yield						Government Departments, Development Organisations
Introduce improved grass varieties to increase milk yield						DAPH, Development Organisations
Introduce suitable good quality cross breeds to increase milk yield						Development Organisations

Provision of initial capital to purchase equipment and start up SMEs						Development Organisations
Technology transfer through training						Development Organisations, Local Authorities
Increase human resources within supporting institutions						Provincial Agriculture, support from Development Organisations
Regularising cooperative management systems						DAPH, Office bearers of Cooperatives
Improve milk collection infrastructure, establish community managed sales outlets and links with local canteens, restaurants, milk bars and hotels for direct marketing						Development Organisations, Local Authorities
Inland fisheries sub-sector						
Improve rural roads						Local Authorities
Provide micro credit as initial capital to selected groups						Development Organisations
Rehabilitate minor tanks and support communities in maintenance work						Development Organisations, Local Government
Explore the feasibility of fingerling breeding at local level and constructing mini hatcheries and mini nurseries						Development Organisations
Facilitate financial and technical support to existing district level breeding centre to improve the quantity supplied and quality of the breeds						Development Organisations

Supply of fishing gear to vulnerable groups/those that sustain them							Development Organisations
Provide training on new methods of fish culturing							Department of Fisheries, Development Organisations
Awareness creation about resources management and stopping over-fishing							Fisheries societies, Development Organisations
Increase awareness about culture fishing (especially among the private sector) with the aim of promoting investments and introducing quality control mechanisms							Department of Fisheries, Development Organisations
Create and/or strengthen fisheries societies integrated with the farming groups							Development Organisations
Improve branding for value added products - introduce a trade name and packaging							Development Organisations
Establish links to existing local markets such as Pola, establish sales outlet at urban centres within the districts and link producers							Development Organisations
Marine fisheries sub-sector							
Identifying and linking up potentially interested financial institutions/ individuals with the fishing community – to invest in deep sea fishing, crafts, equipment and support services							Development Organisations
Provide microfinance facilities for poor fisher folk							Development Organisations working with Fisheries societies

Identify enterprising individuals to provide support services (ice production, boat manufacturing etc.) and provide training and facilitate initial capital									Development Organisations
Provide capital and technical support for fishing gear and fishing craft and equipment									Development Organisations
Support conversion of day boats into multi-day boats									Development Organisations
Provide specialised fishing gear to suit the seasonality									Development Organisations, Department of Fisheries
Introduce alternative/ secondary livelihoods during the off season									Development Organisations
Provide training on cleaner fish handling									Development Organisations, Department of Fisheries
Introduce culture fishing									Development Organisations
Introduce/expand value addition such as fish canning at community level									Development Organisations
Training on financial management, marketing									Development Organisations
Facilitate access to price information through mobile phones									Development Organisations
Identify and create linkages to the markets with more purchasing power to sell high value capture and culture fish									Development Organisations
Facilitate direct market linkages with private sector									Development Organisations

Cross-cutting solution - integrated farming system for minor tanks

Minor tanks usually belong to a community with 50-150 families benefiting from it. An integrated farming approach with paddy cultivation can easily be adopted around the minor irrigation tanks. Inter-seasonal short-term vegetables/grains such as cowpea, green gram and soya bean can be cultivated with the remaining moisture. Livestock such as cattle and goat are best for this type of farming. Fish can be introduced to the minor tanks, so that the tank is utilised to its optimum level. A live fencing around cultivation land is important to protect it from grazing animals.

This farming system has numerous potential advantages. It helps farmers to overcome the problems of seasonality by providing a year-round income. The inter-seasonal leguminous vegetable cultivation helps better soil nutrient management and increases cropping intensity which yields higher returns per unit of land to the farmer. This is another way of improving the efficiency of irrigation water. Animal waste can be used as manure for cultivation and harvest residuals and live fences could be used as feed for animals, which will reduce the cost of production of the whole system. Tank fish will provide families of farmers with adequate access to animal protein. However, traditional value systems and beliefs of the farmers in the communities will have to be taken into consideration when introducing the integrated systems. For example, in a community where livestock rearing for meat is not practiced, introducing goat rearing will not be successful. Using the tank that provides water for cultivation to rear freshwater fish and engaging in fishing might be rejected by certain communities.

I. Paddy sub-sector

The analysis identifies a) increasing productivity, b) improving value addition and c) increasing marketability as means of generating a higher and sustained income from the paddy sub-sector. Given the excess production levels in the two districts and the growing trend in volume of production, further efforts in increasing production is not encouraged. Providing other income opportunities in terms of rice/rice-based value-added products, engaging in other forms of livelihoods and establishing more equitable market linkages are encouraged.

a) Increasing productivity

Regularising access to land

Introducing methods and mechanisms to provide solutions for land disputes will increase the interest level of the farmers in two ways. First, they will have an incentive to invest in land fertility management and maintain the sustainability of the land cultivated. Second, regularised access to land will mean easier timely access to government subsidies on quality fertilizer and seed paddy, which in turn will increase the yield from the paddy land.

Rehabilitation and regular maintenance of minor irrigation tanks and other irrigation infrastructure

The minor tanks and related infrastructure in the two districts serve the target populations more than the major and medium tanks but the focus of the external actors is more on rehabilitating major and medium tanks at present. Rehabilitation and regular maintenance of minor tanks is important and should be highlighted as an issue of importance among relevant authorities with communities being involved in taking care of the tanks. The resulting timely and sufficient availability of water will increase the productivity of the paddy lands. The involvement of the community through farmer organisations will ensure continuous maintenance of the irrigation-related infrastructure even without the presence of an external actor.

Increase access to quality inputs (seed paddy and fertilizer)

Awareness should be increased on procedures that need to be followed in order to obtain good quality, timely seed paddy at a lower cost for own account workers as well as tenant/lease cultivators. Supporting local level seed paddy producers who are currently engaged in seed paddy production by providing training on new technology and initial capital will increase the availability of seeds.

b) Adding Value

Increasing storage facilities

Storage facilities should be provided closer to the community to facilitate the storage of paddy, seed paddy and fertilizer. Identifying and assisting the local people in developing storage that will be shared with the community or constructing paddy/seed paddy/fertilizer stores closer to the target communities will protect the farmers from the paddy price shocks brought on by seasonality. It will give them the space to avoid the harvest glut and wait for the correct market price. Farmers would also be able to store the seed paddy required for the next season which will reduce their dependence on the input suppliers.

Providing milling opportunities (paddy and rice) closer to the communities

The value addition to paddy is envisaged to be at three levels; rice, rice flour-based products (eg: hoppers, string-hoppers and pittu) and paddy waste (husk and bran) based products. Technological and capital constraints for the value addition processes could be overcome in two ways. One is by promoting individuals with the capital and experience in value addition such as medium-scale mill owners to expand and improve their activities and integrate those at the producer level of the value chain by sourcing their labour and paddy. Second, community based SMEs could be initiated with the involvement of the small-scale rice and rice flour-based producers such as FHHs on a profit sharing basis. These SMEs should be linked to markets at the local and, in the long term, with the urban centres in order to ensure sustainability.

Introducing high value traditional paddy varieties

Introducing high value paddy varieties initially on a pilot basis within the communities that already possess the skills will bring them higher returns. Although the yield is lower from traditional varieties, the market prices are higher and linkages with markets with high purchasing power and the necessary start up technology and input will move the paddy producers away from the common varieties and protect them from the price fluctuations of the common varieties.

c) Increasing marketability

Identifying niche markets

Specialised market opportunities should be identified for paddy and the value-added products at the local level as well as outside the district. Areas that are popular with local tourists could be targeted for rice flour-based products such as hoppers. For high value traditional paddy varieties the tourism industry and local urban markets with high purchasing power should be targeted. The potential markets for paddy bi-products will be toothpaste, biscuit and animal feed producers. Links should also be identified and created with the private sector (for example, with companies such as Cargills and CIC). Private sector companies are already showing an interest in buy-back systems and forming partnerships with producers in the conflict affected North and East and this potential should be explored.

Providing market information and linking up with markets

Accurate up-to-date information on prices and potential buyers will lessen the dependency of the producers on middlemen who are seen to play an exploitative role. Producers should be linked to the markets outside the districts through producer groups such as farmer organisations. Collective marketing should be encouraged to ensure continuous supply to the larger scale dealers such as private sector companies.

Providing support to diversify livelihoods

Introducing cash crop cultivation such as red onions, big onions, chilli and fruit such as banana, papaya, mango and pineapple could be recommended as secondary/alternative livelihood options for the target communities (see section 4.1 on cash crops for further details). Exploring the possibility of an integrated farming system with cash and other field crops, livestock rearing and inland fishing in the village tank as discussed above will help the communities to diversify. Other crops with low irrigation requirements in comparison to paddy could be cultivated during the Yala season and also during the inter-season in the same paddy tract using the moisture that was retained in the soil during the Maha season. A diverse livelihood portfolio will provide producers with a cushion during the off-season and inter-seasons of paddy cultivation and bring them out of credit bondage to the trader/collector, opening up market opportunities and better bargaining ability for a higher paddy price.

Providing/facilitating micro credit facilities

Linking producers with rural micro credit facilities will make them less dependent on the informal credit systems. The potential of lending to these recently resettled communities should be explored with both regulated (Sanasa Development Bank, Hatton National Bank, People's Bank) and non-regulated financial institutions (Samurdhi Authority, Sewa Finance, SEEDS, BRAC SL and Arthacharya¹¹) and awareness should be created at community level on the prerequisite documentation processes. Micro credit/revolving loan schemes can target the more vulnerable groups in the communities such as PwDs and FHHs who could use it as start capital or for purchasing production equipment and also for value addition activities such as rice milling and rice flour-based production.

II. Vegetables and fruits sub-sector

For vegetable and fruit crop cultivation in the two districts to become competitive with other districts, production and productivity will have to be enhanced along with the introduction of value addition technologies and dynamic markets. Given the excess paddy production in the two districts and the lack of properly functioning irrigation facilities, the introduction of vegetable and fruit varieties with low moisture requirement and high value addition or marketability should be strongly encouraged.

a) Improving production and productivity

Improving seed availability

High yielding hybrid seed varieties with a shorter maturity period should be made available to the farmers by supporting the increase of production capacity of the DOA through technology and capital transfers if necessary. Seed production at the community level could be introduced with the support of the DOA and DOAS. Opportunities of linking up the farmers with the private sector seed producers should also be explored and facilitated.

¹¹ Source: Gomez, June 2009

Promoting the use of organic fertilizer

The comparatively smaller plot size for vegetables and fruits and the fact that the fields in these areas have been arable for a certain period of time due to the conflict makes cultivation using organic fertilizer highly profitable given the niche market for such produce. Farmers should be made aware of the potential higher returns of using organic fertilizer and training should be given to them in preparation of organic fertilizer with required quality.

Introducing mix/inter-cropping, crop diversification and inter-seasonal cropping

Fruit and vegetables could be cultivated as mix or inter-crops, a mix of short-term crops and perennial crops so that the farmer can gain short-term and long-term income from it. Crop diversification will protect the farmers from price shocks during the harvest glut and will also increase nutrient management of the soil. The introduction of inter-seasonal vegetable cultivation will optimise the moisture in the soil following the paddy harvest and will increase the return per unit of land for the farmer during the year. Alternatively, promoting vegetables and fruits with a relatively lower water requirement such as pineapple is also advised.

Promoting micro-irrigation systems

Increasing awareness on the merits of using micro irrigation systems such as drip and sprinkler irrigation and providing initial capital will improve the cultivability of the land and bring long-term benefits to the farmers. It will also increase the efficiency of water usage, given the dry zone conditions of these areas.

Improving extension services

Increasing the number and area of coverage of extension officers, providing sufficient resources for better functioning and capacity building of the extension officers will facilitate the transfer of latest technological knowledge to the farmers. Some of these crops might be relatively new to the farmers and strong extension services are essential in order to overcome the potential challenges in cultivation.

b) Promoting value addition

Provide vegetable and fruit processing machinery at community level

Increasing awareness on potential value addition activities and providing training and introducing new value addition methods for vegetables and fruits will increase the returns to the producers. Vegetable processing machinery such as seed separators for maize, soya beans and cow pea and fresh fruit juice and pulp making machinery could also be introduced.

Improving traditional methods of processing

Providing capital support and facilitating market linkages for traditional value addition methods such as preparation of lime dill, pickle and spice (chilli, saffron) grinding will move the producer higher along the value chain. Good quality packaged products can be marketed targeting the local markets as well as tourist related ventures.

III. Dairy and livestock sub-sector

Cattle, goat and poultry rearing are the most prevalent elements of animal husbandry in the two districts. Goat and poultry rearing is done to provide meat while cattle-rearing is done for both dairy and meat purposes.

The dairy industry can be strengthened by: a) improving the productivity of the herds by introducing suitable good quality cross-breeds, rehabilitating pasture lands and introducing improved grass varieties, b) increasing institutional support to the industry by increasing the quality and capacity of human resources in the departments, providing financial services

facilities, and facilitating formal financial services through relevant institutions, rural banks and NGOs, c) providing value addition opportunities by improving access to power, rural roads, facilitating technology transfer through training, and provision of equipment, d) improving marketability through improved milk collection infrastructure, better rural roads, creating links with local markets and regularising cooperative management systems.

a) Improving the productivity of the herds

Introducing suitable good quality cross-breeds

New breeds that are suitable for the local climatic conditions should be introduced in order to increase the milk yield of the herds. This should be a gradual process undertaken with the use of the necessary technical support since the cross-breeds need semi/intensive management systems. Lessons learnt in terms of consequences of introducing cross-breeds to a new environment should be incorporated. (New breeds may carry unidentifiable, uncommon diseases that may destroy the local breeds as well.)

Increasing quality and quantity of feed

Increasing the quality and quantity of the feed can be done by rehabilitating the pasture land and introducing new varieties with high productivity. This should be done in partnership with the DOA and DOAS in order to obtain the required technical support. The initial step should be to identify the pasture lands used during/pre-war, located in close proximity to the communities. This will also require consultations and approvals from relevant local government authorities and district/divisional administration bodies. High yielding improved grass varieties such as CO3 have already been introduced in Sri Lanka and can be tested to improve the productivity of the pasture lands.

b) Increasing institutional support for the dairy industry

The number of livestock development officers and veterinary surgeons in the district need to be increased in order to meet the demand for extension services. Development initiatives should support the DAPH to increase manpower at least in the areas where the project is implemented. This can be done by providing incentives for the officers to work on development projects or by supporting the DAPH to temporarily recruit graduates or diploma holders and provide them with the necessary training. This will create employment opportunities for the youth as well as make the project sustainable in the long run.

Provide access to financial services

The recommendations related to financial service are discussed at the beginning of this section as it is a cross-cutting issue for all the sectors.

c) Providing value addition opportunities

Improving rural roads, access to power

This is discussed above in detail in the broad, cross-cutting theme of infrastructure. It should be noted that access to power is important to improve value addition in the dairy sub-sector.

Provide training and equipment for value addition

Sufficient liaison of the project with the DAPH could be of benefit to producers who are interested in dairy value to obtain technical training on value addition. The learning coming from the experience of the DAPH is that provision of training and equipment should be targeted only to those interested in implementing the learning gathered. Simple equipment

that can be easily maintained should be provided for curd and yoghurt making. Producers should also be given training to handle the equipment provided. Training on packaging and labelling is also important for reaching broader markets.

d) Improving marketability

Improve milk collection networks

Community level milk collection networks should be encouraged through farmer organisations in order to avoid involvement of middlemen and to increase the bargaining power of the farmers. A record keeping system should be introduced to make the functioning of networks smooth and accountable. The farmer organisations belonging to one community/village/GN can be given a vehicle or bicycles, milk collection cans and temporary storage facilities so that the milk collection process will run with fewer interruptions. Paid, dedicated personnel from the farmer organisations should be in-charge of the activities related to milk collection. Larger milk collecting companies such as Milco or Nestle can directly buy from the farmer organisations for a reasonable price. This will reduce the wastage of milk and will enable milk collection in the afternoons, which is not in practice at the moment.

Regularising cooperative management systems

The aim of this recommendation is to avoid delays in payment for farmers after selling the milk to the cooperative and to minimise the dependency on middlemen and selling milk at low prices. Initiatives should be taken to promote such systems and highlight these constraints to the relevant institutions, such as the DAPH, for prompt action.

Establishment of community managed sales outlets

These outlets will serve as a place to display and sell the fresh milk as well as value-added products of the farm. The outlets should be established closer to the town or main road so that products get sufficient demand and popularity. These outlets can be made a point of contact for external buyers. Projects should look at ways of linking these outlets with the external market and providing continuous support until operations stabilise.

IV. Inland fisheries sub-sector

Inland fisheries and aquaculture

Inland fisheries should be strengthened mainly in the areas of a) increasing production and productivity by increasing the quality and quantity of the fingerlings, supplying fishing equipment to vulnerable groups and by improving the supporting infrastructure such as connectivity and tank rehabilitation, b) promoting market linkages for fresh capture inland fish at the local level as well as outside the district, for culture fish and for value added fish.

a) Increasing production and productivity

Strengthening existing hatcheries that supply fingerlings to the two districts

Carp and Tilapia as fresh fish and local breeds such as Sungan and Viral for value addition (smoke dry) fish were identified as the types of fresh water fish with the highest market demand. At present, the seasonal and perennial tanks in the East are stocked with fingerlings from breeding centres in Inginiyagala and Dambulla. Facilitating financial and technical support to increase production in the two hatcheries will minimise the fingerling scarcity.

Feasibility of constructing mini hatcheries and mini nurseries

The feasibility of constructing mini hatcheries in the two districts to be managed by the breeding centres in Iniginiyagala and Dambulla with the proper technology transfer should be explored. The communities lack the technology of fish hatching at present. Improvement in transport modes and also mini hatcheries within the districts would minimise the high fingerling mortality rate. Land-based mini nurseries (such as those present in Rajawewa in Ampara) are also proposed and fisher societies could be strengthened to manage the mini nurseries and hatcheries. They can also increase their income from the tank by selling the fingerlings to the other fishing communities.

Introducing/promoting culture fishing

There is a strong state interest in fish culture of breeds based on abundant brackish water resources that fetch higher incomes targeting the export market¹² (oysters, sea bass, sea cucumber, crab and shrimp). Target communities (including vulnerable groups such as FHHs and PwDs) should be linked with these efforts by the state and by other non-state actors as methods of facilitating technology transfer. There is a clear lack of capital among the studied communities, therefore financial services should be introduced as start up for culture fishing, and market linkages should be created. Interested actors/institutions with experience/necessary market linkages with the export market from the private sector should be identified and encouraged to invest in culture fishing with the aim of introducing quality control mechanisms as per the international standards.

b) Improving marketing

The fresh water capture fish, value added fish (smoked dried fish) and culture fish are the main products in the inland and aquaculture sub-sector identified in the current analysis. Marketing should be facilitated through fisher societies. Fresh water capture fish can be marketed locally to the consumers that prefer fish without ice. Retail outlets should be constructed closer to/integrated with market centres for these sales.

For **processed fish**, market linkages should be facilitated at local as well as with urban markets and hotels and restaurants in the area. The identified high demand method of smoked dry fish making should be popularised among the target communities that engage in inland fishing. Improving the quality of value addition through better packaging, labelling and branding should be encouraged through training. Special attention can be placed on including vulnerable groups in the value addition process.

The high demand in the local market as well as for export of **culture fish** should be capitalised upon and market linkage should be created with the local markets as well as the export market through the involvement of the private sector.

Improving infrastructure and provision of fishing equipment to vulnerable groups

Minor tank rehabilitation should be prioritised and connectivity infrastructure such as roads and bridges/culverts will have to be constructed in order to connect the producers with the markets. Market infrastructure should also be constructed, as discussed above. The analysis highlighted the lack of fishing equipment for vulnerable groups and provision of the same will increase their participation in the sub-sector and bring them more income.

¹² Eastern Revival official website, Nagenahira Navodaya, www.neweast.lk, accessed on September 2010

V. Marine Fisheries sub-sector

Higher returns to the fishers can be generated by a) improving productivity by providing specialised fishing gear, training on cleaner and better fish handling mechanisms, capital support in acquiring deep sea fishing crafts and gear, introducing and promoting support services such as boat manufacturing and ice plants through SMEs and facilitating credit, b) improving marketing, creating direct market linkages, and introducing and supporting alternative/secondary income sources.

a) Improving productivity

Providing specialised fishing gear to suit the seasonality and to support conversion of multi-day boats

The availability of specialised types of fishing gear to capture fish available according to the time of the season will bring higher returns. Supporting the conversion of day boats into multi-day boats should be encouraged as this will give the fishers access to a better resource base compared to the coastal sub-sector, while also enabling them to access fish types such as tuna which fetch a higher price in the international market. The financial institutions should be encouraged to invest in and link up with the fishers venturing into the deep sea sub-sector as a business investment with high profit. The shift into the deep sea sector will minimise the constraint of resource depletion in the coastal sub-sector.

Introducing and promoting support services such as ice production and boat manufacturing. Youth who are unwilling to engage in ocean fishing activities and the fishers in the less productive coastal sub-sector should be encouraged to join the chain of support services related to fishing. Construction of boats, boat cleaning and maintenance, fishing net manufacture, ice production and supplying of other services required by the industry such as transport, food provisions and mechanical parts for the boat engines should be promoted by providing financial capital along with technical training from the relevant state authorities.

SMEs could be anchored to more enterprising fisher communities/societies or individuals with initial capital. The more vulnerable fishers can be then linked to these SMEs which would give them a more stable income than unproductive day boat fishing. Promotion of support services locally will also boost the expanding fisheries sector in the East and the shifting of fishers from the coastal sub-sector to the other services will be a solution for the resource depletion issue as well and ensure sustainability of the fishing industry.

Capacity building of fishers and fisher societies

Training on cleaner fish handling in order to minimise post-harvest loss and to meet the export standards is essential in looking to expand the market for fish. Financial management (especially in saving during the peak season in order to be financially secure during the off-season), business planning and marketing are other areas which would improve the skill base and productivity of the labour force and the sub-sector.

b) Marketing

Introduction of alternative livelihoods for the off-season

Introduction of cash crop cultivation or non-farm activities such as three wheeler/motorbike repairing/servicing, and IT related businesses such as 'communication centres' could be promoted depending on where the particular communities are located. For example, communities that have better access to main roads such as Kallarawa could be introduced into non-farm activities. An alternative/secondary livelihood option will provide the fisher communities a reserve that they can fall back on during the fishing off-season and will move them away from the cycle of debt to the fish collector/trader.

Direct market linkages

The monopoly of the collector/wholesaler can be reduced by facilitating direct market linkages with the wholesale markets within and outside the district. The improvement of support services as discussed above (such as transport and ice plants) will be essential in direct marketing. The involvement of the private sector, for example hotels and restaurants, could be sought to market other high value fish products.

VI. Non-farm livelihood sub-sector

The presence of the non-farm sector is minimal in recently resettled communities, but the strong state drive towards improving the much needed supporting infrastructure for the SMEs and the interest shown by some of the large private companies investing in the area, especially in agro-based industries show potential for introduction/improvement of this sub-sector. The recommendations regarding the agro-based industries have been discussed under the relevant sub-sectors and this section provides recommendations for the enterprises that are related to non-farm activities.

Strengthening the state services and motivated individuals/groups who want to start up enterprises

For the business enabling environment in the two districts to be made more conducive for investment and business start-ups, the local authorities that are the main points of contact of such ventures will have to be strengthened, in terms of knowledge about business registration, taxation procedures and dispute resolution especially related to land and being more motivated in carrying out the necessary procedures. Building the capacities of interested individuals to start up and manage enterprises should also be done simultaneously and through a continuous consultative process.

Promoting the industries and enterprises that are present in the communities

The enterprises that are already present in the areas such as reed-based production, clay and cement brick making, agro-based industries such as rice mills, curd making and other small-scale businesses such as restaurants, shops, salons and bakeries should be strengthened with necessary knowledge on business planning, business management, customer service and improving marketability of their products.

Introducing new enterprises

Enterprises that have proved to be successful and have a relatively established clientele in the respective locations which are outside the communities that are targeted by the project should be introduced to the communities on a pilot basis with strong capital and technology support. Some of these enterprises are handlooms, small garments and shoe making factories, as well as information and communication technology related businesses such as mobile phone repairing and communication centres, three wheeler/motorbike repairing and construction-related activities such as carpentry and masonry.

Incorporating lessons learnt from other projects that are working within the two districts in trying to promote enterprises

Given the relatively experimental nature of the new enterprises proposed, it is strongly recommended that the lessons from similar projects on enterprise development within the region be studied. Some of these projects, identified through the study, are the USAID-CORE projects, the entrepreneur groups promoted by Nucleus¹³, and Rebuilding Lives through Sustainable Development Project by Berendina Micro Finance Institute¹⁴.

¹³ More details available at www.nucleus.lk, accessed on August 2010

¹⁴ More details available at www.berendina.org, accessed on August 2010

Linking with tourism industry

The expanding tourism industry in the East can create a market for farm and non-farm produce, both value added and non-value added. The potential of linking up the vegetables and other field crop producers, the inland fish producers and the livestock producers with the booming tourism industry in the region should be encouraged through the service providers that supply the local and foreign tourists with food and accommodation. Bees honey and smoked dry fish could also be explored as produce with a potential niche market among the local and foreign tourists.

5.4 Future trends and important livelihoods of the target communities

Potential future trends

The following elements were identified as potential income generating activities in the target villages. The opportunities and constraints in engaging in these activities are discussed in detail in the sub-sector analysis.

- o High value traditional paddy cultivation
- o Cash crop cultivation (vegetables and fruits) and processing (fresh fruit drinks, dill, pickle)
- o Value addition based on milk (curd, yoghurt)
- o Deep sea fishing, culture fishing (shrimp, sea bass, crab), support services for the fishing sector (ice plants, boat repairing/manufacturing, fish transport) and value addition (dry fish, canned fish)
- o Non-farm based livelihoods (maintenance and repair, ICT-based services, retail trade, mini garment factories)
- o Support services to the tourism industry (accommodation, restaurants, adventure tourism)

5.5 Conclusion

It will take a considerable time for recently resettled families to develop their capacity and venture into new areas of production. Therefore, it is recommended that small producers be encouraged to build on their existing skills, and that they are supported to move up the value chain of their existing forms of livelihood. In the divisions studied, agriculture and fisheries were the main forms of livelihood, with animal husbandry, home gardening, brick making, etc. providing alternative means of earning additional incomes. There is considerable potential to add value to their operations within the existing context, and also to make use of the potential changes that can be brought in through the development of tourism in the two districts.

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ANNEXES

Table 1: Infrastructure availability of study communities - Trincomalee District

D.S & G.N Divisions	Connectivity		Electricity	Water			
	Distance to the main road	Frequency of public transport		Drinking		Cultivation	
			Yes / No	Yes / No	Source	Yes / No	Source
Kuchaveli, Thiriyai	1 km	About 4 - 5 buses operate daily, both private and CTB	Yes	Yes	Tube wells	Yes	Rain water
Kinniya, Aayiladi	5 km to Kinniya-Kantale main road. Wan-ela – Kinniya road runs through the village.	No CTB bus, but one private bus on the Wan-ela - Kinniya road. Bus service twice a day - (morning and evening) but does not function regularly.	No	Yes	Wells	Yes	Minor tank
Gomarakadwala, Mylawewa	45 km to Horowpothana	Twice a day to Belikkada from Horowpothana	No	Yes	Wells	Yes	Rain water

Source: Focus Group Discussion Data

Table 2: Infrastructure availability of study communities - Batticaloa District


D.S & G.N Divisions	Connectivity		Electricity	Water			
	Distance to the main road	Frequency of public transport		Drinking		Cultivation	
				Yes / No	Source		Yes / No
Vaharai, Madurankernyikulam	12 km (Vaharai-Batticaloa)	No bus services, residents travel by foot, bike, cycle, and three wheeler etc.	No	Yes	Tube wells and wells	Yes	Minor tank & rain water
Kiran, Poolakkadu	12 km Kiran junction	No bus services and residents travel by foot, cycle & boat.	No	Yes	Wells	Yes	Minor tank & rain water
Eravur Pattu, Pullumalai	Village situated on Chenkalady – Maha Oya main road (Badulla Road)	No issues on transport	No	No	Drinking water is provided in milk containers by soldiers and the Pradeshiya Sabha	No	---
Vellaweli, Vilamthottam	500 m	Transport available (CTB & private) but does not function regularly.	No	Yes	Wells	Yes	Minor tank & rain water

Source: Focus Group Discussion Data

Table 3: Profile of vulnerable groups within the study sample

Location	Sex	Type of Vulnerability	Cause of widowhood, disability	Age	Education status	Welfare benefits
Kunjan katkulam	Female	Disability	Attacked by wild elephant	56	No schooling	Samurdhi plus kerosene stamp
Kunjan katkulam	Male	Disability & elderly	By disease	65	No schooling	Compensation and elderly welfare payment
Pirambaditheevu	Male	Disability	By army	52	No data	No benefits
Pirambaditheevu	Male	Disability	By shell attack	40	Grade 4	Samurdhi
Wilamthottam	Male	Elderly	Not applicable	78	Grade 2	Samurdhi and compensation
Aayiladi	Male	Disability	By crocodile attack	68	Grade 4	Samurdhi, boat, net by tsunami relief and tricycle by rotary club
Wilamthottam	Female	Elderly	Not applicable	60	No schooling	Samurdhi
Kiran	Female	Widow	Natural death of husband	34	Grade 2	Samurdhi, Rs. 10,000/= as a loan by a NGO
Kallarawa	Female	Widow	Natural death of husband	59	Grade 6	A house by Red Cross, solar panel by ZOA
Wilamthottam	Male	Elderly	Not applicable	80	Grade 3	Samurdhi, elderly welfare payment and personal payment by GN of Rs. 10,000/=
Aayiladi	Female	Widow	Husband kidnapped	42	No schooling	Samurdhi

Source: Centre for Poverty Analysis, 2010



After the end of the conflict in 2009, communities in the Northern and Eastern Provinces of Sri Lanka started rebuilding their lives and livelihoods. Many were displaced communities who were returning to their homes in the North and East. The livelihood needs of these communities, especially communities resettling in war torn areas, are different to those in other areas. As part of an initiative by the Agency for Technical Cooperation and Development (ACTED) to help these resettling communities, the Centre for Poverty Analysis (CEPA) was contracted to undertake a study in 2010, to identify potentially profitable economic activities in two conflict affected districts, Batticaloa and Trincomalee. The analysis aimed at providing an understanding of livelihood patterns and market opportunities and constraints in these regions. Part of this process included analysing the potential to target the most vulnerable people in the communities, such as female-headed households, the elderly and people living with disabilities. Findings detailed in this study highlight the different livelihood areas which require support. Results from this study can be used to fine-tune and more effectively target livelihood development initiatives for communities in these and other conflict-affected areas.

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