

Northumbria Research Link

Citation: Dasanayaka, S.W.S.B. and Wedawatta, Gayan (2014) Tsunami Disaster Recovery Experience: A Case Study on Micro, Small and Medium Scale Enterprises in Southern Sri Lanka. *Procedia Economics and Finance*, 18. pp. 584-591. ISSN 2212-5671

Published by: Elsevier

URL: [http://dx.doi.org/10.1016/S2212-5671\(14\)00979-4](http://dx.doi.org/10.1016/S2212-5671(14)00979-4)
<[http://dx.doi.org/10.1016/S2212-5671\(14\)00979-4](http://dx.doi.org/10.1016/S2212-5671(14)00979-4)>

This version was downloaded from Northumbria Research Link:
<http://nrl.northumbria.ac.uk/id/eprint/35940/>

Northumbria University has developed Northumbria Research Link (NRL) to enable users to access the University's research output. Copyright © and moral rights for items on NRL are retained by the individual author(s) and/or other copyright owners. Single copies of full items can be reproduced, displayed or performed, and given to third parties in any format or medium for personal research or study, educational, or not-for-profit purposes without prior permission or charge, provided the authors, title and full bibliographic details are given, as well as a hyperlink and/or URL to the original metadata page. The content must not be changed in any way. Full items must not be sold commercially in any format or medium without formal permission of the copyright holder. The full policy is available online: <http://nrl.northumbria.ac.uk/policies.html>

This document may differ from the final, published version of the research and has been made available online in accordance with publisher policies. To read and/or cite from the published version of the research, please visit the publisher's website (a subscription may be required.)



Available online at www.sciencedirect.com

ScienceDirect

Procedia Economics and Finance 18 (2014) 584 – 591

Procedia

Economics and Finance

www.elsevier.com/locate/procedia

4th International Conference on Building Resilience, Building Resilience 2014, 8-10 September 2014, Salford Quays, United Kingdom

Tsunami Disaster Recovery Experience: A Case Study on Micro, Small and Medium Scale Enterprises in Southern Sri Lanka

SWSB Dasanayaka^{a*} and Gayan Wedawatta^b

^aDepartment of Management of Technology, Faculty of Engineering, University of Moratuwa, Katubedda, Sri Lanka

^bEngineering Systems and Management, School of Engineering and Applied Science, Aston University, Birmingham, B4 7ET, UK

Abstract

Post-disaster recovery of Micro, Small and Medium-Scale Enterprises (SMEs) remains an issue of interest for policy and practice given the wide scale occurrences of natural disasters around the globe and their significant impacts on local economies and SMEs. Asian Tsunami of December 2004 affected many SMEs in southern Sri Lanka. The study was developed to identify the main issues encountered by the Tsunami affected SMEs in Southern Sri Lanka in the process of their post-tsunami recovery. The study: a) identifies tsunami damage and loss in micro and SMEs in the Galle district; b) ascertains the type of benefits received from various parties by the affected micro and SMEs; c) evaluates the problems and difficulties faced by the beneficiary organizations in the benefit distribution process; and d) recommends strategies and policies for the tsunami-affected micro and SMEs for them to become self-sustaining within a reasonable time frame. Fifty randomly selected tsunami-affected micro and SMEs were surveyed for this study. Interviews were conducted in person with the business owners in order to identify the damages, recovery, rehabilitation, re-establishment and difficulties faced in the benefit distribution process. The analysis identifies that the benefits were given the wrong priorities and that they were not sufficient for the recovery process. In addition, the many governance-related problems that arose while distributing benefits are discussed. Overall, the business recovery rate was approximately 65%, and approximately 88% of business organizations were sole proprietorships. Therefore, the policies of the tsunami relief agencies should adequately address the needs of sole proprietorship business requirements. Consideration should also be given to strengthen the capacity and skills of the entrepreneurs by improving operational, technological, management and marketing skills and capabilities.

© 2014 Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

Selection and/or peer-reviewed under responsibility of the Centre for Disaster Resilience, School of the Built Environment, University of Salford.

* Corresponding author. Tel.: +94-112-650365

Email address: sarathd@mot.mrt.ac.lk

2212-5671 © 2014 Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

Selection and/or peer-reviewed under responsibility of the Centre for Disaster Resilience, School of the Built Environment, University of Salford.

doi:10.1016/S2212-5671(14)00979-4

Keywords: Disaster; disaster recovery; Small and Medium Scale Enterprises; SMEs; Sri Lanka; Tsunami

1. Introduction

The tsunami tidal wave caused by an earthquake struck Indonesia, Sri Lanka, India, Thailand and several other countries around this region on 26 December 2004. Sri Lanka was one of the main countries affected by this tidal wave and the subsequent floods, mainly in the coastal areas. Thirteen coastal districts (out of a total of twenty-five districts in Sri Lanka) were affected by the tsunami: namely, Puttlam, Gampaha, Colombo, Kalutara, Galle, Matara, Hambantota, Ampara, Batticaloa, Trincomalee, Mulaitiu, Kilinochchi and Jaffna. Most of these coastal areas are highly populated; hence, the disaster was immense where the lives of the people, properties and commercial sectors were concerned. According to the United Nations Development Programme (UNDP) (UNDP, 2005a), two-thirds of the coastal zone of Sri Lanka were adversely affected by the tsunami, with 31,000 lives being lost. Approximately 6,300 persons are still missing, 15,000 were injured and approximately 443,000 persons were displaced. The initial phase of the recovery concentrated on attending to the immediate humanitarian crisis that occurred as a result of the loss of life, injury, displacement and psychological trauma. In Steele's study (2006), he reported that approximately 150,000 people lost their main source of income due to the tsunami. There are several types of organizations working on reviewing livelihoods since the tsunami, and at least eight government ministries and more than one hundred national and international organizations are involved in livelihood restoration activities. More than Rs. 12 billion have been committed to livelihood recovery activities (Steele, 2006). The three economic sectors most affected by the tsunami are fisheries, tourism, and micro and SMEs. Of these, the micro enterprise sector plays a significant role because it provides employment and income generation opportunities, primarily to poor and low income families. The tsunami badly affected a considerable number of these entrepreneurs. According to the study by UNDP (2005b), the Ministry of Finance estimate showed that a large percentage of tsunami-affected people were engaged in micro enterprises, of which approximately 25,000 suffered damage. Many enterprises were indirectly affected due to the breakdown of infrastructure and support services, as well as the loss of markets, customers, skilled labour and raw materials (Dasanayaka, 2006).

2. Research Objectives

The tsunami adversely affected a large number of micro and SMEs, which were the mainstay of thousands of families in the coastal area and its immediate vicinity in southern Sri Lanka. Redressing the damage sustained by the micro enterprise sector is crucial given that this sector primarily catered for poor people and those marginally above the poverty line (working poor). Taking into consideration the extent of damaged enterprises in Sri Lanka, the damage to industry in the Galle district is the heaviest, as the concentration of industry here is very high compared to the rest of the country. After the tsunami, most enterprises had to totally rebuild their entire business activities. The government, international non-governmental organizations (INGOs), local non-governmental organizations (NGOs) as well as other organizations appealed to the international community/donors and received a significant amount of donations. This research study ascertains the problems and issues encountered in the recovery and benefit delivery process, as follows:

- What were the problems faced by the tsunami-affected industries in their recovery process?
- What were the assistance received by micro and SMEs from government and various aid agencies?
- What is the current business level of rehabilitated micro and SMEs compared to before the tsunami?
- What issues have been encountered by the tsunami-affected business organizations when receiving benefits?

3. Research method

This research study was carried out based on interviews with tsunami-affected business organizations in the Galle district in order to identify the key losses and the requirements for recovery, rehabilitation and re-establishment. For this purpose, research was focused on the following activities:

- Review of relevant literature to obtain secondary data and information.
- Interviews and discussions with relevant stakeholders conducting various rehabilitation and re-establishment programmes for tsunami-affected business organizations.
- Collection of data relating to tsunami-affected business organizations in the Galle district from secondary data sources in the area.
- Analysis and categorization of the existing national level data for micro, small, medium and large organizations for the selection of sample data relating to tsunami-affected micro and SMEs.
- Selection of fifty micro and SMEs from different types of industry/business organizations in this district for interview.
- Interviews were conducted in person with the entrepreneurs in order to identify damage, recovery, rehabilitation and re-establishment.

Secondary data for this research study was collected in order to understand the views of previous researchers relating to tsunami-affected SMEs. For this purpose, the research focused on a literature search of websites, publications and discussions with relevant stakeholders involved in the rehabilitation and re-establishment of tsunami-affected business organizations. Interviews were also conducted with researchers who had studied tsunami-affected industries, tsunami relief programmes, livelihood officers in divisional offices, various stakeholders, and Sri Lankan and international aid agencies, who conduct a broader study on post-tsunami rehabilitation. The UNDP tsunami recovery unit (Colombo office) was visited in order to obtain the details of their programmes for tsunami-affected enterprises. Data relating to the tsunami-affected business organizations in the Galle district was also collected from district offices, such as IDB, FCCISL, the district secretariat and divisional offices, Seeds (Gte) Ltd, BRAC Sri Lanka and the Seva Lanka Foundation. Internet data was searched using various websites relating to the disaster management of micro and SMEs. The data collected from IDB was from the survey report of 2005 relating to tsunami-affected SMEs. The IDB Galle district office was visited in order to collect the beneficiary list to identify the tsunami-affected manufacturing and service enterprises. Another list of beneficiaries was obtained from the Back to Business project carried out by the FCCISL Galle district office. This covers all affected business organizations in the district. The Galle district recovery officer and divisional livelihood officers were met with in order to obtain beneficiary lists relating to the tsunami recovery projects. Project details and a list of active participants were also collected during these visits. Fifty micro and SMEs were selected, covering different types of industries/businesses in the district in order to obtain primary data. As stated above, interviews were conducted in person with all entrepreneurs in order to identify damage, recovery, rehabilitation, re-establishment and the difficulties faced during the aid distribution process.

4. Findings

4.1. Assistance received from various support organizations

Business owners' responses relating to the degree of types of assistance received from various parties are summarized in Table 1 below. Table 1 indicates that 78% of business organizations did not receive support from government agencies, 84% had not received recovery assistance individually from INGOs, local NGOs or trade and chamber associations, 76% did not receive support from companies, 96% did not receive support from political parties and 82% did not receive support from individual personnel. Overall, the data shows that none of the relief organizations gave satisfactory support to the tsunami-affected business organizations even though a significant amount of money was received by the country during the post-tsunami period. Each data category relating to the degree of assistance received from various bodies by tsunami-affected industries was further analyzed by weight for the entrepreneurs, as shown in Figure 1 below.

Table 1 - Number of business organizations receiving assistance from Tsunami aids agencies (with percentages)

| Source of assistance | Number of Business Organizations Receiving Assistance (with percentages) | | | | | | | |
|----------------------|--|---|---------|----|--------|----|------|----|
| | Very High | | Average | | Little | | None | |
| | Nr. | % | Nr. | % | Nr. | % | Nr. | % |
| Government Agencies | 0 | 0 | 4 | 8 | 7 | 14 | 39 | 78 |
| International NGOs | 0 | 0 | 3 | 6 | 5 | 10 | 42 | 84 |
| Local NGOs | 0 | 0 | 2 | 2 | 6 | 12 | 42 | 84 |
| Trade Associations | 0 | 0 | 1 | 2 | 7 | 14 | 42 | 84 |
| Companies | 0 | 0 | 6 | 12 | 6 | 12 | 38 | 76 |
| Political Parties | 1 | 2 | 1 | 2 | 0 | 0 | 48 | 96 |
| Others: personnel | 1 | 2 | 2 | 4 | 6 | 12 | 41 | 82 |

Figure 1 shows that none of the relief organizations gave satisfactory support to the tsunami-affected business organizations, as the value of the percentage of maximum possible weight is only 12%. The results confirmed that 32% of business organizations did not receive any form of assistance from tsunami aid agencies to recover their businesses. Further, political parties have not given adequate support towards the recovery. Most of the business organizations were given assistance from supply companies, who proved them with goods, in addition to other companies operating in the areas not affected by the tsunami. Government agencies, such as banks and the IDB, gave considerable support in the recovery process. A considerable level of support was also given by individuals, such as wealthy people, parties with foreign connections (in particular, the hotel sector) and business people in order to rebuild the business activities after the tsunami. Some direct support has been given by INGOs, local NGOs and trade/chamber associations.

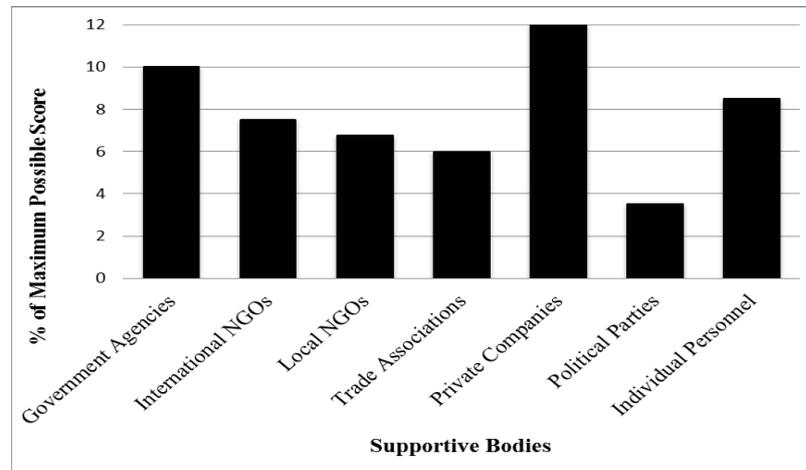


Figure 1 - Percentage of Maximum Possible Weight for Assistance received by Tsunami-Affected Business Organizations

4.2. Type and values of support and benefits (grants and loans) received

Table 2 shows the amount of total grants received, the average grant received and the percentage of average grant received for each category of business requirement. These grants have been categorized as follows: 'land', 'buildings', 'plant and machinery', 'market development programmes', 'inventory' and 'entire business'.

Table 2 - Total grants received by Tsunami-affected business organizations

| Category | Total Grants (Rs. '000) | Average Grants Per establishment (Rs. '000) | % of Average Grants |
|-------------------|-------------------------|---|---------------------|
| Land | 0 | 0 | 0 |
| Buildings | 550 | 11 | 17.3 |
| Plant & Machinery | 1032 | 20.64 | 32.5 |
| Inventory | 459 | 9.18 | 14.5 |
| Entire Business | 1130 | 22.6 | 35.6 |
| Total | 3171 | 63.42 | 100 |

As shown in Table 2, the highest percentage of grants received for entire business development and value is 35.6% of average grants. Only 33% of average grant was received for plant and machinery. Even though the tsunami caused significant damage and loss to inventory, plant and machinery, priority assistance was not received for this category. Values of loans received by each category of business requirement are shown in Table 3 below.

Table 3 - Total loans received by Tsunami-affected business organizations

| Category | Total Loans (Rs'000) | Average Loan per Organization (Rs '000) | % of Average grant |
|-------------------|----------------------|---|--------------------|
| Land | 0 | 0 | 0 |
| Buildings | 1700 | 34 | 3.1 |
| Plant & Machinery | 100 | 2 | 0.2 |
| Entire Business | 53600 | 1072 | 96.8 |
| Total | 55400 | 1108 | 100 |

According to Table 3, the highest percentage of loans was 96.8% of the average loan received for entire business development. Therefore, the main issue for the tsunami-affected business organizations was the loss of inventory, with plant and machinery not being directly supported by the aid agencies. This clearly shows that the correct levels of grants and loans were not received according to the requirement of recovery of key losses for the business organizations.

4.3. Business comparison to pre-tsunami situation

The mean values of the current recovery level of business activities for the fifty organizations surveyed are given in Table 4 below. This shows that the average percentage of current business level compared to pre-tsunami levels is 64.8% and also shows that the business organizations recovered only 64.8% of business level from the pre-tsunami situation even after almost six years since the disaster.

Table 4 - Current business recovery status compared to pre-tsunami situation

| Business Activities | Average % of Business Level Compared to Pre-Tsunami Condition |
|---------------------------|---|
| Sales revenue | 62.3 |
| Number of employees | 76.4 |
| Production service volume | 62.1 |
| Capital employed | 58.3 |
| Percentage of average | 64.8 |

4.4. Problems and Difficulties Faced by the Beneficiary Organizations

Table 5 shows the responses received regarding problems relating to receiving benefits for recovery. The main reasons are the delay in receiving promised benefits, political influence, lack of cooperation from government officers, procedural difficulties and having to give bribes.

Table 5 - Problems related to receiving benefits (with percentages)

| Item | Entrepreneurs' Choices Relating to Problems Receiving Benefits (with Percentages) | | | | | | | |
|---------------------------------------|---|----|-------|----|----------|----|----------------|----|
| | Strongly Agree | | Agree | | Disagree | | Not Acceptable | |
| | No. | % | No. | % | No. | % | No. | % |
| Delay in receiving benefits | 14 | 28 | 9 | 18 | 9 | 18 | 18 | 36 |
| Political influence | 1 | 2 | 2 | 4 | 24 | 48 | 23 | 46 |
| Lack of cooperation from the Officers | 2 | 4 | 5 | 10 | 25 | 50 | 18 | 36 |
| Procedural difficulties | 5 | 10 | 7 | 14 | 21 | 42 | 17 | 34 |
| Having to give bribes | 1 | 2 | 0 | 0 | 31 | 62 | 18 | 36 |

As per the survey findings, 28% of the respondents strongly agreed, while a further 18% agreed that a delay in receiving promised benefits were major issues faced by them. Ten per cent of businesses strongly agreed and 14% agreed that procedural difficulties were the next major issue faced by them in getting assistance. All responses received relating to the problems faced have been calculated by giving simple weights to the responses, as shown in Figure 3 below.

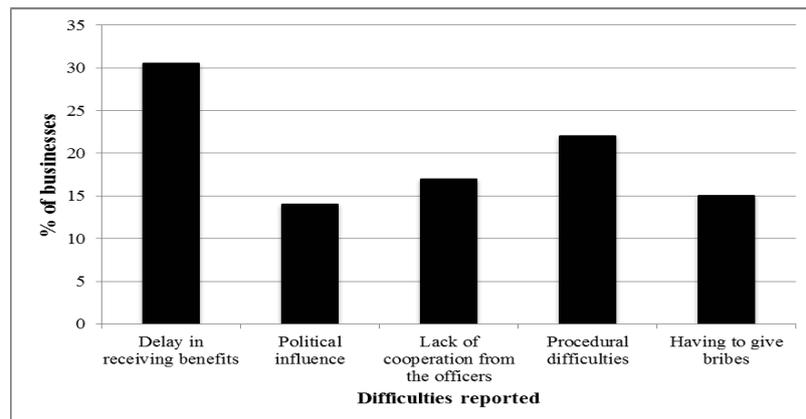


Figure 2 – Difficulties in receiving benefits for tsunami affected business organizations

As shown in Figure 2, the main problem and difficulty faced by the beneficiary organizations relating to the aid distribution process is the delay in receiving benefits, with a value of 30.3%. The next major problem is procedural difficulties, amounting to 21.9% of the total weight. Lack of cooperation from officers can be ranked the third. However, nearly 34% of the businesses did not answer this question because they did not receive any benefits from the tsunami aid agencies and few of them received support from parties personally known to them. Furthermore, this research confirms that most of the businesses were not in the position to give bribes in order to acquire benefits. However, there is no major problem in receiving benefits since the percentage of maximum possible value is 46% for all the problems stated.

5. Strategies and Policies to Develop Tsunami Affected Micro and SMEs

Micro and SMEs are very important to the economic development of southern Sri Lanka. Therefore, it is vital to implement strategies and policies to recover and develop these enterprises to their full potential. However, even after almost six years since the tsunami most business organizations in the Galle district had not been recovered up to the pre-tsunami situation, as revealed by this study. The government should act as initiator, promoter, guide and supporter in this process, since it is difficult for the rehabilitation and re-establishment of tsunami-affected micro and SMEs due to many external factors outside the control of these businesses. The government should also take responsibility for making the optimal use of aid for the rehabilitation and re-establishment of the affected industries, because this can be used as an opportunity for development of industry in the coastal area. Therefore, government strategies should be focused especially on tsunami-affected entrepreneurial and enterprise development. The strategies given below should address the medium- and long-term needs of the tsunami-affected business organizations in a sustainable manner:

- The findings of this study identified that approximately 32% of business organizations did not receive any form of assistance to recover their businesses from the significant foreign and local donations received for the cause. The government should formulate the correct strategy to eliminate this issue. This research suggests giving low interest loans for the purchase of plant, machinery and inventory with minimum security.
- The research findings show that the current average percentage of business level compared to the pre-tsunami situation is 64.8%. Therefore, suitable strategies should be implemented in order to recover 100% for the tsunami-affected micro and SMEs, since it is important to develop business to benefit the poor and low income groups in the locality.
- This research shows that business income has also been badly affected with a value of 79.5% of maximum possible score. Therefore, strategies have to be formulated to create marketing opportunities for business organizations.
- Most of the businesses' buildings were damaged, with a value of 74% of maximum possible score. Therefore, strategies have to be formulated to improve building premises for business organizations.
- One of the major problems relating to receiving benefits is the procedural difficulty, amounting to 22.2% of the total weight. Strategies should be formulated to eliminate unnecessary procedural difficulties in order to simplify the issue.
- Entrepreneurs should be advised to acquire insurance and other disaster management systems for their businesses in order to mitigate future losses. Risk transfer through insurance allows for the burden of reconstruction to be shared among insurance companies after a disaster.
- The main damage to the industries identified from this research are damage to plant and machinery (93%) and inventory (92%). However, tsunami aid agencies have distributed loans of 96.8% and grants of 35.6% to the entire business development. Therefore, this implies that the amounts of grants and loans provided are not sufficient to compensate the tsunami-affected business organizations. Most of the aid agencies provided grants and loans towards development of the businesses, including plant and machinery and inventory. However, one of the primary challenges relating to rebuilding the business organizations is loss and damage to inventory and plant and machinery. Therefore, it would be better if the government formulates a policy to provide for the capital goods and inventory rather than grants and loans.
- The study confirms that approximately 32% of business organizations did not receive any form of assistance to recover their businesses. The reasons for not receiving benefits are as follows:
 - remaining in the 100 meter buffer zone
 - not having adequate property for security to obtain tsunami loans
 - not having the capacity to talk to the aid agencies
 - pre-tsunami loans not settled
 - low lobbying power to convince the aid agencies
 Therefore, current policies should be changed to overcome the above issues.
- Even though the tsunami caused drastic destruction to the lives of people in the coastal area, this research confirmed that the damage to employees in the business organizations was minimal compared to other damage.

Therefore, the government should focus on the main damage, such as inventory, plant and machinery and buildings.

- Approximately 88% of business organizations are sole proprietorship businesses and 10% are companies. Therefore, aid agencies should formulate policies to satisfy sole proprietorship business requirements.
- None of the relief organizations gave satisfactory support to the tsunami-affected business organizations, with a value of 12% of maximum possible weight. Therefore, the government should implement policies to improve support for the tsunami-affected business enterprises in order to improve the overall economy in the coastal area with regard to infrastructure redevelopment.
- Consideration should also be given to addressing and strengthening the capacity and skills of the entrepreneurs by improving operational, technological, management and marketing facilities. These should take the form of business-related skills training and other services that support the development of micro and SMEs. Business and technology innovation may be the correct approach.

6. Recommendations

Some micro and SMEs did not receive any support from the aid agencies, due to the 100 metre buffer zone regulation, but most of the establishments, such as the hotel and tourism and fishing industries, need to be located on beaches. The government should modify the 100 metre buffer zone regulation by taking into consideration individual business requirements. In order to rebuild the business organizations, aid agencies should understand the root cause of the problems for the industries affected by the tsunami. According to the survey results, the main problems relating to benefits are the delay in receiving benefits and procedural difficulties. Therefore, the agencies should consider these issues and try to eliminate them. This survey confirms that the tsunami-affected business organizations have recovered only 64.8% of business level since the tsunami, with most entrepreneurs requiring low interest loans to fully recover their businesses. The government should consider this. According to the research, business income has also been drastically affected by the tsunami, with a value of 79.5% of maximum possible score. Therefore, tsunami-affected business organizations should be provided with consultancy services, for example, business development services (BDS) and training programmes in order to improve their operational and marketing activities.

7. Acknowledgement

Special thanks go to: C. Manathunga, T. Kasun, M. Manukantha, M. Deleepa and K. Kanthi for their research assistance: the many other officers at the Industrial Development Board; the Disaster Management Centre; and to many other people in southern Sri Lanka for their support.

8. References

- Dasanayaka. S (2006) Development of Tsunami affected small and medium enterprises in Sri Lanka, International conference in the financing of SMEs in developed countries. University of Warwick, United Kingdom, 4th -5th April 2006.
- Dasanayaka.S and Sardana.G (2010) Small and Medium Scale Enterprises in Informal Sector in Pakistan and Sri Lanka, A Research Agenda, Euro Asia Journal of Management Vol. 38(2), PP. 85-102.
- Industrial Development Board of Ceylon (IDB) (2005) Survey report on Tsunami affected industries, Ministry of Small and Rural Industries, Sri Lanka.
- Steele. P (2006) Livelihoods in post-Tsunami Sri Lanka: "Building Back Better"?. Colombo: Institute of Policy Studies of Sri Lanka.
- United Nations Development Program (UNDP) (2005a) Program of recovery the of fisheries sector, UNDP, Sri Lanka.
- United Nations Development Program (UNDP) (2005b) Program of sustainable recovery of micro enterprise sector, UNDP, Sri Lanka.