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# Post tsunami recovery capacity gaps in Sri Lanka

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## Abstract

Poor response capacity has been identified as a major inhibitor for successful post tsunami recovery attempts in Sri Lanka. Despite level of incentives aid and help which have been received from the international communities, both governmental and nongovernmental organisations, have evidently failed to deliver expected levels of performance in post tsunami recovery activities. It is of utmost importance to identify and overcome the related capacity gaps if Sri Lanka is ever to recover from the December 2004 devastation and any future disasters. Within the light of this, as the first step towards recovery, the country must fully understand the nature and scale of its capacity gaps related to the post disaster recovery.

Addressing this issue, the EURASIA (European and Asian Infrastructure Advantage) international collaborative research programme has conducted a series of interviews with key personnel in Sri Lanka to explore the nature and magnitude of this problem. The main objective of this paper is to present the outcome of these key expert interviews highlighting the priority attention areas and possible actions towards minimising the post tsunami recovery capacity gaps in Sri Lanka.

**Keywords:** Capacity building, Disaster management, Developing countries, Post disaster reconstruction, Long term recovery.

## 1. Background

### 1.1 Disasters and the developing world

During the past decade, the number of worldwide disasters has risen sharply. The Annual Disaster Statistical Review 2006 [1] highlights that the number of natural disasters that occurred in the period 1991 to 1999 varied between 200-250, while the figures have almost doubled during the period 2000 and 2006. Despite the continuous and rapid growth in the number of natural disasters, the number of actual victims affected by disasters has varied considerably

along the timeline and across regions. During the last two decades, the average annual number of victims affected by natural disasters ranged between 100,000,000 to 300,000,000 [1]. Further, the Asian continent has experienced the greatest loss of life in absolute terms and in proportion to the population, due to natural disasters. As CRED [2] reports, the figures accounted for an average of 83.7% people killed in natural disasters in Asia, compared to Europe (10.55%), America (3.54%), Africa (2.16%) and Oceania (0.05%) during the period 2000-2005.

Within these fatality rates, a significantly higher number of death tolls is evident in developing countries compared to the developed countries [3, 4]. For an example, the earthquake which hit central California in 2003 with a magnitude of 6.5 on the Richter scale, took two lives and injured 40 people [5] whereas the earthquake which hit Iran four days later with a magnitude of 6.6 killed at least 26,000 people [5]. As one would suspect, this immense difference in the death toll is not uniquely related to factors such as population densities, as both events took place in areas with high-density populations. Not only do developing countries experience higher levels of mortality during a disaster, they generally require longer periods for post disaster recovery.

Within a typical disaster management scenario, 4 distinguishable stages exist [4]. Those are:

1. Pre-disaster planning
2. Immediate relief
3. Transitional phase
4. Medium/Long term recovery

Within the pre-disaster planning stage, the vulnerable counties prepare strategies and plans of actions to meet the demands of the future disasters. Just after the disaster itself, the immediate relief stage starts, within which the focus is on providing immediate relief to the victims. Often during this stage, the disaster receives the maximum attention from relief agencies and media exposing the affected communities to possible routes of obtaining required resources and help. After the immediate relief phase, the affected communities often go through a transitional period between the aftermaths of the disaster and their normal way of life. However, without a proper medium/long term plan for the recovery, the affected communities will experience a prolonged transitional period leading to an unsettled society.

As the “Mind the gap” report [4] highlights, even though the developing countries often receive financial and other humanitarian support from international communities, nongovernmental organisations and donor agencies as immediate relief aid, generally long-term recovery has primarily been identified as a national, sub-national and local government-led matter. As such, traditionally the donors and other organisations working towards humanitarian relief pay less attention to the long term recovery aspect of disaster management. Thus, not surprisingly, developing countries who witness disasters, often fail to launch successful long term disaster recovery programmes especially due to lack of resources and capacities, both in financial and intellectual terms. Consequently, this inability hinders the value of the resources dispersed and

services rendered by the donor agencies within the immediate relief stage. For these reasons, there is a need to assess the long term disaster recovery issues in developing countries.

## **1.2 The case of post tsunami Sri Lanka**

The case of post tsunami Sri Lanka exemplifies the issues related to the post disaster long term recovery in developing countries. Sri Lanka is a small island situated close to southern tip of India near the equator. It is a developing country with the total population just over 20 million. Before the Indian Ocean Tsunami, Sri Lanka was known to be a safe haven where outrages of nature scarcely occurred except for occasional floods and landslides. However, the Tsunami affected 75% of the coastline of Sri Lanka. It also resulted in the destruction of more than 100,000 houses [6] which in turn also resulted in the taking away of several livelihoods such as fishing, farming, tourism and handicrafts-related activities. In addition to commercial and non-commercial property damage, the number of deaths apportioned to the Indian Ocean Tsunami is estimated to be in excess of 130,000 with at least 31,000 of those in Sri Lanka [7]. The lack of awareness of the nature of a tsunami, among the Sri Lankan public, is quoted as one of the reasons for this mammoth death toll [8]. Indeed, the term “Tsunami” was heard by most of the ordinary Sri Lankans only after this devastation.

During the immediate relief stage, Sri Lanka received humanitarian relief aid from donors all over the world. This aid was in the form of financial assistance, equipment and materials and human resources for rescue/relief missions. While most of the aid was aimed at providing immediate relief to the victims, some of the funds were meant to be utilized for long term recovery attempts such as reconstruction of houses and infrastructure facilities.

Four years on, Sri Lanka is yet to recover fully from the devastation of the December 2004 tsunami. In fact, after a successful immediate relief phase [9], Sri Lanka is going through its transitional period between the short term relief and the medium/long term recovery. The Sri Lankan government started the long term recovery programmes with optimism and expectations for speedy recovery [9]. In fact the government expected the post tsunami recovery programmes to be completed within 3-5 years [10]. Further to this optimism, as Weerakoon et al [9] highlights there were pronouncements at political level about even speedier recovery intentions, such as meeting all permanent housing needs within one year of the devastation. However, this target has not been fully met even after three years [9].

With reference to the infrastructure, the pace of recovery of larger scale infrastructure projects, has reported been slow with an estimated 50% of construction projects yet to commence by end 2006 [11]. As GOSL [11] highlights, by end 2006, 134 of 182 damaged schools were estimated to be in various stages of construction. However, by the end of 2005, construction work had started only in 18 schools. Similarly, within the health sector only 55 of a total of 102 damaged buildings have been completed by June 2006 [9 cited 12].

### 1.3 Capacity building for post disaster recovery

From the above figures it is clear that the post tsunami recovery (long term) attempts in Sri Lanka were less than successful compared to the government's expectations and plans. One of the problems the governments of developing countries often face, with regards to post disaster recovery, is their response capacity. Generally, capacity at local government level to plan and implement post disaster recovery strategies is limited and incapacitated as a result of the disaster itself. In the light of this, strengthening local capacities for this process has been identified as a main priority [10, 13].

Strengthening national capacities of developing countries towards post disaster recovery predominantly demands financial incentives. Such incentives given by donors during a disaster are generally routed towards short term relief efforts rather than long term recovery programmes. As a result, the governments of affected countries (specifically developing countries) are financially incapable of launching successful long term recovery programmes [4]. As such, it has been identified within recent reports (e.g. [4, 10]), that the main focus of the donor organisations should be to achieve the appropriate balance of fund allocations between the immediate/short term relief and the medium/long term recovery. The donor organisations such as UN have recently recognised this aspect as a timely priority[10].

Lack of financial capability is a major contributing factor preventing a county from obtaining required physical resources such as equipment and infrastructure to launch successful long term post disaster recovery programmes. A lack of appropriate intellectual capacity can be recognised as another factor hindering the implementation of successful recovery plans. In this scenario, lack of intellectual capacity refers to lack of knowledge, expertise and training related to post disaster recovery within the relevant local authorities/institutions. Affected countries could be intellectually incapacitated for various reasons and at various levels. The Brain Drain, the lack of proper coordination between relevant authorities/institutions and immature organisational processes can also be highlighted as behind intellectually incapacitated countries. In some instances, mere lack of expectancy can also be a reason for a county to demonstrate intellectual incapacity in long term disaster recovery. For example, some of the Sri Lankan authorities [13] may have been incapacitated when responding to post tsunami (December 2004) recovery attempts due to the fact that Sri Lanka had not experienced a tsunami for centuries and there was no reasonably predicted reason for them to be prepared for devastation of that scale.

Highlighting the importance of improving local capacities in post disaster recovery, various reports (e.g. [11, 13, 14]) have highlighted the development of institutional mandates and capacities as a key focus area in achieving success in implementing its post tsunami long term recovery measures. These reports further acknowledge that identification of the capacity gaps in relevant institutions and authorities is a prerequisite placed above the task of developing institutional capacities and still very much to be completed along the country's journey to long term recovery from the December 2004 tsunami. In the light of this, this paper addresses the following research question:

“What priority capacity gaps exist within relevant authorities and institutions in Sri Lanka that need to be addressed to achieve successful long term recovery from the December 2004 tsunami?”

## 2. Methodology

The rest of this paper presents the outcome of an empirical investigation carried out by the authors with the intention of addressing this research question. This research work was carried out as part of an international collaborative research project, EURASIA. The **EU**ropean and **AS**ian **I**nfrastructure **A**dvantage (EURASIA) is a 3 year research collaboration between Europe and Asia funded through the ASIA-LINK programme of the European Union. The specific objective is to enhance the capacity of the partner institutions for training, teaching and research activities required for the creation and long-term management of public and commercial facilities and elements of infrastructure associated with post tsunami activities in Sri Lanka.

The overall approach to this research took the shape of a case study. This helped to meet the challenges of the research question being answered, specially to investigate the phenomena deeply and thoroughly, within the limited context of post tsunami Sri Lanka. The case study approach further supported the exploratory nature of the study where the concepts related to questions being answered gradually enriched throughout the investigation. Within this scenario, the boundary of the case study was defined as the post-tsunami recovery attempts in Sri Lanka. The unit of analysis was defined as the capacity gaps prevailing within the above boundary. The study was conducted as a single case study as the phenomena being investigated is unique, considering all the economical, cultural and geographical parameters related to the context.

The data collection approach was centred around a series of semi structured interviews conducted with 12 organisations involved in the post tsunami recovery programmes. These organisations were selected based on their level of involvement in the recovery actions in Sri Lanka. Main offices of all the organisations selected are based in Colombo, Sri Lanka, while the activities carried out by these organisations are geographically widespread to include all the Boxing Day tsunami affected areas, including the Eastern part of the island. All the interviews were conducted between 1<sup>st</sup> June 2007 and 30<sup>th</sup> June 2007, in English. Due to the high sensitivity of the issues being discussed, an agreement has been reached between the investigator and the organisations involved regarding maintaining the anonymity of the participants. For this reason, the true identity of the participating organisations or the interviewees has not been revealed within this paper. However, all the personnel interviewed within this study are either top level or medium level managers as the information intended to collect was of strategic level rather than operational level. During the interviews, information about the experiences of the interviewees regarding the successes and failures of the post-tsunami recovery attempts in Sri Lanka were collected. The interview guide prepared for the semi structured interview was structured in such a way that, as the interview progresses, it captures the issues related to the failures of recovery attempts and reasons behind success stories experienced by the interviewees. The preparation of the interview questions was informed by a

literature review to note the capacity gaps already identified within the above context. This ensured that this research was not attempting to re invent the wheel.

All the interviews were transcribed and analysed to identify key capacity gaps that hinder the success of post-tsunami recovery in Sri Lanka. The data analysis strategy is based on the principles of content analysis where the concepts related to the phenomena are captured through analysing the contents of the interviews qualitatively. To ensure all the data captured during the data collection stage was treated with care and consistently, the authors used a qualitative data analysis tool namely, NVivo (version 7). This is a computer based qualitative data analysis tool to help organise and analyse qualitative data systematically and transparently.

The next section highlights the outcome of the analysis.

### 3. Analysis and results

#### 3.1 The analysis process

The first step of the analysis was to identify “concepts” which emerged during the interviews. For this purpose, the interview transcripts were carefully reviewed by the researchers within NVivo while highlighting the main ideas presented by each interviewer for each question asked. These “concepts” were then recorded within NVivo as “free nodes”. Within NVivo a free node represents an idea that has emerged from a data source (in this instance from an interview transcript). Figure 1 below shows the list of free nodes identified within the transcripts analysed.

Free Nodes		
Name		
Community Pressure	Lack of persistent long term strategies	Poor Requirements capture
Coordination	Lack of <b>Planning</b>	Research skills
Coordination with GAs	Lack of political leadership	Security issues
Cultural Challenges	Lack of Professionals	Security Restrictions
Ethnic problems	Lack of Statutory powers and capacity	Technical
Excessive costs	Lack of Supervision	Training
Influence on the Economy	Lack of will of people	Unrest of affected communities
Information dissemination to communities	Management	<b>Weak organisations</b>
Infrastructure management	Mitigation activities	
Integration between reconstruction and livelihood	Need for Local Expertise	
Lack experience of this scale of operation	Over Ambitious	
Lack of Central Statistics	Owner driven approach	
Lack of <b>Experience</b>	Planning skills	
Lack of Good practice transfer	Policies and Decision Making Issues	
Lack of incentives	Political Influence	
Lack of Management and technical skills	Poor Communication	
	Poor Quality <b>Assurance</b>	

Figure 1- Concepts identified from the interviews as free nodes

Each of the free nodes identified above are based on comments made by the interviewees. While identifying these key concepts as free nodes, NVivo keeps a track of references about which interviewee(s) commented about the concept, and on how many occasions. There were instances where the same concept has been referred to by several interviewees more than one time. For example, lack of planning skills was identified as a capacity gap in 5 occasions by 2 interviewees during the interviews. During the first part of the analysis, these concepts were recorded in free nodes to ensure all collected data was considered in the analysis. The second stage of analysis focused on identifying how these initial concepts map together to answer the research question.

During the second stage of analysis, the initial concepts were mapped with the various aspects of the research question being answered. While the main aim of this research was to identify the main capacity gaps in post tsunami recovery Sri Lanka, the interview guidelines have been prepared to capture various elements of the main issue. For an example, the interviewees were motivated to talk about the capturing post tsunami recovery capacity gaps in Sri Lanka in four main areas. Those areas are:

1. Financing
2. Human resources
3. Institutional (both governmental and non governmental)
4. Skills References

Determination of these four areas is based on the outcome of a literature review, where the key elements of post disaster capacity gaps have been discussed based on previous work in the field. This discussion is considered to be outside of the purpose of this paper and is being prepared to be presented elsewhere.

Further, during the interview process the interviewees were guided towards revealing possible causes for capacity gaps and possible solutions to overcome them. For example, with the help of the focus of the interview guideline, the initial concepts identified in the first stage of the analysis could be converted into a grouped layout, which gives a clearer image about how those concepts map with the research question being answered. In NVivo this grouping of concepts can be presented as “tree nodes”. With the creation of these tree nodes, some key “themes” emerged about post tsunami recovery capacity gaps in Sri Lanka.



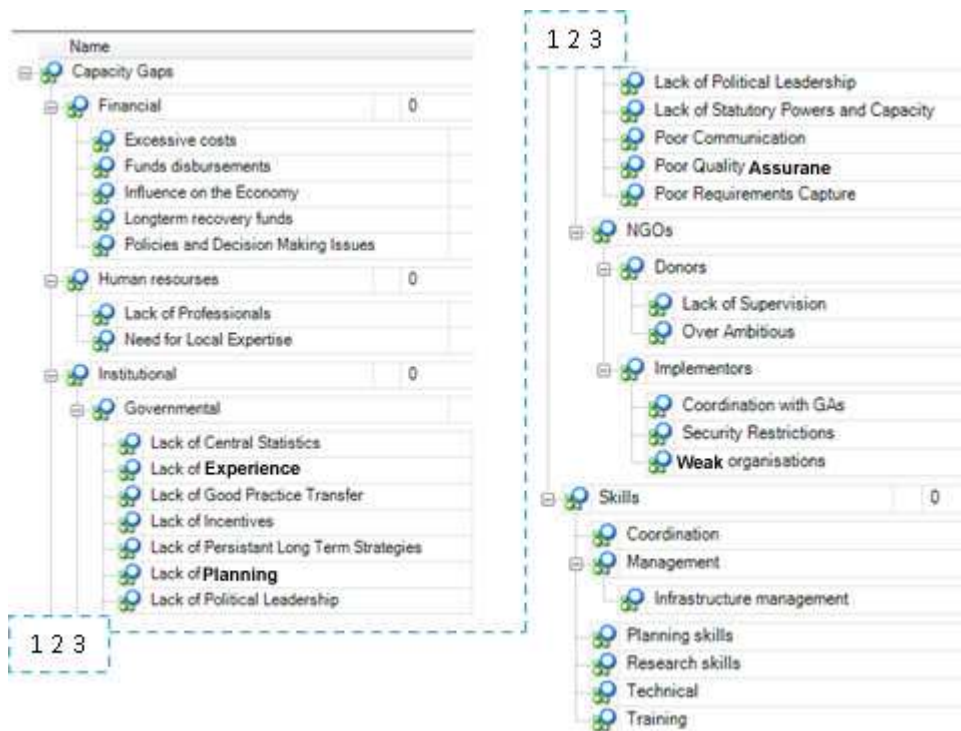


Figure 2 - Key themes organised as tree nodes

In addition to this “grouping”, the researchers identified “relationships” within and between the concepts and themes. These relationships lead to present the identified capacity gaps with causal-effect explanations. The identified concepts, key themes and relationships were then modelled using NVivo to understand and represent the results more thoroughly. The next section discusses the results of the analysis in more detail with the help of the models.

### 3.2 Results

As discussed above, within this research, the capacity gaps in post tsunami Sri Lanka have been investigated in four main areas. The rest of the paper discusses the results of the empirical investigation with reference to these areas of capacity gaps. Further, under each area the results will be discussed with the aim of answering the research question “what are the main capacity gaps identifiable within Sri Lanka while attempting to recover from the devastation of the December 2004 tsunami?” Additionally, the causes and effects related to the identified capacity gaps will also be discussed, where appropriate, through the concepts and themes identified from the interviews.

### 3.2.1 Capacity gaps related to skills shortages and human resources

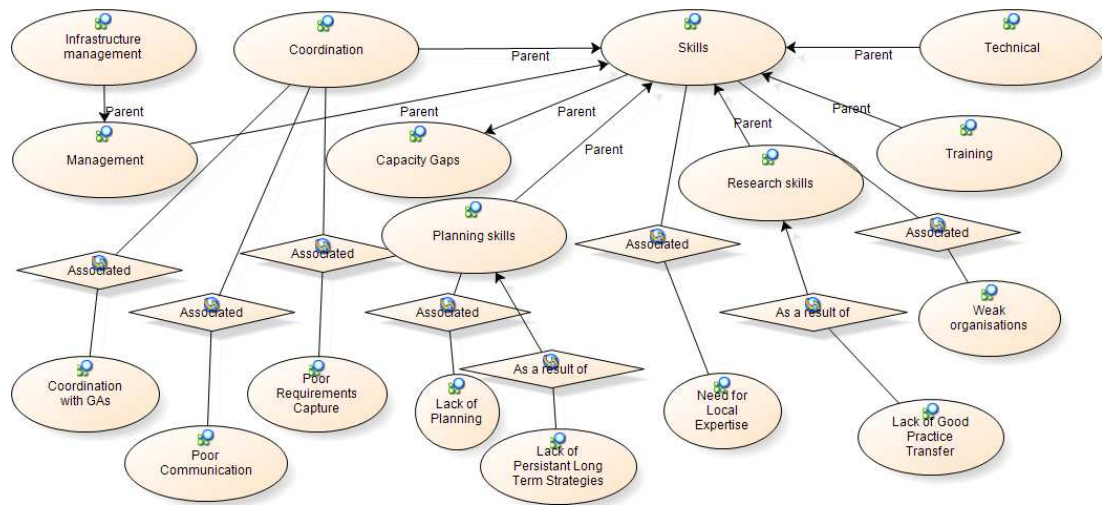


Figure 3 - Skills shortage as a capacity gap - links and relationships

During the interviews, skills shortage has emerged as a main capacity gap in post tsunami Sri Lanka. In fact 18 references were made by the interviewers in 9 occasions about various skills shortages as capacity gaps. As illustrated within the Figure 3 above, 6 main skills areas that require capacity enhancements have been identified from the research. These are:

1. Coordination skills
2. Management skills
3. Planning skills
4. Research skills
5. Technical skills
6. Training skills

Out of these capacity gaps in skills; coordination, management and planning have been identified as key areas of concern. Post disaster recovery attempts in general require a great deal of coordination between various parties, planning of appropriate actions and management of the work. Within the context of this research, the interviewees highlighted significant gaps in the above areas including the requirements capture actions to resettlements. For an example, during the interview, one interviewee pointed out that post tsunami housing reconstruction work in some areas do not appeal to the affected communities as the houses are constructed without giving much attention to the infrastructure availability within the area. In another interview, the same point was raised and highlighted the fact that some of the affected communities are not willing to be settled in the newly built areas as they were constructed without giving due consideration to the livelihoods of the affected communities (e.g. fishermen are reluctant to be relocated away from the coastal area). This highlights that the relevant authorities have not

demonstrated required planning, coordination and management skills within the context of post tsunami recovery in Sri Lanka. Highlighting a planning issue, one interviewee commented that there is a visible lack of persistent long term strategy to implement the post tsunami recovery actions in Sri Lanka. For example, the interviewee pointed out that the government had to change its position on the coastal buffer zone consistently to address the issues such as the community pressure. Had this strategy been reviewed thoroughly before the decision, the actions could have been implemented more successfully. These issues are not visible only in government authorities. In fact the interviewers have highlighted that fact that these issues exist in government authorities, donor agencies as well as in NGOs who are involved in post tsunami recovery actions. This issue will further be discussed under the section 3.2.2 below.

In addition to the skills gaps identified above, the capacity gaps in research and training have also been identified as shortcomings to implement successful post tsunami recovery actions. In terms of the capacity gaps in research, the interviewees felt that in general, the research activities are under-funded in Sri Lanka. Some interviewees specifically identified that disaster management research and training activities in Sri Lanka were not especially strong before the tsunami. Even though there is evidence to support improved research and training activities related to disaster management recently, interviewers raised their concern about the current research and training capacities in Sri Lanka to deal with the demands of post tsunami recovery activities.

It has also been identified that some of the required technical skills for post disaster recovery in Sri Lanka are lacking. Interviewees commented especially about the shortage of construction technical skills in post tsunami Sri Lanka to cater for the massive demand created with the start of the post tsunami reconstruction work. As an example, two interviewees mentioned that labour rates in construction has risen sharply recently, demonstrating a shortage in skilled labour. Further, particular emphasis has been drawn to the fact that there are tsunami affected areas where the security problems exist due to the ethnic problem in Sri Lanka. Due to the reluctance of skilled construction workers to work in these areas, a prominent technical skills shortage exists.

As mentioned above, these skills shortages are not limited to one particular organisation, group or sector. Rather these have been identified in various authorities and institutions that perform main roles in post tsunami recovery activities in Sri Lanka. As such, the next section discusses the institutional skills gap identified within the post tsunami Sri Lanka.



### 3.2.2 Institutional and financial capacity gaps

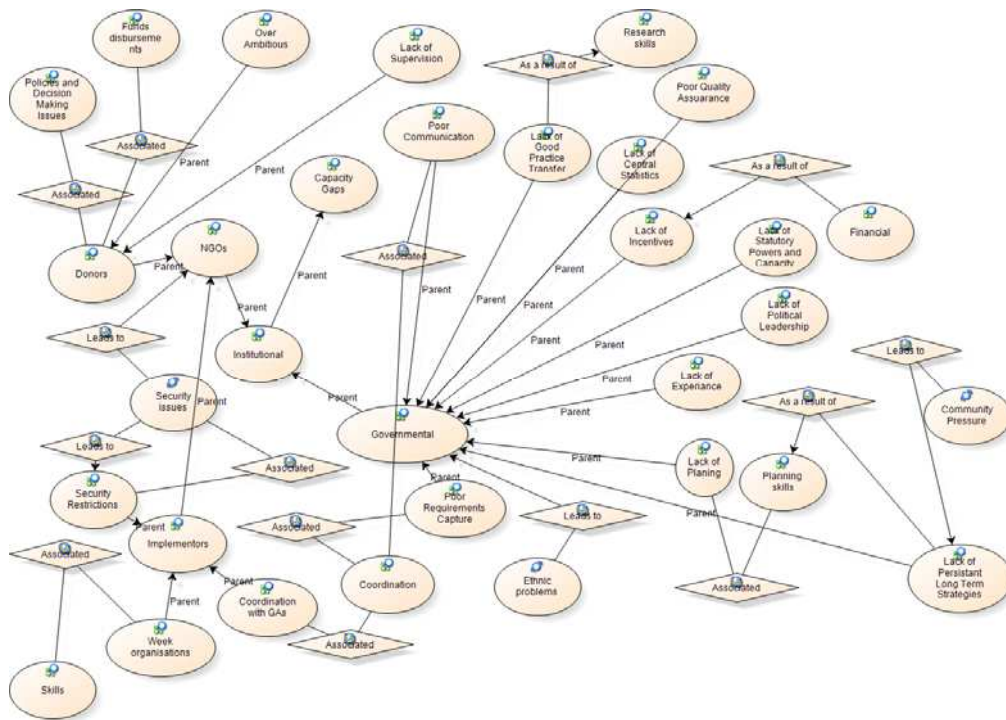


Figure 4 - Institutional capacity gaps identified within post tsunami Sri Lanka

Figure 4 above highlights the key institutional and financial capacity gaps and causal – effects relationships identified within the context of the research. Primarily, the institutional capacity gaps have been identified within two main groups of organisations involved within the post tsunami recovery context. These are:

1. Governmental organisations – These are the government owned organisations that carries the authority and responsibility for the overall post tsunami recovery strategies and actions.
2. Non-governmental organisations – These are the organisations that are involved within the post tsunami recovery process, outside the governmental direct control.

Out of these two groups, governmental organisations have been the most cited with relation to the areas of lack of institutional capacity in implementing post tsunami recovery actions. In fact, 8 areas of concerns have been cited by the interviewees in 16 instances, through 21 references. The areas of concern are:

- Lack of central statistics
- Lack of experience
- Lack of good practice transfer
- Lack of incentives
- Lack of planning
- Lack of communication

- Poor quality assurance
- Poor requirements capture

Out of these areas, lack of planning and poor communication has been cited frequently by the interviewees. This coincides with the discussion presented within the section 3.2.1 above, where these have been identified as the main capacity gaps related to the required skills. In addition poor quality assurance has been identified as an area where the government institutions show significant capacity gaps. For example, one interviewee highlighted that, despite the existing policies about construction quality, the houses constructed and allocated for effected communities varies significantly in terms of their quality, questioning the capacity of authorities to check and enforce the expected quality levels. During the investigation it was identified that the lack of experience to deal with the scale of the December 2004 tsunami was a main cause for the governmental organisations to demonstrate capacity gaps in various areas. For example, during the last 2 centuries Sri Lanka had not experienced a tsunami on any scale. This fact itself justifies, to a certain extent, why Sri Lankan governmental organisations were not able to handle a post disaster recovery attempt of this scale. Furthermore, this leads to the fact that the country is not ready with required central statistics to effectively handle the demands of this recovery attempt. One interviewee commented that the number of constructed houses in one of the relocation areas is greater than the affected communities in the surrounding. This highlights that the planning and requirement capture capacities of the relevant authorities were not optimal in this particular instance, and at the same time it highlights the issue of lack of central statistics about those affected.

From the non-governmental organisations' (NGOs) point of view, the institutional capacity gaps have been identified in two perspectives. The NGOs operate in post tsunami Sri Lanka under two capacities; as donors and implementers. From the donor's perspective, a number of interviewees have mentioned their rigid policies and decision making capacities on funds disbursement as a main capacity gap. As the interviewers pointed out, most of the time, the donors are less flexible with funds disbursement. Most donors prefer to fund short term relief actions and allow fewer funds for long term recovery actions. And often the donors were criticised for being over ambitious leading problems in implementing recovery actions. These gaps have been identified not only as the capacity gaps in donor organisations, but have been continuously discussed under the financial capacity gaps that post tsunami Sri Lanka is facing.

When an NGO operates as an implementer for post tsunami recovery actions, most of the capacities required are connected with reconstruction work. The main problem identified by the interviewees in this regard is their incapacity to carry out relevant reconstruction work in some areas due to security issues. Due to the ethnic problem prevailing in Sri Lanka, some of the worst tsunami affected areas cannot be reached by the organisations who are carrying out the reconstruction work. This hinders the effectiveness of such programmes. Moreover, some interviewees commented that some of these organisations demonstrate poor communication and coordination capacities especially when maintaining the link between the government authorities and themselves. Since the same is visible within governmental organisations, these organisations need to monitor the situation carefully to overcome this issue.

While essential, identifying the main capacity gaps which hinder the post tsunami recovery attempts in Sri Lanka is just a starting point. As discussed above, most of these capacity gaps have roots in problems which go beyond the scope of disaster management. It is therefore the role of the parties involved to analyse these factors and gaps in detail prior to embarking on post tsunami recovery actions.

## 4. Conclusions

Identifying capacity gaps is an essential task for Sri Lanka to overcome the problems they face with their post tsunami recovery attempts. It is evident that the government had ambitious plans and high expectations for speedy recovery but with less success rate. The capacity gaps existing in various scales under various organisations and circumstances have been identified as influential factors limiting the success of post tsunami recovery actions in Sri Lanka. Among other factors, various skills shortages such as coordination and planning skills have been identified as main capacity gaps which need immediate attention. Further, some of these capacity gaps in skills have led to the country to demonstrate capacity gaps in human resources such as lack of construction professionals and skilled construction workers.

In addition to the capacity gaps identified in general as above, institutions involved in the post tsunami reconstruction activities are also suffering from institutional capacity gaps. Among these, governmental institutions suffer from capacity gaps such as lack of central statistics and poor quality assurance. From the perspective of non-governmental organisations such as donor agencies and implementing organisations, a lack of coordination, security restrictions and policy issues have been identified as the main areas of concern. Dealing with donor organisations, unrealistic ambitions, rigid funding policies and lack of coordination with government organisations have been identified as issues which are needed to be addressed and at the same time as leading to financial capacity gaps that Sri Lanka is experiencing within the context of post tsunami recovery.

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