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ISSN 0961-8309

Volume 28, Number 1, Mar. 2006

SYSTEMIST

**The Publication of
The UK Systems Society**

Tsunami Disaster Relief Work, 2005: A Case Study on Soft Systems Methodology (SSM)

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Abstract

This paper describes the practical value of Soft Systems Methodology (SSM) in project-managing complex issues related to disaster relief work. Project-managing disaster relief means that the project team needs to go beyond the hard systems tools such as Gantt charts to deal with the human-centred complexities, while ensuring that the outcomes are delivered to those in need.

This is demonstrated by the author via Action Research within a small organisation in relief work, referred to as OF-PR. It operates within the concept of 'Human Values'. Thus, its frontline activities rely heavily on the SSM paradigm to project-manage the disaster relief work, giving prominence to the human, emotional intelligence to learn about the systemic issues. The employment of SSM, more specifically the seven stage model is to achieve the outcomes that are immediate and at the same time within the ethos of the donors and other stakeholders. This paper finally assesses the strengths and limitations of employing a paradigm such as SSM in the disaster relief work.

Keywords: Soft Systems Methodology (SSM), Human Values, Area of Control (AoC), Area beyond Control (AbC), PESTEL factors

Introduction

The devastation of the tidal waves, triggered by the tsunami effect around the South East Asian brim on the 26th December 2004 is deemed to be that of a global catastrophe. Many lives have been lost, many communities have been shattered and many economies have plunged into stagnation (BBC News /2005/03/27).

However, as the media interest moves away from this tsunami disaster to other 'news worthy' stories, it is tempting to assume that the disaster and poverty

relief work is complete. This assumption does not always follow the reality as the disaster and poverty relief work normally carries on beyond a prescribed 'time line' to deal with the systemic issues. As the 'time line' forms one of the key measurements in assessing the success or failure of any relief work, it is an attractive proposition to rely on the 'hard systems' methodologies. This implies analysing the disaster itself and managing the relief work through structured project management tools and techniques.

Disasters, whether they are natural or man-made, often cut across many socio-political and economic systems. Hence, the relief organisations are expected to manage both the resource scarcity and the socio-political complexity at the same time as achieving the overall stated outcomes in disaster relief. This balancing act then needs to be closely aligned to the needs of those affected. Only then the project outcomes such as the alleviation of poverty and emotional stress will become feasible. The danger is that a plan that is independent of those affected might be totally irrelevant to the needs and wants of the recipients (Wang and Ahmed, 2003).

This, therefore, considers a case for 'learning about' the issues related to disaster and poverty relief through Soft Systems Methodology (SSM), while accepting the world events as part of a total system (Boulding, 1985) and to shape the outcomes from that, rather than working on a set of outcomes that were pre-planned at the outset. In this, the SSM with its roots clearly anchored to human involvement (Checkland, 1981) provides a welcome alternative to the traditional top down, structured methodologies that are independent of end-users, yet often used by the managers of large projects.

To achieve the aim of this paper, a single case study, referred to as OF-PR is selected. The researcher's involvement with OF-PR as a volunteer member provides an ideal opportunity for Action Research. Moreover, OF-PR has prior experience in disaster relief work in countries such as Bosnia, Romania and Ukraine based on 'Human Values'.

OF-PR, not only relies heavily on the SSM paradigm to project manage its relief work but also provides an opportunity to capture the essence of the real-life events as they unfold (Denzin and Lincoln, 1998) for the benefit of its benefactors, volunteers and other relief agencies. This is achieved via Action Research conducted by volunteer members of OF-PR at ground level, whether the disaster is in Europe, Asia or elsewhere. The Action Research of OF-PR also offers an understanding of how humanism and emotional intelligence (Dulewicz and Higgs, 1999, Jaafari, 2003, Senge, 1990) are incorporated into the outcomes selection with the aid of 'rich picture diagrams' (Checkland, 1981, Lewis, 1994) in a schematic form.

The main objective of Action Research is to achieve the project outcomes that are immediate in the relief work for those who are in need and at the same time within the ethos of the donors of the relief funds. This form of research with context-rich, qualitative data gathered from the ground level work of OF-PR provides the deeper meaning of this research topic that is crucial for the validity

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of a case study research (Yin, 1994). The data on the impact of the tsunami disaster was collected by the local Project Officer assigned to the region and in this case, Sri Lanka from the trustees of the orphanages or children's homes, local officers of the international agencies such as Red Cross and UNICEF and local relief agencies. While the local OF-PR Project Officer's role was to function as the conduit in the collection and transmission of the data to the committee of OF-PR in the UK prior to the relief work, the analysis of the data was carried by the researcher himself, as a volunteer member of OF-PR.

The analysis of the data was largely to identify the problem situation and express it in a coherent manner to the donors, volunteers and the media. However, the synthesis of the data was carried out by the researcher, who was also a project team member of OF-PR and the team at the ground level. Thus, the outcomes of this Action Research formed the basis of the relief work itself. This paper explicates the process management of the relief work by OF-PR within the philosophy of 'social constructionism', aided by the seven stage model of SSM. Finally this paper assesses the strengths and limitations of employing a paradigm such as SSM in this disaster relief work.

Research Process

As the disaster relief work includes the complexity of the whole situation and the main drivers are based on 'Human Values', the ontological assumptions on the reality itself set the scene for the relief work. Therefore, the first stage of the relief work was aimed to increase the general understanding of the situation through conversations and dialogue among the stakeholders in the disaster zone itself by the regional Project Officer of OF-PR. While the initial data analysis provided the theoretical abstractions and some generalisations of the extent of the disaster itself, the epistemological underpinning about the best format for inquiring into the true nature of the disaster itself was left to the researcher-led project team at the ground level. In this, both the researcher and the project team became part of the action itself in the relief work. Hence the researcher and the team members were both the observers and the observed, providing reflective feedback at every stage. This evolutionary form of research needed an analytical tool that is flexible, yet with clearly distinguishable anchors that can underpin both the research and the relief work itself. Thus, the seven stage model of SSM was selected as a tool for this Action Research, relying on some prior experiences in using SSM in the Bosnian, Romanian and Ukraine disaster relief work of OF-PR in the 1990's, foregoing other project management tools such as Gantt Charts and Critical Path Analysis.

The Situation

The disaster relief activities following the devastation triggered by the tsunami on the 26th December 2004 provides an opportunity to reassess the role of charity organisations in the relief work, especially in managing the smaller projects with immediate impact. As the tsunami disaster of 2004 is deemed to be

that of a global catastrophe rather than a regional one, the donors, volunteers and voluntary sector organisations responded extremely well to deal with the immediate crisis management without any charity appeal fatigue (Schlegelmilch, et al, 1997). The Rapid Response Network of the Disaster Emergency Committee (<http://www.dec.org.uk>. Accessed - 3rd May 2005) not only immediately set in motion the mechanism for funds generation, but also dispatched the emergency relief through its member organisations.

Since the cessation of the Tsunami Disaster Relief Appeal on the 26th February 2005, DEC has allocated £112M with a significant proportion going to the worst affected areas, Sri Lanka and Indonesia out of the £300M appeal fund. While the Rapid Response Network of DEC has responded well to the immediate relief work, the medium to long term projects have made a slow start. This is because the inputs of wants and need have cut across many socio-political systems in the tsunami affected region. It has also stretched the resource and knowledge limits of the voluntary sector projects.

Large projects in the voluntary sector generally tend to follow the conventions of a commercial sector project. However, the process of goal setting, defining the boundary or scope and the resource allocation are often slowed down by the different requirements of the many project stakeholders. Moreover, different stakeholders also bring their own agenda to the disaster relief work. Thus, dealing with different stakeholders in different geographical and socio-political environments slows down the process of a disaster relief project. While the medium to long term projects take shape with the approvals and implementation plans, the quality of life of those who were affected by the tsunami disaster on the 26th December 2004 still remains dire. Therefore, the relief work organisations, whether they are large or small in size are under pressure from the donors to deliver the relief quickly. Hence many opt for a narrowly focussed strategy that can champion the relief work closer to the front line without dealing with the issues of those people who are affected, as stakeholders. This leads to a dichotomy between the hard, structured paradigm that enshrines objectivity in outcomes and the soft paradigm that focuses on the context bound human interpretations in deciding on the outcomes.

Hard – Soft Paradigms in the Relief Work

Since the seminal work of Professor Peter Checkland (1981) and his colleagues at Lancaster University on the softer, behavioural aspects of systems thinking, SSM has come a long way in the sphere of systems development and project management. SSM often seen as:

“a methodology which emphasises the human involvement in systems and models their behaviour as part of systems analysis in a way that is understandable by non- technical experts”

(Bocji, et al, 1999, p347)

This methodology contrasts with the traditional 'hard systems approach' that operates within a set of fixed rules and procedures to achieve an explicit objective (ibid.). While the proponents of the hard systems approach emphasise the objectivity in performance measurement and control in this paradigm through techniques such as Structured Systems Analysis and Design Methodology (SSADM) and Projects in a Controlled Environment (PRINCE), there are also critics who view this paradigm as '*unsuitable to applications in social situations*' (Lewis, 1984, p27).

This has meant that the new emerging concepts in Project management, going beyond the total reliance on the Gantt chart (Maylor, 2001) to deal with the critical factors that are crucial for the quality of outcomes (Cicmil, 1997) in the age of complexity and continuous change (Jaafari, 2003) have not shaken off an image of the hard systems approach as deterministic, sometimes being criticised as the mechanistic approach to systems development and project management (Bocji, et al, 1999).

A 'Project' whether it is in the commercial sector or in the voluntary sector, needs a set of objectives, strategy to manage the processes and a boundary (Cockerill, 1995). However, both the traditional and emergent concepts in Project Management still rely heavily on the philosophical stance - positivism. In this philosophical stance, linear cause-effect relationship (Easterby-Smith, et al, 2002) shapes the project itself. Therefore, a project within the positivist's stance heavily relies on a few key phrases to reinforce this linear relationship: a non repetitive or specific activity, clear start and finish, time specific, low volume - high variety matrix and finally budget-controlled (Bruce and Langdon, 2000, Maylor, 2003). While the structured approach to project management through the positivist stance supports the project managers to ensure the time performance, cost performance and finally the quality performance, it tends to underplay the importance of humanism that is linked to socio-cultural differences of the stakeholders. However, humanism, especially the desire to serve the underprivileged, forms the cornerstone of the voluntary sector.

Yet, the projects in both poverty relief and disaster relief tend to overshadow the mindset and life styles of the donors with pre-determined development goals often linked to neoclassical economic models (Trainer, 2002) and the market orientation of the charity organisations themselves (Balabanis, et al, 1997). This phenomenon may account for the tendency of many large voluntary sector organisations that deal with the poverty or disaster relief by following the project management model of a large commercial sector organisation, often top down and highly structured. While the structured approach to voluntary sector projects offers both tangible evidence of project outcomes or goals and clear audit trails to satisfy the donors, the immediate needs of those victims who are experiencing the fight for survival are often overlooked for the greater good in the long term.

Case Study and its Brief History

The analysis and synthesis of this paper, therefore is largely based on a single case study called OF-PR, an organisation that narrowly focuses its operations within the poverty relief work among children. It is a very small organisation run by a committee of volunteers, yet prides itself in responding to global disasters quickly, whether they are man-made or environmental.

OF-PR exists to provide poverty relief on a global basis based on 'Human Values'. It has no political or sectarian alliance or affiliation and is funded by donations and membership fees only. Currently every Penny collected (100%) is spent on the poverty relief work. The organisation relies totally on volunteers for its poverty relief projects, confirming the mind-set that encapsulates both the teamwork spirit and motivation that exists in a small charitable organisation (Heap, 2002). OF-PR with its short, eight year history of poverty relief work among the needy children around the world is neither in a league to become a member of the Disaster Emergency Committee (DEC) nor has personnel with project management skills to undertake large scale projects on a voluntary basis. However, with its emphasis on 'Human Values', Soft Systems Methodology (Checkland, 1981) was deemed to be the natural choice by the committee members of OF-PR. This notion was further strengthened by their prior experiences in Bosnia, Romania and Ukraine. This is because; Soft Systems Methodology (SSM) encapsulates the project deliverables within the human behaviour paradigm and the concept of 'weltanschauung' or the world view from a utilitarian perspective.

Systems Thinking within OF-PR:

OF-PR, like many small scale charitable organisations, sees the disaster relief work or the poverty relief work as its core organisational (business!) process and project management is viewed simply a technique to manage that process. Hence the projects themselves represent socially justified set of activities that are underpinned with human values. Thus, the projects are context bound to represent different situations in different environmental scenarios.

This notion fits well with the general systems theory of Ludwig Von Bertalanffy (1968) with clear inputs, processes and outputs. However, the mechanism to deal with the environmental uncertainty and openness in the disaster relief work creates challenges to OF-PR. In this, opinions vary significantly due to different views expressed by both academics and practitioners (Bocij et al, 1999, Cockerill, 1995). Since, there is no single pathway in systems thinking that can encapsulate the ethos of OF-PR, the committee members of OF-PR find it comfortable to apply SSM in the relief work, that incorporates both systemic learning opportunities to the organisation and to deliver realistic, utilitarian outcomes to those who are in need.

In the case of disaster relief, openness to the environmental factors such as *political, economic, social, technological, environmental (or ecological!) and*

finally the legal (PESTEL factors, Johnson and Scholes, 2002, pp 99-103) not only makes the predictability of events more difficult, but also creates unique evolutionary processes in the change management, from a state of disaster to a bearable position for those who are affected. In this, the project outputs are inextricably linked to those who need both tangible and emotional support to overcome the disaster or the poverty trap. Thus the process is shaped by the emotions of those who are expected to benefit from the disaster relief projects.

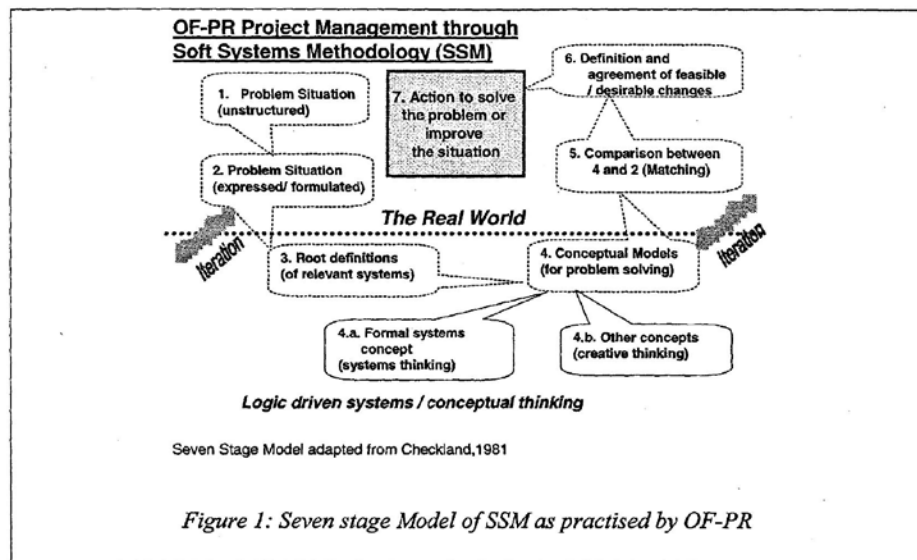
As the emotion of those who are the recipients of the project outputs shape the project deliverables, emotion is not only linked to the human wellbeing, but also is expected to underpin the systems and project methodologies (Wang and Ahmed, 2003).

Hence the project outputs are emergent, creating a synergy between the creative thinking of the project team, the intermediaries such as the local leaders or trustees and the targeted group of beneficiaries. In this, *'every problem is different and that the same solution cannot always be applied to similar, or even apparently exactly similar, problems'* (Cockerill, 1995). Therefore, the communication feedback loop between the project team and the group of beneficiaries are iterative and emergent during the project life. In this the project outputs are shaped by the events rather than being pre-planned at the outset. This calls for softness in the project management processes, where a synergy between the real world and the conceptual, mental models can be achieved to deliver the project outcomes.

The Application of SSM by OF-PR in the Disaster Relief

The application of SSM in a systems development or project management environment uses the seven stage model of SSM developed by Professor Peter Checkland (1981). In this the outcomes are derived experientially through learning about the real world issues rather than optimisation of resource – outcome matrix. Hence, as in SSM, the starting point of OF-PR's disaster relief work is the unstructured, world view of the problem situation (Figure 1).

It then goes on to consolidate the views on project outcomes through human activity. Thus, SSM enables the disaster relief project team to conduct a stream of socio-cultural enquiry starting from the real world perspective to establish the scope and boundary of the project and then to move onto the logic-driven stream of enquiry to negotiate the project deliverables. The stages of the SSM as they were developed in the tsunami disaster relief work in OF-PR are explored in more depth in the following sections.



1. Problem Situation (Unstructured)

Immediately after the tsunami disaster on the 26th December 2004, the committee members of OF-PR commenced the process of problem identification. This was carried via telephone and email system to expedite the process. Yet, the situation was unclear due to the unfolding of the magnitude of the disaster itself. For OF-PR the 'weltanschauung' view is the concern for the children in need in the disaster zone. By its constitutional boundary and its previous activities in the region, especially, Sri Lanka, OF-PR viewed the problem situation in the context of children in need, thus treating the destruction of the infrastructure around the coastal areas in the disaster zones as Area beyond Control (AbC), a term coined by the researcher and OF-PR in pursuit of differentiating the controllable and uncontrollable factors in the disaster relief work.

During the first three weeks after the tsunami disaster the committee members pursued the task of data collection, albeit in an unstructured manner, heavily relying on those who were close to the scene and from the media to identify the problem situation. As the flow and collation of data was ongoing during this period, the problem situation was amended and modified through much iteration with the aid of news media and feedback from those who are grounded in the disaster area. This was achieved via the cognitive mapping of the situation with 'rich pictures' (Figure 2).

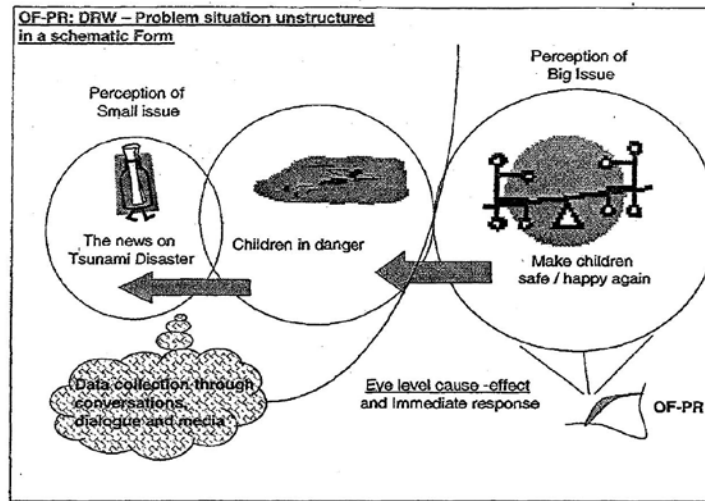


Figure 2: Stage 1 of the Seven Stage Model (SSM)

As a picture normally depicts the meaning of more than a thousand words, the rich picture was used as an 'aide mémoire' by the members of OF-PR to concentrate on the issues, elements and the possible solutions.

2. Problem Situation Formulated and Expressed

While the rich picture diagram or cognitive mapping is not required by SSM itself to express a problem situation, this form of diagram was seen as the ideal vehicle to capture considerable information from the 'front line messengers' who were grounded in the midst of the disaster recovery.

For OF-PR, the rich picture at the context level (Figure 2) provided the triggers to gather myriad of facts about the real implication of the tsunami disaster. Yet the assembling of that data and the organisational learning (Senge, 1990) through the interpretations of that data and the consequential iterations in sense making were left to the committee members of OF-PR. While learning about the problem situation, the committee members were also expected to harness the wishes of the stakeholders. Here, the expectation of the stakeholders of OF-PR, largely composed of non-technical people, yet with a humanitarian mind-set, was that the urgency in identifying the problem domain so that an action plan can be implemented quickly.

As the committee members are aware from the previous disaster relief operations in the 1990's that, without the understanding of the scope and boundary of the problem situation, there is a danger of missing out on the true nature of the problem and the potential solutions to that problem. Hence, a holistic view was taken by the committee members in problem analysis, sense-

making and finally decision-analysis from the data collected by the regional Project Officer. In this, the view of the executive committee of OF-PR was that,

“a system to survive and preserve integrity, its controls or mechanisms to react to events must be as diverse as the events themselves”

(Cockerill, 1995)

Therefore, the previously stated ‘unstructured problem situation’ was fine-tuned for clarity. While the boundary of the problem was initially set to include all the children in the disaster zone, the magnitude of the tsunami disaster has meant that the executive committee of OF-PR had to redefine the boundary itself. The information gathered at ground level suggested that the tsunami disaster has exacerbated the survival and emotional needs of those ‘parentless’ children who were already trapped in poverty before the tsunami disaster. Thus, to make these children happy and safe again, both survival needs and emotional needs are to be met at every level. This created more challenges for OF-PR. While collecting, analysing and synthesising the data itself proved to be difficult as the telecommunication infrastructure in the affected areas had been damaged during the initial period, goal programming for the best course of action also had become dependent on factors that are outside the control of the executive committee, especially the raising of financial resources and putting together an expatriate group of volunteers who can perform in a different social and cultural setting. Hence, rich picture building via schematic diagrams was employed by the committee members of OF-PR to describe the structure, process and the climate in which the disaster relief work was to be carried out (Ho and Sculli, 1994).

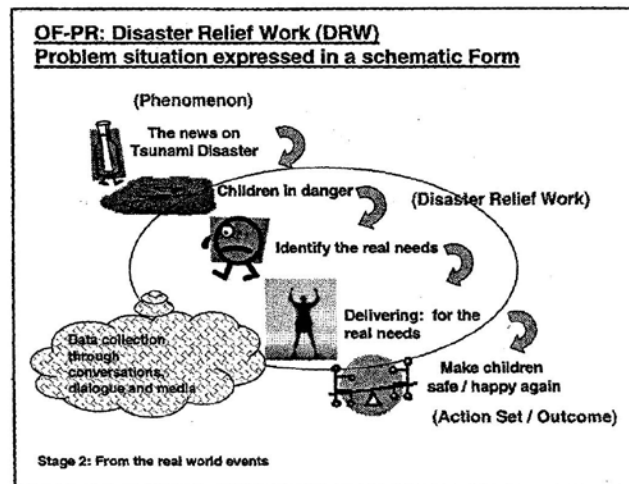


Figure 3: Problem situation expressed in a schematic form

Hence, a refined version of the rich picture diagram (Figure 3) was created. This is to enable the disaster recovery plan to become more responsive to the reality of the events on a reactive basis. By nature, a reactive approach is largely tactical rather than strategic. As OF-PR does not operate an all embracing system that covers all the global issues, issues such as natural disasters linked to climatology or geology are treated as beyond the control of a small organisation such as OF-PR. This, in turn leads to an adaptive model to the physical environmental issues that had caused the problem situation in the first place rather than concentrating on the environmental issues at macro level.

Moreover, the Areas of Control (AoC) and Area beyond Control (AbC) needed to be understood and expressed at this juncture by the executive committee of OF-PR to identify the true nature of the problem and thereby formulate the disaster recovery plan. While the disaster recovery plan of OF-PR needs to be adaptive in a disturbed physical and social environment, the emergent properties of the outsider intervention should be in line with the socio-political and cultural context. Here, the opportunity to create a situation of 'faux pas' among those who are in need is greater and any mismanagement of this process could lead to the detraction of value rather than adding value to the disaster recovery plan. Hence, a matrix of AoC and AbC were created as a foundation to underpin the formulated problem situation (Table 1).

Area of Control (AoC)	Area beyond Control (AbC)
The choosing of the region for the relief work by OF-PR	The socio-political climate and legal constraints in the region
The number of volunteers assigned	Physical, environmental conditions and the infrastructure prevailing in the disaster relief region
Fund raising initiatives by OF-PR	Funds (budget) available for the relief work

Table 1: AoC and AbC of OF-PR in the Disaster Relief Work

Based on the AoC and AbC, the problem situation was divided into two categories, the irreversible problems that are beyond the control of OF-PR and the reversible problems where OF-PR could influence the 'problem solving'. This is to ensure that the efforts are directed towards the reversible problems within the scope of OF-PR rather than towards the irreversible problems.

Irreversible:

- a. Loss of lives - loss of children outside the orphanages or children's homes
- b. Loss of lives - Loss of children inside the orphanages or children's homes

- c. Loss of the total system - loss of orphanages or children's homes

Reversible:

- a. Existing children in the orphanages, who have survived, even though they may have emotional scars.
- b. Newly orphaned children, who have been vetted and allocated to orphanages or children's homes with trauma by the local agencies and UNICEF.
- c. Infrastructure and material damages to the orphanages or children's homes

Based on the AoC and AbC and the consequential identification of the reversible issues, the problem situation was formulated and expressed in the following manner (Figure 4). Here, the problem solving is based on the needs that are not met by the state or other agencies.

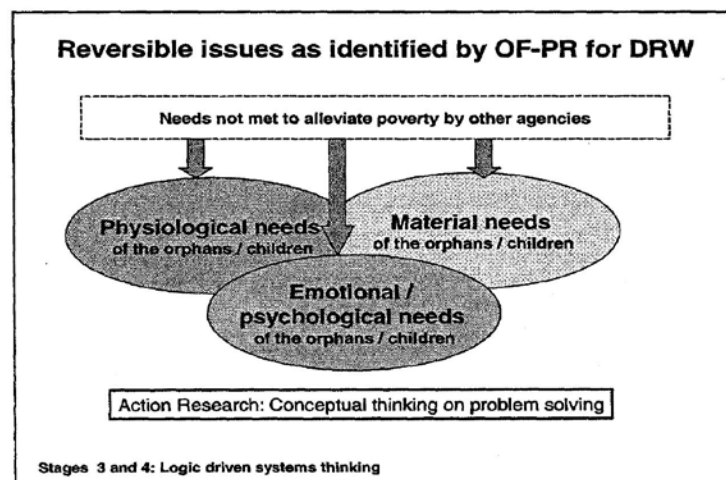


Figure 4: Reversible issues as identified by OF-PR

3. Root definitions of the Disaster Relief Work System

Once the problem situation is expressed to all the stakeholders, the task of OF-PR was to create the root definitions of the relief work system, where the inputs, processes and the outputs can be synchronised and managed. For this purpose OF-PR used the CATWOE framework to structure their definition (Checkland, 1981) among its committee members and volunteers ((Table 2).

Components	Root definitions
C- customers	The children who either directly or indirectly were affected by tsunami and cleared by the local agencies
A- actors	The volunteers of OF-PR who are expected to carry out the human activities (with links to other agencies), trustees and matrons of the children's homes / orphanages
T- transformation processes	The human activities that converts inputs into outputs
W- World view (Weltanschauung)	The (moral) belief system of OF-PR that is inherent in the relief work
O- owners	OF-PR takes the ownership of the relief work so that it can amend, modify or extend its activities at the front line as appropriate while performing the relief work.
E- environmental constraints	The constraints on the relief work imposed by the PESTEL factors (Johnson and Scholes,2002) beyond the control of OF-PR

Table 2: OF-PR's CATWOE definition for the tsunami relief work

This also supports the legitimising of the systems thinking (Table 3) and enables OF-PR to identify the 'enabling criteria' through the inputs and 'results criteria' through the outputs (Bryde, 2003a).

Inputs (Enablers)	Processes	Outputs (Results criteria)
1. Money Resource, 2. Material Resource, 3. Volunteer Resource	1. Collect the resources (mainly Money!) 2. Team building of the volunteers 3. Plan/ synchronise with the local agencies / children's homes 4. Travel to the disaster zone 5. Assess the problem from the real world perspective 6. Deliver the deliverables	1. Fulfilment of physiological needs 2. Fulfilment of material needs 3. Fulfilment of emotional needs

Table 3: Enabling and Results Criteria of the tsunami relief work

4. Conceptual Models for Problem Solving

4a. Systems Thinking

While the inputs, processes and outputs had enabled OF-PR to focus on the scope and boundary of the project, further elaboration of the systems-thinking was sought at abstract level, before the activity could commence.

As this form of relief work very much falls into the category of an open system, the customers of the system are clearly defined within the legal requirements at the front line. Hence the advantaged group of beneficiaries are those who have been cleared by the appropriate agencies and linked to the registered orphanages or children's homes. The disadvantaged customers are those are out of reach through legal constraints.

While certain environmental constraints are accepted in the modelling of the relief work, the colossal nature of the tsunami disaster and the consequent constraints imposed by the local environment are expected to have an influence on the processes of the system itself.

4b. Creative Thinking

Once the systems-thinking was in place, OF-PR applied its creativity to link the whole process of the relief work that will not only show clarity in the goal programming, but also simplify the understanding of the process through a rich picture diagram (figure 5).

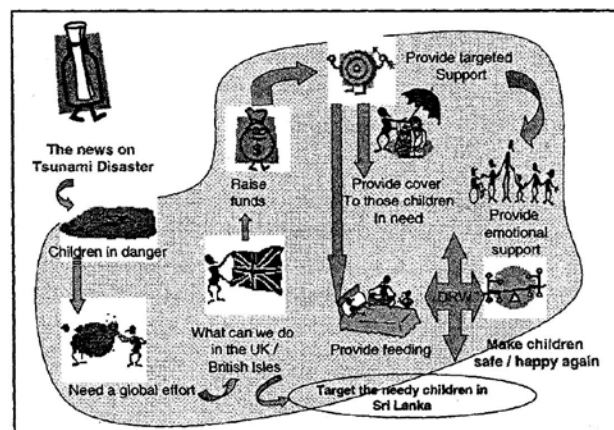


Figure 5: Conceptual Model for Problem Solving

5. Comparison between the real world scenario and the Conceptual Models

While the conceptual models were created before the volunteers were at the front line, they were examined and modified with the aid of local agencies and support groups. This was carried out by the team of volunteers on arrival in Sri

Lanka. As the inputs were largely in place, before the arrival, the modifications and improvements were made to the processes to achieve the intended outcomes. In this, the outcomes were based on the severity of the current position and the immediacy of the impact from the outcomes. Thus, the emphasis at this stage was on the processes, largely of a logistical nature.

6. Definitions and Agreements on the feasibility of changes

As the beneficiaries of the outcomes are minors and in this case 'the children in need', the decisions on all the proposed changes are directly linked to the trustees and matrons of the children's homes and orphanages. Thus, through formal meetings with the custodians, context bound definitions and issues related to tsunami relief work were discussed and clarified. As suggested by Brooks (1997) and Cowie (2003), this was done to ensure that all the cultural cues are taken on board in the disaster relief work that involves people, both as customers (beneficiaries) and as actors.

Through iterative processes and self reinforcing feedback between the OF-PR volunteers and the legal custodians of the children in need, the scope and boundaries were set (Jabri, 2004, Kippenberger, 2000, Robson, 1995). In this process, the projects that are beyond the resource capabilities of OF-PR such as construction of a new building were moved outside the scope and outcomes. Moreover, at each institution, the projects were broken down into subsets with clear deliverables and a time line (Table 4) as recommended in conditions of irreversible change by Geyer (1998). This is to ensure that the project deliverables are not only feasible but also not duplicated through the efforts of other agencies.

Needs	To be completed by the volunteers during the visit	To be completed, post volunteer visit
Physiological	Feeding the children, providing personal care items etc	Projects such as a dairy cattle system to offer milk, dairy products to children
Material	Sleeping aids, cooking aids, water pump, generator etc	Projects such as learning aids, skill development facilities
Emotional / psychological	1. Activities propagated by the volunteers for emotional support 2. Toys etc for emotional comfort	Structured emotional / psychological and learning support

Table 4: Needs – Project Deliverables Matrix

7. Action to solve the problems or improve the situation

Deliverables delivered to the targeted customer group by the volunteers during the visit.

1. Fulfilling the physiological needs

- a. The volunteers of OF-PR organised a feeding day to feed over 500 children in 10 children's homes and orphanages.
- b. Provided personal care items to the children

2. Fulfilling the material needs

- a. The volunteers of OF-PR purchased or replaced items such as sleeping mats, pillows kitchen utensils, cookers, fridge freezers etc to improve the quality of the life for the children.
- b. Replaced water pump, generator etc ruined by tsunami
- c. Organised the repairs in the orphanages (toilets etc)

3. Fulfilling the psychological needs

- a. The volunteers of OF-PR supported the children through various trauma reduction activities such as singing and playing (Figure 6)
- b. Provided toys etc for emotional comfort



Figure 6: Providing emotional support to the children by the OF-PR team

8. Post-Delivery Review

The human activities of OF-PR have covered 19 children's homes or orphanages in the worst hit area of Sri Lanka. The volunteers have also had the opportunity to be with a group of children incognito (i.e. not allocated to a foster family or an orphanage) following the tsunami disaster. As the processes

of the relief work were continuously evaluated and amended to fit the real world scenario, the delivered outputs were very much closer to the requirements of the customers, in this case the children themselves. Moreover, the human activities were not only focussed on the human interaction with the children to fulfil the psychological needs, but also applied to negotiations with the trustees, matrons and the goods and services providers to purchase the deliverable items for the children as appropriate at that time.

All this became possible by adopting a stance of learning about the deliverables in the real world scenario, rather than having pre-set outcome objectives.

Conclusions and Recommendations:

With the aid of the case study, OF-PR, this paper outlines the application of SSM in a non-commercial, disaster relief work. As SSM does not attempt to achieve a preset outcome that is independent of the real world or environmental conditions, it closely aligns with the projects in disaster and poverty relief work. Moreover, SSM provides an opportunity for the non-technical stakeholders to assess the scope, boundary, performance management and quality issues with tools and techniques such as rich picture diagrams without the use of packages such as Microsoft Project or PRINCE, which can be daunting to some.

However, limitations of the use of SSM stems from the input side of the variables needed to complete the projects in relief work. As the proposed outcomes are amended and changed during the life span of the project, it was difficult for the project team and the benefactors to raise and allocate the funds at the outset of the project itself. This has a curtailing effect on the project deliverables.

While the project deliverables are shaped and modified by the project team during the period of this Action Research at OF-PR, this is not always the case with other larger relief organisations. For example, OF-PR does not receive any funding from the Disaster Emergency Committee (DEC) nor attracts any Government funding, whether at national or at European Union Level. Hence, OF-PR enjoys the flexibility in its disaster relief work and its project management processes. However, larger organisations are required to submit fully evaluated project proposals with the '*annual indicator capacity*' and with the '*monitoring and evaluation processes for programme expenditure*' (<http://www.dec.org.uk> – Accessed 03/05/2005). As the 'accountability of funds management' is the key factor in the funding process, large organisations tend to lean towards the hard systems to project manage the disaster relief. Thus, this paper on Action Research at OF-PR leaves the readers with two questions in the arena of disaster relief work, for further the knowledge in this field.

Firstly, can the large organisations attract the level of funding they require for the disaster relief work by opting for a flexible SSM as is the case with OF-PR?

Secondly, can the efficacy and effectiveness of this Action Research at OF-PR be measured or bench marked?

While these questions are unanswered, the researcher's reliance on the favourable feedback from the trustees, matrons and the children themselves as the key indicator shows the limitation of this paper on Action Research with SSM. However, from the feedback received from the beneficiaries such as the trustees, matrons and 'parentless' children both at ground level in Sri Lanka and at committee level in the UK supports the view of OF-PR; that the aims of the disaster relief work at phase 1 level has been achieved. In this, the researcher concurs with the conclusion of OF-PR.

Note

This paper describes the findings of an empirical study based on OF-PR, a small charitable organisation involved with disaster and poverty relief work. The project management practice of OF-PR and the opinions of the people involved provide the core data for this paper.

Bibliography

- BBC News (2005) "Sri Lanka's tsunami aid politics",
http://news.bb.co.uk/go/pr/fr/-/2/hi/south_asia/4367935.stm, published 2005/03/21
- BBC News (2005) "Tsunami: Anatomy of a disaster",
<http://news.bb.co.uk/go/pr/fr/-/2/hi/science/nature/4361395.stm>, published 2005/03/27
- Balabanis, G., Stables, R. E. and Phillips, H. C (1997) "Market orientation in the top 200 British charity organisations and its impact on their performance", *European Journal of Marketing*, 31(8), pp 583-603
- Bennett, R. and Kottasz, R (2000) "Emergency fund-raising for disaster relief", *Disaster Prevention and Management*, 9(5), pp 352-359
- Bertalanffy, L. von (1968) *General Systems Theory*, New York, Braziller Publishing
- Bocij, P., Chaffey, D., Greasley, A. and Hickie, S. (1999) *Business Information Systems – Technology, Development and Management*, 1st Edition, Harlow, FT Prentice Hall
- Boulding, K (1985) *The World as a Total System*, Beverley Hills, California, Sage Publications
- Bryde, D. J (2003a) "Modelling project management performance", *International Journal of Quality & Reliability Management*, 20(2), pp 229-254
- Bryde, D. J (2003b) "Project management concepts, methods and application", *International Journal of Operations & Production Management*, 23(7), pp 775-793

- Brooks, I (1997) "Leadership of a cultural change process", *Health Manpower management*, 23(4), pp 113-119
- Burnes, B (2004) *Managing Change*, FT Prentice Hall
- Checkland, P. (1981) *Systems Thinking, Systems Practice*, Chichester, Wiley
- Checkland, P. (2000) "Soft Systems Methodology: A Thirty Year Retrospective", *Systems Research and Behavioral Science*, 17(S1), pp S11-S58
- Cicmil, S. J. K (1997) "Critical factors of effective project management", *The TQM Magazine*, 9(6), pp 390-396
- Cockerill, S. K. (1995) "Unfolding systemic ideas", *Executive Development*, 8(4), pp 4-8
- Cowie, G. (2003) "The importance of people skills for project managers", *Industrial and Commercial Training*, 35(6), pp 256-258
- Denzin, N. K. and Lincoln, Y. S (1998) *Strategies of Qualitative Research*, London, Sage Publications
- Development and Learning in Organizations (2004) "Getting personal about leadership", *Development and Learning in Organisations*, 18(5), pp 23-26
- Disaster Emergency Committee – <http://www.dec.org.uk> (accessed 03/05/2005)
- Dulewicz, V. and Higgs, M. (2000) "Emotional Intelligence: A review and evaluation study", *Journal of Managerial Psychology*, 15(4), pp 341-372
- Easterby-Smith, M., Thorpe, R. and Lowe, A. (2002) *Management Research – An Introduction*, 2nd Edition, London, Sage Publications Ltd
- Geyer, F (1998) "From simplicity to complexity: Adapting to the irreversibility of accelerating change", *Paper for presentation in WG01 Session 13, 14th World Congress of Sociology, Montreal, 1998, July 26 – August 1*
- Heap, J. (2002) "Charity works", *Work Study*, 51(3)
- Ho, K. K. J., and Sculli, D. (1994) "Organizational Theory and Soft Systems Methodologies", *Journal of Management Development*, 13(7), pp 47-58
- Jaafari, A. (2003) "Project management in the Age of Complexity and Change", *Project Management Journal*, 34(4), December, pp 47-57
- Jabri, M (2004) "Team feedback based on dialogue", *Journal of Management Development*, 23(2), pp 141-151
- Johnson, G. and Scholes, K. (2002) *Exploring Corporate Strategy*, FT Prentice-Hall
- Kippenberger, T. (2000) "Leading project team", *The Antidote*, 5(4), pp 17-20
- Kirshbaum, D. A (1999) "Emotional Reactions to complexity and Chaos", [Http://www.calresco.org/kirshbm/reaction.htm](http://www.calresco.org/kirshbm/reaction.htm) (accessed 4th May 2005), 4.73, April (2002)

- Lewis, P. (1984) *Information – Systems Development*, London, Pitman Publishing
- Maylor, H. (2001) “Beyond the Gantt Chart: Project Management Moving on”, *European Management Journal*, 19(1), pp 92-100
- Maylor, H. (2003) *Project Management*, 3rd Edition, FT Prentice Hall
- Mingers, J. (2000) “An idea ahead of its time: The History and Development of Soft Systems Methodology”, *Systems Practice and Action Research*, 13(6), pp 733-755
- Platt, A. and Warwick, S. (1995) “Review of soft systems methodology”, *Industrial Management & Data Systems*, 95(4), pp 19-21
- Robson, M. (1995) *Problem solving in groups*, 2nd Edition, Gower Publishing
- Robson, W. (1997) *Strategic Management & Information Systems*, 2nd Edition, FT Prentice Hall
- Saunders, M., Lewis, P. and Thornhill, A. (2000) *Research Methods for business Students*, 2nd Edition, FT Prentice Hall
- Schlegelmilch, B. B., Diamantopoulos, A. and Love, A. (1997) “Characteristics affecting charitable donations: empirical evidence from Britain”, *Journal of Marketing Practice: Applied marketing Science*, 3(1), pp 14-28
- Senge, P. M. (1990) *The Fifth Discipline – The Art & Practice of the Learning Organization*, Century Business
- Tan, J. A. C., Hartel, C. E. J., Panipucci, D. and Strybosch, V. E (2005) “The effect of Emotions in Cross-Cultural Expatriate Experiences”, *Cross Cultural Management*, 12 (2), pp4-15
- Trainer, T (2002) “Development, charity and poverty: The appropriate development perspective”, *International Journal of Social Economics*, 29(1/2), pp 54-72
- Wang, C. L. and Ahmed, P. K. (2003) “Emotion: the missing part of systems methodologies”, *Kybernetes*, 32(9/10), pp 1283-1296
- Yin, R. K. (1994) *Case Study Research: Design and Methods* – 2nd Ed, London, Sage Publications