

Mainstreaming Disaster Risk Reduction into Housing Sector in Sri Lanka

1 HOUSING SECTOR A PRIORITY FOR MAINSTREAMING DISASTER RISK REDUCTION

1.1 Background

The regional consultative committee (RCC) on Disaster Management under its program on mainstreaming disaster risk reduction into development (MDRD) has identified Housing, Health, Infrastructure, Agriculture and Education as priority sectors to initiate mainstreaming disaster risk reduction (DRR). The fast rate of development and urbanization in Asia leading to corresponding increase in investment in housing units makes it an imperative to prioritise safer planning, design and construction of housing in regard to natural hazards.

In the RCC which comprises of heads of the National Disaster Management Offices of 26 Asian Countries, members had submitted expression of interest to initiate mainstreaming DRR into particular sectors depending on the development priorities of their country.

Disaster Management Centre (DMC) under the Ministry of Disaster Management & Human Rights of Sri Lanka which is a member of RCC had expressed interest in initiating mainstreaming DRR into Housing sector in partnerships with the agencies in Sri Lanka responsible for planning, construction and approval of housing. Accordingly in second half of 2008, the Priority Implementation Partnership (PIP) was initiated by DMC with technical support from Asian Disaster Preparedness Centre (ADPC) and with financial support from Australian agency for International Development (AusAID).

1.2 Housing sector in sri lanka

The present housing requirement in Sri Lanka is estimated to be around 4.95M where as the existing housing stock is nearly 4.35 M. Thus there is a gap of approximately 600,000 units.

(Source: *Mahinda Chintana, Department of National Planning, Ministry of Finance & Planning, 2006*). With regard to the quality of present housing stock, nearly 0.915 million units are sub standard, and require urgent improvement or rehabilitation. This includes

200,000 line rooms and temporary structures in the estate sector as well as 65,000 units in the low

income settlements of Colombo. Houses damaged due to conflict in the Northern and Eastern provinces further adds to the requirement by over 1.5 million unit (*Source: Guidelines for Housing Development in Coastal Sri Lanka, NHDA, 2005*).

To add to this deficiency in number are the larger issues of land use and land management such as issues related to land tenure, lack of availability of land, lack of infrastructural facilities; which adds to the existing vulnerability of the housing stock and is thus often impacted by natural hazards such as floods, landslides, cyclones and domestic fires. The table below shows the impact of hazards on housing stock in the year 2008.

Hazard	Houses damaged	
	Fully	Partially
Flood	2588	7237
Landslide	437	1371
Strong Wind	108	1523
Fire	282	6
Total	3395	10137

Source: NDMC, Report, 2008

The importance of reducing the impact of these hazards on the housing sector is increasingly being recognized by Government of Sri Lanka and accordingly the National Physical Plan calls for adoption of non-structural and structural mitigation measures in planning and implementation of development activities and the Draft National Disaster Management Plan highlights the importance of hazard resilient housing and revision of building codes for reducing disaster risk.

2 PRIORITY IMPLEMENTATION PARTNERSHIP (PIP)

2.1 A Process towards Mainstreaming Disaster Risk Reduction

2.1.1 A multi – agency technical working group takes the lead

Similar to other countries, the housing sector in the Sri Lanka functions in the close collaboration of various agencies such as Ministry of Housing & Common Amenities, Ministry of Construction, Engineering, Housing& Common Amenities, Ministry of Local Government and Provincial Councils and specific Departments within various Ministries such as Coast Conservation Department (CCD), National Planning Department (NPD), National Physical Planning Department (NPPD),

authorities such as National Housing Development Authority (NHDA), Condominium Management Authority (CMA), Central Environmental Authority (CEA), Urban Development Authority (UDA) and National Building Research Organisation (NBRO). Each of these agencies has a specific role in the process of planning, designing and approval of housing units. For example, while the approval for construction of individual housing units in urban and non-urban areas are under the jurisdiction of Municipal councils, Urban councils or local authorities, relevant prior approval is required from the Urban Development Authority (if the site is located in urban declared areas), Coast Conservation Department (if the site is located within the coastal zone), and the land clearance certificate from Land Reclamation & Development Corporation (SLLRDC) with approval of Director of Agrarian Services (if the land is an abandoned paddy field).

Thus in order to mainstream DRR in the process of planning, design and approval of Housing sector, DRR needs to be integrated in the task of each of these agencies. In addition, further collaboration is required with DMC and technical agencies responsible for producing information related to natural hazards such as NBRO and Metrological Department, Irrigation Department, Gemmological & Mines Bureau (GMSB) and Universities of Sri Lanka. With this understanding, the PIP formed a Technical Working Group (TWG) with multi-agency membership to steer the process of implementation.

The TWG comprised of representatives from the following agencies:

PIP- Technical Working Group (PIP-SL TWG):

- **Chairperson:** Disaster Management Centre (DMC)
- **Membres**
- Ministry of Construction, Engineering, Housing & Common Amenities
- Ministry of Economic Development
- Ministry of Public Administration & Home Affairs
- Ministry of Local Government & Provincial Councils
- Ministry of Fisheries & Aquatic Resources
- Ministry of Irrigation & Water Management
- National Planning Department
- Irrigation Department
- Central Environmental Authority
- Coast Conservation Department
- Urban Development Authority
- National Physical Planning Department
- National Housing Development Authority
- Sri Lanka Land Reclamation & Development Corporation
- National Building Research Organisation
- Rana Viru Sewa Authority
- **Others – various INGO's and NGO's working in the housing sector development activities were invited accordingly**

2.2 Phase i of the pip looked into

It was realized that the ultimate aim of mainstreaming DRR could only be achieved by bringing change in the overall of housing development, planning & approval processes. This required thorough understanding of the existing process of housing development and accordingly the DMC led TWG decided on to undertake the following activities during phase I of the PIP-SL Project:

1: Understanding the housing development process in Sri Lanka; agencies involved in public sector housing, roles and responsibilities and their ongoing and planned housing programmes in the country.

2: Identifying entry points for DRR in the Draft National Housing Policy

3: Study of the housing development aspects of the *Mahinda Chintana- A Ten Year Horizon Development Framework 2006- 2016* in relation to incorporation of DRR

4: Stocktaking of the National Guidelines/Codes/Manuals on construction of houses

5: Understanding housing planning, design and approval process at local level; study of Sabaragamuwa Province

The TWG met regularly over the period of implementation of this Phase of the PIP-SL project and guided the implementation of the above mentioned activities. The findings of the phase I of the PIP was presented by the TWG at a National Workshop held in Colombo in April 2009 to the wider stakeholders involved in the housing sector.

2.3 Findings and recommendations

The following activities were carried out to fulfil the Component identified at PIP initial stage as follows:

2.3.1 Understanding the development process in Sri Lanka;

With close consultation with the TWG members this activities mapped out the various stages in the development of a housing program, identified the stakeholders involved in each of the stage, and listed their roles and responsibilities, scope of tasks undertaken and issues and challenges in integration of DRR in their respective work area. The consultation highlighted the following areas for improvement in the process:

- Need for synergy in the role of Divisional Secretary vested with the task of land acquisition and the Local Authority response for approval of housing construction. Having a common land use zoning plan and land bank data base is essential for both the purposes as well as the need for hazard maps which would guide the process of safe development. These land banks should be maintained at the Divisional Secretariat level for identification of suitable lands for housing construction.
- Approval of land sub-division is a responsibility of local authorities, but the system needs strengthening especially in terms of usage of land use plans, building capacity of technical officers involved in the process as well

involvement of multi-stakeholders in the process of land sub-division.

- Need for having land use zoning plans for all areas declared under the Urban Development Authority. All land use plans should have hazard and risk information integrated in them.
- The process of approval in coastal area by the Coast Conservation Department should take into consideration risk from natural hazards into consideration.
- Approval procedure in non UDA declared area should be strengthened with establishment of planning committees.

2.3.2 Identifying entry points for DRR in the Draft National Housing Policy

Currently the National Housing Policy of Sri Lanka is under revision. Both the existing policy and the draft of the revised one have been studied in depth by the TWG in terms of identifying opportunities of integrating DRR. The findings are as follows:

DRR aspect as been included in the Draft National Housing Policy in specific sections such as the one on *Disaster affected Housing Reconstruction*;

'To avoid shortfalls in the government institutional system disaster affected housing reconstruction policy will be based on following:

- *Government to have a land bank in close proximity of areas prone to natural disasters for release in the urgent reconstruction activities after a disaster.*
- *Families will not be living in disaster prone areas; people will not be allowed to build houses in these areas; Formulate and implement a national settlement policy with the identification of prone areas and not allowing people to construct houses in those areas. Local Authorities will give approval only for applications in safe areas.*
- *Programmes with multi-storied housing in prone areas and infrastructure providing agencies to plan to cope with this strategy".*

For further improvement of the Policy, the TWG members recommended to provide specific emphasis on pre and post disaster housing. The recommendations could be summarised as:

Disaster risk reduction in Housing construction

- Promoting research on DRR in housing construction among other aspects
- Ensure adherence to guidelines on hazard resilient construction in hazard prone areas
- For successful implementation of housing, usage of land use zoning plans which takes into consideration information on risk from natural hazards
- Introducing amendments and revisions for land sub-division process considering the natural surface drainage path, contour plans and its approval procedure.

Post disaster housing reconstruction

- Government to have a land bank in close proximity of areas prone to natural hazards for release in the urgent reconstruction activities after a disaster.
- Provincial Councils, Local Authorities, District/Divisional Secretaries will coordinate as relevant to ensure that housing reconstruction by all parties including private sector, NGOs and community, ensuring adherence to the DRR guidelines for construction in hazard prone areas as stipulated in Standard Operating Procedure for reconstruction issued by the Ministry of Disaster Management and Human Rights. This will be irrespective of the funding sources, whether government, private sector, donors, NGOs/INGOs or community.

2.3.3 Study of the housing development aspects of the Mahinda Chintana- A Ten Year Horizon Development Framework 2006- 2016 in relation to incorporation of DRR

The ‘Mahinda Chintana- Visions towards a new Sri Lanka’ aims at increasing the Gross Domestic Product to more than eight percent. Based on this strategy and within the broad policy framework, a long term development program covering 2006-2016 has been prepared which also includes a section on *Human Settlements*. Some of the key issues identified under Human Settlements include:

- Inadequacy of guidelines on settlement planning at national and regional levels.
- Shortage of suitable land for residential purpose in urban areas.
- Blocking out and selling of lands by private developers without proper utilities, mainly water supply, drainage system and internal roads.
- Difficulties in access to affordable housing for urban floating population and workers communities (Underserved settlements, estate workers, fishing communities etc.)

- Poor maintenance of urban housing schemes (Condominium apartments) and burden to government on their maintenance.

The TWG identified opportunities for integrating DRR in the Human Settlement program of the Mahinda Chintana. Based on the list of agencies provided by the Mahinda Chintana, for human settlements, some of which are already a member of the TWG, the TWG proposed to further include other agencies as TWG members in the next phase of the PIP. These agencies would include:

- Condominium Management Authority
- Estate Community Housing Development Unit
- Fisheries Housing Unit
- Gemidiriya Foundation
- Real Estate and Exchange (Pvt) Ltd

2.3.4 Stocktaking of the National Guidelines/ Codes/ Manuals on construction of houses

It is realized that especially since the 2004 Indian Ocean Tsunami various technical guidelines/manuals have been developed for housing construction especially in the coastal areas. However, due to lack of awareness and legal enforcement, these Guidelines are not much in use. Though the TWG realizes the importance of having a national Guideline for Mainstreaming DRR into Housing development project, however, at this stage it decided on taking a stock of existing guidelines, manual, codes, circulars, technical reports etc to support the ongoing initiatives of the DMC in developing DRR integrated construction guideline for the country. Currently the DMC has established a Guidelines Committee to reviewing existing guidelines and developing new ones by integrating DRR.

2.3.5 Understanding housing planning, design and approval process at local level; study of Sabaragamuwa Province

Sabaragamuwa Province is experiences hydrological hazards such as landslides, cyclones and floods. The increase in urbanisation is also leading to increase in urban floods and fire.

With the actual implementation of the housing programmes at the local level and the vital role played by the local authorities in construction related regulations, it is realized that it is essential to have the involvement of local authorities if mainstreaming of DRR in the Housing Sector needs to be achieved. While the scope of this PIP

is to initiate the process of mainstreaming at the National Level, this activity undertaken in 30 local authorities in Sabaragamuwa province, carried out a review and documentation of the process of housing planning, design, approval and construction in terms of integrating DRR. This would help in reinforcing the need of strengthening capacity at the local level, along with change in policy and plans at the national level for mainstreaming DRR.

The study specifically looked into the following in the Local Authorities in the province:

- Details of new development in the past 6 years;
- Land use zoning plan of the Local Authorities;
- Procedure for planning clearance;
- Process of land sub division;
- Development approval process including the planning committee and the building application form

2.3.6 Following are the key findings of the study:

Lack of land use plans availability and land use zoning plans inadequate consideration on hazards; Lack of proper mechanism for the planning clearance procedure at the Local Authority level; Land Sub-division is carried out by the Planning Committee and less consideration were given to the potential hazards; Building approval procedure is mainly operational in the Local Authorities declared under the UDA Act; Lack of funds to carry out detail risk assessments for the particular local areas

2.3.7 Based on the findings the PIP recommends the following:

The Land use zoning plans should be based on hazards maps; The Land Sub-division should be based on natural contours and hazards; Standard planning approval mechanism needed to be in place backed by legal provisions; The building application forms should include DRR aspects; Local Authorities should a mechanism for approval of housing development in estate sector;

3 WAY FORWARD

In order to take forward the momentum gained under the PIP, the TWG has identified the following broad areas to realize the recommendations.

- Revise the building permit procedure of Coast Conservation Department by incorporating DRR in the approval forms.

- Develop a checklist of approval procedure for housing in urban and non urban areas.
- Preparation/revision of Land Use Plans with information on hazard incorporated in it.
- Finalisation of Building Guidelines by DMC Guidelines Committee.
- Awareness programs on DRR and strengthening of capacities of Local Authorities.
- Develop a mechanism to monitor the approved projects and enforcing adherence to DRR conditions as set out in the approval permits.

It is aimed that the second phase of the PIP; planned to be implemented over July 2009 to December 2010, would undertake some of the priority activities from the list of recommendations and continue to advocate for implementation of the activities by relevant TWG partners.

4 PHASE II OF THE PIP LOOKED INTO

1: Mainstreaming DRR into Selected Housing Projects by National Housing Development Authority (NHDA)

The TWG recommended testing out the suggestions provided during the phase I of the PIP-SL project in one pipeline project of the Ministry of Engineering services, construction, Housing and Common Amenities and identified the following two projects to explore the possibilities of integrating DRR:

- Aislaby Estate, Bandarawela AGA Division, Badulla District
- St. Claire's Estate, Thalawakelle, AGA Division, Nuwara Eliya District
- Housing is a basic need of a people and it should be done consciously in order to provide safe inhabitable environment. At present, in some situations housing constructions are not following the appropriate construction methods and approval process. Therefore, this activity would aim to provide assistance on site selection, hazard identification potential risk in the site, hazard resilient designs, if the site is in risk areas, planning, designing and implementation etc. Not following the proper methods could create an unsafe environment to its inhabitants. Therefore, this activity could provide shelter with safe environment. National Building research Organisation (NBRO) will provide the assistance on site selection. Additionally, this activity would bring together the various stakeholders and engage them in a consultative process, in order to identify the various stakeholders and their roles and

responsibilities, linkages with each other, ongoing and planned housing programmes and to identify gaps and opportunities for integration of disaster risk reduction in the planning and design estate housing programmes incorporating DRR measures. NHDA has identified two sites suitable for implementing the activity.

- Initial field visit were conducted on the month of January, 2010 with the participation of representatives from NHDA, UDA, NBRO, DMC and ADPC. During the field visit, team met with the estate management and the beneficiaries to get their consent on incorporating DRR into the project. The estate management and the NHDA regional officers discussed the ongoing initial activities of the project such as land sub division, land clearance etc. However, it was observed that the proposed site was cleared by using machineries and steep earth cutting activities were conducted by the beneficiaries. Therefore, it was decided with the corrections of the cutting failures, NHDA regional office would carry out the contour survey. Further, NBRO has recommended the site was suitable for housing development and certain recommendations were provided to mitigate potential risk.

2: Develop & Conduct 03 day National Training program on Mainstreaming DRR into Housing sector Development & planning processes in Sri Lanka

- This activity aims to train the stakeholders involved in housing development project planning, constructions, and approval process. Additionally, identify a suitable training institute or a training division from the agencies involved in housing sector. Disaster Management Centre (DMC) and National Housing Development Authority (NHDA) with the funding support from The Asia Foundation (TAF) implementing the First National Training Programme on MDRR into Housing Sector. DMC in collaboration with NHDA prepared the 03 days training course curriculum. 04 modules covering topics such as Disasters and housing Sector, MDRR into planning processes of housing sector programs, MDRR in the design and construction process of Housing Sector Programmes, Partnerships and Financing options for MDRR in Housing Sector. First National Training program conducted from 17th -19th May 2010 at Colombo. 36 participants from Eastern, Uva, Central and western province attend the three days program. DMC & NHDA proposed to conduct five more programs targeting the

audience at eastern, northern and north central provinces of Sri Lanka.

3: Integration of DRR into Housing Policy of Sri Lanka by Ministry of Housing & Common amenities

- Currently the National Housing Policy of Sri Lanka is under revision. Both the existing policy and revised one studied in depth in terms of identifying opportunities of integrating disaster risk reduction concerns. During the process, consultations carried out with various stakeholders involved in the revision of the Housing Policy, to raise their awareness/understanding on integration of disaster risk reduction. It is expected the momentum created by the ongoing revision process would help to advocate for integrating disaster risk reduction in future policies. Comments & Suggestions submitted for National Housing Policy by DMC.

4: Inclusion of DRR into Local Development Plan of Kanthale in Trincomalee District, Sri Lanka by Urban Development Authority (UDA)

- The existing development planning process of UDA are not adequately looking at the hazards in particular UDA declared area. Therefore, this activity would help to develop a guiding principle for the future development plans. UDA has already conducted the initial data collection activities and the subsequent activities which are required to finalize the development plan. Further, UDA has submitted the base map (GIS) to DMC to demarcate the areas prone to prevailing hazard and identify potential hazards in the Kanthale PS area.

5: Inclusion of DRR into housing construction approval process by Ministry of Local Government & Provincial Councils.

- Ministry of Local Government prepared a national policy for Local government and Recommendations and comments provided for the draft national policy for Local government by DMC lead TWG (PIP-SL). Recommendations were incorporated into the recently published gazette No. 1632/26 (18/12/2009) and approved by the GoSL. Additionally, local government legislations also open for public comments. It is expected the momentum created by the ongoing revision process would help to advocate for integrating disaster risk reduction in future policies and local government legal system. Recommendations and comments provided for

the most relevant legal amendments by DMC lead TWG (PIP-SL).

6: Develop a checklist to be used by National Physical Planning Department (NPPD) in housing development programs for areas not declared as urban.

- NPPD formulates national physical planning policy, regional physical plans and strategies to ensure the implementation of such policies through regional and local development plans. The primary mission of the NPPD is to promote and regulate integrated planning of social, physical and environmental aspects of land and territorial waters of Sri Lanka. National Physical Planning Policy and Plan was approved by the National Physical Planning council on 03rd March 2007. Therefore, this activity would aim to develop a checklist to be used in housing construction planning approval process for non UDA declared areas. NPPD initiated the preparation of checklist and requested DMC to provide assistance to consult a legal officer once the draft document is completed.

7: Inclusion of DRR into CZMP in relation to Housing development and Permit procedures by Coast Conservation Department (CCD)

- The existing CZMP does not adequately incorporate DRR into coastal zone management practices in Sri Lanka. This activity aims to review the existing CZMP to incorporate the DRR into CZM practices of coastal zone. Therefore, this activity would help to develop a guiding principle for the future development activities in the Coastal areas. One of the main objectives of this activity is to identify opportunities to review & revised the CCD permit procedures & application procedures to incorporate DRR. Additional this activity would prepare a check list to identify the minimum requirements to be adhered to when applying and approving the housing construction in coastal areas.

8: Develop checklist to be used in housing planning and approval process by SLLRDC

- The existing SLLRDC approval process not adequately incorporate DRR into low lying area development in the country. This activity aims to review the existing codes of practices for canal reservations to incorporate the DRR. Therefore, this activity would help to develop a guiding principle for the future low lying development activities in the Country. SLLRDC draft a

checklist for the procedure of submission of building plan and development plan. Further, Existing Code of Practice for canal reservation submitted to the DMC and PIP-SL TWG for comments and recommendations.

9: Training Program for TOs & Craftsman in Northern and Eastern provinces on Housing Construction Guidelines & certain regulation and by-laws

- This activity proposed by the Ministry of Economic Development. (Formerly Ministry of Estate Infrastructure & Development) At present Ministry is involved in construction of houses at the north eastern province in Sri Lanka. Aim of the activity is to provide the training and awareness on hazard specific guidelines and the Local level approval procedures. Additionally, DMC requested TWG to develop a comprehensive training manual which includes several modules and sub topics related to Housing sector. As step forward DMC initiated a discussion to develop a comprehensive training program on MDRR into housing sector with other stakeholders.
- At present DMC has initiated a program with relevant partners to deliver the training programs.

10: Continuation of Technical Working Group (TWG) meetings

4.1 Regional Consultative Committee on Disaster Management (RCC)

The RCC comprises of members who are working in key government positions in the National Disaster Management offices of countries of the Asian region. To date, 26 countries are represented by 30 RCC members from the Asia and Pacific regions, namely, Afghanistan, Bangladesh, Bhutan, Brunei, Cambodia, China, Georgia, India, Indonesia, Iran, Jordan, Kazakhstan, Korea, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Sri Lanka, Thailand, Timor Leste and Vietnam.

4.2 RCC Program on Mainstreaming Disaster Risk Reduction into development Policy, Planning and Implementation in Asia (RCC MDRD)

A key priority identified by the RCC is the integration of DRR into development process. To initiate action on this agreed direction, the RCC program on Mainstreaming DRR into development policy, planning and implementation (MDRD) was launched at the 4th RCC meeting in Bangladesh in

March 2004. The RCC 5 adopted the Hanoi RCC 5 statement on Mainstreaming DRR into Development in Asian countries which prioritizes mainstreaming of DRR to be initiated in National development planning process as well as Sectoral development. It identified priority sectors namely Agriculture, Education, Health, Housing and Infrastructure for mainstreaming of DRR. The program has five components for implementation:

1. Partnerships for Mainstreaming disaster risk reduction into National Development Planning processes;
2. Priority Implementation Partnerships (PIP) on Mainstreaming disaster risk reduction into sector development;
3. Advocacy for Building awareness and political support for Mainstreaming disaster risk reduction into development policy and planning;
4. Knowledge management platform for mainstreaming disaster risk reduction: Showcasing good practice and lessons learned; and
5. Capacity development for Mainstreaming of disaster risk reduction into development of national and sector ministries, technical institutes, private sectors and NGOs in RCC member countries.

This case study highlights the experience of undertaking a Priority Implementation Partnership (PIP) on incorporating DRR into the planning, design, approval and construction of housing in Sri Lanka, implemented by the Disaster Management Centre (DMC), under the Ministry of Disaster Management with technical and financial support from Asian Disaster Preparedness Centre (ADPC), and AusAid.

For more information, please contact:

Disaster Management Centre (DMC)
Ministry of Disaster Management & Human Rights

- **Major General Gamini Hettiarachchi**
Director General
Email: dg@dmc.gov.lk
- **U W L Chandradasa**
Director (Mitigation & Technology)
Email: Chandra@dmc.gov.lk

Asian Disaster Preparedness Center (ADPC)

- **Aloysius Rego**
Deputy Executive Director, ADPC
Email: ajrego@adpc.net
- **Arghya Sinha Roy**
Program Manager
Email: arghya@adpc.net

- **Rohan Cooray,**
Project Coordinator,
Priority Implementation Partnership (PIP-SL)
Email: rohan@adpc.net; rohan@dmc.gov.lk