

Mainstreaming Disaster Risk Reduction into Housing Sector in Sri Lanka



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A Priority Implementation Partnership (PIP) between the Disaster Management Centre (DMC), Ministry of Disaster Management & Human Rights and Housing planning, construction and approval agencies in Sri Lanka. Phase 1 (October 2008 – April 2009)

Under the Regional Consultative Committee on Disaster Management (RCC) Program on Mainstreaming Disaster Risk Reduction into Development in Asia.

implemented by

- Ministry of Disaster Management and Human Rights
- Ministry of Housing and Common Amenities
- Ministry of Nation Building and Estate Infrastructure Development
- Ministry of Public Administration and Home Affairs
- Ministry of Local Government and Provincial Councils
- Ministry of Fisheries and Aquatic Resources
- National Physical Planning Department (NPPD)
- Sri Lanka Land Reclamation and Development Corporation (SLLR&DC)
- Rana Viru Sewa Authority (RVSA)



Coast Conservation Department (CCD)



Central Environmental Authority (CEA)



Urban Development Authority (UDA)



National Building Research Organisation (NBRO)



National Housing Development Authority (NHDA)

with support from





Housing Sector a priority for mainstreaming Disaster Risk Reduction



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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 the Housing sector in partnership with agencies in Sri Lanka responsible for planning, construction and approval of housing. Accordingly in the 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).

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 about 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 the 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 making it 1.5 million units (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; adding to the existing vulnerability of the housing stock which is 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.

Priority Implementation Partnership (PIP) A Process towards Mainstreaming Disaster Risk Reduction

A MULTI – AGENCY TECHNICAL WORKING GROUP TAKES THE LEAD

Similar to other countries, the housing sector in Sri Lanka functions in close collaboration with agencies such as Ministry of Housing & Common Amenities, Ministry of Public Administration & Home Affairs, 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, design 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 land clearance certificate from the Land Reclamation & Development Corporation (SLLR&DC) with approval of Director of Agrarian Services (if the land is an abandoned paddy field).

In addition, though the implementation of large scale public sector housing programmes are based on an annual work

plans of individual Ministries with funding available from the Treasury or external agencies, during the feasibility stage of these large scale projects, Environmental Impact Assessments need to be undertaken which is led by the Central Environmental Authority under the Ministry of Environment & Natural Resources of Sri Lanka.

Thus in order to mainstream DRR in the process of planning, design and approval of Housing programs, 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, Department of Meteorology, Irrigation Department, Geological Survey and Mines Bureau 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:



Photo credit: NBRO





PIP- Technical Working Group:

Chairperson

- Disaster Management Centre (DMC)

Members

- Ministry of Housing & Common Amenities
- Ministry of Nation Building & Estate Infrastructure Development
- Ministry of Public Administration & Home Affairs
- Ministry of Local Government & Provincial Councils
- Ministry of Fisheries & Aquatic Resources

- Ministry of Irrigation & Water Management
- 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

PIP LOOKED INTO

It was realized that the ultimate aim of mainstreaming DRR could only be achieved by bringing change in the entire system of housing development. This required thorough understanding of the existing process of housing development and accordingly the TWG decided to undertake the following activities:

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 six times over the period of November 2008 to April 2009 and guided the implementation of the above mentioned activities. The findings of the PIP was presented by the TWG to the wider stakeholders involved in the housing sector at a National Workshop held in Colombo in April 2009. The Workshop also guided the scope of the next phase of the PIP.



FINDINGS AND RECOMMENDATIONS

Understanding the housing development process in Sri Lanka;

With close consultation of the TWG members this activity mapped out the various stages in the development of a housing program, identified the stakeholders

involved in stage, and listed their roles and responsibilities, scope of tasks undertaken and issues and challenges in integrating DRR in their respective work area. The consultation highlighted the following areas for improvement in the process:





- Need for synergy in the role of agencies vested with the task of land acquisition and the ones responsible for approval of housing construction. Having a common land use zoning plan and land bank data base is essential for both 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 as 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 into them.
- The process of approval in coastal areas by the Coast Conservation Department should take into consideration risk from natural hazards.
- Approval procedure in non UDA declared area should be strengthened with establishment of planning committees.

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

'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 emphasize 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 safer construction of housing, usage of land use zoning plans which takes into consideration information on risk from natural hazards*
- *Introducing amendments and revisions for the land sub-division process considering the natural surface drainage path, contour plans and its approval procedure.*

Post disaster housing reconstruction

- *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*



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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:





of Disaster Management and Human Rights. This will be irrespective of the funding sources, whether government, private sector, donors, NGOs / INGOs or community.

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.
- Rapid escalation of value of land in major cities and suburbs
- 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 worker communities (Underserved settlements, estate workers, fishing communities etc.)
- Poor maintenance of urban housing schemes (Condominium apartments) and burden on government for their maintenance.
- Regular price increases in building materials and lack of standards.

The TWG identified opportunities for integrating DRR in the Human Settlement program of the Mahinda Chintana. The Mahinda Chintana identifies agencies involved in human settlement. Some of these agencies are already a member of this 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 under the Ministry of Nation Building and Estate Infrastructure Development
- Fisheries Housing Unit under Ministry of Fisheries and Aquatic Resources
- Gemidiriya Foundation
- Real Estate and Exchange (Pvt) Ltd

The stocktaking included the following Guidelines / Manuals / Codes / Circulars / Technical Reports / plans applicable for housing:

NHDA

- Guidelines for Housing Development in Coastal Sri Lanka (NHDA), 2005
- Draft House Designs, 2008

UDA

- Planning Guidelines for Urban Natural Disaster Mitigation, 2003
- Guidelines for Western Province wetlands zoning & relevant regulations for Application in Urban Development Plan preparation, 2007
- A Basic Guide to Design & Planning of Coastal Green Belts in Sri Lanka, UDA, 2005
- Building Regulations, 1986
- Western Province Wetland Plan, UDA, 2003

Local Authorities

- Municipal Council Plans
- Urban Council Plans
- Pradeshiya Sabha Plans

NPPD

- National Physical Planning Policy of Sri Lanka, 2007

CEA

- EIA Regulation, 1991
- Environmental Protection License, 1993

CCD

- Coastal Zone set back limits, 1997
- Coastal Zone Management Plan, 2004

Irrigation Department

- Canal reservations Circular (Departmental Circular No 10 of 1986)
- River Reservations Circular (Clause No 228 of Lands Ordinance)

M / NB & EID

- Technical Guidelines for North East Housing Programme (NERP), 2005
- Special Roof Protection Methods for Cyclone Area, NERP, Technical Circular II, 2005

Asia Foundation / NBRO

- Housing construction Guidelines in landslide prone areas, 2009
- Manual on Design for High Winds ; Reprint by DMC, 2008

Photo credit: DMC





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 projects, however, at this stage it decided on taking stock of existing guidelines / manuals / codes / circulars / technical reports etc to support the ongoing initiatives of the DMC in developing DRR integrated construction guidelines for the country. Currently the DMC has established a Guidelines Committee to review existing guidelines and develop new ones by integrating DRR.

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

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 is to be achieved. While the scope of this PIP is to initiate the process of mainstreaming at the National Level, this activity carried out a review and documentation of the process of housing planning, design, approval and construction in 30 local authorities in Sabaragamuwa province, 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.

Sabaragamuwa Province is located in the wet zone of Sri Lanka and experiences hydrological hazards such as landslides, cyclones and floods. The increase in urbanisation is also leading to an increase in urban floods and fire. Kegalle and Ratnapura are the two districts in the Province. Ratnapura is the capital city of the Province. The Province has 28 local authorities (1 Municipal Council, 3 Urban Councils and 24 Pradeshiya Sabah's), and 28 Divisional Secretarial Divisions (DSD). Tea and Rubber Plantations are the main economic activity of the province apart from the agricultural and gem industry.

CHPB

- Technical Report: No.1 The Cyclone prone areas of Sri Lanka
- Technical Report: No.2 - Physical Planning Guidelines
- Technical Report: No.3 - The Reconstruction of Damaged Buildings
- Technical Report: No.4 - Building design Policy and Cyclone Resistance
- Technical Report: No.5 - Cyclone Resistant Masonry Construction
- Technical Report: No.6 - Strengthened Wattle and Daub
- Technical Report: No.7 - Sri Lanka Cyclone Hand Book
- Guidelines for Construction in landslide prone areas, Reprint by DMC, 2008
- Guidelines for Construction in Disaster Prone Areas Reprint by DMC, 2008
- Guidelines for Settlements Planning and Construction in Flood Prone Areas Reprint by DMC, 2008
- Guidelines for Construction in Areas Prone to Landslides Reprint by DMC, 2008

- Guidelines for Construction in Areas Prone to Cyclones Reprint by DMC, 2008
- Guidelines for Protection of Buildings and Safety from Lightning Strikes Reprint by DMC, 2008

The Society of Structural Engineers, Sri Lanka

- Reinforcement Detailing to Mitigate Seismic Effects, for use when designing buildings adopting Codes for design to withstand the forces of earthquakes,

SLLR & DC

- Wetland Management Act No.35 of 2006, SLLR & DC has been empowered to manage all declared wetlands in the Country and the declaration of wet lands in western Province has already been completed, 2006

Building codes

- British Building Codes
- Australian Building Codes
- Indian Building Codes





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

Apart from the above, the study also looked into the following aspects in selected major organisations involved in housing in the Province:

- On-going and planned housing programmes;
- Internal procedure in carrying out housing development;
- Problems associated with land acquisition,
- Obtaining planning clearance, land sub division and building approval

Following are the key findings of the study:

- Out of 28 Local Authorities in the Province, 17 are declared as urban under the UDA Act. However, land use zoning plan is available for only six out of these 17 Local Authorities. Moreover, only one of these land use zoning plans (out of six) contains detailed information on hazards.
- With regard to planning clearance processes for development, all UDA declared local authorities have systems in place for planning clearance procedure. In cases where there is no structured system in place, the planning clearance procedure is usually handled by the Council of the Local Authority or by a Special Committee. In some cases the Technical Officers handle the procedure which does not allow multi stakeholder involvement.
- In regard to Land Sub-division, it is mostly carried out by the Planning Committee and in some cases by the Technical Officers and Council of the Local Authority.
- Currently the building approval procedure is mainly operational in the Local Authorities declared under the UDA Act. In most of the areas not declared by UDA, Local Authority's approval is requested only if the owner or the house builder requires a housing loan from a financial institute.

- Building approval committees consist of a different number of members which ranges from five to eight. However, the system does not have a mandatory membership in the committee.
- UDA Local Authorities and other regulatory agencies adopt a standard format for housing constructions approval that does not specifically require assessment of disaster risks.
- Mostly national budgets do not provide funds for surveys and investigations at the feasibility study stage, and it is therefore unusual for DRR measures to be incorporated at early stages of project preparation.
- There is uneven application of building codes and design standards between urban, rural and estate sector housing constructions.
- Landslide data is available for major landslide districts and flood information is available for the major rivers in Sri Lanka. But this information has not uniformly been processed to provide flow / stage relationships for different return periods, which could be used for housing developments.

Based on the findings the PIP recommends the following:

- Each Local Authority should develop the Land use zoning plan and wherever it exists it should be reviewed and revised regularly. This activity must take into consideration the Land Use Policy and Plans of the Land Use Policy Division of the Ministry of Lands. The land use zoning plans should incorporate information on hazards common to the area.
- The approved Land Sub – division plan should be a compulsory document when applying for planning clearance. The Land Sub-division procedure should include information on natural contours and hazards prevailing in the area.
- Legislation should be in place for having a standard planning approval mechanism for all Local Authorities in the form of a Planning Committee with defined membership. The same Committee will have the authority for the building / development approval.
- In all Local Authorities (urban and non urban) a standard building approval mechanism should be in place. The building application form should include DRR aspects.
- The Estate Sector Local Authorities do not have any authority in housing





development; therefore a mechanism must be identified for the Local Authorities

to intervene in some form during the approval process.



WAY FORWARD



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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 June 2010, would undertake some of the priority activities from the list of recommendations and continue to advocate for implementation of the remaining activities by other interested partners.

The TWG also recommended testing out these suggestions in one pipeline project of the Ministry of Housing and Common Amenities and identified the following two projects to explore the possibilities of integrating DRR:

- Icelabewatta Estate, Bandarawela AGA Division, Badulla District
- Doloswatta Estate, Nivithigala AGA Division, Ratnapura District

In the initial two months of the second phase of the PIP, the TWG would detail out the activities for implementing some of the above mentioned recommendations which would contribute to the following objectives:

- Implementation of recommendations of Phase I of the PIP in an ongoing / planned Housing program of the Government of Sri Lanka
- Implementation of recommendations of Phase I of the PIP in housing approval procedures in a specific local area
- Increased awareness among agencies (TWG members) responsible for approving housing programs / schemes on integration of DRR
- Increased dialogue of the TWG with external agencies such as multilateral and bilateral development partners involved in the housing sector in regard to integration of DRR in externally funded housing projects.





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 Lesté and Vietnam.

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 sectoral ministries, technical institutes, private sector and NGOs in RCC member countries.

This case study highlights the experience of undertaking a Priority Implementation Partnership (PIP) on mainstreaming 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 & Human Rights with support from Asian Disaster Preparedness Centre (ADPC), and AusAID.



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