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5 SOCIAL ASSESSMENT REPORT

Project

INTEGRATED COOUM RIVER ECO-RESTORATION PLAN

FINAL REPORT

TNUIFSL CRRT

Date

November 2014

INTEGRATED COOUM RIVER ECO-RESTORATION PLAN

The project contains the following documents:

VOLUME 1 – MAIN REPORT

VOLUME 2 – SEWAGE & SANITATION SECTOR

VOLUME 3 – SOLID WASTE & SILT DISPOSAL PLAN

VOLUME 4 – INUNDATION (FLOOD) MANAGEMENT PLAN

VOLUME 5 – SOCIAL ASSESSMENT REPORT

VOLUME 6 - RIVERFRONT DEVELOPMENT PLAN

VOLUME 7 – BIODIVERSITY: FLORA & FAUNA DEVELOPMENT PLAN

VOLUME 8 – ENVIRONMENTAL ASSESSMENT REPORT

VOLUME 9 – FINANCIAL MANAGEMENT & OPERATING PLAN

VOLUME 10 – GEOGRAPHICAL INFORMATION SYSTEM

ACKNOWLEDGEMENT

This eco-restoration plan has been developed under the guidance of the CRRT and TNUIFSL, GoTN. This plan is a project integrating the involvement of all the responsible departments under the GoTN, for which CRRT has been the umbrella agency.

We would like to take an opportunity to thank all the departments and agencies, who were with us throughout the project, to make it potential. Interaction with the officials of CRRT/TNUIFSL has helped us in crystallizing and finalizing the plan in both the technical and economic aspects. We are especially grateful to Mrs. Anita Praveen,I.A.S, Member Secretary, CRRT and including Thiru Pandian, Dr. Raman, Thiru Pradeep John, TNUIFSL, Dr. Kalairasan, Project Officer and Dr. Viswanathan, CRRT.

We hereby acknowledge the help of the officials from the Tamil Nadu Slum Clearance Board for their in-depth help and their timely suggestions which made the consultant to bring out the best, suitable and sustainable proposals for the improvement of the quality of the people living along the river banks. We are especially thankful to Thiru Elango, CE and Thiru Jaypal, Ex-CE and Thiru Rajashekar Nagayam, Ex-SE, Thiru Shanmuga sundaram, SLCC, Mmt. Vijayanthi, CDO, Mmt. U. Manimeghalai, Deputy Planner, Dr. Bhuvana and Thiru Bhaskar, Community Officer. They have been very generous in sharing their valuable time and resources. Their warm hospitality and keen interest in the project was very humbling.

We hereby thank the officials from Coastal Management Authority for their consistent guidance which helped in improving the project including, Mmt. Jayanthi Murali, I.F.S and Thiru Pandian.

The services and support from the IIT, Madras, Thiru Chella Rajan, HOD, Mmt. Pritha Gopalan, professor and Ms. Srinidhi Sampathkumar, scholar are thankfully acknowledged for their constant assistance in the data collection and analysis of the slums along the river banks.

Specialists from the LKS Spain and Indian team, Eco-services, Apex Topo mappers, Archivista and IIT Madras were the members in the team to make this project an intense and feasible design. Their contributions are thankfully acknowledged

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ABBREVIATIONS

AEE	:	Assistant Executive Engineer
AIDS	:	Acquired Immune Deficiency Syndrome
AMC	:	Ahmedabad Municipal Corporation
BMZ	:	Economic Cooperation and Development
BP	:	Bank Procedures
BSS	:	Behavioural Surveillance Survey
BSUP	:	Basic Services for Urban Poor
CDP	:	Comprehensive Development Plan
CIDCO	:	City and Industrial Development Corporation
CMA	:	Chennai Metropolitan Area
CMA	:	Commissionerate of Municipal Administration
CMDA	:	Chennai Metropolitan Development Authority
CMDAMP	:	Chennai Metropolitan Development Authority Master Plan
COHAB	:	Co-Operation on Health & Biodiversity
CRRT	:	Chennai Rivers Restoration Trust
CRZ	:	Coastal Regulation Zone
DTCP	:	Directorate of Town and Country Planning
EA	:	Environmental Assessment
EB	:	Electrical Bill
EDP	:	Electronic Data Processing
EHDR	:	Egyptian Human Development Report
EMIS	:	Environmental Management Information System
ESF	:	Environmental and Social Framework
ETRP	:	Environment Technology Research Programme
EWS	:	Economically Weaker Section
FOP	:	Financial Operating Plan
FSI	:	Floor Space Index
GCMA	:	Greater Cairo Metropolitan Area
GDP	:	Gross Domestic Product
GoI	:	Government of India
GOPP	:	General Organization of Physical Planning
GRC	:	Grievance Redressal Committee
HIV	:	Human Immuno-deficiency Virus

IACC	:	Inter-Agency Coordination Committee
ICDS	:	Integrated Child Development Services
IDB	:	Inter-American Development Bank
IIT	:	Indian Institute of Technology
ISHDP	:	Integrated Housing and Slum Development Program
ISR	:	In-Situ Re-construction
JNNURM	:	Jawaharlal Nehru National Urban Renewal Mission
KENSUF	:	Kenya Slum Upgrading Low Cost Housing and Infrastructure Fund
KENSUP	:	Kenyan Slum Upgrading Program
LA	:	Land Acquisition
LIG	:	Low Income Group
MCGM	:	Municipal Corporation of Greater Mumbai
MHADA	:	Maharashtra Housing and Area Development Authority
MMRDA	:	Mumbai Metropolitan Region Development Authority
MOEF	:	Ministry of Environment and Forests
MoPIC	:	Ministry of Planning and International Cooperation
MSSG	:	Multi-Stakeholder Support Group
MUEPA	:	Ministry of Urban Employment and Poverty Alleviation
NEMA	:	National Environment Management Authority
NGO	:	Non-Government Organisation
NRBP	:	Nairobi River Basin Program
NRCP	:	National River Conservation Plan
NRRP	:	National Rehabilitation and Resettlement Policy
OP	:	Operational Policy
PAF	:	Project Affected Family
PAP	:	Project Affected Persons
PDP	:	Participatory Development Program
PHC	:	Preventive Care Centres
PIC	:	Project Information Centre
PIU	:	Project Implementing Unit
PMU	:	Programme Management Unit
POA	:	Plans of Action
PDP	:	Participatory Development Program
PWD	:	Public Works Department

R&R	:	Resettlement and Rehabilitation
RAP	:	Resettlement Action Plan
RAY	:	Rajiv Awas Yojana
RGI	:	Registrar General India
ROW	:	Right of Way
RP	:	Resettlement Plan
SAR	:	Social Assessment Report
SC	:	Schedule Caste
SEC	:	Settlement Executive Committee
SHG	:	Self Help Group
SMP	:	Social Management Plan
SNP	:	Slum Networking Program
SPARC	:	Society for the Promotion of Area Resource Centres
SPIU	:	Settlement Program Implementation Unit
SSR	:	Social Status Report
ST	:	Schedule Tribe
STP	:	Sewage Treatment Plant
TC	:	Trustee Company
TEAP	:	Tsunami Emergency Assistance Project
TNSCB	:	Tamil Nadu Slum Clearance Board policy
TNSCZMA	:	Tamil Nadu State Coastal Zone Management Authority
TNUDF	:	Tamil Nadu Urban Development Fund
TNUIFSL	:	Tamil Nadu Urban Infrastructure Financial Services Limited
TUFIDCO	:	Tamil Nadu Urban Finance and Infrastructure Development Corporation
UNEP	:	United Nations Environment Programme
ZTR	:	Zoned To Residential use

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CHAPTER I INTRODUCTION

I.1. PROJECT DESCRIPTION

I.1.1. GENERAL DESCRIPTION

The Government of Tamil Nadu has recently announced Interconnection of Rivers and the project to establish Smart Water Ways in Tamil Nadu. Interconnection of Rivers will be done by the Public Works Department and the study for establishing Smart Water Ways will be carried by Chennai Rivers Restoration Trust (CRRT).

CRRT is an umbrella organisation with the prime objective of restoration of rivers and waterways. The Government has visualized the concept and instructed to appoint consultants for developing a River Restoration Master Plan for Cooum River in Tamil Nadu. In turn, CRRT has approached TNUIFSL for technical assistance for Cooum River.

Tamil Nadu is one of the highly urbanised states in India with 48.45% of its population living in the urban areas. Hence, the pressure on the urban areas on the basic infrastructure facilities like water supply, sewerage systems, solid waste management, storm water drains, industrial facilities, etc., have increased diversely and are set to increase in the coming years also. Growth of urbanisation without associated facilities led to pollution of existing rivers. As a consequence some of the river and ecological systems were polluted. The major pollution contributing factor is sewage, dumping of solid wastes along the banks of the rivers, industrial discharges like effluents and other wastes into the river apart from presence of urban slums and encroachments along the banks of the waterways.

River restoration project aims to increase ecosystem goods and services, and ideally convert damaged fresh water ecosystems into sustainable ones whilst protecting downstream and coastal ecosystems. The restoration of river would also lead to development of waterfront along the urban areas. The government intends major initiatives to resolve and to further develop the waterways for better living standards. And hence, there is an urgent need to undertake preventive measures to stop the pollutants from flowing into the river.

A developed waterfront trail would provide the residents an access to new recreational opportunities and an expanded awareness of the natural aspects of river life. The Riverfront would attract a growing legion of morning walkers and after-work runners. Added to this, public access sites connected by linear green ways will tie developments together, eliminating barriers, both real and fictional, and animate the waterfront with the light and life of the city. The restoration of waterways would also have a positive impact on the health and enhance the socio-economic conditions of the citizens. The restored waterways can also become an asset to support secondary water needs of urban areas.

The objectives of the assignment are**:**

(i) To ensure effective abatement of pollution and protection of rivers by adopting a sustainable approach to promote inter-sectorial co-ordination through comprehensive planning and management.

(ii) To maintain minimum ecological flows in the rivers with the aim of ensuring water quality and sustainable development.

(iii) To improve and maintain the flood-carrying capacity of the river.

(iv) To create a River Front Development within urbanised areas, where ever possible.

(v) To identify projects / sub projects for pollution abatement with cost estimates.

(vi) To explore the possibility of navigation purposes and for other future use of the River after restoration.

CHAPTER II SOCIAL ASSESSMENT

II.1. OVERALL IMPACT AND SOCIAL ASSESSMENT

II.1.1. INTRODUCTION

The study area starts at **Paruthipattu Anicut** and runs up to the **mouth** of the river **(32 km).**

Cooum river eco-restoration plan has been developed in several volumes which will describe in detail each management plan proposed. In this volume and chapter how solutions have been balanced with social negative impacts along with social assessment will be justified.

II.1.2. ENVIRONMENTAL AND SOCIAL FRAMEWORK

The Environmental and Social Framework (ESF) of Tamil Nadu Urban Infrastructure Financial Services (TNUIFSL) is a comprehensive document that includes several indicators for an effective assessment of environmental and social implications of development projects. Approved by the Government of Tamil Nadu in 2006, it sets clear guidelines for carrying out and monitoring urban development projects, such as the CRRT's Cooum Restoration.

The ESF provides an overall framework to TNUIFSL for identification, assessment and management of environmental and social concerns at the sub project level. The ESF outlines the policies, assessments and procedures that will enable TNUIFSL to ensure that a subproject that it funds is developed in accordance with ESF and is adequately protected from associated risks.

In this section, we highlight the following important areas of the ESF:

TNUIFSL's definition of environmental and social aspects,

Areas of work undertaken,

Legal frameworks influencing the scope of projects,

Social and environmental categories depending on level of impact, and

Social safeguard and entitlement framework.

Definition

Specifically, ESF seeks to safeguard environmental aspects such as:

Conserving natural resources,

Preserving bio-diversity and ecological equilibrium;

Minimizing release of polluting wastes and

Integrating mechanisms within projects to maintain and enhance environmental quality of project locations.

The ESF seeks to protect project-affected persons through:

- addressing legitimate concerns of relevant stakeholders, especially project affected persons,
- avoiding or minimising resettlement and rehabilitation due to land acquisition and transfer of government land under different tenure system through appropriate technical and management measures,

- ensuring appropriate resettlement and rehabilitation of project affected persons irrespective of legal status with a view to provide sustainable livelihood options that at least restore, if not improve, their standard of living,
- protecting marginalized and vulnerable groups, including the economically and socially disadvantaged, and
- minimizing health and safety hazards.

Areas of work

- TNUIFSL is expected to finance the following categories of urban infrastructure projects:
- Water Supply and Sewerage
- Solid Waste Management
- Transportation including urban roads and traffic management
- Commercial Complexes
- Non-commercial/Community Amenities
- Integrated area development

Improvement of waterways

The ESF specifically discusses improvement of waterways (TNUIFSL, 2006: p. 26), noting that environmental and social issues may not result from these works, and plans must assess likely impact to flora, fauna, and people in the affected areas, and take steps to minimize negative impact.

Legal frameworks

The ESF draws on laws, regulations, and policies to ensure compliance with national frameworks safeguarding social and environmental interests.

The environmental **laws** applicable to TNUIFSL financed projects are both pollution and natural resource related. Key mandatory environmental laws are:

Water (Prevention and Control of Pollution) Act, 1974 and Tamil Nadu Water (Prevention and Control of Pollution) Rules, 1974

The Water (Prevention and Control of Pollution) Cess Act, 1977

Environment (Protection) Act, 1986

Forest (Conservation) Act, 1980

Wildlife Protection Act, 1972

Coastal Regulation Zone (CRZ) Notification, 1990

Chennai Metropolitan Area Ground water (Regulation) Amendment Act, 2002

Key environmental **rules and regulations** applicable for TNUIFSL projects are:

Air (Prevention and Control of Pollution) Act 1981 and Tamil Nadu Air (Prevention of Control of Pollution) Rules 1983.

Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989

Hazardous Waste (Management and Handling) Rules, 1989

Municipal Solid waste (Management & Handling) Rules 2000

Bio Medical Waste (Management & Handling) Rules 1998

Environmental **policies** salient to the ESF are:

National Conservation Strategy and Policy Statement on environment and Development, 1992

Policy Statement for Abatement of Pollution 1992

World Bank's Operational Policy 4.01 outlines Bank policy and procedures for environmental assessment (EA) of bank investment lending operations and related types of environmental analysis.

Mandatory Social **laws** are:

The right to fair compensation and transparency in Land Acquisition and Resettlement & Rehabilitation, 2013

TN Highways Act 2001

Government Order No. 885 of the Revenue Department dated 21.09.95 describing procedures for acquisition through negotiation.

Board Standing Orders (Standing Orders of the Commission for Revenue Board) based on the Revenue Act 1884 of the Madras Presidency (for Rayatwari states), regarding assignment of land, lease and cancellation and encroachments.

Tamil Nadu Land Encroachment Act, 1905

The Tamil Nadu Slum Areas (Improvement and Clearance) Act, 1971Policies

National Policy on Resettlement and Rehabilitation for Project Affect Families, 2003

The World Bank OP and BP 4.12 describe Bank policy and procedures on involuntary resettlement as well as conditions that borrowers are expected to meet in operations involving resettlement.

Social entitlement framework

An act namely "The right to fair compensation and transparency in Land Acquisition and Resettlement & Rehabilitation", 2013 that has been framed for the upliftment of the project effect families, which provides a reference for the social part of the ESF. It also majorly deals with the social assessment of the people affected by the Government projects. Three broad categories of economic and social impacts that would be mitigated are:

Loss of assets, homestead and land and other fixed assets,

Loss of income or means of livelihood, and

Indirect group oriented impacts due to loss of common property and resources:

S. No	Sensitive Environmental Component
1	Religious, heritage historic sites and cultural properties
2	Archaeological monuments/sites
3	Scenic areas
4	Hill resorts/mountains/ hills
5	Beach resorts
6	Health resorts
7	Coastal areas rich in corals, mangroves, breeding grounds of specific species
8	Estuaries rich in mangroves, breeding ground of specific species
9	Gulf areas
10	Biosphere reserves
11	National park and wildlife sanctuaries and reserves
12	Natural lakes, swamps Seismic zones tribal Settlements
13	Areas of scientific and geological interests
14	Defence installations, especially those of security importance and sensitive to pollution
15	Border areas (international)
16	Airport (for solid waste management projects)
17	Tiger reserves/elephant reserve/turtle nestling grounds
18	Habitat for migratory birds
19	Lakes, reservoirs, dams
20	Streams/rivers/estuary/seas

Table 1. List of Sensitive Environmental Components

E-2 projects are expected to have only moderate environmental issues. A project is categorized as E2 if its potential adverse environmental impacts are less adverse than those of E1 projects. These impacts are mostly generic impacts in nature and in most cases mitigation can be designed more readily than for E1 projects. Although the scope of assessment for an E2 project is project specific and examines the project's potential negative and positive environmental impacts, it recommends measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance.

No environmental issues are expected in E-3 projects and can be termed 'environmentally benign'. Hence no environmental assessment is required for an E3 project beyond screening.

Regarding social component S1, S2, and S3 projects are described below:

Based on the number of Project Affected Persons (PAPs) who may be affected and based on the magnitude of impact, projects have been categorized as either S-1, S-2 or S-3 projects.

S-1 projects are those that will affect 200 PAPs (30 – 40 Households) or more or if PAPs are physically displaced and will require a detailed Social Assessment Report (SAR) that would include a resettlement plan.
S-2 projects are those in which no PAP is physically displaced and less than 10% of their productive assets are lost (or) less than 200 PAPs are affected. In this case the borrower can submit a Social Management Plan (SMP) that would include an abbreviated resettlement plan.
S-3 projects, on the other hand will not have any households affected at all i.e. they can be classified as 'socially benign'. However, the borrower will have to submit a Social Status Report (SSR)

Category	**Description**		**Type of project**
	Level of issues	**Management measures**	
S-1	Serious social issues expected	project specific SAR along with a RP essential	200 PAPs are affected
S-2	moderate social issues expected	adopt generic design guidelines and norms in ESF along with a project specific abbreviated plan essential	< 200 PAPs are affected
S-3	no social issues expected hence socially benign	no social mitigation measures required, need to submit SSR	No PAPs are affected

Table 2. Categories based on social sensitivity

Social Safeguard and Entitlement Framework

The National Policy on Resettlement and Rehabilitation for Project Affected Families – 2003 that came into effect from 17th February 2004 provides a reference to the social part of the ESF. In order to provide a framework for the R&R process in projects where World Bank financing is involved, this ESF provides a list of entitlements for project affected persons and families. Three broad categories of economic and social impacts that would be mitigated are

- Loss of assets, homestead and land,
- Loss of income or means of livelihood and
- Indirect group oriented impacts due to loss of common properties and resources.

For purposes of this framework, the following definitions will be applicable:

- Project Affected Persons (PAP): Any person affected either directly or indirectly by the project and/or project related activity, irrespective of the legal status and would include:

  Pattah holders, encroachers, squatters, tenants, leaseholders, sharecroppers, employees, landless labourers, vulnerable groups (women, children, landless, marginal and small farmers, scheduled population) and persons loosing access to community amenities and resources.

- Project Affected Family (PAF): A family consisting of father, mother, children living together with common kitchen and are affected by the project, irrespective of their legal status resulting in loss of homestead, other assets, sources of income / livelihood, common assets and cultural properties

- Vulnerable PAPs: Vulnerable PAPs are those living below poverty line, SC / ST families and women headed households.

Cut-off date: Cut-off date is used to determine eligibility of the PAPs. The cut-off date will be the start date of baseline survey. The baseline census survey will identify the residents or users of the land being acquired, transferred and alienated in favour of the project. In case the clearance of encroachment and squatting had taken place.

II.1.3. APPLIED CRITERIA

On Project development, the following criteria has been applied in order to achieve previously defined social framework context:

- To minimize the displacement and to identify non – displacing or least displacing alternatives.
- To ensure adequate rehabilitation package and expeditious implementation of the rehabilitation process with the active participation of the affected families.
- To ensure that a special care will be taken for protecting the rights of the weaker sections of the society.
- To provide better standard for living, making concerted efforts for providing sustainable income to the affected families.
- To integrate rehabilitation concerns into the development planning and implementation process.

II.1.4. ALTERNATIVES ANALYSED

On Eco-restoration plan systematically potential social impacts have been identified in the existing and proposed areas included in the plan.
Solutions haven been developed on several plans after analysis alternatives and feasible options in order to get project objectives balanced with sustainability (environmental, **social** and economic aspects).

The analysed solutions are the following:

From the Hydraulic Perspective:

Construction of storage reservoirs at catchment points: This solution consists of finding suitable areas at the origin of the river or its tributaries to create reservoirs by means of check-dams which will enable to accumulate a certain volume of water during the rainy season and gradually release it during the low water season.

By-pass to other waterways: This alternative involves studying the possibility of new connections to the basins of the Rivers Kosastalaiyar and Adyar, in order to increase the flows to the Cooum's basin.

Flood protection walls: This option involves studying the possibility of creating flood protection walls or check dams in the areas of the Cooum River where space limitations prevent low-impact flood alleviation measures from being used (mainly in the lower basin).

Definition of riverbed level and cross sections: This alternative involves fixing the riverbed of the Cooum (slope, cross section) to provide a greater hydraulic capacity, preventing water stagnation and limiting silting.
Construction of storm water tanks and retention ponds in the city: The greatest flooding problems in the city of Chennai occur along the Cooum River area, which is due to the insufficient carrying capacity of the storm water networks. For this alternative, we have studied the option of providing open spaces (retention basins) or closed spaces (storm

tanks) for peak flood absorption. These structures could be installed in leisure areas (parks or sports areas).

Gates in the river: We assessed the possibility of taking advantage of the tidal range (8-9km from the river mouth) to create areas of still waters and artificial weirs through the installation of automatic flood gates. During still water periods, creation of a navigable waterway could be considered as a mode of urban transport. With the waterway open, the water flow would be aerated and its speed would increase, improving the quality of water and preventing silting.

From Pollution Abatement Standpoint:
Main lines on both banks of the river to collect all outlets and a wastewater treatment facility: This solution consists of constructing two linear mains, one on each bank, which would collect all the outlets draining into the river, carrying the flow to two new wastewater treatment plants downstream that would clean the water before it is discharged.

Mains on both river banks and an underwater outfall: This solution consists of constructing a main on each river bank to collect all the existing sewage outlets. These mains would join at the lowest point of the River Cooum to discharge into the sea at a distance from the city, via an underwater outfall.

Building walls along the length of the river to prevent solid waste from being dumped into it. This solution would involve building walls beside the river, at a height sufficient to prevent solid waste dumping into it.

Specific measures to be carried out at critical points and scheduled maintenance. This solution consists of initially working in the critical areas, and in the opportunity areas created by the Master Plan, to eliminate the sewage outlets that discharge into the river, adapting to Chennai's existing network and focusing on maintenance of this existing network to avoid any possible problems.

From the Social Point of View
No In-situ development: Means no action has to be carried out on the slums area along the Cooum River.

Total Resettlement**:** Means no in-situ re-construction or improvement is possible, so entire slum population must be resettled to alternative locations.

Total in-situ re-construction: This suggests that every slum area affected should be redefined by a new urban development strategy in order to develop in-situ re-constructions.

Resettlement, in-situ reconstruction and in-situ development: Means that in each slum, in accordance with the area affected by the Right of Way Line and to the lands that are necessary for the project development, after evaluating several parameters, different solutions are defined on case to case basis.

From Landscape and River Front Development Perspective
Completely urbanized river front: It suggests developing a continuous river front on both river banks urbanizing the whole areas and developing a strong infrastructure along the project area.
Completely naturalized river front: Means trying to restore the river to its natural state in the whole project areas:
Mixed solutions, walkway, parks, re-vegetation and smooth paths: Suggests developing different solutions in accordance with the analysed options, providing a continuous river front at least in one river bank, whether left, right or alternating banks, restoring the

previous natural conditions in some other areas and planning river front development as urban development goes on in some other areas.

SOLUTIONS-OBJECTIVES, IMPACTS

Table 3. Comparison of different solutions, objective achievement balanced with sustainability

SOLUTIONS		OBJECTIVES							
		1	2	3	4	5	6	7	
		Abatement of pollution and protection of rivers. Sewage	Maintain minimum ecological flows in the river with the aim of ensuring water quality and sustainable development	Improve and maintain the flood carrying capacity of the river	Create a river front development within the urbanised areas	Identify projects / subprojects for pollution abatement with cost estimates Waste solid	To explore the possibility of navigation purposes and other future use of the river after restoration (public use, transport)	**Sustainability** **(including economical sustainability)**	TOTAL
	HYDROLOGY & HYDRAULICS								
A	Construction of storage reservoirs at the river source								
B	By-pass to other waterways								
C	Providing flood protection walls								

D	Specific analysis of the problems in each section								
E	Construction of storm tanks and flood basins in the city								
F	Gates in the river								
	POLLUTION ABATEMENT								
G	Mains on both banks of the river to collect all outlets and 2 STP								
H	Mains on both banks and underwater outfall								
I	Construction of walls to prevent solid waste dumping								
J	Specific measures at critical points and scheduled maintenance								

	SOCIAL ASSESSMENT								
K	**Not improving**								
L	**Total resettlement**								
M	**Total In-situ re-construction**								
N	**Resettlement, in-situ reconstruction and In-situ development**								
	RIVERFRONT DEVELOPMENT								
O	Completely urbanised riverfront								
P	Completely naturalised riverfront								
Q	Mixed solutions, walkway, parks, re-vegetation and smooth paths								

JUSTIFICATION OF SOLUTIONS

In the following paragraphs there is an explanation of the justification of the comparison made between each objective and each alternative.

HIDRAULIC SOLUTIONS

CREATION OF STORAGE RESERVOIRS AT THE CATCHMENT POINT

A1. Medium impact: Constructing reservoirs that will not be used for water supply, enables water to be released into the river during drought periods, diluting the pollutant content.

A2. Medium impact: Constructing reservoirs that will not be used for water supply and enables a constant water flow to be released, maintaining an ecological flow. However, its negative result would be the inability to maintain a constant water flow, due to the climate conditions of the area.

A3. It facilitates water retention and enables drainage of part of the water stored during the heaviest rain period, in accordance with the river's critical points and its hydraulic capacity.

A4. This solution has no impact on this particular objective.

A5. This solution has no impact on this particular objective.

A6. Residual impact: it enables a moderate flow, but not sufficient for navigation. It does not contemplate other forms of mobility.

A7. No impact. Financially it is very costly, and from an environmental viewpoint building dams upstream will lead to modification of current land use, reduction in vegetation, elimination of settlements, etc.

BY-PASS TO OTHER WATER WAYS

B1. It has no impact on pollution, it does not increase the flow, nor does it dilute the pollution.

B2. No impact on the ecological flow and the by-pass is only activated in case of possible overflow.

B3. It increases the hydraulic capacity in case of overflow, channelling it into another river with a greater hydraulic capacity that can receive the excess water.

B4. No impact on urban development.

B5. No impacts on reduction of refuse dumping.

B6. No impact on the possibility of studying different forms of mobility.

B7. The works are costly as a new infrastructure needs to be built.

PROVIDING FLOOD PROTECTION WALLS

C1. Constructing barriers around the river prevents residents from accessing the river and therefore prevents solid waste dumping.

C2. Constructing barriers has no impact on maintaining an ecological river flow.

C3. It improves the river's hydraulic capacity by widening it, but it also prevents rainwater in the city from draining into the river.

C4. It prevents development of the river banks and completely cuts off the river from the city.

C5. No impact on pollution reduction or sanitation improvement.

C6. No impact on the study of different river transport options.

C7. It is a relatively low-cost solution.

SPECIFIC ANALYSIS OF THE PROBLEM IN EACH STRETCH

D1. Specific analysis of the hydraulic section in each stretch of the river has no impact on urban solid waste management.

D2. Study of the river's hydraulic section is compatible with finding a shallow water section for an ecological flow.

D3. Gives rise to potential improvement with regards to flood risk, finding the necessary river width to prevent flooding.

D4. Finding new hydraulic sections of the river will enable new solutions to be found for the river environment and for improving its urban development.

D5. No impact on reduction of the pollution caused by sewage discharge.

D6. The fact that new shallow water sections can be created will enable new areas to be opened up for other modes of transport along the river axis.

D7. As this solution involves specific diagnosis for the entire river, it is a more economical and sustainable solution.

CREATION OF STORM TANKS AND RETENTION BASINS WITHIN THE CITY

E1. Construction of small-sized storm tanks has no impact on pollution reduction.

E2. Construction of small-sized storm tanks enables water to be retained and stored over time, thus obtaining a minimum flow.

E3. It has an impact on flood reduction as it allows water to be stored in case of flooding. Each tank has a relatively low capacity and the solution is therefore not optimum.

E4. No impact on urban development of the river.

E5. No impacts on the reduction of the pollution caused by refuse dumping.

E6. No impact on the possibility of opening up new forms of mobility on the river.

E7. Construction of storm tanks is not an economically sustainable solution, but land needs to be found in the city to build them.

GATES OF THE RIVER

F1. The use of flood gates is not a pollution-improving measure.

F2. The measure does not ensure a minimum flow, although it may be designed to do so.

F3. The measure does not increase the hydraulic capacity of the waterway.

F4. It makes no significant contribution to the river's urban development, although the fact that there is a navigable area could generate wealth, aid the urban development of the banks and give rise to infrastructures (a quay, for example).

F5. It has no impact on achieving the aim of reducing pollution from refuse dumped on the banks, although developing a navigable area will give rise to specific improvement and treatment of the refuse on the banks of this stretch of the river.

F6. The use of gates will enable control of the tides and water sections, making some stretches of the river navigable. In this sense it is a positive measure.

F7. Gates or other constructions for controlling water sections are not sustainable measures and are also costly infrastructures.

POLLUTION ABATEMENT SOLUTIONS

MAINS ON BOTH BANKS OF THE RIVER COLLETING ALL THE OUTFALLS AND TWO STP

G1. This is an important measure with regards to river water quality.

G2.Intercepting sewage water flow by means of mains, conveying it to a wastewater treatment plant and returning a clean flow to the river does more towards creating an ecological flow with acceptable water quality than maintaining the pollutant discharge.

G3. Control of rainwater drainage flows is a measure assisting the increase of a river's hydraulic capacity.

G4. This measure facilitates urban development of the river fronts.

G5. This measure has no impact on the problem of managing solid waste dumping on the river banks.

G6. This measure has no impact on making areas of the river navigable.

G7. A sustainable action with a reasonable cost.

MAINS ON BOTHS BANKS OF THE RIVER AND UNDERWATER PIPELINE

H1. Important measures in favour of the quality of the water body of the river, but high pollution discharge into the sea.

H2. If sewage flow is collected and discharged into the sea through an underwater pipeline, an ecologic flow is not being favoured. Measures can be taken in order to catch storm waters to drain into the river.

H3. Flow control in storm water drains is a measure in favour of increasing the flood-carrying capacity of the river.

H4. Measure in favour of the urban development of the riverfronts.

H5. This measure has no impact on solid waste management

H6. This measure has no impact on making areas of the river navigable

H7. High cost and effective intervention consisting of removing pollution from the river through an underwater pipeline. It is not a fully sustainable solution.

BUILDING WALLS ALONG THE LENGTH OF THE RIVER

I1. This measure does not significantly contribute to reducing river pollution.

I2. It has no impact on maintaining the ecological flow.

I3. It has little impact on improving the flow in case of flooding.

I4. A barrier effect is created that is not advisable for the urban development of the river fronts.

I5. This measure minimises solid waste dumping on the river banks.

I6. It is of no significance as regards making sections of the river navigable.

I7. It is not a sustainable measure from a social, ecological or economic viewpoint. Creating a barrier prevents any desirable use being made of the river, and although it may help prevent more solid waste from being dumped, the end does not justify the means, as it is too contradictory to the rest of the project's objectives to be recommendable.

SPECIFIC INTERVENTIONS IN CRITICAL POINTS AND PROGRAMMED MAINTENANCE

J1. Specific measures, although in critical areas, help reduce river water pollution.

J2. Specific measures, although in critical areas these may contribute to maintaining the ecological flow.

J3. Specific measures in critical areas and planned maintenance may contribute to facilitating the flow in case of flooding.

J4. Advisable for the urban development of the river fronts.

J5. Specific measures in critical areas and planned maintenance may minimise refuse on the river banks.

J6. Specific measures may be negotiated for making areas of the river navigable.

J7. Working in critical areas only and allowing the river dynamics to act naturally, together with planned maintenance, is wholly sustainable and requires only moderate investment.

SOCIAL

NO IN-SITU DEVELOPMENT

K.1 This would consolidate and even worsen the existing situation.

K.2 This would consolidate and even worsen the existing situation.

K.3 The existing obstacles as regards flooding and flood risk would be maintained.

K.4 It would prevent improvement of the river front.

K.5 It would consolidate and even worsen the existing situation.

K.6 It would prevent options for developing navigability-related infrastructures from being assessed.

K.7 It would not be environmentally viable.

TOTAL RESETTLEMENT

L.1 It would enable development of the sewage network.

L.2 It would have no impact on improving the ecological flow.

L.3 It would minimise the risk of flooding and enable hydraulic improvement.

L.4 It would enable river front development.

L.5 It would enable waste management.

L.6 It would enable development of navigability-related infrastructures.

L.7 It is not be economically convenient.

TOTAL IN-SITU RECONSTRUCTION

M.1 It would hinder development of the sewage network.

M.2 It would have no impact on improving the ecological flow.

M.3 It would minimise the flood risk and hydraulic improvement in critical areas impossible.

M.4 It would enable river front development, although with major conditioning factors.

M.5 It would enable waste management.

M.6 It would enable development of navigability-related infrastructures.

M.7 It is socially viable, although it would entail a great management effort.

RESETTLEMENT, IN-SITU RECONSTRUCTION AND IN-SITU DEVELOPMENT

N.1 It would make developing the optimised sewage network.

N.2 It would have no impact on improving the ecological flow.

N.3 It would enable the flood risk to be minimised and hydraulic improvement to be made in critical areas.

N.4 It would enable riverfront development.

N.5 It would enable waste management.

N.6 It would enable development of navigability-related infrastructures.

N.7 It is socially and economically viable.

LANDSCAPE AND RIVER FRONT DEVELOPMENT

COMPLETELY URBANISED RIVER FRONT

O.1 It would make developing the sewage network perfectly possible.

O.2 It would have no impact on improving the ecological flow.

O.3 It would condition minimising the flood risk and hydraulic improvement in critical areas.

O.4 It would enable river-front development.

O.5 It would enable waste management.

O.6 It would enable development of navigability-related infrastructures.

O.7 It is socially viable but economically non-viable.

NATURALISED RIVER FRONT

P.1 It would condition development of the sewage network.

P.2 It would have no impact on improving the ecological flow.

P.3 It would enable minimisation of the flood risk and hydraulic improvement in critical areas.

P.4 It would enable the development of a totally natural riverfront.

P.5 It would enable waste management, although it would give rise to critical situations as regards discharge control.

P.6 It would enable development of navigability-related infrastructures.

P.7 Its social viability is questionable.

MIXED SOLUTIONS, WALKWAY, PARKS, REVEGETATION AND SMOOTH PATHS

Q.1 It would make developing the optimised sewage network .

Q.2 It would have no impact on improving the ecological flow.

Q.3 It would enable minimisation of the flood risk and hydraulic improvement in critical areas.

Q.4 It would enable balanced riverfront development.

Q.5 It would enable waste management.

Q.6 It would enable development of navigability-related infrastructures.

Q.7 It is socially, environmentally and economically viable.

As a result several proposals have been developed in several plans:

1.- Biodiversity conservation & management plan

2.-Sewage & water quality management plan

3.-Inundation management plan

4.- Solid waste management & Riverbed muck disposal Plan

5.- Land scape & restoration plan

6.- In-situ development, Resettlement & Rehabilitation Plan

7.-Operational & Maintenance

8.- Bill of Quantities.

9.-Financial management plan (including financial analysis and FOP)

II.1.5. SOCIAL ASSESSMENT

More over in chapter III.4 the methodology followed is defined and how actions with affection to the inhabited areas has been prioritized.

Cooum eco-restoration plan works mostly with the land areas within Right of Way line. If in case area to develop this plan needs land outside Right of Way, such situation has been estimated and detailed in Chapter VIII RRP.3 Affected lands maps.

Any time priority has been given to affect minimum necessary land outside ROW in order to achieve project objectives. As it is shown in Chapter VIII RRP.1 Action on slums and Chapter VIII RRP.3 affected land maps.

Working on several phases or time scenarios has also been worked out in order to prioritise areas where project can be developed without any affection to land or property in the short term, or those areas affecting lands outside Right of Way line, but not affecting any slum area in the medium term time. Actions on areas affecting slum areas have been programmed in the last period.

This way "social negative impact evaluation" is shown on maps Chapter VIII RRP.2. On these maps are shown:

- Areas where action to be developed have no affection on land outside ROW line or slum areas.

These areas are defined as very low social negative impacts areas and are marked in green colour.

- Areas where action to be developed have affection on land outside ROW line.

  These areas are defined as medium social negative impacts areas and are marked in yellow colour.

- Areas where action to be developed have affection on land outside ROW line or slum areas.

  These areas are defined as high social negative impacts areas and are marked in red colour.

With regards to the river front development, the social negative impacts (affection to lands outside ROW line and slums) results as shown in the maps Chapter VIII RRP.2 and are described as following:

- Very low negative social impacts areas are marked in green colour. A total of 40% walkaways, 40% cycle tracks, 90% maintenance ways and 30% parks could be developed without affecting any land.

- Medium negative social impacts areas, marked in yellow colour. 30% walkaways, 30% cycle tracks, 10% maintenance ways and 5% parks could be developed just affecting lands outside ROW line but not affecting any slum.

- High negative social impact areas, marked in red colour. 30% walkaways, 30% cycle tracks and 65% parks development would affect the existing slum areas.

As per social categorization of ESF entitlement matrix, based on social sensitivity, this project comes under S1 category needing for project specific Social Assessment Report and RAP.

After this chapter RAP (Resettlement Action Plan) is developed taking into account of policy provisions and entitlements available in the National R&R Policy, 2007/The right to fair compensation and transparency in land acquisition, rehabilitation and Resettlement act, 2013 besides ESF entitlement matrix.

CHAPTER III RESETTLEMENT ACTION PLAN, INTRODUCTION

III.1. SOCIAL POLICY CONTEXT

The 2000s have seen several comprehensive policies at the Central and State levels for improving the quality of life of those living in informal settlements. River conservation has also received its due in the same time frame. In this section we look across several Central, State, and local policies that address these related issues, as informal settlements, especially in large, crowded cities, may be riparian. There are serious concerns raised by scholars and activists around slum evictions for the cause of river restoration, as it causes loss of livelihood and erode bonds of community. In this section, we focus on the intersections among some key policies to support our differentiated strategy of upgrading, in-situ reconstruction, and resettlement, which at least partially addresses the equity issues that loom large when low income groups have to be relocated for large-scale development projects.

In this section we briefly describe seven key policies.

1. National River Conservation Plan (NRCP)
2. National Rehabilitation and Resettlement Policy (NRRP)
3. Jawaharlal Nehru National Urban Renewal Mission (JNNURM)
4. Rajiv Awas Yojana (RAY)
5. Tamil Nadu Slum Clearance Board policy (TNSCB)
6. Environment and Social Framework (ESF)
7. Chennai Metropolitan Development Authority Master Plan (CMDAMP)

Policies 1- 4 are facilitated by departments of the Central government, 5 and 6 are State-level agencies, and 7 originate from a Chennai-based agency. In the following section, we analyse their similarities regarding social and environmental goals and actions. Finally, we locate our proposal in the policy context, and address the key equity questions raised by the project.

After reading and categorizing the policies, we find there is significant concurrence between NRRP, RAY, TNSCB, and ESF on the issue of in-situ relocation, in-situ upgrade of slums, and minimizing resettlement. JNNURM and RAY, like TNSCB, emphasize upgrading basic services for the poor through improving infrastructure and public services to informal settlements.

The NRCP and CMDA Master Plan set holistic agendas for river restoration, and development of the Chennai Metropolitan Area, respectively. By requiring alignment between sewage, drainage, and public services, they both emphasize common goals for disparate city agencies. NRCP and ESF concur on the need to minimize pollutants, as well as enhance environmental quality.

This favourable policy context greatly encourages us to position our proposal for restoration of the Cooum River and in-situ reconstruction and resettlement of the informal settlements lining its banks.

1. National River Conservation Plan

The NRCP was created by the Ministry of Environment and Forests (MOEF) in 1993 to restore 38 rivers across 20 states of India. The main provisions were to reduce pollution in major and minor rivers by **reducing sewage and waste dumping** in rivers. The Central government initially provided all the funding. Post 2001, funding was shared by the Central and State governments with additional funds from the World Bank and other bodies. The

main mode of accomplishing this end was to establish additional sewage treatment capacity. The NRCP included two Chennai waterways: the Adyar and the Cooum. Funds earmarked for the two rivers amounted to Rs. 491.52 Cr (MOEF, 1993). Progress on improving water quality in the rivers, and reducing sewage inflow has been slow due to implementation delays and need for better coordination between Central and State bodies. The current collaboration between Chennai city authorities and LKS is well-positioned to build on this work.

2. National Rehabilitation and Resettlement Policy

The NRRP was established by the Central Government in 2003, and revised in 2007, to address the growing need for a comprehensive solution to the growing displacement of low-income rural and urban dwellers by large-scale development projects. Administered through a variety of schemes of the Central and State governments throughout India, this policy places emphasis on **minimizing resettlement, improving economic opportunities to rehabilitate displaced groups,** and in the case of land acquisition projects, to facilitate the process in an equitable manner. Implementation of specific development projects requires individualized resettlement action plans and social impact assessments, which are mandatory if more than 400 families are being displaced in plain areas and 200 displaced in hilly and other designated areas Governing and implementing authorities need to consult and address the concerns of project-affected persons under NRRP (Ministry of Rural Development, 2007).

3. Jawaharlal Nehru National Urban Renewal Mission

This Central government policy, begun in 2005, is administered by the Ministry of Urban Employment and Poverty Alleviation (MUEPA). The Centre, States, and financial institutions jointly provide funds for projects under JNNURM. Cities and towns all over India are covered by this program, with an outlay of over 18,000 Cr. The main provisions concern **the improvement of urban infrastructure and governance, and basic services to the urban poor.** The policy envisioned efficient and planned development within identified cities using fast-track reforms. 45 projects were undertaken in different urban areas of India by 2011. The Integrated Housing and Slum Development Program (ISHDP) and Basic Services to the Urban Poor (BSUP) are two programs that are part of JNNURM. BSUP, especially, discusses the proximity of livelihood to housing settlements of the urban poor, and integrating land use with services, urban transport, and environment management (MUEPA, 2005a).

4. Rajiv Awas Yojana

RAY, a 2009 policy focused on affordable housing and slum redevelopment, is also administered through the Ministry of Urban Employment and Poverty Alleviation. RAY is jointly funded by the Centre and para-statal agencies. RAY adopts a whole-city approach, by mapping all slums in every zone of the city, and ensuring basic infrastructure, services, and decent housing. **Part-1 of the program is concerned with upgrading existing slums and Part-2 seeks to prevent new slums.** In Part-1 the State would need to survey and map all exiting slums in selected cities proposed by the State for coverage under RAY. In Part-2 the Plan would need to assess the rate of growth of the city with a 20 year perspective, and based on the numbers specify the actions proposed to be taken to obtain commensurate lands or virtual lands and promote the construction of affordable EWS houses so as to stay abreast of the demand. A city-wide/zone based approach would enable shifting untenable slums to the nearest possible available vacant land or notified slum which has the space to receive them. States would be required to forward the Slum-free City Plans of Action (POA) to the Centre for clearance along with the bill for assignment of property rights cleared by the State Cabinet (MUEPA, 2005b).

5. Tamil Nadu Slum Clearance Board Policy

The Tamil Nadu Slum Clearance Board (TNSCB) has worked in Tamil Nadu since 1970 in the areas of slum clearance and improvement. It adopts a three-pronged strategy for improving urban housing and services: **a) in-situ improvement of infrastructure through provision of basic facilities such as roads, street lights, drinking water facilities, storm water drain, and public toilets, and ensuring tenurial rights; b) in-situ tenemental schemes where slums are in objectionable areas; and c) resettlement schemes where in-situ schemes are not possible.** Resettlement schemes are located in the nearest available locations, and the encroached area is restored to its original use. Over the last 40 years, TNSCB has upgraded over 500 slums, improved infrastructure across the state for over 80 Cr., and built over 100,000 tenement buildings.

The TNSCB also plays an important role as the state-level functionary that facilitates Central policies such as JNNURM and RAY to ensure their implementation throughout the state. TNSCB also collaborates with the Chennai River Restoration Trust as the agency responsible for resettling project-affected persons living on the banks of the river in tenement housing in the outskirts of the city.

According to TNSCB sources, current resettlement includes tenement housing at Okkiyam Thoraipakkam (8 km from Guindy), Perumbakkam (25 km from Guindy), and planned sites in Athipattu (10 km from Kilpauk), Thiruvottiyur (13 km to Chennai Central), and Navalur (near Tambaram). The total housing capacity of current and planned units is 18,000 on OMR (Thoraipakkam and Perumbakkam), and smaller settlements of less than 5000 people in the new sites.

Compensation for families will be calculated using the PWD Building Division's estimates. The flat in the tenement will be provided to project-affected families free of cost.

TNSCB also has detailed norms for community and youth development, livelihoods development, and microfinance for women in new settlements. Project-affected families will be entitled to participate in these activities to help them better establish themselves in the new settlement (TNSCB, 2010).

6. Environment and Social Framework

Tamil Nadu Urban Infrastructure and Financial Services (TNUIFSL) was set up to manage the Tamil Nadu Urban Development Fund (TNUDF). TNUIFSL aims to promote environmentally sound, socially acceptable and economically viable urban infrastructure projects in the state of Tamil Nadu. TNUIFSL, like the Trustee Company (TC) of the TNUDF, believes that each of its projects will improve the living standards of the people and the quality of environment in and around projects location.

The TC intends to promote environmentally sound and socially acceptable urban infrastructure projects by integrating environmental and social considerations in to their lending operations. The institutions commit all projects to (TNUIFSL, 2006):

Environment: Environmental soundness by conserving natural resources, preserving bio-diversity and ecological equilibrium; **minimizing release of polluting wastes** and integrating mechanisms within projects to maintain and enhance environmental quality of project locations (TNUIFSL, 2006: viii).

Social: Addressing legitimate concerns of relevant stakeholders, especially project affected persons; **Avoiding or minimizing resettlement and rehabilitation due to land acquisition** and transfer of government land under different tenure system through

appropriate technical and management measures; **Ensuring appropriate resettlement and rehabilitation of project affected persons** irrespective of legal status with a view to provide sustainable livelihood options that at least restore, if not improve, their standard of living; Protecting marginalized and vulnerable groups, including the economically and socially disadvantaged; and Minimizing health and safety hazards (TNUIFSL, 2006: ix).

7. Chennai Metropolitan Development Authority Master Plan

Developed in 2010, this plan is developed by the Chennai Metropolitan Development Authority (CMDA). The plan sets an integrated vision for the development of the Chennai Metropolitan Area (CMA) and delineates the **scope of work and funding needs for all local and state bodies involved in housing, electricity, water supply, road works, drainage, solid waste management, and other public services.** The plan also provides detailed maps of CMA with stipulations for land use for green areas, recreational spaces, special economic zones, transport facilities, etc. This plan provides the background for all discussions of river restoration and slum improvement and resettlement issues, as the functions of all authorities involved in public services within CMA are clearly outlined. The plan also ties different areas of work with sources of Central, State, and local funding through extant policies such as JNNURM (CMDA, 2010).

There is ample support in Central and State policies, and the CMDA Master Plan for our stand that the restoration of the Cooum River need not mean the wholesale displacement of project-affected persons and their families. By using a differentiated design that includes in-situ solutions, as well as resettlement of those living in flood-prone or otherwise objectionable areas, we minimize the social cost of moving from a habitat close to schools, workplaces, and community and cultural networks. The National River Conservation Plan calls for an integrated approach including minimizing sewage outflows, management of solid waste, and greening of riverbanks. The CMDA Master Plan similarly calls for integrated functioning of civic bodies, and creating green, recreational spaces along rivers. Our design is aligned with the Master Plan in this regard as well.

We are eminently positioned to work in ways that balance the social and environmental prerogatives of this project, within a policy context that is highly conducive to this work.

III.2. ENVIRONMENTAL AND SOCIAL BASELINE

Survey information about slums on Cooum River Bank has been provided by Tamil Nadu Slum Clearance Board. Main documents provided are as follows:

- Cooum Restoration Plan - Tamil Nadu Slum Clearance Board. July 2.012.
- Update slum list along Cooum River Banks. Tamil Nadu Slum Clearance Board. (Chapter IX Appendix 1).

According to these documents 76 slums areas are detected on Cooum River banks.

General socioeconomic baseline, based on the categories based on the proof submitted in the survey developed is collected in Chapter IX Appendix 1 list.

III.3. MAGNITUDE OF IMPACTS

As has been defined previously on chapter II.1.3 Applied criteria, II.1.4 Alternatives analysed and II.1.5. Social assessment,Chapter II.1.5 magnitude of impacts has been asses along project definition evaluating in each case solutions in order to achieve where ever is possible project objectives together with minimizing social impacts related to several plans and actions to be developed.

Magnitude of impacts evaluation regarding to resettlement actions would be a process to be developed on RAP implementation.

III.4. METHODOLOGY

III.4.1. BASELINE SOCIO-ECONOMIC SURVEY

We have faced several challenges in gathering socio-economic data to support our proposal, as our timeline has not been supported by major data collection efforts by Rajiv Awas Yojana (RAY) and Census 2011. LKS – IIT has worked with TNSCB for potentially using RAY data when it becomes available for our subset of slums, and with the Office of the Registrar General of India and the Tamil Nadu Census Bureau for releasing slum-level, or in their terminology, "enumeration block" level data. In this section we outline the steps we have taken to address the socio-economic analysis that is an important piece of the proposal.

0. TNSCB through CRRT has awarded Coum river eco-restoration Plan (2012) which includes the social assessment report which requires the socioeconomic data for which a survey has been conducted in 2010 along with the TNSCB and PWD departments and has identified PAFs within ROW line along Cooum river banks. PAFs list is enclosed along with this report as Chapter IX Appendix I.

1. At the outset, IIT proposed to conduct a survey along the banks of the Cooum, selecting rural and urban settlements in geographically different zones of the city and its outskirts. However, due to concerns raised by TNSCB and TNUIFSL about the sensitive nature of the project, IIT applied for permission through CRRT to use TNSCB data from a 2010 enumeration, and RAY data, collected in 2012. (Chapter IX Appendix I)

2. The TNSCB enumeration sought to identify slum dwellers through noting their identification cards for resettlement purposes. The survey did not have socio-economic data or housing types, both of which are critical to our assessment. We have used this data to categorize the types of identification on average in each slum, but have had to look for other sources to develop a fuller socio-economic analysis.

3. The RAY survey is extremely comprehensive and has graphic and numeric data covering geographical location, size of settlement, socio-economic criteria, basic services, common resources, and dwelling types. However, this data is not ready for release by RAY in Tamil Nadu. We applied to RAY through the Cooum River Restoration Trust for access to this data for Zones 5, 7, 8, 9, 10, and 11, which cover the settlements on the North and South bank of the Cooum. We have marked an * next to the tables where RAY is the potential source of data.

Despite our request for data being authorized by TNSCB on 29.1.2013, and the extension of the fullest cooperation by nodal officers at TNSCB, delays in the RAY enumeration have made it difficult for TNSCB to share the data with LKS-IIT within the time frame of the final proposal. We enclose the letter from CRRT with the stamp of authorization by the Chairman, TNSCB.

4. Census 2011 data, released in March 2013, yielded aggregate city-level slum data for Chennai, which does not give any picture of the variations within slums in different regions of the city. IIT is in communication with the Census office of Tamil Nadu, located in Chennai, and the Office of the Registrar General of India, New Delhi, which houses the Data Unit of the National Census Bureau. We have exchanged several emails, and phone calls, as well as sent a formal letter on 26.4.2013 to the RGI office (attached), and received a response from the same authorizing use of disaggregated data on 25.6.2013. We expected that we would obtain access to data at the "enumeration block" level, the closest level to slum-level data in the Census. However, when LKS sent a representative based in New Delhi to purchase the data, the Data Unit was only willing to release city-level data, and not the enumeration block data.

LKS-IIT have also been in communication again with the Tamil Nadu Bureau as well as directly with the Registrar General's Office to press for permission to release enumeration block level data. At that point LKS - IIT tried to meet the RGI in person to explain our purpose and specific data needs. This action had no further result.

The Census, though not as extensive as the RAY survey, covers several important socio-economic criteria such as religion, caste, literacy, educational attainment, livelihood types, distance to place of work, and migrant status. The house listing schedule, completed before the Census, collects information on building materials, drinking water availability, toilets, drainage, sewage, and electricity, ownership of TV, radio, vehicles, and use of banking services. We have marked ** next to the tables where Census 2011 and the Census house listing schedule are the sources of data.

5. Ideally, combining Census 2011 data with raw data from RAY would have provideda complete framework of socio-economic indicators such as literacy, types of work, distance to work, schooling of children, average income, and ownership of electronic devices and vehicles, along with an analysis of common resources of each slum, housing types and cost, population density in each slum, and access to basic services. With the support of the respective government departments, we will strive to combine these sources to provide a comprehensive analysis.

The following tables illustrate the kind of analyses that would have been carried out in case the data become available, and the source (RAY *, and Census **). By the time this report is closed no further data have been received.

The following tables illustrate the kinds of analyses that will be carried out once the data become available, and the source (RAY *, and Census **).

General*

Serial number	Name of slum	Area of slum (sq.m.)	Number of families	Average density of population	Notified or Not	Years in existence

House Structures and Cost**

Serial number	Name of slum	Number of dwellings	Types of roof	Types of walls	Types of floors	Average cost of dwelling (PWD estimates)

Livelihood**

Serial number	Name of slum	# of working people	Types of work	Income range *	Vehicles owned	Distance to work	Mode of travel to work

Facilities * and **

Serial number	Name of slum	Water sources	Elec. supply	Drainage facilities	Access to roads

Disposal of waste, waste water and garbage *

Serial number	Name of slum	# HH with access to drainage	Number with access to sewage connect.	Prone to flooding during rains? Y/N	Public toilets	Home latrines	Garbage collect.

Education *

Serial number	Name of slum	Average number of children per household	Number enrolled in school	Grades enrolled	Average distance to school	Mode of travel to school

Table 4. Type of analyses that will be carried out once the data become available

6. During the mid and end of august 2013 LKS – IIT team have developed some enumeration sample on several slums as requested by CRRT – TNUIFSL. IIT has concluded the pilot count of 3 slums along the Cooum, accompanied with PWD and TNSCB officials. The count was conducted over 2 days in Anju Kudisai, Navalar Nedunchezian Nagar and Pallavan Nagar in the Chintadripet/Pudupet area. The pilot count enumeration was done on the basis of 10% of the total population of the affected slums (PAFs) i.e. 1749 families out of the estimated 14634 families.

LKS and IIT have also met RAY officials and procured a final count for a one-sixth of the total Cooum slums. Data from these slums were gathered: Pallavan Nagar, Bootha Perumal Naickan Street, West Cooum River, South Cooum River, Anjukudisai, Navalar Nedunchelian Nagar, Padikuppam, Sathyasai Nagar, Sunnambukalvaikarai Street and Nallamuthu Mariamman Koil Street. The RAY count, 2013 of 3505 households of an estimated 14634 households along Cooum River given by TNSCB, 2012 contributes to the verification of 24% of the estimated population of TNSCB, 2012. RAY round 1 has been concluded, and data is available in those slums that did not raise strong objections to the survey. RAY, round 2, to be begun soon, will address the slums that raised objections. Most of latter are located in the Egmore – Annanagar stretch of the river, and covers more than half the slums in the TNSCB 2012 list.

Comparing the TNSCB 2012 numbers (Chapter IX Appendix 1) with RAY numbers in 2013 shows an average **decrease in the population by 9.6%** in one year.

The margin of error is calculated for 10 slums that were successfully covered by RAY 2013 and TNSCB 2012 by averaging the difference between the numbers and calculating the percentage change from 2012 The TNSCB projection was a 10.9% increase over 2012. There was a 1% difference in the field count conducted by LKS-IIT and RAY, indicating that RAY numbers are verifiable in the 3 slums in the pilot.

7. As a final conclusion, the criteria adopted for this document would be to maintain the data provided by the TNSCB, as the final and complete one for the whole Cooum river banks within ROW line slum areas (Chapter IX Appendix 1 and Appendix 2), but is pointed on that the **number families could be decreased in a 9.6% according to pilot enumeration developed and RAY data provided.**

8. The team has even requested for the pending data for several times as shown in enclosed letters on Chapter IX Appendix 3, no further data have been received from neither RAY nor Census. As per verification developed as explained in previous points 6 and 7, the complete data collected have been implemented as Socio economic survey data on this project.

III.5. OPTIONS EXPLORED, RESETTLEMENT, IN-SITU RECONSTRUCTION AND IN-SITU DEVELOPMENT ON SLUMS

Unplanned settlements or slums have been delimited on graphic documents using the RAY (Rajiv Awas Yojana) visor available in the following link:

http://www.tnscb.org.in/RAY/map/slums.html

As is defined in the RAY Guidelines:

Rajiv Awas Yojana (RAY) for the slum dwellers and the urban poor envisages a 'Slum-free India' through encouraging States/Union Territories to tackle the problem of slums in a definitive manner.

It calls for a multi-pronged approach focusing on:

- *Bringing existing slums within the formal system and enabling them to avail of the same level of basic amenities as the rest of the town;*
- *Redressing the failures of the formal system that lie behind the creation of slums; and*
- *Tackling the shortages of urban land and housing that keep shelter out of reach of the urban poor and force them to resort to extra-legal solutions in a bid to retain their sources of livelihood and employment.*

Slums delimited in the RAY visor in Chennai urban areas have been related to the slum on Cooum river bank list provided by Tamil Nadu Slum Clearance Board.

Even though RAY will be developed in a more complex and complete Geo-reference Information system, only slum limits on the city limits (upstream until Koyambedu junction) are available.

The rest of the areas have been located through a field survey, coordinated by Metro water, and crossing field visit information with the slum list provided by Tamil Nadu Slum Clearance Board.

Out of the total slum areas that have been identified and located, 65 slums are inside the Eco-Restoration Plan study area in which 7 of them are already been resettled.

So a total of 58 slums areas could be affected by the Cooum Eco-Restoration Plan.

Every slum area has been analysed according to the following parameters in order to verify whether resettlement is necessary or any other action must be developed in order to achieve Eco-Restoration plan objectives.

Broad strategies of Tamil Nadu Slum Clearance Board are:

- In situ Development - Provision of Basic Infrastructure amenities such as water supply, roads, sanitation, etc.,
- In situ Reconstruction – Construction of dwelling units, construction of tenements without any relocation.
- Resettlement & Rehabilitation – provision of houses, infrastructure, and livelihood programmes, etc., with a holistic approach.

Actions on slums have been defined in these terms: resettlement, in-situ reconstruction (up gradation for in-situ re-construction) and In-situ development.

On every slum analysed, the parameters to achieve project objectives are as follows:

- Area is included total or partially (P) in the Right of Way Line provided by PWD.
- Area is included total or partially (P) in the Fluvial Corridor defined in the CMA Master plan developed by CMDA.
- Urban regeneration is necessary in order to obtain lands inside ROW line.
- River front needs improvement.
- Areas that full or partially (P) present high (2 years return period), medium (10 years return period) low (100 years return period) or very low (200) years return period) flooding risk.
- Current situation is not compatible with a proper river urban front.
- Resettlement, in-situ reconstruction or In-situ development have been defined according to the previous parameters described earlier and together with this general criteria.

According to this analysis several options have been set with the following criteria:

Resettlement:

- No availability of urban land in proximity.
- Provision of infrastructure facilities along with the housing is not possible.

In-situ reconstruction:

- Land available for developing in-situ re-construction.
- Provision of infrastructure facilities is possible.
- Land ownership.

In-situ development:

- No land including hutments is needed for developing river front solutions.
- No land including hutments is needed for improving river hydraulic functions.
- River front current state is rather acceptable and just needs some improving or river front development.

CHAPTER IV RESETTLEMENT ACTION PLAN, BASELINE SOCIO-ECONOMIC SURVEY

IV.1. THE FINDINGS OF BASELINE SOCIO-ECONOMIC SURVEY PAFS

We have faced several challenges in gathering socio-economic data to support our proposal, as our timeline has not been supported by major data collection efforts by Rajiv Awas Yojana (RAY) and Census 2011. LKS – IIT have worked with TNSCB for potentially using RAY data when it becomes available for our subset of slums, and with the Office of the Registrar General of India and the Tamil Nadu Census Bureau for releasing slum-level, or in their terminology, "enumeration block" level data. In this section we outline the steps we have taken to address the socio-economic analysis that is an important piece of the proposal.

TNSCB through CRRT has awarded Cooum river eco-restoration Plan (2012) which includes the social assessment report which requires the socioeconomic data for which a survey has been conducted in 2010 along with the TNSCB and PWD departments and has identified PAFs within ROW line along Cooum river banks. PAFs list is enclosed along with this report as Chapter IX Appendix I.

At the outset, IIT proposed to conduct a survey along the banks of the Cooum, selecting rural and urban settlements in geographically different zones of the city and its outskirts. However, due to concerns raised by TNSCB and TNUIFSL about the sensitive nature of the project, IIT applied for permission through CRRT to use TNSCB data from a 2010 enumeration, and RAY data, collected in 2012. (Chapter IX Appendix I)

Complementary to this the RAY survey is extremely comprehensive and has graphic and numeric data covering geographical location, size of settlement, socio-economic criteria, basic services, common resources, and dwelling types. However, this data is not ready for release by RAY in Tamil Nadu. We applied to RAY through the Cooum River Restoration Trust for access to this data for Zones 5, 7, 8, 9, 10, and 11, which cover the settlements on the North and South bank of the Cooum. We have marked an * next to the tables where RAY is the potential source of data.

Despite our request for data being authorized by TNSCB on 29.1.2013, and the extension of the fullest cooperation by nodal officers at TNSCB, delays in the RAY enumeration have made it difficult for TNSCB to share the data with LKS-IIT within the time frame of the final proposal. We enclose the letter from CRRT with the stamp of authorization by the Chairman, TNSCB.

Finally during Census 2011 data, released in March 2013, yielded aggregate city-level slum data for Chennai, which does not give any picture of the variations within slums in different regions of the city. IIT is in communication with the Census office of Tamil Nadu, located in Chennai, and the Office of the Registrar General of India, New Delhi, which houses the Data Unit of the National Census Bureau. We have exchanged several emails, and phone calls, as well as sent a formal letter on 26.4.2013 to the RGI office (attached), and received a response from the same authorizing use of disaggregated data on 25.6.2013. We expected that we would obtain access to data at the "enumeration block" level, the closest level to slum-level data in the Census. However, when LKS sent a representative based in New Delhi to purchase the data, the Data Unit was only willing to release city-level data, and not the enumeration block data.

LKS-IIT has also been in communication again with the Tamil Nadu Bureau as well as directly with the Registrar General's Office to press for permission to release enumeration block level data. At present, we are trying to meet the RGI in person to explain our purpose and specific data needs.

The Census, though not as extensive as the RAY survey, covers several important socio-economic criteria such as religion, caste, literacy, educational attainment, livelihood types, distance to place of work, and migrant status. The house listing schedule, completed before the Census, collects information on building materials, drinking water availability, toilets, drainage, sewage, electricity, ownership of TV, radio, vehicles, and use of banking services. We have marked ** next to the tables where Census 2011 and the Census house listing schedule are the sources of data.

Ideally, combining Census 2011 data with raw data from RAY will provide a complete framework of socio-economic indicators such as literacy, types of work, distance to work, schooling of children, average income, and ownership of electronic devices and vehicles, along with an analysis of common resources of each slum, housing types and cost, population density in each slum, and access to basic services. With the support of the respective government departments, we will strive to combine these sources to provide a comprehensive analysis.

The tables showing the analysis are explained in the methodology, in the previous pages, in the Table 4, Chapter III.4.1.

During the mid and end of august 2013 LKS – IIT team developed some enumeration sample on several slums as requested by CRRT – TNUIFSL. IIT has concluded the pilot count of 3 slums along the Cooum, accompanied by PWD and TNSCB officials. The count was conducted over 2 days in Anju Kudisai, Navalar Nedunchezian Nagar and Pallavan Nagar in the Chintadripet/Pudupet area. The pilot count enumeration was done on the basis of 10% of the total population of the affected slums (PAFs) i.e. 1749 families out of the estimated 14634 families.

LKS and IIT also met with RAY officials and procured a final count for a sixth of the total Cooum slums. Data from these slums were gathered: Pallavan Nagar, Bootha Perumal Naickan Street, West Cooum River, South Cooum River, Anjikudisai, Navalar Nedunchelian Nagar, Padikuppam, Sathyasai Nagar, Sunnambukalvaikarai Street and Nallamuthu Mariamman Koil Street. The RAY count, 2013 of 3505 households of an estimated 14634 households along Cooum River given by TNSCB, 2012 contributes to the verification of 24% of the estimated population of TNSCB, 2012. RAY round 1 has been concluded, and data is available in those slums that did not raise strong objections to the survey. RAY, round 2, to be begun soon, will address the slums that raised objections. Most of latter are located in the Egmore – Annanagar stretch of the river, and covers more than half the slums in the TNSCB 2012 list.

Comparing the TNSCB 2012 numbers (Chapter IX Appendix 1) with RAY numbers in 2013 shows an average **decrease in the population by 9.6%** in one year.

The margin of error is calculated for 10 slums that were successfully covered by RAY 2013 and TNSCB 2012 by averaging the difference between the numbers and calculating the percentage change from 2012 The TNSCB projection was a 10.9% increase over 2012. There was a 1% difference in the field count conducted by LKS-IIT and RAY, indicating that RAY numbers are verifiable in the 3 slums in the pilot.

As a final conclusion, the criteria adopted for this document would be to maintain the data provided by the TNSCB, as the final and complete one for the whole Cooum river banks

within ROW line slum areas (Chapter IX Appendix 1 and Appendix 2), but is pointed on that the **number families could be decreased in a 9.6% according to pilot enumeration developed and RAY data provided.**

By the closing time of this report, even requested for the pending data for several times as shown in enclosed letters on Chapter IX Appendix 3, no further data have been received from neither RAY nor Census. As per verification developed as explained in previous, the complete data collected have been implemented as Socio economic survey data on this project.

At this point, available general socioeconomic data for each slum that have been provided by TNSCB is shown in the Chapter IX Appendix 1. This data has been detailed for each slum that could be affected by the Eco-Restoration Plan as it is shown in the Chapter IX Appendix 2.

CHAPTER V SOCIAL ASSESSMENT

V.1. STUDY CASES: SOCIAL ASSESSMENT & RESETTLEMENT AND REHABILITATION

V.1.1. INTRODUCTION

Increasingly, writers and activists working on the area of shelter hold that global urbanization has economic, environmental, and social facets that complicate approaches to slum rehabilitation and resettlement. A review of the literature on approaches to in-situ reconstruction and resettlement shows that innovative and collaborative efforts are more likely to come to fruition, than top-down, interventionist efforts. Chang (2009) reviewed recent literature in this sector, and stated that successful efforts often have partners from the public, private, and voluntary sectors working together, but most importantly involve "those most affected by such efforts - the slum dwellers themselves" (Chang, 2009: 12). Cases from Mumbai, Ahmedabad, Cairo, and Sao Paulo also show that participation and partnership are critical.

In this section we present 5 case studies from large cities in developing countries including India, Brazil, Egypt, and Kenya. The studies, which include the cities of Mumbai, Ahmedabad, Sao Paulo, Cairo, and Nairobi, represent varied approaches to in-situ slum in-situ reconstruction, resettlement, and river restoration. We especially highlight the efforts in each city to balance social and environmental costs as they work toward being "slum-free." While the results are mixed, and no city is entirely "slum free" as yet, their experiences are important, and provide us with a realistic view of the complex task of improving urban spaces in an inclusive and participatory manner. Overall, developing country governments and their partners have shown favour on in-situ efforts, as this minimizes the social repercussions of mass evictions.

V.1.2. IN-SITU RECONSTRUCTION AND IN-SITU DEVELOPMENT

The Mumbai case used the innovative method of using the land on which slums are located to build tenement housing, part of which was provided free to residents, and part of which was sold at market rates to finance the construction. While there is scope for misappropriation of low cost housing, this approach has been used in Mumbai for several years, and has buy-in from urban local bodies and slum dwellers.

Another in-situ case in Ahmedabad, widely cited in the housing policy literature, illustrates the promise of a partnership between government bodies, non-governmental organizations, a microfinance provider, and slum residents in carrying out slum upgradation. Residents contributed partially to the cost of individual toilets and sanitation services and were in turn connected to the city sewage and drainage system, and guaranteed tenure for 10 years in the same area.

The in-situ case of Cairo, where informal settlements were neglected for almost 50 years, before a collaborative program between Germany and Egypt - the Participatory Development Program - began to make inroads through slum upgrading, financing, and social development activities in which multilateral agencies, foundations, and residents worked with the government to develop strong pilots in Cairo and Alexandria.

Finally, the in-situ re-construction undertaken in favelas or slums in Sao Paulo, which was same like in Ahmedabad case, is also considered a strong model in global housing policy. Similar to Mumbai, the land under the slums was seen as the resource and various forms of partnership with slum-dwellers and builders with the municipal authorities resulted in

tenement housing, twin houses, and commercial developments. Although the quality of the tenements and their maintenance varied widely within the greater metropolitan area of Sao Paulo, the in-situ program overall improved sanitation, supply of public services, safety, and the quality of life of residents. This case also discusses actions taken to upgrade the favelas that were directly on a polluted reservoir which was Sao Paulo's main drinking water source, in order to improve its water quality.

V.1.3. RESETTLEMENT AND REHABILITATION

The Nairobi slum resettlement case is one of forced evictions with alternative accommodation provided in quarters where evictees had to rent or buy with their own funds. Although a microcredit model was proposed, it was not in proportion to the scale of evictions. Human rights groups have criticized the Kenyan government for its approach to slum clearance, and Nairobi has witnessed several protests by slum dwellers and human rights organizations.

V.1.4. RIVER RESTORATION

We reviewed several cases of river restoration in large cities within developing countries such as the Philippines, China, Cambodia, and Thailand. In each case, ambitious programs were initiated to rid urban rivers of sewage, solid waste, and industrial pollutants. However, the results are discouraging and not in proportion to the time, money, and effort invested in river restorations.

The Nairobi river restoration case is similar to the cases in Asia, as an ambitious program with multiple stakeholders and adequate funds to begun, but did not reach its stated goals because of slow implementation, lack of coordination between the different social and environmental agencies, and forced evictions of riverbank settlers without provision of adequate alternative housing.

V.1.5. COAST REGULATION ZONE NOTIFICATION

Restoration of the Cooum River could require an amendment to the existing CRZ regulation governing the Chennai metropolitan area. In this section we discuss the socio-economic repercussions of large-scale resettlement of riverbank settlers, the option for in-situ re-construction in line with the current policy climate (see Chapter I for a full discussion of trends in housing policy in India), and the benefits of the CRZ amendments granted to Mumbai, Kerala, and Goa in protecting vulnerable populations, to make the case that an amendment would greatly benefit the cause of Cooum riverbank settlers, as well as allow river restoration work to proceed without impediment.

There were several amendments to the CRZ regulation after 1991. The 25th amendment is relevant to our project, as it involves a relaxation of CRZ norms along the coastlines of Kerala, Goa, and Mumbai. We have learnt from the Chennai Metropolitan Development Authority that the Cooum River is governed by CRZ for a 9km stretch from the mouth near Island Groundstill Choolaimedu Bridge. From our visits to riverbank slums, we have identified that 12 large slums with more than 6000 families (about 55% of all project-affected by resettlement families) live within the CRZ-affected part of the river. Many of the slums have been in existence for decades, and their residents work in nearby shops, hospitals, homes, and offices, according to Ward and Zonal officers who helped us to compile the slum list. (See Chapter IX Appendix 1 and 2 for a list of slums along Cooum river banks).

V.1.6. CONCLUSION

The lessons learnt from the five case studies indicates that a **participatory approach** has to be carried out where governments, knowledgeable and reputed non-governmental partners, and residents of slums are involved is probably the only approach that will allow for large-scale improvement, whether it is in-situ or through resettlement. Implementing appropriate and adequate services and maintaining such services in the long term require service providers and "beneficiaries" to be in close coordination. Non-governmental organizations, which have the trust of local residents, can work to build and maintain cooperation and coordination, as seen in the most effective efforts.

While we have reported on successful pilot projects in four of the five cities, all sites faced **challenges with scaling up** the model throughout citywide. Despite reliable funding and favourable policy contexts, scaling proceeded slowly, and in some cases, has not happened in some parts of the city to date.

While national governments have come forward to carry out the long-term and expensive task of urban in-situ reconstruction, it appears that partnerships with developed countries or with global housing experts may **build their capacity** to address this complex task in an efficient and just manner.

Behind this, it is crucial that CRZ requirements are rolled back for the affected parts of the Cooum River, as many settlers have lived there for decades and in-situ re-construction is the most equitable approach for improving their standard of living while reducing pollution in the river. Most of the children attend schools in the area, and men and women have steady work in nearby commercial and residential establishments. Precedents set in Mumbai, Goa, and Kerala to have served to protect the interests of vulnerable groups living along the coast and this amendment will do the same for settlers along Chennai´s major waterways.

Detailed case studies developed in this chapter are annexed to the SAR in Chapter IX Appendix 4.

V.2. DETAILS ABOUT RESSETTLEMENT SITES AND FACILITIES IN THE RESETTLEMENT SITES

According to the information collected from TNSCB if in case in-situ re-construction was not possible, these are the on-going project areas for resettlement in alternative places:

Location	*Date*	*Number of PAFs (Cooum)*
Perumbakkam, Ph. I Perumbakkam, Ph.II	August, 2013 March, 2014	6,000 14,376
Okkiyam Thorai Pakkam (OTP)	August, 2013	6,000
Navalur	March, 2014	2048
Kudapakkam	March 2014	1024
AIR	March 2014	416
TOTAL		**29,864**

Table 5. Current Resettlement Plans of TNSCB (Figures from CE's office)

As TNSCB has informed whole areas are provided with electricity, water, street lights, roads, storm water drains, schools, primary health centres, ration shops, police station, and

sewerage. This is in existing resettlement locations such as Kannagi Nagar and the completed buildings in Perumbakkam.

V.3. COMPENSATION AND RESETTLEMENT COST

As TNSCB has informed compensation package to be paid to the PAFs as Rs. 50,000 as a lump sum, of which Rs. 30,000 for subsistence (loss of livelihood), and Rs. 20,000 for moving expenses apart from this an additional a tenement unit will be given.

Regarding the new apartment the notional cost is of Rs. 6.25 lakhs, for which the beneficiary has to pay 10% through an instalment scheme under JNNURM. Beneficiary pays Rs. 62,500 as their contribution towards the flat. If the PAF is not opting for house – shall be provided with financial assistance of house construction (Rs.1.5 lakhs as per the LA&RR Act).

All the layouts for tenements are similar. Not being discriminated based on existing house of beneficiary. It depends on the housing modifications made by builder and agency as the project evolves. No variation by the condition of current residence of beneficiary. Most of the flats in the buildings built are at the same time and would have the same space and layout. Layout sample is shown on Chapter IX Appendix 5.

According to JNNURM budget split is:

CENTER: Co-chaired by Ministry of Urban Development and Ministry of Urban Employment and Poverty Alleviation, Govt. of India 50%

STATE: State level Committee led by Tamil Nadu Urban Finance and Infrastructure Development Corporation (TUFIDCO) 40%

BENEFICIARY: 10%

V.4. OPTIONS EXPLORED

V.4.1. INTRODUCTION

Different options have been explored through social assessment in order to define proposal for resettlement and rehabilitation on the slum areas.

Firstly each slum is being analysed as shown in Chapter IX Appendix 6 the categories analysed for each slum are defined based on the diagnosis developed.

Every slum has been analysed with regards to the flooding risk, affection and encroachment on Right of Way Line and compatibility with a new river front development through site visits and multi-criteria integral analysis. This way different group of areas have been defined: areas included total or slightly partially (P) in the Right of Way Line provided by PWD; areas included total or partially (P) in the Fluvial Corridor defined in the CMA Master plan developed by CMDA; and areas that full or partially (P) present high, medium, low, or very low flooding risk. The analysis has been completed by evaluating whether urban regeneration is necessary in order to obtain lands inside ROW line, river front needs In-situ development or current situation is not compatible with a proper river urban front.

From this analysis and from the possibilities to develop a new river front wherever possible several actions have been proposed. Actions have been prioritised in order to develop in-situ development wherever is possible, that is, where no hutments are affected and river front is acceptable.

For each slum type of action to be developed is being defined in terms of the options explored, resettlement, in-situ reconstruction, in-situ development or none (already resettled). Actions on slums options are defined in the list in Chapter IX Appendix 6.

The maximum number of families that could be affected, according to the data received, and the options explored, is shown in the list on Chapter IX Appendix 6.

Data showed on Chapter IX Appendix 6 are based on general information as per slum information provided by TNSCB.

SUMMARY	%	PAFS
Option 1: Partial RST+ISD	87%	12,459
Option 2: Partial RST+ISD+ISR	47%	6,681
Option 3: Complete RST**	100%	14,257

** option approved by TNSCB

Table 6. Slums and families affected by each action of the options explored. Number of families could be decreased by 9.6% according to pilot enumeration developed and RAY data provided.

The definition of each type of action explored is described below:

- **In situ Development (ISD)** - Provision of Basic Infrastructure amenities such as water supply, roads, sanitation, solid waste management policies in the slums.
- **In situ Reconstruction (ISR)** – Construction of dwelling units, construction of tenements without any relocation within the slum area.
- **Resettlement & Rehabilitation (RST)** – provision of houses, infrastructure, and livelihood programmes, etc., with a holistic approach in the TNSCB relocation areas.

Areas affected on each slum are shown through graphic documents in Volume 2, CHAPTER VIII RRP01 Action on slums maps.

The criterion regarding the type of actions explored is explained below.

V.4.2. OPTIONS EXPLORED FOR RESETTLEMENT

At this point, the options explored such as in-situ development, in-situ reconstruction and resettlement are explained in detail below.

V.4.2.1. IN-SITU DEVELOPMENT

In some areas in-situ development has been set. The areas were characterized by these factors:

- Do not fall within flooding risk.
- No hutments are affected by ROW line or the ones affected are in a river front development acceptable situation

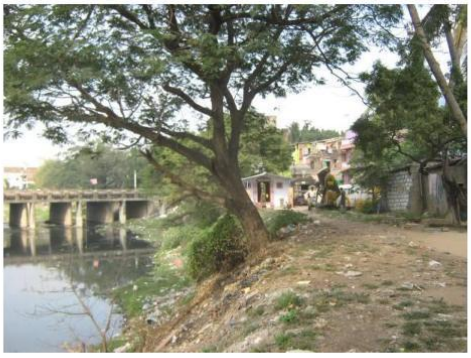
- The area can be improved in its river front not affecting the families living in the area with resettlement action.
- Areas can be improved integrating a new river front development compatible with existing urban form.

In-situ development actions are linked to:

- The river front development with new walk ways or cycle axis.
- Sanitation network improvement or development.
- Low income sanitation solutions.
- Re-vegetation improvement in river banks.

Some other improvement actions could be taken on existing buildings such as:

- Renewable energies implementation.
- Building improvement.
- Public spaces within slum improvements according to the new riverfront developed.



Picture 1 and Picture 2 : Left river bank next to Bharathipuram slum. Area where in-situ development option has been explored

Picture 3: River front In-situ development option explored in the river bank area near next to Bharathipuram slum

V.4.2.2. IN-SITU RECONSTRUCTION

In case in-situ development is not possible because of either flooding risk or incompatibility with the urban river front, the second option explored could be applied, that is in-situ reconstruction.

These areas have been located where urban development conditions are suitable for urban development as follows:

- **No flooding risk**, development areas have been delimited to 10 mts from the maximum flood level for the return period of 200 years, so that floodplains are free from any construction.
- **Connectivity** with the existing urban areas is possible and the new developments which will improve the existing urban form.
- **Land use zoned as residential**, in the areas where this land use is currently zoned (this applies for first, and fourth group).

Areas have been categorised as follows:

- **In-situ reconstruction (ISR)**

  These areas are where slums are currently located and can be reorganised through in-situ reconstruction to new urban areas.

- **In-situ reconstruction areas affected by Coastal Regulation Zone notification (CRZ)**

These areas are affected by Coastal Regulation Zone and so an amendment to this Regulation is proposed.

- **In-situ reconstruction areas to be zoned to residential use (ZTR)**

  These areas are currently zoned as Open Space and Recreational areas in the CMDA 2nd Master-plan for CMA. The riverfront development proposals do not need these lands so it is proposed to re-zone these areas to residential land use in order to intend these lands for in-situ re-construction areas.

In-situ reconstruction: This intervention has been explored as an option which would develop new residential areas by in-situ reconstruction and development in **five areas**. As many as **525 new dwellings** with 270 sq.ft. carpet area (plot) and 393 sq.ft. plinth area (built - up), could be developed in these areas with an average 0.77 FSI and with an average density of 209 dwelling/ha, according to layouts developed, shown on Chapter VIII RRP.4 In-situ reconstruction proposals.

New dwellings would increase upto 714 in case FSI is increased to the maximum of 1.10 for developing new residential areas including green and open spaces with an average rate of 350 land sq.ft /dwelling.

These areas would not be affected directly by Eco-restoration plan, only would be affected in case if in-situ re-construction is developed.

By in-situ reconstruction not only new dwellings would be developed, but also areas for little commerce and tents, small business and handicraft activities can be established.

As a second option, the proposal explored is **in-situ reconstruction affected by Coastal Regulation Zone notification (CRZ)** which prevents new developments on the riverside and they have been identified as **six** areas.

Coastal Regulation Zone's notification's amendment is justified and proposed by this plan in order to develop in-situ reconstruction.

These areas could be up-gradated by in-situ reconstruction. This action would allow to develop **2,346 new dwellings,** with a carpet area (plot) of 270 sq.ft. and 393 sq.ft. plinth area (built - up), being developed in these areas with an average 1.10 FSI and an average dwelling density of 301 dwelling/ha including green and open spaces with an average rate of 350 land sq.ft /dwelling.

As per the information gathered from Department of Environment, Government of Tamil Nadu the process for developing an amendment in the CRZ regulation, which could last for one year, is as follows:

- Submission of Draft (Proposal for the amendment) – By the Applicant (in this case CRRT) to the Director of Environment, TNSCZMA (Tamil Nadu State Coastal Zone Management Authority) who is the member secretary.
- Resolution by TNSCZMA and forwards to the Government of TN (Department of Environment and Forest)
- Forwarded to the GoI (Ministry of Environment & Forest – National Coastal Zone Management Authority)
- Acceptance of the Authority.
- Published in the local newspapers – for Public Consultation (90 days)
- Amendment is made and will be produced in the Parliament.

- Acceptance of the Ministers.
- Amendment will be approved.

As the third proposal explored as an option is **in-situ reconstruction areas to be zoned to residential use (ZTR)** and **ten areas** have been identified which are suitable for proposing residential improvement which are not necessary for the development of the river front or are currently vacant as free space areas like abundant parks or playgrounds. These areas are currently zoned as open space & recreational uses, thus this plan proposes them to be reclassified as zoned to residential use (ZTR) so that they are viable for in-situ reconstruction.

This action will allow a development of **2,650 new dwellings**, with 270 sq.ft. carpet area (plot) and 393 sq.ft. plinth area (built - up), in these areas with an average 1.07 FSI and an 294 dwelling/ha average density.

New dwellings would increase to 2,718 in case FSI is increased to the maximum 1.10 for developing new residential areas including green and open spaces with an average rate of 350 land sq.ft /dwelling.

Success on these proposals management would rely on land ownership and promotion management as private owners could be involved and a request has been submitted to the revenue department in order to get information about land ownership. Preliminary land ownership has been checked together with TNSCB and PWD and is included on Chapter IX Appendix 7 on land ownership column. Not only area but also its main dimensions are detailed out. Finally platform level, as minimum level for urban development and in-situ re-construction in order to avoid 100 years return period floodplain is detailed. As being informed Housing Board would be also clue stakeholder involved in developing Low Income Houses in the areas proposed for in-situ re-construction once land use and land development conditions are fixed to the proposed final residential use destination.

Detailed calculations, area details, main dimensions, land ownership, dwelling number, FSI, and densities are shown on Chapter IX Appendix 1.

This way the proposal for in-situ re-construction would affect the grand total of 5,520 families according to the layouts developed and calculations developed. In case if maximum 1.10 FSI is applied the proposal for in-situ re-construction would affect the grand total of 5,778 families.

In case F.S.I could be increased then the new number of dwellings and families under in-situ re-construction would increase accordingly.

In situ reconstruction and new developments proposals	DWELLING
In situ reconstruction (ISR)	714
In situ reconstruction. Areas affected by Coast Regulation Zone (CRZ)	2,346
Areas proposed to be zone to residential (ZTR)	2,718
TOTAL	5,778

Table 7: In situ reconstruction proposal option explored and new dwellings estimation

Finally, it is also advised that in-situ re-construction could be managed applying Low Income Houses management. In Volume 1 Chapter V Shelter, 5.12 c) points in CMA Master plan 2026 developed by CMDA that 10% dwellings in private residential areas developed must be reserved as Low Income Houses. This way applying this measure would be possible but in any case price on new dwelling should be affordable for weaker society sections or management would be developed by central and state government.

In-situ reconstruction proposals are defined on Urban Renewal options explored CHAPTER VIII RRP4 maps.

The following graphics will explain the in-situ re-construction phases for Naduvankarai and Moovendar Nagar area.

Phase 0 and 1 Current state. Works in order to connect walkways and cycle axis proposals.

Phase 2 and 3.
2.a Families transitory resettled. 2.b Two first blocks are developed.
3.a Families transitory resettled. 3.b First U blocks are developed.

Phase 4 and 5.
4.Last U block is developed.
5.Families in-situ reconstructed ending phase 4: 173.
Picture 4: (Series). Phases for Naduvankarai and Moovendar Nagar area.

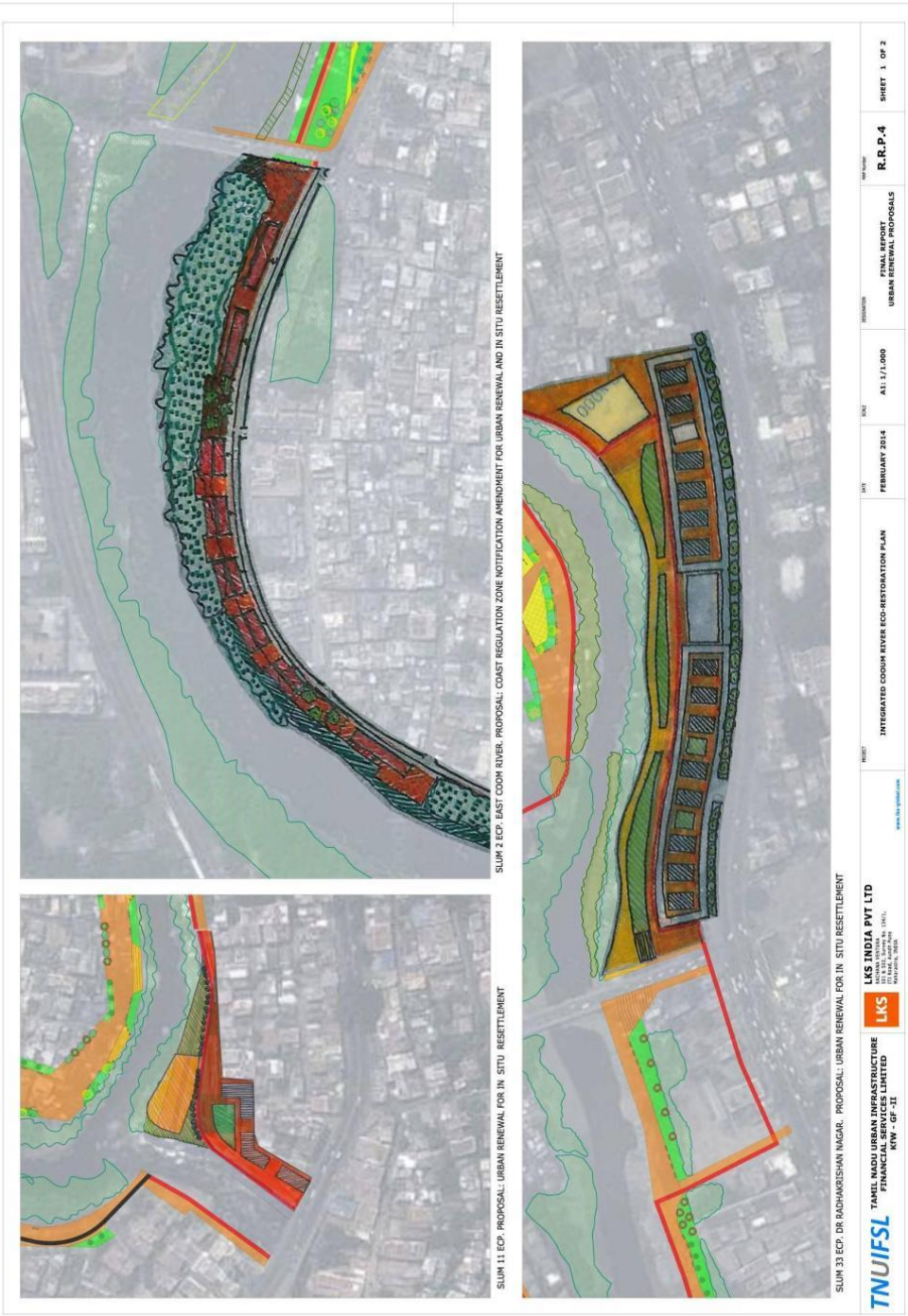
Picture 5: In-situ reconstruction option proposed in Naduvankarai and Moovendar Nagar.

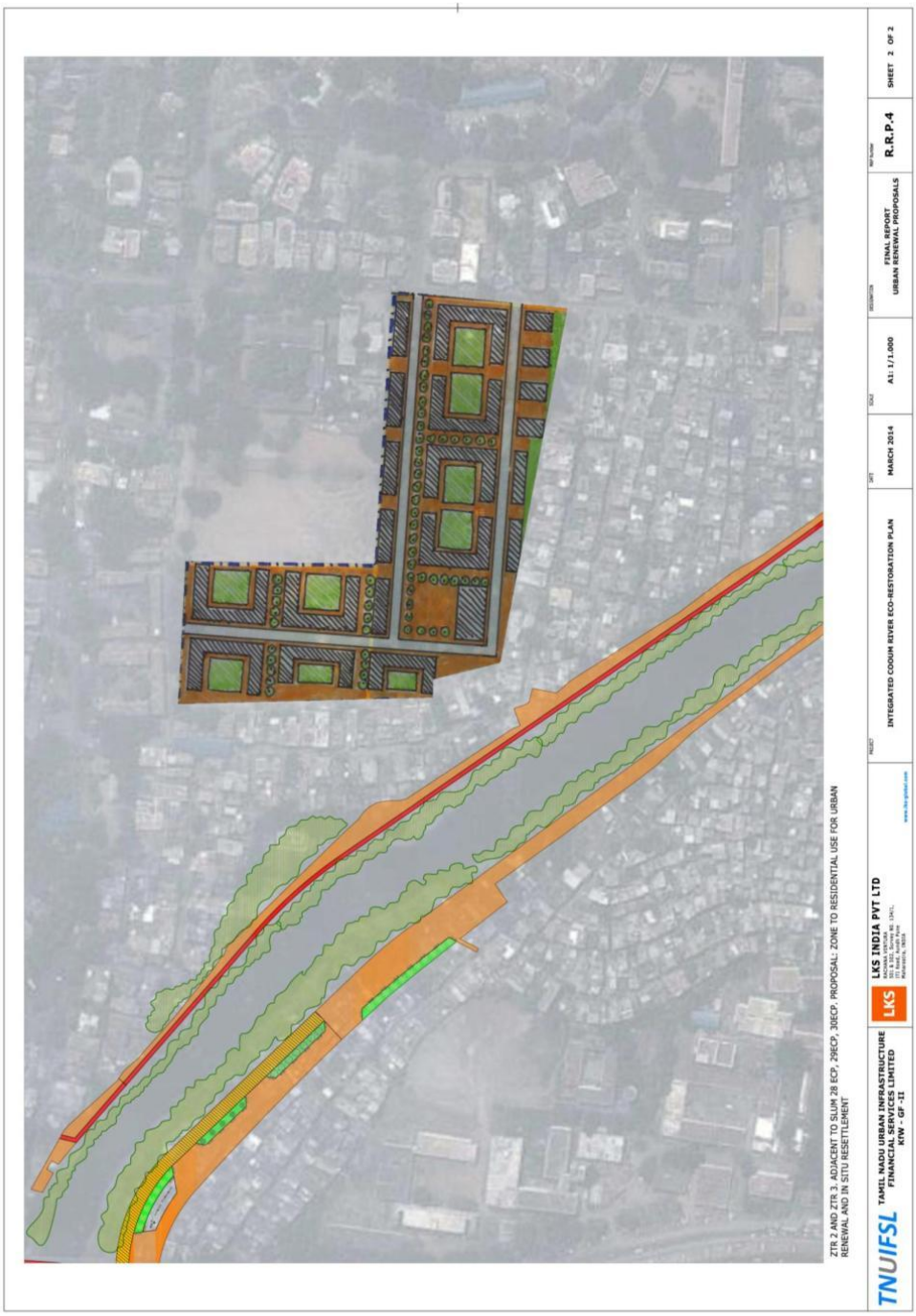
Picture 6 and Picture 7: Area where in-situ reconstruction option has been explored, East Cooum River Slum

Bellow in-situ reconstruction proposals explored and defined on Chapter VIII RRP4 Urban Renewal options explored maps are shown.

Some in-situ reconstruction proposals explored are defined in these maps on following areas:

- Slum 11 ECP, WEST NAMASIVAYAPURAM - SALAVAIYAR COLONY
- Slum 2 ECP, EAST COOUM RIVER
- Slum 33 ECP, DR RADHAKRISHNAN NAGAR
- Areas ZTR2 and ZTR3 proposed to be zoned to Residential Uses, adjacent to slums 28ECP THIRUVEETHIAMMAN KOIL STREET, 29ECP KATHIRAVAN COLONY and 30 ECP BHARATHIPURAM.


SLUM 2 ECP. EAST COOM RIVER. PROPOSAL: COAST REGULATION ZONE NOTIFICATION AMENDMENT FOR URBAN RENEWAL AND IN SITU RESETTLEMENT
SLUM 11 ECP. PROPOSAL: URBAN RENEWAL FOR IN SITU RESETTLEMENT
SLUM 33 ECP. DR RADHAKRISHNAN NAGAR. PROPOSAL: URBAN RENEWAL FOR IN SITU RESETTLEMENT
TNUIFSL
TAMIL NADU URBAN INFRASTRUCTURE FINANCIAL SERVICES LIMITED KNW - GF -II
LKS INDIA PVT LTD
PROJECT
INTEGRATED COOUM RIVER ECO-RESTORATION PLAN
DATE
FEBRUARY 2014
SCALE
A1: 1/1,000
DESCRIPTION
FINAL REPORT
URBAN RENEWAL PROPOSALS
R.R.P-4
SHEET 1 OF 2



Picture 8: In-situ re-construction proposals options explored on Chapter VIII RRP4 map

V.4.2.3. RESETTLEMENT

Where resettlement has been set, multi-storeyed tenements would be constructed with Social and Community infrastructure in alternate places to resettle these families there.

The resettlement strategies should be applicable as follows:

- **Developing Co-operative Housing Societies**, as defined in Volume 3 Chapter VI Shelter, 6.28 point in CMA Master plan 2026 developed by CMDA.

  Co-operative Housing Societies involve future householders in housing promotion and sets social bases for future habitat.

- **Managing Low Income Houses** that must be reserved on private residential developments. As define in Volume 1 Chapter V Shelter, 5.12 c) points in CMA Master plan 2026 developed by CMDA.

  When housing neighbourhoods and apartment blocks are developed by the private sector on lands exceeding one hectare, 10% of the land shall be reserved and developed for housing for LIG/EWS with dwelling units not exceeding 45 sq.mt either within the site proposed for development or in a location within a radius of 2km from the site under reference.

- **Developing sustainable areas**, as integrated new townships, applying this criterion on urban development.

  a) Development would be integrated with existing towns, allowing spatial and social continuity.

  b) Developments would integrate parks and open space areas in order to promote relationship, recreation and biodiversity increase.

  c) Access to facilities, from basic urban infrastructures, water supply, sanitation, solid waste management to educational, health assistance and cultural facilities.

  d) Access to public transport services in order to promote a more sustainable mobility.

  e) Promote entrepreneurship and socioeconomic development planning economic, commercial and other revenue activities (based on population current and potential skills like handcraft, art craft and others), planning commercial uses integrated in dwelling buildings ground floor and by developing Community Development Program.


Picture 9 and Picture 10: Quith E Millet Bridge to Old Jail slum on Island Grounds


Picture 11 and Picture 12: Left, area where resettlement is necessary MGR Colony slums on the left bank. Right, area where resettlement is necessary, slum on left river bank opposite to NSK Nagar slum

V.5. RESETTLEMENT PROPOSAL AND AFFECTED FAMILIES

V.5.1. RESETTLEMENT PROPOSAL

Every slum has been analysed with regards to the flooding risk, **affection and encroachment on Right of Way Line** and compatibility with a new river front development, through site visits and multi-criteria integral analysis. This way the areas have been defined based on the following parameters: areas included total or slightly partially (P) in the Right of Way Line provided by PWD; areas included totally or partially (P) in the Fluvial Corridor defined in the CMA Master plan developed by CMDA; and areas that are fully or partially (P) present within high, medium, low, or very low flooding risk. The analysis has been completed evaluating whether urban regeneration is necessary in order to obtain lands inside ROW line, river front needs improvement or current situation is not compatible with a proper river urban front.

The exploration of different options of relocation has been developed within the scope of this project as stated in the Terms of Reference. **All the 3 options, described in the previous chapter, were presented to the TNSCB in several meetings, and the TNSCB approved the 3rd one citing that the land laws cannot be deviated, and as an immediate remedy for the affected people, only option 3 is possible as the tenements are built and ready for occupation.**

Detailed information regarding the analysis developed and number of families and slum areas affected by the resettlement proposal are detailed out in Chapter IX Appendix 8.

Summary of is given below:

	%	FAMILIES	SLUMS
TOTAL FAMILIES	100.00	14972	65
ALREADY RESETTLED	4.78	715	7
Families under Cooum Project		14257	58
RESETTLEMENT	95.22	14257	58

Table 8. Slums and families affected by resettlement. Number families could be decreased in a 9.6% according to pilot enumeration developed and RAY data provided.

V.5.2. COMMUNITY DEVELOPMENT ACTIVITIES

Recent thinking on community development emphasizes community participation and decision-making in conceptualizing, planning, and implementing related activities (World Bank, 2012). Previous notions of community development were "interventionist" and treated members of the community as beneficiaries, rather than participants. Very often, NGOs and government agencies found that such interventionist programs did not find traction in the communities they sought to serve, as they were superimposed on existing structures and practices, and did not entirely mesh with them (Mohan, 2001; Chambers, 1993).

Innovative methods of working with communities tap into leadership within communities, and tie newer practices and external technologies with existing structures in which they can become embedded and slowly work their way through the system. Collaboration is the key element in community development, as it helps external agents fully understands the needs and aspirations of the groups they work with, and work in meaningful ways with them (Berkes & Ross, 2013).

The TNSCB document on community development activities to support in-situ reconstruction and resettlement of slum dwellers affected by the Cooum restoration is comprehensive in that it includes approaches to improving public services, education, health, and livelihood. Document collected from TNSCB is enclosed on Chapter IX Appendix 9. We would urge the adoption of a participatory approach in implementing these activities by seeking out formal and informal leaders within the community, integrating the views of younger and older, and male and female residents, and tapping into their capacities and interests for effectively and sustainably carrying out these activities.

V.6. INSTITUTIONAL MECHANISM AND IMPLEMENTATION ARRANGEMENTS

V.6.1. IMPLEMENTATION AGENCY

A well-defined institutional arrangement and implementation mechanism is very important for the timely and successful implementation of any plan. The success or failure of a Resettlement and Rehabilitation (R&R) programme predominantly depends on the officers responsible for its implementation. Therefore it is appropriate to define the type of institutional arrangement and implementation mechanism proposed for the R&R programme.

V.6.2. IMPLEMENTATION AUTHORITY

TNUIFSL is responsible for redacting the, 'Integrated Cooum River Eco- Restoration Plan".

Even though several stakeholders are involved in the project implementation, it is proposed that TNSCB will constitute several Project Implementing Unit (PIU) which will be under the direction of the Executive Engineer, Division I and FAP, TNSCB, who are responsible for coordination of all components of resettlement.

The PIU will be staffed with an Officer – Resettlement and Rehabilitation of the rank of Assistant Executive Engineer (AEE-RR) from the same Divisional Office. The AEE-RR will be supported by one Community Development Officer and Community Officer with experience in consultation and relocation activities, till the end of the implementation of the RP.

V.6.3. COORDINATION WITH CIVIL WORKS

The PIU will be responsible for coordination of civil works and the RP for timely relocation of the PAFs. The PIU will be responsible for the overall co-ordination of RP and will ensure that construction of tenements are complete and all related amenities are in place before advising the PAFs to relocate to the tenements allotted to them. By ensuring this the shifting of PAFs temporarily does not arise and the PAFs can continue to live in the same place until the tenements are ready for occupation.

V.7. GRIEVANCE REDRESSAL MECHANISM.

V.7.1. GRIEVANCE REDRESSAL COMMITTEE (GRC)

Any aggrieved PAFs will be directed to approach the Executive Engineer, TNSCB and forwarded to the Chief Engineer (TNSCB) subsequently at the first level. Further if the PAFs are not satisfied, they may approach Assistant Commissioner / DMR and DRO / R&R of Project Management Unit Office at Ezhilagam. Petitions received will be acknowledged within 7 days from the date of receiving. The action taken on the grievance will be communicated to the aggrieved PAF through registered letter within 30 days from the date of receipt of the petition. The project affected person can go through these two levels of grievance redressal forum available to the PAF and if not satisfied can appeal in the Court of Law. Step-by-step process for registering and redressing of grievances, response time, communication modes, mechanism for appeal and the provisions to approach civil courts in case of other provision fail will be disseminated. These will be prepared in the local language and distributed to all the PAFs at the time of issuing identity cards.

V.7.2. PROJECT INFORMATION CENTRE (PIC)

Because of the project extension several Project Information Centres are proposed to be located in existing or future parks as reflected in the graphic information.

V.7.3. PUBLIC DISCLOSURE

First public disclosure linked to the Eco-restoration Plan will be held on dissemination report phase. (see further information below).

V.8. PUBLIC CONSULTATIONS, STAKEHOLDER MEETINGS, DISEMINATION REPORT

First public consultations have been developed on the Data collection for the development of the SAR in the Interim Report. Tamil Nadu Slum Clearance Board and PWD being the main stakeholders were consulted by the Consultant. Several meetings with involved stakeholders have been developed on developing Final Draft.

Public consultation with general public has been held on June 13th.

The aim of the sessions developed was to share with the general public the progress of the project, once the diagnosis and a progression of the proposals to be developed were made. Another objective was to explain the updates of the project development status to the administrations involved, as a part of the process begun in late 2012 of involvement of the authorities in this comprehensive project.

There have been two sessions, the first aimed at the general public, attended by about a hundred people and another one oriented to non-governmental organizations and academic institutions, where number of interventions and contributions stood out. The media and local TV have echoed the presentations, developing articles in the main publications in

English and in various newspapers in Tamil, the local language of the former Madras state, counting a total of ten references in the press both written and digital.

The third session, aimed at involved administrations and other authorities, was attended by all the agents managing the development of the proposals and served as a forum and work session for the contrast and inter-sectorial coordination, key aspect to the future success of the management, development and execution of the project. Details about queries received and preliminary answer is developed on the project report on chapter dissemination report.

CHAPTER VI IMPLEMENTATION PLAN

VI.1. IMPLEMENTATION ARRANGEMENTS

In this point the implementation plan to be developed when the Eco-restoration Plan finalises, is defined.

The entire programmed implementation period is established in the Report Volume. Each entitled unit (family/persons) will be issued an identity card that will list the support mechanisms and amount of assistance to be given. The PIU will be established exclusively for the purpose of implementing the RP in order to complete the implementation in twelve weeks. However if there is any delay in implementation due to unforeseen circumstances, the period of PIU will be extended accordingly.

The implementation of the RAP involves the following activities:

- Identification of affected families by ID Card
- Obtaining concurrence from affected families for the resettlement
- Finalization of Cut-off date
- Notification for clearance of encroachments and Squatters for resettlement
- Enlistment of the Structures of the Project affected
- Estimation of the impact of Loss of the project affected
- Issue of ID Cards
- Preparation of PAFs for resettlement
- Disbursement of R&R cash Assistance for the affected people
- Relocation and resettlement of PAFs.

The main steps in implementation of the programme include:

- Establishment of the PIU
- Imparting training to the staff to be involved in implementation
- Issuing identity cards to PAFs
- Disbursement of RP assistance
- Consultation and allotment of dwelling units
- Delivery of completed dwelling units fit for occupation and
- Impact evaluation

VI.2. STEPS IN IMPLEMENTATION AND COORDINATION WITH OTHER GOVERNMENT AGENCIES /DEPARTMENTS

The institutional framework that has to be followed for the implementation of the Eco-restoration project of the Cooum River has been detailed out in the Phasing Plan and Implementation chapters in the Main Report volume.

VI.3. MONITORING AND EVALUATION ARRANGEMENT

Though sizeable numbers of PAFs are involved, the impact to the PAFs is one hence TNSCB itself can do the concurrent monitoring. A consultant will be appointed who would undertake an impact evaluation, six months after the implementation of the RP.

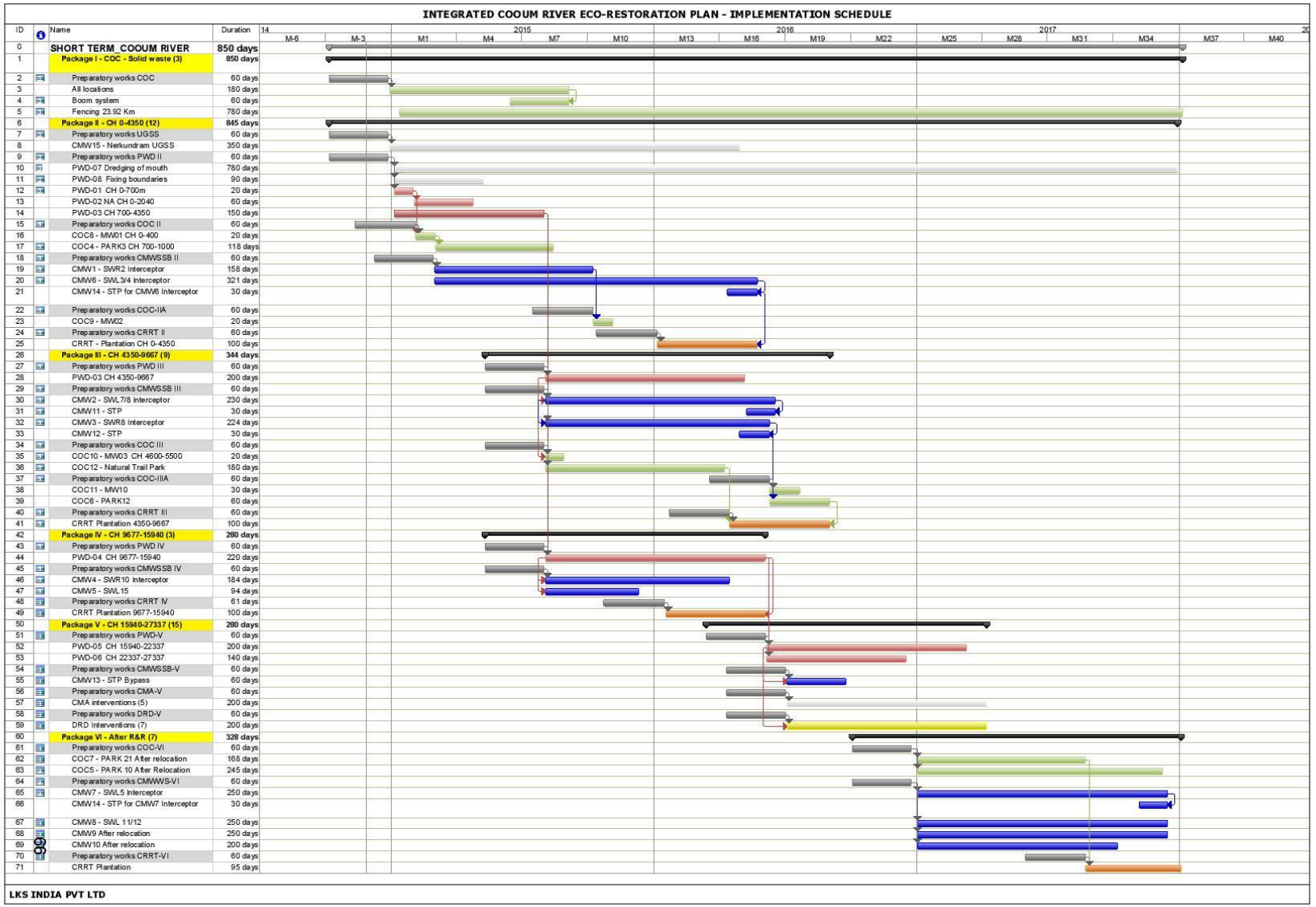
TNSCB will monitor the R&R activities and prepare monthly progress reports in terms of physical and financial indicators and submit the same to the Special Officer, ETRP/TEAP. In addition, the monitoring process will also look into the communication and reactions of PAFs, use of grievance procedures and information to PAFs on benefits, options and implementation timetable. The progress report will be reviewed by the PMU.

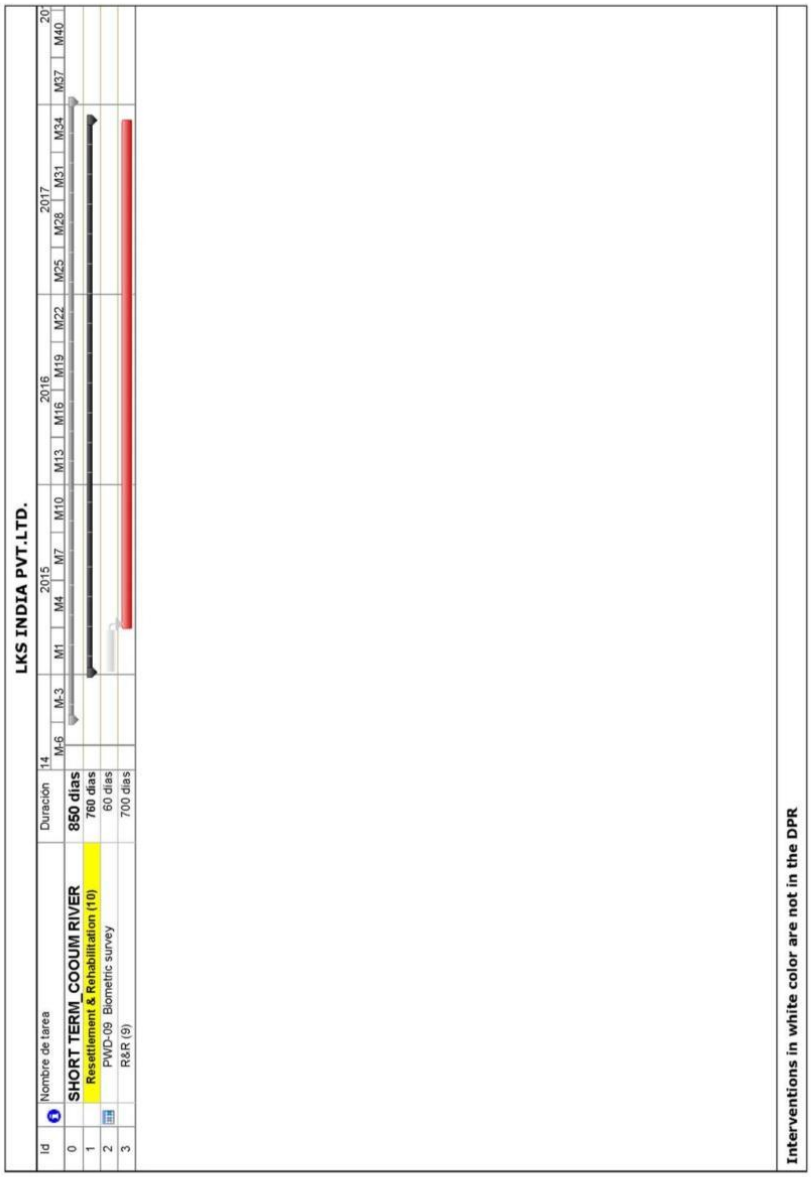
For the impact evaluation the consultant would collect primary data from the PAFs and compare the same with the BSS data collected. Some of the key socio-economic indicators that would be used to assess the success of the project are listed below:

- Type of dwelling unit and size of dwelling unit
- Access and quality of basic amenities such as water, electricity, toilet, separate kitchen, and
- Income levels

VI.4. WORK PROGRAM (IMPLENTATION SCHEDULE)

The implementation plan or work programme is in the following page:


INTEGRATED COOUM RIVER ECO-RESTORATION PLAN - IMPLEMENTATION SCHEDULE
ID
Name
Duration
2015
2016
2017
M-6
M-3
M1
M4
M7
M10
M13
M16
M19
M22
M25
M28
M31
M34
M37
M40
0 SHORT TERM_COOUM RIVER 850 days
1 Package I - COC - Solid waste (3) 850 days
2 Preparatory works COC 60 days
3 All locations 180 days
4 Boom system 60 days
5 Fencing 23.92 Km 780 days
6 Package II - CH 0-4350 (12) 845 days
7 Preparatory works UGSS 60 days
8 CMW15 - Nerkundram UGSS 350 days
9 Preparatory works PWD II 60 days
10 PWD-07 Dredging of mouth 780 days
11 PWD-08 Fixing boundaries 90 days
12 PWD-01 CH 0-700m 20 days
13 PWD-02 NA CH 0-2040 60 days
14 PWD-03 CH 700-4350 150 days
15 Preparatory works COC II 60 days
16 COC8 - MW01 CH 0-400 20 days
17 COC4 - PARK3 CH 700-1000 118 days
18 Preparatory works CMWSSB II 60 days
19 CMW1 - SWR2 Interceptor 158 days
20 CMW6 - SWL3/4 Interceptor 321 days
21 CMW14 - STP for CMW6 Interceptor 30 days
22 Preparatory works COC-IIA 60 days
23 COC9 - MW02 20 days
24 Preparatory works CRRT II 60 days
25 CRRT - Plantation CH 0-4350 100 days
26 Package III - CH 4350-9667 (9) 344 days
27 Preparatory works PWD III 60 days
28 PWD-03 CH 4350-9667 200 days
29 Preparatory works CMWSSB III 60 days
30 CMW2 - SWL7/8 Interceptor 230 days
31 CMW11 - STP 30 days
32 CMW3 - SWR8 Interceptor 224 days
33 CMW12 - STP 30 days
34 Preparatory works COC III 60 days
35 COC10 - MW03 CH 4600-5500 20 days
36 COC12 - Natural Trail Park 180 days
37 Preparatory works COC-IIIA 60 days
38 COC11 - MW10 30 days
39 COC6 - PARK12 60 days
40 Preparatory works CRRT III 60 days
41 CRRT Plantation 4350-9667 100 days
42 Package IV - CH 9677-15940 (3) 280 days
43 Preparatory works PWD IV 60 days
44 PWD-04 CH 9677-15940 220 days
45 Preparatory works CMWSSB IV 60 days
46 CMW4 - SWR10 Interceptor 184 days
47 CMW5 - SWL15 94 days
48 Preparatory works CRRT IV 61 days
49 CRRT Plantation 9677-15940 100 days
50 Package V - CH 15940-27337 (15) 280 days
51 Preparatory works PWD-V 60 days
52 PWD-05 CH 15940-22337 200 days
53 PWD-06 CH 22337-27337 140 days
54 Preparatory works CMWSSB-V 60 days
55 CMW13 - STP Bypass 60 days
56 Preparatory works CMA-V 60 days
57 CMA interventions (5) 200 days
58 Preparatory works DRD-V 60 days
59 DRD Interventions (7) 200 days
60 Package VI - After R&R (7) 328 days
61 Preparatory works COC-VI 60 days
62 COC7 - PARK 21 After relocation 168 days
63 COC5 - PARK 10 After Relocation 245 days
64 Preparatory works CMWWS-VI 60 days
65 CMW7 - SWL5 Interceptor 250 days
66 CMW14 - STP for CMW7 Interceptor 30 days
67 CMW8 - SWL 11/12 250 days
68 CMW9 After relocation 250 days
69 CMW10 After relocation 200 days
70 Preparatory works CRRT-VI 60 days
71 CRRT Plantation 95 days
LKS INDIA PVT LTD


LKS INDIA PVT.LTD.
Id
Nombre de tarea
Duración
SHORT TERM_COOUM RIVER
850 dias
Resettlement & Rehabilitation (10)
760 dias
PWD-09 Biometric survey
60 dias
R&R (9)
700 dias
2015
2016
2017
Interventions in white color are not in the DPR

CHAPTER VII COST ESTIMATE

VII.1. R&R COST

The total cost for the resettlement of the slums has been estimated to be **Rs. 1,223.60 Cr** including 5% contingencies, 7.5% supervision charges.

Rs. in crores

TAMIL NADU SLUM CLEARANCE BOARD		COST
CO-TNS-2014-STP-01	Shifting allowance at Rs.5000 per person	7.13
CO-TNS-2014-STP-02	Subsistence allow @Rs.2500/month for 1 year	42.77
CO-TNS-2014-STP-03	Beneficiary contribution. 10 % of the cost of construction	92.67
CO-TNS-2014-STP-04	EB Service Connection	3.56
CO-TNS-2014-STP-05	Community Development programme	4.89
CO-TNS-2014-STP-06	Impact Assessment study	0.43
CO-TNS-2014-STP-07	Project Management Group	1.41
CO-TNS-2014-STP-08	Land cost at auto nagar(300sp ft @ Rs.638 per sq ft for 458 families)	8.77
CO-TNS-2014-STP-09	Notional cost of construction at Rs. 6.5 Lakhs per family	926.00
	Total (TNSCB for Short Term Plan)	**1,087.63**
	Contingencies 5%	54.38
	Supervision Charges 7.5%	81.57
	Total (TNSCB for Short Term Plan)	**1,223.58**

CHAPTER VIII DETAILED DRAWINGS

List of drawings:

RRP.01 **ACTION ON SLUMS**

RRP.02 **SOCIAL ASSESSMENT, SOCIAL NEGATIVE IMPACTS EVALUATION**

RRP.03 **SOCIAL ASSESSMENT, AFFECTED LANDS**

RRP.04 **URBAN RENEWAL, OPTIONS EXPLORED**

CHAPTER IX APPENDICES

APPENDIX – 1 SLUM LIST AND SOCIO ECONOMIC TABLES, DATA COLLECTION PROVIDED BY TNSCB

TAMIL NADU SLUM CLEARACNE BOARD

CHENNAI RIVER RESTORATION PROJECT

WITHIN CITY LIMIT

S.No.	Name of the Slum	Total	Categories based on proof submitted						
			1	2	3	4	5	6(a)	6(b)
1	Quith-e-Milleth Bridge to old Jail	1140	509	260	185	5	144	34	3
2	Navalar Nedunchelian Nagar	1171	188	110	347	3	122	401	0
3	Bootha Perumal Naickan Street	145	86	22	23	0	8	5	1
4	Anjukudisai	575	151	112	86	2	60	141	23
5	Rangoon Street	315	115	76	54	0	43	27	0
6	Rajiv Gandhi Nagar	224	82	28	74	1	19	20	0
7	Jothiammal Nagar	70	16	17	29	1	2	3	2
8	Padikuppam	275	104	31	49	4	37	48	2
9	Mel Naduvankarai	48	25	6	9	0	1	7	0
10	Sathyasai Nagar	265	65	49	42	2	45	61	1
11	Poonnuvel Pillai Thottam & Muthu Mariaman Nagar	537	250	99	74	4	56	52	2
12	Beri Beri Road (Already taken by ECP)	--	--	--	--	--	--	--	--
13	NSK Nagar	650	313	132	76	4	79	36	10

14	Moovendar Nagar	105	60	10	12	4	19	0	0
15	MGR Colony	363	150	127	43	0	30	12	1
16	Makkish Garden	491	177	98	86	3	58	65	4
17	Thideer Nagar	595	288	98	117	0	61	29	2
	TOTAL	**6969**	**2579**	**1275**	**1306**	**33**	**784**	**941**	**51**
			5977					**941**	**51**

INDEX		
1	**Category 1**	Families possessing Family Cards and Voter ID issued prior to cut off Date i.e., June 2006
2	**Category 2**	Families possessing only Ration Card issued prior to cut off Date
3	**Category 3**	Families possessing only Voter ID issued prior to cut off Date
4	**Category 4**	Families possessing other evidences such Bank Pass Book, Driving Licence, Tax Receipt, EB Card, Gas Bill, Birth & Death Certificate and Sale Deed within the cut off Date
5	**Category 5**	Families possessing Family Card, Voter ID and other records as per the revised cut off date (October 2009)
6	**Category 6(a)**	Families possessing Family Card, Voter ID issued after the cut off date(October 2009) and having no residential proof
7	**Category 6(b)**	Door Locked, Vacant Place, Dilapidated Structures and Temporary make shift Structures (Not traceable even after 4 visits)

TAMIL NADU SLUM CLEARANCE BOARD

ELEVATED CORRIDOR PROJECT

S.No.	Name of the Slum	Total	*Categories based on proof submitted*						
			1	2	3	4	5	6(a)	6(b)
1	Pallavan Nagar	632	87	127	128	– 14	106	146	24
2	East Cooum Road	575	151	112	86	2	60	141	23
3	West Cooum Road	369	235	65	34	3	28	3	1
4	South Cooum Road	276	123	62	40	4	39	6	2
5	Rettaimalai Srinivasan Nagar	34	3	8	3	0	17	4	0
6	Mayor Ramanathan Salai	470	140	77	72	0	89	54	38
7	Appasamy Street	488	275	96	62	0	28	19	8
8	Chari Road	133	56	34	27	0	8	7	1
9	Jothiammal Nagar	302	133	53	95	0	9	10	2
10	M.K. Stalin Nagar	229	110	48	44	0	18	9	0
	West Namasivayapuram	338	120	63	28	10	38	53	26
11	Salavaiyar Colony								
12	Kalvaikarai								
13	Kalainar Karunanidhi Nagar	24	16	6	3	1	2	2	3
14	Venkatajalapathy	9							
15	Officers colony	41	15	7	4	0	0	0	15
16	E.V.R. Salai	237	109	29	24	3	21	13	38
17	Kanniah Street	60	26	5	8	0	6	11	4
18	Sunnambukalvaikarai Street	251	65	29	21	0	37	52	47
19	South Kasarath Thottam	111	49	22	23	1	9	4	3
20	Nallamuthu Mariamman Koil Street	41	18	3	7	1	2	1	9
21	East Arasamarath Street	67	27	9	7	2	11	5	6
22	S.S. Sahib Street	132	44	19	8	1	26	8	26
23	Perumal Koil Street	395	187	49	56	7	36	32	28
24	Vellalar Street	16	3	1	5	0	2	4	1
25	East Mada Street								

26	Sabapathi Street	67	17	8	5	2	8	2	25
27	Manjakollai	249	75	31	47	8	41	32	15
28	Thiruveethiamman Koil Street	180	65	31	37	0	25	11	11
29	Kathiravan Colony	49	12	9	9	2	0	14	3
30	Bharathipuram	13	5	3	1	0	0	4	0
31	Gajalakshmi colony	57	11	6	15	0	0	22	3
32	River View Colony	303	95	53	58	5	0	82	10
33	Dr. Radhakrishnan Nagar	341	117	63	54	1	32	59	15
34	Muthumariamman Koil Street	390	121	59	69	3	0	117	21
35	Naduvankarai	91	43	8	15	1	13	9	2
	Total	6970	**2552**	**1195**	**1095**	**71**	**711**	**936**	**410**

5624

		936	**410**

INDEX

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	Category 6(b)	Door Locked, Vacant Place, Dilapidated Structures and Temporary make shift Structures (Not traceable even after 4 visits)

TAMIL NADU SLUM CLEARACNE BOARD
CHENNAI RIVER RESTORATION PROJECT
BEYOND CITY LIMITS

S.No.	Name of the Slum	Total	Categories based on proof submitted						
			1	2	3	4	5	6(a)	6(b)
1	Pudu Kesavaram	43	26	5	11	0	1	0	0
2	Sivapuram	35	12	7	3	0	4	7	2
3	Narasingapuram	125	51	26	13	1	19	13	2
4	Perambakkam (MGR Nagar & Gandhi Nagar)	108	37	34	11	3	7	15	1
		131	63	28	13	2	10	13	2
5	Irulanjeri	7	5	1	1	0	0	0	0
6	Satharai	654	184	151	67	8	67	144	33
7	Periyakuppam	On the joint verification, PWD and Revenue Surveyor along with TNSCB had ascertained that the residents are not within the boundaries of PWD. Hence not enumerated.							
8	Ondikuppam	23	5	5	1	1	3	6	2
9	Egattur	15	1	4	2	0	0	6	2
10	Putlur								
	Nerkundram & Maduravoyal	31	6	7	2	0	6	10	0
11	Mettukulam	405	105	46	62	23	77	89	3
12	MSP Nagar	146	16	29	23	8	35	35	0
13	Om Sakthi Nagar	12	3	5	0	0	1	3	0
14	Nagathamman Koil Street	122	30	20	18	8	6	37	3
15	Kambar Nagar	8	6	0	2	0	0		0
16	Perumal Koil Street	45	17	5	7	0	1	14	1
17	Sivabootham	173 - Nanchezhi Pattas were issued to the beneficiaries by Revenue Department, Ambattur Taluk. Hence resisted for enumeration.							
18	Noombal - Shanmuga Nagar								

19	Thiruverkadu Village	490 - On the joint verification PWD and Revenue Surveyor along with TNSCB had ascertained that the encroachments are within the PWD Boundaries. But the residents claim that they reside on elevated level at eastern side of PWD Cooum River bed. Hence resisted for enumeration.							
	Thiruverkadu Municipality								
20	Aathi Sakthi Karumaraiamman Nagar	205	13	47	8	19	39	79	0
21	Melpakkam	59	20	12	3	1	7	15	1
22	Kannampallayam	36	13	7	4	0	1	11	0
23	Soranchcrri-I-Gangaiamman Koil Street	4	3	1	0	0	0		0
24	Soranchcrri-II- MGR Nagar	74	16	17	3	1	13	12	12
	Total	**2288**	**632**	**457**	**254**	**75**	**297**	**509**	**64**
			1715					**509**	**64**

INDEX		
1	**Category 1**	Families possessing Family Cards and Voter ID issued prior to cut off Date i.e., June 2006
2	**Category 2**	Families possessing only Ration Card issued prior to cut off Date
3	**Category 3**	Families possessing only Voter ID issued prior to cut off Date
4	**Category 4**	Families possessing other evidences such Bank Pass Book, Driving Licence, Tax Receipt, EB Card, Gas Bill, Birth & Death Certificate and Sale Deed within the cut off Date
5	**Category 5**	Families possessing Family Card, Voter ID and other records as per the revised cut off date (October 2009)
6	**Category 6(a)**	Families possessing Family Card, Voter ID issued after the cut off date(October 2009) and having no residential proof
	Category 6(b)	Door Locked, Vacant Place, Dilapidated Structures and Temporary make shift Structures (Not traceable even after 4 visits)

Tamil Nadu Slum Clearance Board

Enumeration - Abstract

Sl. No	Projects	No. of Slums	No. of PAFs enumerated	No. of eligible PAFs as per cut off date (June 2006) and records (Category 1 to 4)	No. of eligible PAFs as per the revised cut off date (Oct 2009 - Category 5)	No. of ineligible PAFs	
						PAFs with inadequate records (6a)	Not Traceable/Door Locked cases (6b)
1	Elevated Corridor Project	35	6970	4913	711	936	410
2	CRRT (Within City limit)	17	6969	5193	784	941	51
3	CRRT (Beyond City limit)	24	2288	1418	297	509	64
	Total	76	16227	**11524**	**1792**	**2386**	**525**
	Grand Total ...	**76**	**16227**	**13316**		**2911**	

Index

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Tamil Nadu Slum Clearance Board

Auto Nagar Project

Enumeration Abstract

S. No	Project Affected Families	Members	Non Members	Total	Allotment Order issued	Allotment Order not issued
1	East Coovum Salai	-	14	14	13	1
2	West Coovum Salai	-	276	276	262	14
3	South Coovum Salai	93*	34	127	15	19
	Total	*93*	*324*	*417*	*290*	*34*

** 93 PAF's have also requested for paid plots*

S. No	Associations	Total
1	Heavy Vehicle Spare Parts	158
2	Auto Mobile Spare Parts	634
3	Motor Vehicle Spare Parts	335
	Total	*1127*

417 PAF's + 1127 Association Members = 1544

APPENDIX – 2 SLUM LIST AND SOCIO ECONOMIC TABLES. SUMMARY OF DATA ON SLUMS WITHIN PROJECT WORK AREA

SLUM N.	ZONE N.	WARD N.	SLUM NAME	N. FAMILIES*	CATEGORIES BASED ON PROOF SUBMITTED*						
					1	2	3	4	5	6(a)	6(b)
1	9	114/115/116	QUITH E MILLETH BRIDGE TO OLD JAIL	1140	509	260	185	5	144	34	3
2	5	59	NAVALAR NEDUNCHELIAN NAGAR	1171	188	110	347	3	122	401	0
3	5	60	BOOTHA PERUMAL NAICKAN STREET	145	86	22	23	0	8	5	1
4	8	100	ANJUKUDISAI	575	151	112	86	2	60	141	23
5	9	111	RANGOON STREET	315	115	76	54	0	43	27	0
6	9	109	RAJIV GANDHI NAGAR	224	82	28	74	1	19	20	0
	6	79									
7	7	93	JOTHIAMMAL NAGAR	70	16	17	29	1	2	3	2
	8	100/101									
8	8	99	PADIKUPPAM	275	104	31	49	4	37	48	2
9	8	101	MEL NADUVANKARAI	48	25	6	9	0	1	7	0
10	8	100/101	SATHYASAI NAGAR	265	65	49	42	2	45	61	1
	8	105									
11	8	100	PONNUVEL PILLAI THOTTAM & MUTHU MARRIAMAN NAGAR	537	250	99	74	4	56	52	2
12	8	100	BERI BERI ROAD	-							
13	9	111	NSK NAGAR	650	313	132	76	4	79	36	10
14	9	111	MOOVENDAR NAGAR	105	60	10	12	4	19	0	0
15	8	107	MGR COLONY	363	150	127	43	0	30	12	1
	8	107									
16	8	106	MAKKISH GARDEN	491	177	98	86	3	58	65	4
17	9	111	THIDEER NAGAR	595	288	98	117	0	61	29	2
18	8	107	JOTHIAMAL NAGAR		NO DATA AVAILABLE CAUSE NOT INCLUDED ON TNSCB LIST. AREA LOCATED BY RAY						
19	8	107	AVAIPURAM - APARAO GARDEN - JOTHIAMAL NAGAR		NO DATA AVAILABLE CAUSE NOT INCLUDED ON TNSCB LIST. AREA LOCATED BY RAY						
20	8	106	INDIRA CHANDI NAGAR		NO DATA AVAILABLE CAUSE NOT INCLUDED ON TNSCB LIST. AREA LOCATED BY RAY						
TOTAL				6969							

SLUM N.	WARD N.	ZONE N.	SLUM NAME	N. FAMILIES*	CATEGORIES BASED ON PROOF SUBMITTED*

* BASED ON GENERAL DATA PER SLUM PROVIDED BY TNSCB

Category 1	Families possessing Family Cards and Voter ID issued prior to cut off Date i.e., June 2006
Category 2	Families possessing only Ration Card issued prior to cut off Date
Category 3	Families possessing only Voter ID issued prior to cut off Date
Category 4	Families possessing other evidences such Bank Pass Book, Driving Licence, Tax Receipt, EB Card, Gas Bill & Death Certificate and Sale Deed within the cut off Date.
Category 5	Families possessing Family Card, Voter ID and other records as per the revised cut off date (October 2009)
Category 6(a)	Families possessing Family Card, Voter ID issued after the cut off date (October 2009) having no residential proof.
Category 6(b)	

SLUM N.	ZONE N.	WARD N.	SLUM NAME	N. FAMILIES*	CATEGORIES BASED ON PROOF SUBMITTED*						
					1	2	3	4	5	6(a)	6(b)
1 ECP	5	59	PALLAVAN NAGAR	632	87	127	128	14	106	146	24
2 ECP	5	60	EAST COOUM RIVER	575	151	112	86	2	60	141	23
3 ECP	5	60	WEST COOUM RIVER	369	235	65	34	3	28	3	1
4 ECP	5	60	SOUTH COOUM RIVER	276	123	62	40	4	39	6	2
5 ECP	8	107	RETTAIMALAI SRINIVASAN NAGAR	34	2	8	3	0	17	4	0
6 ECP	9	110	MAYOR RAMANATHAN SALAI	470	140	77	72	0	89	54	38
7 ECP	8	107	APPASAMY STREET	488	275	96	62	0	28	19	8
8 ECP	8	107	CHARI ROAD	133	56	34	27	0	8	7	1
9 ECP	8	107	JOTHIAMMAL NAGAR	302	133	53	95	0	9	10	2
10 ECP	8	107	M.K.STALIN NAGAR	229	110	48	44	0	18	9	0
11 ECP	9	109	WSET NAMASIVAYAPURAM - SALAVAIYAR COLONY	338	120	63	28	10	38	53	26
12 ECP	9	109	WSET NAMASIVAYAPURAM - KALVAIKARAI								
13 ECP	9	109	WEST NAMASIVAYAPURAM - KALAINAR KARUNANIDHI NAGAR								
11 ECP	9	109	WSET NAMASIVAYAPURAM - SALAVAIYAR COLONY		120	63	28	10	38	53	26
12 ECP	9	109	WSET NAMASIVAYAPURAM - KALVAIKARAI								
13 ECP	9	109	WEST NAMASIVAYAPURAM - KALAINAR KARUNANIDHI NAGAR								
14 ECP	8	106	VENKATAJALAPATHY	24	16	6	3	1	2	2	3
15 ECP	9	109	OFFICERS COLONY	9							
16 ECP	8	102	E.V.R. SALAI	41	15	7	4	0	0	0	15
17 ECP	8	106	KANNIAH STREET	237	109	29	24	3	21	13	38
18 ECP	8	106	SUNNAMBUKALVAIKARAI STREET	60	26	5	8	0	6	11	4
19 ECP	8	106	SOUTH KASARATH THOTTAM	251	65	29	21	0	37	52	47
20 ECP	8	106	NALLAMUTHU MARIAMMAN KOIL STREET	111	49	22	23	1	9	4	3
21 ECP	8	106	EAST ARASAMARATH STREET	41	18	3	7	1	2	1	9
22 ECP	8	106	S.S SAHIB STREET	67	27	9	7	2	11	5	6
23 ECP	8	106	PERUMAL KOIL STREET	132	44	19	8	1	26	8	26
24 ECP	8	106	VELLALAR STREET	395	187	49	56	7	36	32	28

SLUM N.	ZONE N.	WARD N.	SLUM NAME	N. FAMILIES*	CATEGORIES BASED ON PROOF SUBMITTED*						
					1	2	3	4	5	6(a)	6(b)
25 ECP	8	106	EAST MADA STREET	16	3	1	5	0	2	4	1
26 ECP	8	106	SABAPATHI STREET	67	17	8	5	2	8	2	25
27 ECP	8	102	MANJAKOLLAI	249	75	31	47	8	41	32	15
28 ECP	8	102	THIRUVEETHIAMMAN KOIL STREET	180	65	31	37	0	25	11	11
29 ECP	8	102	KATHIRAVAN COLONY	49	12	9	9	2	0	14	3
30 ECP	8	101	BHARATHIPURAM	13	5	3	1	0	0	4	0
31 ECP	8	102	GAJALAKSHMI COLONY	57	11	6	15	0	0	22	3
32 ECP	8	101	RIVER VIEW COLONY	303	95	53	58	5	0	82	10
33 ECP	8	106	DR RADHAKRISHNAN NAGAR	341	117	63	54	1	32	59	15
	8	106									
34 ECP	8	106	MUTHUMARIAMMAN KOIL STREET	390	121	59	69	3	0	117	21
35 ECP	8	101	NADUVANKARAI	91	43	8	15	1	13	9	2
TOTAL				**6632**							

SLUM N.	WARD N.	ZONE N.	SLUM NAME	N. FAMILIES	CATEGORIES BASED ON PROOF SUBMITTED*

*** BASED ON GENERAL DATA PER SLUM PROVIDED BY TNSCB**

Category 1	Families possessing Family Cards and Voter ID issued prior to cut off Date i.e., June 2006
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Category 6(b)	

SLUM N.	MUNICIPALITY	SLUM NAME	N. FAMILIES*	CATEGORIES BASED ON PROOF SUBMITTED						
				1	2	3	4	5	6(a)	6(b)
	NERKUNDRAM & MADURAVOYAL									
11 BCL		METTUKULAM	31	6	7	2	0	6	10	0
12 BCL		MSP NAGAR	405	105	46	62	23	77	89	3
13 BCL		OM SAKTHI NAGAR	146	16	29	23	8	35	35	0
14 BCL		NAGATHAMMAN KOIL STREET	12	3	5	0	0	1	3	0
15 BCL		KAMBAR NAGAR	122	30	20	18	8	6	37	3
16 BCL		PERUMAL KOIL STREET	8	6	0	2	0	0		0
17 BCL		SIVABOOTHAM	45	17	5	7	0	1	14	1
	THIRUVERKADU MUNICIPALITY									
19 BCL		THIRUVERKADU VILLAGE		490 - On the joint verification PWD and Reveneu Superviyor along TNSCB had ascertained that the encroachments are within the PWD boundaries. But the residents reclaim that they reside in elevated level at estern side of PWD Cooum river bed. Hence resisted enumeration.						
20 BCL		AATHI SAKTHI KARUMARAIAMMAN NAGAR	205	13	47	8	19	39	79	0
21 BCL		MELPAKKAM	59	20	12	3	1	7	15	1
REST OF THE AREAS PROVIDED BY TNSCB ARE OUT OF THE AREA TO BE DEVELOPED BY COOOUM RIVER ECORESTAURATION PLAN										
TOTAL			1033							

SLUM N.	MUNICIPALITY	SLUM NAME	N. FAMILIES*	CATEGORIES BASED ON PROOF SUBMITTED

* BASED ON GENERAL DATA PER SLUM PROVIDED BY TNSCB*		
	Category 1	Families possessing Family Cards and Voter ID issued prior to cut off Date i.e., June 2006
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	Category 6(b)	Door Locked, Vacant Place, Dilapidated Structures and Temporary make shift Structures (Not traceable even after 4 visits)

APPENDIX – 3 LETTERS SUBMITTED TO STAKEKHOLDERS FOR DATA COLLECTION

O/C

CRRT

CHENNAI RIVERS RESTORATION TRUST

(Formerly Adyar Poonga Trust)

Anita Praveen, I.A.S.,
Member Secretary

CRRT/AP/Cooum River/MP/02/2012 Dated 27.11.2012

To

The Managing Director,
Tamil Nadu Slum Clearance Board,
No. 5, Kamarajar Salai,
Triplicane,
Chennai - 600 005

Sir,

Sub: CRRT – Integrated Cooum River Restoration Plan – Separate Master Plan for Mangrove Plantation – Requested – Reg.

Ref: LKS Lr No. LKS/CRRT/12-0729/01, dated 22.11.2012

The Chennai Rivers Restoration Trust is now involved in the restoration of Cooum River. As part of it, M/s.LKS India Pvt Ltd, has been appointed to conduct a detailed study on Coum River from Parruthipattu Anicut to its confluence to the sea and to prepare the Master Plan and the Detailed Project Report.

Therefore, we kindly request you to extent your fullest cooperation and to do the needful whenever the consultants M/s.LKS India Pvt Ltd approach your department in this regard.

Thanking you

For Chennai Rivers Restoration Trust

27/11/12

Chief Accounts Officer and
Administrative Officer

Copy to

M/s. LKS India Pvt. Ltd,
Rachana Ventura
No. 501&502, Survey No.134/1,
ITI Road, Aundh Pune
Maharastra, India

Received V.Sudha 29/11/13

Received 29 JAN 2013

Adyar Poonga, 6/103, Dr. D.G.S. Dinakaran Salai, Raja Annamalaipuram,
Chennai - 600 028. Ph : 044-24614523, Fax : 24614524

TNUIFSL
TAMIL NADU URBAN INFRASTRUCTURE FINANCIAL SERVICES LIMITED

TNUIFSL/KfW GF-II/Cooum River Restoration 26 April 2013

Dr.C.Chandramouli
Registrar General
Census Bureau
Office of the Registrar General of India
2/A Mansingh Road
New Delhi - 110001

Sir,

Sub: Consultancy assignment for preparation of Integrated Cooum River Eco-Restoration Plan - reg.

The Government of Tamil Nadu has entrusted the Chennai Rivers Restoration Trust (CRRT), an organisation with the prime objective of restoration of rivers and waterways in Tamil Nadu. The Government has invited an Integrated Cooum River Eco Restoration Plan to improve the Cooum, that runs through Chennai. CRRT has approached Tamil Nadu Urban Infrastructure Financial Services Ltd (TNUIFSL) for providing technical assistance for the same.

TNUIFSL, the Fund Manager of KfW GF-II had appointed M/s.LKS India Pvt Ltd (100 % Subsidiary of LKS Spain) as consultants, to prepare a detailed Master Plan for Restoration of Cooum River from Paruthipattu Anicut to River Mouth (32 kms). We request you to assist on procuring 2011 Census data to support research and analysis activities as part of this important project in order to prepare the Resettlement Action Plan for Cooum River.

The Department of Humanities and Social Sciences, IIT Madras, works together with M/s.LKS India Pvt Ltd on the social assessment for the Cooum River Eco-Restoration Plan, have been in contact with the Tamil Nadu Census Bureau since February, 2013 to obtain slum-level Census data, including Houselisting Schedule data from the 2011 Census along the area in Cooum River. Indicators such as types of slum housing, livelihoods, distances to work, and other socio-economic criteria are critical to our analysis. However, after several months of waiting for Census 2011 EXCEL data at the slum level, they were only able to get city-level aggregate data from the house listing schedule. The Chennai Bureau advised us to contact your office for more detailed slum-level data.

We request your assistance in obtaining slum-level data for Chennai from the House listing as well as Census schedules. We can furnish exact Zone and Ward numbers for the areas that the Cooum river flows through, or purchase the entire slum data set for Chennai and its environs and subsequently identify the subset of slums pertinent to our analysis. The necessay fees applicable for the same will be paid by the consultants for both the cases.

We look forward to your reply.

Yours faithfully,

Principal Secretary / Chairperson &
Managing Director
TNUIFSL

TAMILNADU URBAN INFRASTRUCTURE FINANCIAL SERVICES LIMITED
Vairam Complex, 1st Floor, 112, Theyagaraya Road, T. Nagar, Chennai - 600 017.
Phone : 044-2815 3104, 2815 3105, 2815 3107 Fax : 044-2815 3106 website : www.tnuifsl.com

2011

Office of the Registrar General, India
Government of India
Ministry of Home Affairs
2/A, Man Singh Road, New Delhi – 110011
http://www.censusindia.gov.in

INFRASTRUCTURE FINANCIAL SERVICES
21 JUN 2013

F. No. F-14011/12/2012-DDU/39 Dated : 18.06.2013

To,

Principal Secretary/Chairperson & Managing Director,
TNUIFSL,
Vairam complex, Ist Floor,
112, Theyagaraya Road, T. Nagar,
Chennai – 600017

With reference to your Letter No. TNUIFSL/KfW GF-II/Cooum River Restoration dated 26.04.2013 a proforma invoice is given below.

PROFORMA INVOICE

	Price in Rs.
Slum data on houses, household Amenities and Assets 2011	7070.00
Slum data on Primary Census Abstract	N.A.
Postage	110.00
Total	7180.00

(Rupees Seven Thousand One hundred Eighty only)

Please send Banker's Cheque/Demand Draft in favour of ***"PAY & ACCOUNTS OFFICER (CENSUS), MHA, NEW DELHI"*** payable at NEW DELHI, at following address

Data Dissemination Unit,
Registrar General, India
2A, Man Singh Road,
New Delhi - 110011

Yours faithfully,

(Dr. D. Giri)
Deputy Director

APPENDIX – 4 DETAIL CASE STUDIES

1. Mumbai

Country:	India
City / State:	Mumbai / Maharashtra
Importance in country:	The city of Mumbai is regarded as the commerce and entertainment capital of India. Greater Mumbai's GDP has been significantly higher than that of Maharashtra or India. Given that Mumbai's GDP is 27% of Maharashtra's, volatility of Mumbai's growth greatly affects Maharashtra.
Type of project:	Rehabilitation
Name of project:	The slum rehabilitation policy
Duration:	Initiated in 1995
Approach	Construction of self-contained rehabilitation tenements free of cost whilst simultaneously implementing new land use policies and access to credit systems.
Cost:	The Indian Government is not financially involved. The cost of constructing the tenements is cross-subsidized from the sale of free-sale tenements in the open market.
Source of funds :	
Outcome:	100,000 houses constructed and another 100,000 in progress.

According to the 2001 census, the population of the city of Greater Mumbai was 11.91 million, spread over 437 square kilometres. The population density is as high as 48,215 people per sq. km. in Mumbai, and 16,082 per sq. km. in suburban Mumbai (census 2001) with an average city density of 27,348 people per square kilometre. Peak density in certain areas, such as the Dharavi slums, reaches over a million people per sq. km (The Cities Alliance, 2008).

The major government agencies involved in the various aspects of urban planning and development include the Municipal Corporation of Greater Mumbai (MCGM), the Mumbai Metropolitan Region Development Authority (MMRDA), the Maharashtra Housing and Area Development Authority (MHADA) and the offices of the district collectors.

In tune with the population growth of Mumbai, the growth rate of the slums has also gone from 39% to 48% from 1976 to 2001. There is currently a total of 1959 settlements housing around 6.5 million people and occupying an area of 35sqkm (8% of city area). (The Cities Alliance, 2008)

Some of the major challenges that impede progress are insufficient land, out dated land policies, restrictive building regulations, and dependency on real estate rates. The haphazard locations of these slums also present a difficulty in providing services. Since employment of the residents is in the informal sector, there is limited or no access to finance and formal housing.

The urban services offered to the slum settlements include (The Cities Alliance, 2008):

- Water supplied through 0.16 million metered stand post connections
- Sewerage - 73% of the people use community toilets, 0.7% use pay toilets and around 23% do not have access to toilet facilities.
- Primary and secondary education is provided free of cost and education from private institutions is supported by Government grants.
- The MCGM runs PHCs and has set up special maternity wards. Medical services are provided at a small fee
- With regard to solid waste management, refuse bins are placed in or near slums and are collected by municipal vehicles. Only 36% of slums have an organized system of solid waste disposal

Prior to 1970s, slum demolition was practiced widely. This was unsuccessful and also politically controversial. In the 1970s, measures like census and issue of ID cards was undertaken. The slum up gradation approach was first undertaken in the 1980s with the assistance of the World Bank, in partnership with Non-governmental organizations. The Slum Rehabilitation policy was initiated in 1995-96 by the State Government of Maharashtra. It has the following features (The Cities Alliance, 2008)

- Every slum structure existing as of January 1, 1995, is eligible for rehabilitation.
- Slum dwellers get a self-contained, 225 sq. ft. Tenement free of cost.
- Underlying land is the resource for the scheme.
- The consent of 70 % of eligible slum dwellers is required for implementation.
- The cost of constructing the tenements is cross-subsidized from the sale of free-sale tenements in the open market.

The initial stages of policy implementation were primarily concerned with gaining the minimum of 70% approval from residents of the slums, and the approval from the authorities. Tenement homes were allocated by drawing lots from the list of registered slum residents. The developer arranged for temporary accommodation, either on or off-site, to existing residents while the tenement was constructed after demolishing their previous settlement. The Slum Rehabilitation Authority also assisted the process through creating transit camps. Completed tenement flats were allocated based on the allocation list. In addition to this, ID cards and property cards were issued to the people (The Cities Alliance, 2008).

The policy also introduced new land use conditions. While an individual can own a flat, the land remains in the name of the registered society, which is the whole tenement. This is an attempt to combat the increasing scarcity of land resources. The scheme also made credit available to low-income groups to purchase flats in the tenements.

The current slum redevelopment policy is an inventive way of providing a housing supply for the poor at no direct cost to the state, and at present it is Mumbai's greatest innovation regarding housing.

The Dharavi Redevelopment Project was initiated by the government through a partnership with the Society for the Promotion of Area Resource Centres (SPARC, 2003) to rehabilitate housing for over 50,000 slum-dwelling families. SPARC is working on the rehabilitation of the 212 slum families belonging to the Rajiv Indira Suryodaya Cooperative Housing Society. The plan was to construct 5 buildings – 3 for rehabilitation and 2 for sale. So far, one building with 90 tenements has been completed and occupied. The second building with 64 tenements is almost ready and the third building with 56 tenements is underway.

The policy is confronted by a number of challenges - insufficient supply of land, insufficient data, lack of co-ordination among agencies, lack of resources and rigid planning norms, to name a few. A focused attempt at improving land supply, infrastructure, information systems, management and repair of existing house stock, public awareness and participation would help overcome these obstacles. The policy has been proved useful in cases where rehabilitation is necessitated by vital infrastructure projects. Under the current policy, around 100,000 houses have been constructed so far, and an equal number are under construction.

In 2006, the state government declared its objectives in the document *Vision Mumbai.* Its broad objectives include boosting economic growth, expanding transport infrastructure, upgrading other infrastructure and raising finances. In the same year, the Municipal Corporation of Greater Mumbai (MCGM) released its Comprehensive Development Plan (CDP), which was in line with *Vision Mumbai*. MCGM's Housing Policy of 2007 aimed to create surplus housing stock, promote rental housing and upgrade slums. Some of the approaches under the policy include a regulatory authority to oversee markets; schemes of cluster housing; and taxes on unused vacant land. However, no action plan has been formulated and no budget allocations have been made so far (SPARC, 2008).

2. Ahmedabad, India

Country:	India
City:	Ahmedabad
Type of project:	Slum up-gradation
Importance to country:	High
Duration:	Information available for years:1995 – 2008
Name of project, if any:	Ahmedabad Networking Program - Parivartan
Stakeholders :	Ahmedabad Municipal Corporation (AMC), Residents of slums, NGOs SAATHI and Gujarat Mahila Housing Trust, SEWA Bank, and Arvind Mills (only during pilot).
Approach:	In-situ slum upgrading through government and resident participation.
Cost:	AMC, residents, and private partner shared the cost, with AMC paying the biggest share. The cost per household is Rs. 2100, but the overall cost to the AMC is about 4 times that.
Outcome:	Only 3% of slums were upgraded over a 10 year period. However, the approach is highly cited in literature on best practices in housing for the poor.

The city of Ahmedabad in the state of Gujarat in western India has approximately 41% of the city's population residing in informal settlements. Almost 75% of the working population is employed in the informal sector (Anand, n.d.). Given the large number of low-income residents, the government has initiated several policies to promote low-cost housing. However, slums continue to grow, and basic services are still not provided to Ahmedabad's sprawling slums.

The Ahmedabad Municipal Corporation (AMC), in 1995, however, did make inroads into making informal settlements more liveable. The Slum Networking Program (SNP) or *Parivartan* (meaning transformation), is often cited as an international best practice in the area of housing for the urban poor. What set the program apart was the integrated nature of its approach. The AMC sought to bring about a complete set of physical infrastructure improvements and community development initiatives to address the multitude of social and economic problems faced by slum dwellers.

The physical improvements included: individual water supply, individual sewerage connections, individual toilets, storm water disposal, paved roads, street lighting and solid waste management. The community development initiatives included assistance in the formation of community-based organizations, increasing access to primary health care and education, and support for income-generating activities. (Chang, 2009)

The program was implemented through a partnership between the city government, slum residents, two non-governmental organizations SAATH and Gujarat Mahila Housing Trust, and SEWA Bank, a community-based financial institution. One innovation that set this initiative apart was the strong public participation that it rested on. Approximately 13% of the cost of infrastructure and services were to be borne by slum residents if they came forward to participate in the program. The government also provided a guarantee to participating households that they would not be evicted for a period of 10 years if they paid for improvements in the slum (Anand, n.d.).

NGO partners supported the initiative through discussing the program with slum dwellers, setting up Community Based Organizations, and beginning community development activities in the areas of education, health, and skills development. SEWA Bank offered microfinance products to enable residents to afford the contribution for in-situ improvement. Arvind Mills, a large textile mill, was a promoter of this initiative in the pilot phase. Interested in improving the living conditions of its workers, the company approached the AMC for help in this initiative, and contributed funds toward its implementation (Chang, 2009).

The program has benefited 10,000 households across 45 slums over a period of 10 years, a mere 3% of the city's slum population. Despite its lack of scale, the program offers a promising alternative to mass relocation and expensive tenement programs. The co-funding of the initiative by the AMC, a private company, and the residents increased the buy-in of residents in the program. The addition of a microfinance fund and NGO partners strengthened its socio-economic moorings (Anand, n.d.).

The average costs for up-gradation was calculated at Rs. 6000, of which the beneficiary, private sector partner, and AMC contributed Rs. 2000 each. Each beneficiary also deposited Rs. 100 toward maintenance charges to the CBO through an account with SEWA bank. Beneficiaries who could not pay the Rs. 2000 could avail of loans from SEWA bank with easy terms.

Additional costs of the project borne solely by the AMC were: Rs. 5,800 per household to provide individual toilets, Rs. 300 per household to connect the dwelling to the city infrastructure; and in some neighbourhoods which the private partner did not contribute toward, the AMC bore their share as well. Anand (n.d.) who covered this case writes that: "In this way, the beneficiaries pay a total sum of Rs. 2,100 for receiving a package of services worth Rs. 15,900. Another interesting element of the project is that inflationary pressures were borne by the AMC, and the beneficiary contribution remained at Rs. 2000 for the duration of the project (Anand, n.d.).

Chang (2009) writes that, "as of May 2008, 45 slum communities, covering nearly 8,400 households and approximately 39,000 people, have benefitted from the project. The cost sharing structure has changed from a 40-30-30 split between public, private, and community to an 80-20 public-community split. While AMC covers 80% of the cost, individual households are required to contribute at least Rs 2,100 as a one-time contribution. Families who do not possess these funds can take out a small loan from SEWA Bank, a micro- finance establishment that now serves as a partner in the SNP. SAATH continues to be a key player in the program."

3. Nairobi

Country:	Kenya Type of Project- River cleaning, Slum upgrading
City	Nairobi
Type of project:	River restoration and resettlement
Importance in country:	High
Name of project, if any:	Nairobi River Basin Program Kenya Slum Upgrading Program
Duration:	1999- on-going (2007 supposed to end, UNEP 2003- on-going (2008 supposed to end)
Stakeholders	Ministry of Housing and the Nairobi City Council, Slum dwellers, private owners of the land, Government of Nairobi, Cities Alliance, UN HABITAT.
Approach	Non- in-situ. Described approach is participatory, but implementation was otherwise.
Cost	Sharing between the local and National Government, UN, private equity
Outcome	KENSUP has the scope to become successful if a participatory approach is taken.

Nairobi, the capital of Kenya faces issues of overcrowding like most large cities around the globe. The increasing population gradually led to an increase in the need for urban housing. Informal settlements began to proliferate, and the density of such settlements steadily increased. At present nearly 2 million people live on just 7 hectares of land. On average, residents of informal settlements earn low incomes of less than $45 per month. The Kenyan government, concerned with the unsanitary conditions and continuing deprivation, established urban development programs in the last decade to improve conditions in informal settlements (The Cities Alliance, 2008).

The Nairobi River is home to 56% of the city's informal settlements. Forty six highly congested informal settlements are spread across its banks – an outcome of the rapid urbanization and industrialization Kenya has experienced in the last two decades. Inadequate sewage systems, illegal discharge of waste into the river, delayed urban planning, and weak enforcement of the environmental laws have led to the river becoming extremely polluted.

The Nairobi River Basin Program (NRBP), started in 1999, was a key policy initiated by the Kenyan government to improve the lives of slum dwellers and restore the Nairobi River. Launched by United Nations Environmental Program (UNEP), the NRBP had three phases. Implementers established benchmarks, identified interventions, and mobilized Nairobi residents to participate in the program in the first two phases. The Ministry of Environment and Mineral Resources, the Ministry of Nairobi Metropolitan Development, the National Environmental Management Agency, the Ministry of Local Government, the Nairobi City Council, UN agencies, and the private sector were among the organizations involved. The Government contributed 30 % of the budget, with the other partners contributing the rest. The program was conducted in three phases as mentioned in the UNEP's document on the aims of the program as below;

Phase I included: Situation assessment of water quality, Preliminary public awareness and education campaign, community outreach through pilot income-generating projects, capacity building amongst stakeholders and development of an Environmental Management Information System (EMIS).

Phase II was a pilot initiative focusing on a tributary of the Nairobi River system – the Motoine/Ngong River where pollution was monitored and assessed. It was limited to a section of the Motoine/Ngong River basin 22 km upstream of Nairobi Dam. The aim of this phase was not only to address the problem of pollution in Nairobi's rivers but also to put in place community education and information programs to enable capacity building amongst key grassroots stakeholders.

Phase III was a follow-up of the Nairobi River Basin Project Phases I and II. It established benchmarks, identified interventions and mobilized the participation of Nairobi residents. It identified five key results areas that included development of environmental management and planning systems, rehabilitation and restoration of the Nairobi Dam, development and operationalization of water quantity and quality measuring protocols, enhanced service delivery, environmental conservation and sustainable utilization of resources and sustained public awareness of, and participation in, environmental issues directly affecting the Nairobi River Basin which will contribute to the achievement of improved water quality and environment within the Nairobi River Basin.

During Phase I, the National Environment Management Authority (NEMA) identified 212 illegal sewage discharge points into the rivers, 97 of which were from informal settlements. So far 47 illegal outlets from industries have been stopped by NEMA.

Evacuation was the predominant mode of dealing with the problem of growing slums throughout Nairobi's recent history. Forced evictions have led to slum dwellers regarding their tenure as insecure, and not investing in their houses or local areas. In a policy note (Government of Kenya, 2005), the government admits that: "a common denominator in the urban slums and informal settlements of Kenya is the lack of security of tenure and or residency".

In 2003 the government began the Kenyan Slum Upgrading Program (KENSUP) in partnership with UN HABITAT to improve the lives of people living and working in slums and informal settlements in all urban areas of Kenya. The total cost is estimated at Ksh 883.76 billion (US$11.05 billion) for implementing the project between 2005 and 2020.

The main stakeholders in the project are UN HABITAT, Cities Alliance, Nairobi City Council, the Government of Kenya and the residents of informal settlements. KENSUP has established a set of committees to oversee the implementation, including the Inter-Agency Coordination Committee (IACC), Program Implementation Unit (PIU), Settlement Program Implementation Unit (SPIU), Multi-Stakeholder Support Group (MSSG) and Settlement Executive Committee (SEC). The Kenya Slum Upgrading Low Cost Housing and Infrastructure Fund (KENSUF) was established as a central depository of all mobilized financial resources for slum upgrading, including funds from donors, CBOs, private sector and Government budgetary allocations. Their scope of work includes:

- Community mobilization, organisation and participation
- Preparation of City/Town development strategic and land use master plans
- Shelter improvement
- Provision of Physical and social infrastructure/amenities
- Environment and Solid waste management
- Employment / income generating activities
- Liaison with micro financing and credit systems
- HIV/AIDS concerns

- Conflict prevention and management
- Support to vulnerable and disadvantaged groups

Amnesty International (2009) reports that KENSUP stated that the Nairobi Government planned to relocate nearly 600 households from one of the slums, Kibera, to a temporary site, while tenements were being developed to house them. On completion of the new houses the residents identified in the pilot project would move into them on the basis of their ability to afford the costs of owning or renting the new units. This is the first of evacuation that was planned under the project in 2009. There are no recent reports that confirm any fresh resettlement plans.

Since no in-situ slum allocation is happening due to lack of adequate land, heavy opposition and human rights violations persist in the evicted sites. While the term participatory was used in the planning stages of the program, there has been no inclusion of slum dwellers in decision-making or implementation. By charging rent or selling the new houses to slum dwellers, the government has made it difficult for the average evacuated slum dweller to afford the new housing.

4. Cairo

Country:	Egypt
City	Cairo
Type of project:	Slum up gradation
Importance in country:	High
Name of project, if any:	Participatory Development Program
Duration:	2004-2014
Stakeholders:	Governorates of Cairo, Giza, and Qalyubya, Ministry of Local Development, General Organizations of Physical Planning, National NGOs, Ministry of Planning and International Cooperation, Deutsche Gesellschaft fur Technical Zusammenarbeit.
Approach:	In-situ program involving all stakeholders. Trust-building with slum dwellers through NGOs and capacity-building exercises for government and NGOs to implement the program.
Cost:	Multi-million dollar program funded by German, Egyptian governments and the Gates Foundation.
Outcome:	Pilot projects were successful in two large slums. Scale-up in progress along the same participatory lines.

The Greater Cairo Metropolitan Area (GCMA) is yet another case of informal settlements due to rapid urbanization of the city. According to the Egyptian Human Development Report EHDR (UNDP, 2005), the percentage of the inhabitants living under the poverty line in the metropolitan area is 5.7% of the population. This number did not reflect the number of people living in informal districts of GC, which is estimated as 40% of the total GC population.

The failure of the Egyptian government's housing policy to provide affordable, viable housing for a significant number of Cairenes has led many to build homes—either semi-legally or illegally—on privately-owned or public lands. These so-called informal settlements are where approximately 70% of the inhabitants of Greater Cairo live. (Dorman, 2010). The

GCMA case illustrates government efforts to resettle slum dwellers and provide them with better housing, infrastructure, and sanitation services.

The first informal settlements appeared in Cairo after World War II, and increased steadily in number in the 1960s. In Greater Cairo, 84% of new housing units built during the 1970s were considered illegal (ABT Associates et al., 1982). Slums were broadly considered a blot on the landscape by upper class residents of Cairo, and were treated the same way by the government as well. Slum dwellers were neglected, or even worse penalized for being poor, according to Dorman (2007). Unaffordable housing and a complete lack of services worsened the plight of Cairo's poor until the 1980s.

In 1977 the New Towns policy, which sought to regularize slums, came into being, but did not have any effect on the continued growth of informal settlements. In 1993 the Egyptian government created a National Fund for Urban Upgrading. This fund, however, focused mainly on big infrastructural projects such as roads and bridges, which often bypassed informal areas to the advantage of richer neighbourhoods. Another sizeable fund named Upgrading of Scattered Settlements, announced in early 1993 as the primary funding instrument, was quite limited in per capita terms. Much of its money may have been spent on projects of primary benefit to upper-income groups in Cairo's more formal areas (Sims, 2003).

It wasn't until the 2000s that the government got serious about improving informal settlements. The Participatory Development Program (PDP) that started in 2004 used a progressive and inclusive approach to address Cairo's numerous informal settlements. In a joint effort by Germany and Egypt to find sustainable solutions for informal area management, the European-funded program was endowed with € 20 million, in addition to € 4 million from the German Federal Ministry for Economic Cooperation and Development (BMZ), $ 5 million from the Bill & Melinda Gates Foundation, and one million Egyptian Pound per year from the Egyptian Ministry of Planning and International Cooperation (Participatory Development Program, 2013).

The main partners of the program are the Governorate of Cairo, Governorate of Giza, Governorate of Qalyubeya, Ministry of Local Development, General Organization of Physical Planning (GOPP), and National NGOs. The project implemented by Egyptian Ministry of Planning and International Cooperation (MoPIC) has five components (Participatory Development Program, 2013):

- Institutionalization
- Climate Change Adaptation and Urban Resilience,
- Solid Waste Management,
- Fund for Upgrading of Informal Areas and
- Youth Fast Track Measure: Promotion of political participation of youth in informal areas operating at National, Regional and local level.

The project was implemented in three phases in the selected pilot areas:

- The first phase was to test different models of community participation in various development sectors in the pilot areas of Manshiet Nasser, Boulaq El Dakrour, Helwan and three settlements in the Governorate of Alexandria.
- The second phase focused on development and application of participatory development tools in the pilot areas.
- The third phase focuses on capacity building of local administration in order to apply participatory development methods in the pilot areas as models for replication (Luis, 2010).

PDP is an in-situ program adopted by the Government in collaboration with its International partners. Manshiet Nasser and Boulaq el Dakrour, the two pilot areas of the project where physical improvements and social development projects were implemented, are considered model areas. PDP takes a tailor made approach by assessing the needs of every slum through interviews, mapping of infrastructure availability, facilitating trust building activities between the partners and the community and building capacity of the partner organizations.

It has to be noted that PDP as a policy is effective only because of the favourable policy context in the housing sector. The National Housing Policy of 2005 funds housing for limited income groups, unlocks vacant existing houses, provides loans, and rental options. The National Program of Urban Upgrading of 1992, which operated in phases to provide basic infrastructure and municipal services in almost all squatter and informal settlements in the GCMA also supported the work of PDP (City Alliance, 2008).

The main challenges for upgrading and building slum tenements in Egypt have been the follows (from Dorman, 2003; 2010, & Howeidy, 2009):

1. Historically many of the informal tenements were looked at as an operational place for Islamic insurgency.
2. The contradicting data figures given by the different levels of Government. There is a vast underestimate of the number of households, the number of informal settlements and the density of population.
3. The demand for the housing is not matched with the supply.
4. The undue procedural difficulties in obtaining a formal house and required services of infrastructure and sanitation.
5. Political agenda to prove that New town policies are helping.
6. Increase in population.

5. Sao Paulo

Country	Brazil
City	Sao Paulo City (in Sao Paulo state)
Importance in country	State of Sao Paulo is the largest in terms of population, strongest economically, and also politically significant.
Type of project	Favela or slum up gradation
Name of project	Singapore/PROVER
Duration	1996-2004
Approach	Urbanization and regularization of slums through provision of services. Restoration of water quality in the reservoir supplying drinking water to large parts of Sao Paulo.
Cost	US$250 million
Source of funds	IDB and Municipality of Sao Paulo
Outcome	Project managed to improve housing condition of 217,140 low income families through the above stated approaches

Introduction

São Paulo city is home to almost half of the population (city population of 11,000,000, and a metro-area population that is close to 20,000,000) in Sao Paulo state, making it one of the largest metropolitan areas in the world. According to The Cities Alliance (2008), rapid urbanization in a geographically challenging setting has stressed the ecology, leading to

water pollution, transportation challenges, inadequate infrastructure, high levels of informal employment and high crime rates.

Unemployment, currently running at around 30% tends to be more prevalent among the poorer sectors of the São Paulo population, which comprise around 40% of the total population. The ineligibility for conventional housing credit has forced these families to occupy informal settlements in favelas (slums), irregular land subdivisions, and tenements. The favelas and irregular subdivisions house about 30% of the city's population and are mostly located in the peripheral areas.

When these tenements are constructed on lands prone to erosion, they have invariably led to flooding, erosion, silting up of water courses, and negative environmental effects on drinking water supply (Cities Alliance, 2008)

The Singapore Project

The Singapore/PROVER project was a pioneering in-situ approach in the country for the resettlement of favelas in high-rise buildings. It had the merit of initiating a type of intervention that did not remove the favela from its place, keeping the dwellers in high-rise blocks built on the site of their original residences (Magalhães & Di Villarosa, 2012).

The basic operational sequence of the project was (Smith, 2008):

1. Neighbourhood identification.
2. Enumeration of residents and households.
3. Beginning of resident education in high-rise living.
4. Demolition of existing favelas and residents' relocation to nearby temporary housing.
5. New construction of five-six story walk-up flats.
6. Occupancy by returning households.
7. Post-occupancy social services.

In the initial phase of the program, identical residential blocks were constructed. As little attention was paid to the topography, there was deterioration in these settlements. In the program's later phases, the quality was increased due to changes in typology, which was better adapted to the needs of residents, and an increased emphasis was laid on the layout of open spaces and recreational areas (Magalhães & Di Villarosa, 2012).

In a recent refurbishment of the Singapore/PROVER buildings, the Office of the Mayor of São Paulo opted to allow the establishment of commercial and service shops on the ground floors of the rehabilitated blocks. This was done with a particular focus to accommodate commercial businesses that had existed prior to resettlement.

During its 8 years of execution, the project saw the introduction of the Monitoring and Control System, for managing budgets, contracts and designs. It also led to the acquisition and installation of computing and furniture, as well as training 830 officials in information technology. In an attempt to increase efficiency, a database for the entire municipality was established and training programs were conducted for the technicians (Magalhães & Di Villarosa, 2012).

The project focused almost exclusively on the delivery of new housing in high-rise buildings, with little or no diversity. In addition to this, the initial method of helping families choose apartments through self-targeting was not followed consistently. As a result, the families were resettled into houses that could not meet their needs and this led to payment defaults and other such problems. Post-occupation social work was also conducted only sporadically (Smith, 2008).

Under the favela urbanization approach, 9,068 housing solutions were executed, benefiting 37,900 people. Two favelas, Heliópolis and Nicaragua Vila da Paz, were urbanized. With regard to the lot regularization component, 41,375 families were benefited through the coverage of 31,890 lots. In total, the Singapore/PROVER reached 217,140 low-income families. In the health and education sectors, the results have been better than expected. In terms of employment and income generation, the desired results have not yet been achieved (Magalhães, & Di Villarosa, 2012).

The Guarapiranga Programme: A contrast to Singapore

Guarapiranga is a large artificial lake formed by damming the river, in the extreme southern part of São Paulo, to create a vast reservoir that today supplies roughly one-quarter of São Paulo's drinking water (The Cities Alliance, 2008). In the Guarapiranga program, the major focus was on cleaning up the water reservoir and improving additional facilities like sewerage, drainage, etc. As a result, very few houses were demolished and rebuilt, and it was the streetscape that was wholly transformed. The Guarapiranga Program is, from a housing policy standpoint, a broad-based environmental sanitation program that incorporates slum upgrading. Under this program, around 100 slums have already been upgraded (Smith, 2008). The properties are townhouses, rather than high-rises, and are maintained by the homeowners. The common areas are maintained by minimum wage groundskeepers. The overall observation is that the properties under this program are more affordable. The second phase of the Guarapiranga Program, which has now been expanded to include the Billings Dam protection area, is underway and is now known as the Headwaters Program (Cities Alliance, 2008).

Other Projects

Under programs implemented by the Metropolitan Company of the Habitacao, COHAB, the municipality of São Paulo constructed roughly 150,000 flats, which were mid-rise walkups. All the tenements were built on public land, by private builders. The flats were then owned and maintained by the municipality. Eventually, the inadequate maintenance by the municipality led to physical deterioration of the constructions (Magalhães & Di Villarosa, 2012).

The Mutirão program authorized and financed individual slum dwellers to build their own homes. The program was beset by practical difficulties. Land for the project was intended to be compensated at a market price, making the resulting homes expensive even with self-built labour. Money was lost in many cases and the costs mounted. Many homes were never completed. Changes in municipal administration also led to abrupt discontinuation of some properties (Magalhães & Di Villarosa, 2012).

In Favela-Bairro, there was an absolute municipal government commitment demonstrated by the channelling of nearly half the city's budget to its Housing Department and giving the department a central political management role.

In contrast, Nova Baixada distinguished itself by the absence of connections between the state, the program executor, the Baixada Fluminense municipalities and the program's target communities, despite what was established by the IDB contract.

In Bacia da Una, the program was under joint responsibility of the state government and the Office of the Mayor of Belém. The constant disagreements between the parties negatively impacted the general coordination and disrupted the connection with the communities (Magalhães & Di Villarosa, 2012).

6. Coast Regulation Zone Notification. Amendments in Mumbai, Kerala, and Goa

After a detailed review of the Coastal Regulation Zone norms and their implementation, a committee chaired by Dr. M.S. Swaminathan (Ministry of Environment and Forests, 2005), recommended that socio-economic as well as environmental issues must be considered in the application of the law in different parts of the country. The Ministry of Environment and Forests (MoEF) issued a notification for rolling back the CRZ provisions in the regions, stating that the pressure of development was not uniform across India's 7,500-km coastline (MoEF, 2011). This action came after much criticism of CRZ boundary by communities living along water bodies, whose physical and social structure, and economic security were jeopardized by the implementation of the regulation. Activists made the important distinction between "granting concessions" and "respecting rights," and stated that the continuity of communities that had inhabited these areas for generations were threatened by the legislation (Bhaduri, 2010). The amendment rolled back the 500m restriction to 50m from the high tide line, and allowed renovating existing structures, and constructing new structures for living and working spaces past the 50m line in these three states (MoEF, 2011).

After much effort by the governments of Kerala, Goa, and Mumbai, the MoEF, following a directive from the Supreme Court, specified special provisions, citing reasons related to development of infrastructure, and protection of vulnerable sections of the society and their traditional livelihoods. (Press Information Bureau, 2011; Badhuri, 2010; Mascarenhas, 1999).

- ***Mumbai***

For Mumbai, part V 1 (b) 1 and 2, the notification presently allows slum redevelopment and protection of vulnerable populations. Over five lakh people living in CRZ-II areas have the opportunity to improve their housing and sanitation with the help of government and parastatal agencies.

Koliwadas or settlements of the fishing communities along the coast, belonging to the Kolis who are considered the original settlers of Mumbai, were declared CRZ-III, which means that no other groups can occupy these areas, and only the Kolis can develop the area. Jairam Ramesh, the then Minister of Environment and Forests, directed the State government to avoid evicting fisher folk and the urban poor living along the coast, and instead improve living conditions, and identify affordable spaces for the growing numbers of urban poor (Ghosh, 2012; Kulkarni, 2008).

This amendment also famously allowed plans for an international airport in Navi Mumbai promoted by the Government of Maharashtra and CIDCO in a "No Development Zone," as the planned airport will partially occupy land which comes under CRZ zones I, II and III, and will destroy over 400 acres of mangrove forests. The project is delayed due to environmental concerns and cost escalation, and other options are now under consideration (Yeshwantrao, 2013; CIDCO, 2012, Kulkarni, 2008).

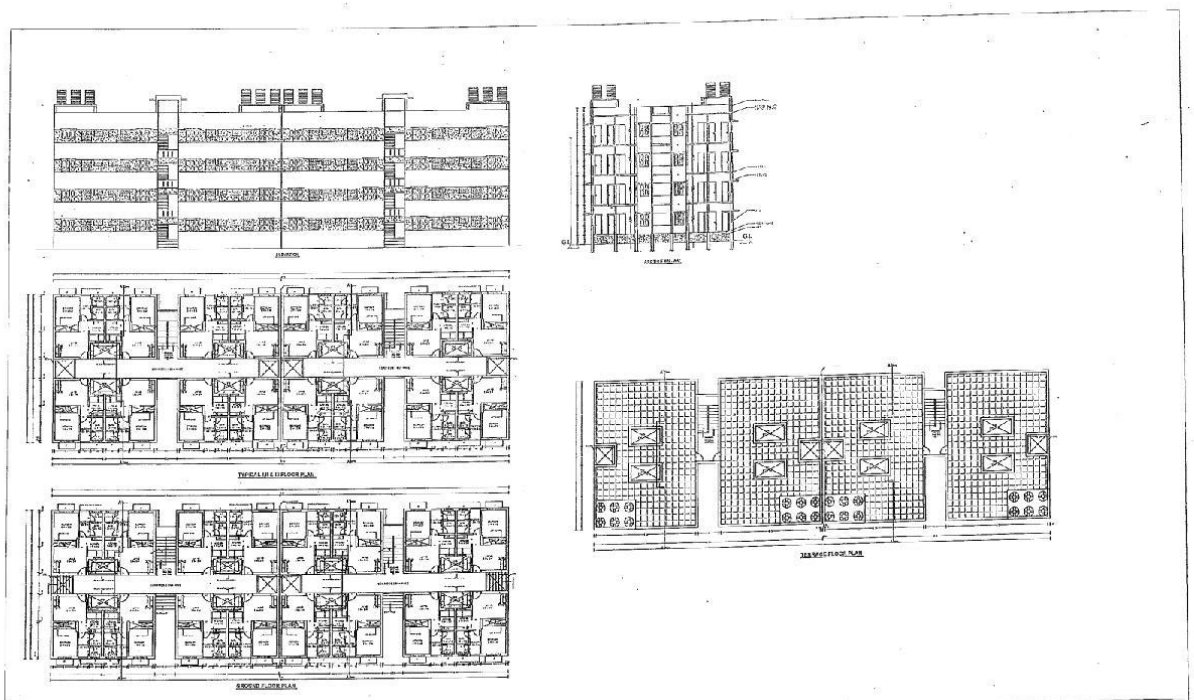
- ***Kerala***

The population density along the coastal areas of Kerala is around 2,150 persons per sq kms. Parts of Kerala's coast have been classified as CRZ-I or CRZ-III requiring a 'No Development Zone' between 0 and 200m from the waterline. Activists from fishing communities and labour unions pushed for recognition of their rights to construct in the no-build zone to protect their livelihoods. The new provision (part V, 2) reduced the no-build zone to 50m, and allowed existing dwellings past the 50m to be repaired and redeveloped (Ghosh, 2012; Bhaduri, 2010)

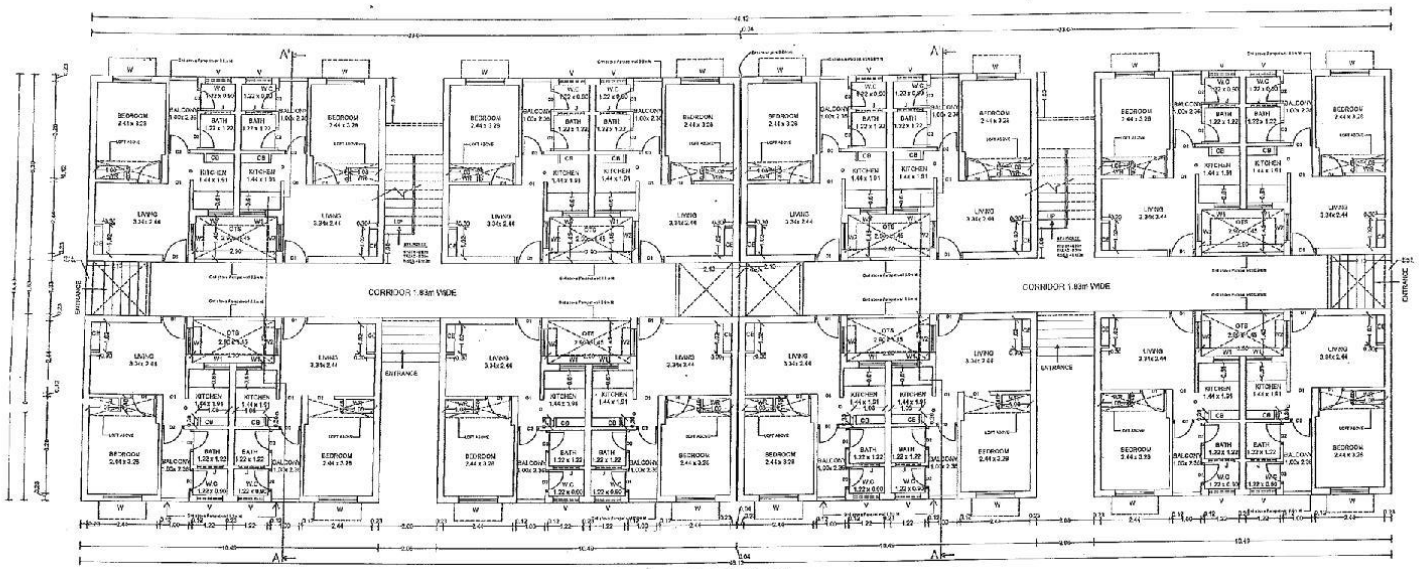
- ***Goa***

In Goa, the boundary was relaxed as in Kerala, to boost the livelihoods of fisher folk and other groups dependent on coastal livelihoods. As Goa is one of India's most popular tourist destinations, traditional coastal communities were already in decline as large tourism developers were already buying up large tracts of land from fisher folk. The CRZ amendment upheld the rights of fisher folk and allied workers to develop the no-build zone to support their livelihoods. The zone lies between 100-200m from the high tide line, and existing coastal structures are permitted to remain. Construction between 200-500m from the high tide line was restricted to 9m in height, and could be developed only by groups with traditional rights and customary use of the land. (Goa Chronicle, 2011; Mascarenhas, 1999).

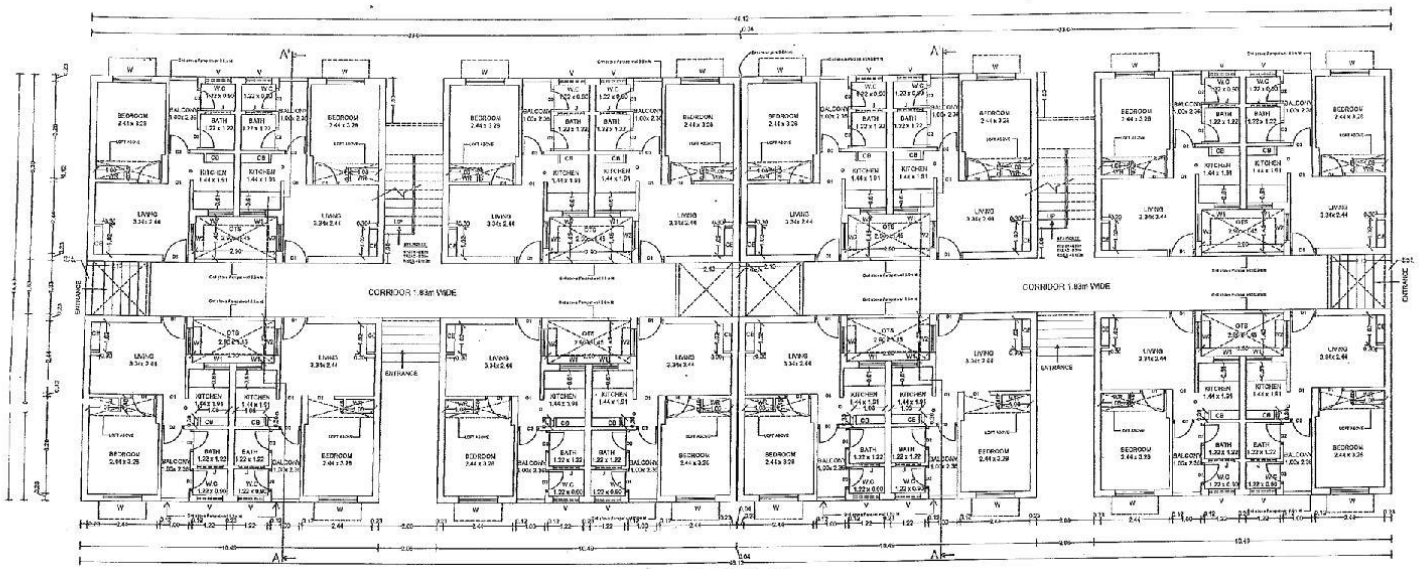
APPENDIX – 5 NEW DWELLINGS TYPE LAYOUT PROVIDE BY TNSCB



TAMIL NADU SLUM CLEARANCE BOARD	SCHEDULE OF JOINERIES			SCALE - 1:100		
TYPE DESIGN NO. 04 / 2012 (G + 3 FLOORS - 16 UNITS/FLOOR) [64 UNITS / BLOCK]	TYPE	DESCRIPTION	SIZE	NOTE 1. THE TYPE DESIGN TO BE ADOPTED FOR JAILPETTAI. 2. ALL DIMENSIONS ARE IN METRE.	PLANNING ASSISTANT	ASSISTANTPLANNER
PLINTH AREA / UNIT - 36.53 sq.m (INCLUDING COMMON AREA)	D	DOOR	1.00 x 1.98m			
COMMON AREA / UNIT- 5.74 sq.m	D1	DOOR	0.91 x 1.98m			
PLINTH AREA / UNIT - 30.79 sq.m (EXCLUDING COMMON AREA)	D2	DOOR	0.76 x 1.98m			
CARPET AREA / UNIT - 25.16 sq.m	O	OPENING	0.91 x 1.98m	PREPARED BY : L.POONGODI DATE : 24.05.2011	DEPUTY PLANNER	CHIEF ENGINEER
	W	WINDOW	1.37 x 1.22m			
	W1	WINDOW	0.91 x 0.9 m			
	W2	FRENCH WINDOW	0.91 x 1.22m			
	V	VENTILATOR	0.91 x 0.6 m			
	J	JOLLY	0.91 x 0.6 m			
	J1	JOLLY	2.00 x 1.22m			



GROUND FLOOR PLAN



GROUND FLOOR PLAN

APPENDIX – 6 SLUM LIST AND ACTION ON SLUMS EXPLORED TABLES, SUMMARY OF ACTIONS EXPLORED AND JUSTIFICATION ON SLUMS WITHIN PROJECT WORK AREA

SLUM N.	ZONE N.	WARD N.	SLUM NAME	N. FAMILIES*	ACTIONS	JUSTIFICATION									N. FAMILIES RESETTLED
						RST	IMP	ICRC	IROW	VLFR	LFR	MFR	HFR	IPU	
1	9	114/115/116	**QUITH E MILLETH BRIDGE TO OLD JAIL**	1140	RESETTLEMENT				P	P	P	NO	NO		1140
2	5	59	**NAVALAR NEDUNCHELIAN NAGAR**	1171	RESETTLEMENT					P	P	NO	NO		1171
3	5	60	**BOOTHA PERUMAL NAICKAN STREET**	145	RESETTLEMENT					NO	NO	NO	NO		145
4	8	100	**ANJUKUDISAI**	575	RESETTLEMENT					P	P	NO	NO		575
5	9	111	**RANGOON STREET**	315	RESETTLEMENT			P	P	NO	NO	NO	NO		315
6	9	109	**RAJIV GANDHI NAGAR**	224	RESETTLEMENT			NO	P	NO	NO	P	P		224
7	6	79	**JOTHIAMMAL NAGAR**	70	RESETTLEMENT			NO	P	NO	NO	NO	NO		70
8	7	93	**PADIKUPPAM**	275	RESETTLEMENT					P	P	P	NO		275
9	8	101	**MEL NADUVANKARAI**	48	RESETTLEMENT	NO	NO	NO	P	NO	NO	NO	NO	NO	48
10	8	99	**SATHYASAI NAGAR**	265	RESETTLEMENT			NO	P			P	NO		265
11	8	101	**PONNUVEL PILLAI THOTTAM & MUTHU MARRIAMAN NAGAR**	537	RESETTLEMENT			P	P	P	P	P	P		537
12	8	100/101	**BERI BERI ROAD**	-	ALREADY RESETTLED	ALREADY TAKEN BY ECP									ALREADY RESETTLED
13	8	105	**NSK NAGAR**	650	RESETTLEMENT			P	P	P	P	P	NO		650
14	8	100	**MOOVENDAR NAGAR**	105	IN SITU DEVELOPMENT	NO		NO	P	NO	NO	NO	NO	NO	0
15	8	100	**MGR COLONY**	363	RESETTLEMENT			P	P	P	P	P	P		363
16	9	111	**MAKKISH GARDEN**	491	RESETTLEMENT					P	P	P	P		491
17	9	111	**THIDEER NAGAR**	595	RESETTLEMENT					P	P	P	P		595
18	8	107	**JOTHIAMAL NAGAR**	**	RESETTLEMENT			P	P	NO	NO	NO	NO		NO SURVEY DEVELOPED
19	8	107	**AVAIPURAM - APARAO GARDEN - JOTHIAMAL NAGAR**	**	RESETTLEMENT			P	P	P	P	P	P		NO SURVEY DEVELOPED
20	8	106	**INDIRA CHANDI NAGAR**	**	RESETTLEMENT			P	P	P	P	P	P		NO SURVEY DEVELOPED
TOTAL				**6969**											**6864**

SLUM N.	ZONE N.	WARD N.	SLUM NAME	N. FAMILIES*	ACTIONS		MAX. N. FAMILIES RESETTLED

*** BASED ON GENERAL DATA PER SLUM PROVIDED BY TNSCB**	RESSETLEMENT	RST_URBAN REGENERATION NEEDINGS
** Enumeration was not done for these slums as trying to get the enumeration done in those areas, concerning officials were not allowed in. Even though these areas were located and identified in RAY.	IN SITU DEVELOPMENT	IMP_IMPROVEMENT IN THE BORDER NEEDINGS
	ALREADY RESETTLED	IROW_INSIDE RIGHT OF WAY LINE
		ICRC_INSIDE CMDA RIVER CORRIDOR
		VLFR_VERY LOW FLOODING RISK (Q200)
		LFR_LOW FLOODING RISK (Q100)
		MFR_MEDIUM FLOODING RISK (Q10)
		HFR_HIGH FLOODING RISK (Q2)
		IPU_INCOMPATIBLE WITH URBAN RIVER FRONT
		P PARTIALLY

SLUM N.	ZONE N.	WARD N.	SLUM NAME	N. FAMILIES*	ACTIONS	JUSTIFICATION									N. FAMILIES RESETTLED
						RST	IMP	ICRC	IROW	VLFR	LFR	MFR	HFR	IPU	
1 ECP	5	59	PALLAVAN NAGAR	632	RESETTLEMENT					P	P	P	P		632
2 ECP	5	60	EAST COOUM RIVER	575	RESETTLEMENT			NO	P	NO	NO	NO	NO		575
3 ECP	5	60	WEST COOUM RIVER	369	RESETTLEMENT					P	P	P	P		369
4 ECP	5	60	SOUTH COOUM RIVER	276	RESETTLEMENT					P	P	P	P		276
5 ECP	8	107	RETTAIMALAI SRINIVASAN NAGAR	34	NONE	ALREADY RESETTLED									ALREADY RESETTLED
6 ECP	9	110	MAYOR RAMANATHAN SALAI	470	IN SITU DEVELOPMENT	NO		NO	P	NO	NO	NO	NO	NO	0
7 ECP	8	107	APPASAMY STREET	488	IN SITU DEVELOPMENT	NO		NO	P	P	P	P	P	NO	0
8 ECP	8	107	CHARI ROAD	133	NONE	ALREADY RESETTLED									ALREADY RESETTLED
9 ECP	8	107	JOTHIAMMAL NAGAR	302	NONE	ALREADY RESETTLED									ALREADY RESETTLED
10 ECP	8	107	M.K.STALIN NAGAR	229	NONE	ALREADY RESETTLED									ALREADY RESETTLED
11 ECP	9	109	WSET NAMASIVAYAPURAM - SALAVAIYAR COLONY	338	RESETTLEMENT			P	P	P	P	P	P		338
12 ECP	9	109	WSET NAMASIVAYAPURAM - KALVAIKARAI					NO	P	NO	NO	NO	NO		
13 ECP	9	109	WEST NAMASIVAYAPURAM - KALAINAR KARUNANIDHI NAGAR					P	P	P	P	NO	NO		
14 ECP	8	106	VENKATAJALAPATHY	24	IN SITU DEVELOPMENT	NO		NO	P	NO	NO	NO	NO	NO	0
15 ECP	9	109	OFFICERS COLONY	9	NONE	ALREADY RESETTLED									ALREADY RESETTLED
16 ECP	8	102	E.V.R. SALAI	41	RESETTLEMENT			P	P	P	P	P	P		41
17 ECP	8	106	KANNIAH STREET	237	RESETTLEMENT			P	P	NO	NO	NO	NO		237
18 ECP	8	106	SUNNAMBUKALVAIKARAI STREET	60	RESETTLEMENT			P	P	NO	NO	NO	NO		60
19 ECP	8	106	SOUTH KASARATH THOTTAM	251	RESETTLEMENT			P	P	NO	NO	NO	NO		251
20 ECP	8	106	NALLAMUTHU MARIAMMAN KOIL STREET	111	RESETTLEMENT			P	P	P	P	P	P		111
21 ECP	8	106	EAST ARASAMARATH STREET	41	RESETTLEMENT			P	P	P	P	P	P		41
22 ECP	8	106	S.S SAHIB STREET	67	RESETTLEMENT			P	P	P	P	P	P		67
23 ECP	8	106	PERUMAL KOIL STREET	132	RESETTLEMENT				P	NO	NO	NO	NO		132
24 ECP	8	106	VELLALAR STREET	395	RESETTLEMENT			P	P	P	P	P	P		395
25 ECP	8	106	EAST MADA STREET	16	RESETTLEMENT			P	P	P	P	P	P		16
26 ECP	8	106	SABAPATHI STREET	67	RESETTLEMENT			P	P	P	P	P	P		67
27 ECP	8	102	MANJAKOLLAI	249	RESETTLEMENT			P	P	NO	P	P	NO	NO	249
28 ECP	8	102	THIRUVEETHIAMMAN KOIL STREET	180	IN SITU DEVELOPMENT	NO	NO	P	P	NO	NO	NO	NO	NO	0
29 ECP	8	102	KATHIRAVAN COLONY	49	IN SITU DEVELOPMENT	NO	NO	NO	P	NO	NO	NO	NO	NO	0
30 ECP	8	101	BHARATHIPURAM	13	IN SITU DEVELOPMENT	NO		P	P	NO	NO	NO	NO	NO	0
31 ECP	8	102	GAJALAKSHMI COLONY	57	IN SITU DEVELOPMENT	NO		P	P	NO	NO	NO	NO	NO	0
32 ECP	8	101	RIVER VIEW COLONY	303	RESETTLEMENT			P	P	P	P	P	P		303
33 ECP	8	106	DR RADHAKRISHNAN NAGAR	341	RESETTLEMENT			P	P	P	P	P	P		341
34 ECP	8	106	MUTHUMARIAMMAN KOIL STREET	390	RESETTLEMENT			P	P	NO	NO	NO	NO		290

SLUM N.	ZONE N.	WARD N.	SLUM NAME	N. FAMILIES*	ACTIONS	JUSTIFICATION									N. FAMILIES RESETTLED
						RST	IMP	ICRC	IROW	VLFR	LFR	MFR	HFR	IPU	
35 ECP	8	101	NADUVANKARAI	91	IN SITU DEVELOPMENT	NO		NO	P	NO	NO	NO	NO	NO	0
TOTAL				**6970**											**4891**

SLUM N.	ZONE N.	WARD N.	SLUM NAME	N. FAMILIES	ACTIONS	JUSTIFICATION	N. FAMILIES RESETTLED

*** BASED ON GENERAL DATA PER SLUM PROVIDED BY TNSCB**

ACTIONS
RESSETLEMENT
IN SITU DEVELOPMENT
ALREADY RESETTLED

JUSTIFICATION	
RST_URBAN REGENERATION NEEDINGS	
IMP_IMPROVEMENT IN THE BORDER NEEDINGS	
IROW_INSIDE RIGHT OF WAY LINE	
ICRC_INSIDE CMDA RIVER CORRIDOR	
VLFR_VERY LOW FLOODING RISK (Q200)	
LFR_LOW FLOODING RISK (Q100)	
MFR_MEDIUM FLOODING RISK (Q10)	
HFR_HIGH FLOODING RISK (Q2)	
IPU_INCOMPATIBLE WITH URBAN RIVER FRONT	
P	PARTIALLY

SLUM N.	MUNICIPALITY	SLUM NAME	N. FAMILIES*	ACTIONS	JUSTIFICATION									N. FAMILIES RESETTLED
					RST	IMP	ICRC	IROW	VLFR	LFR	MFR	HFR	IPU	
	NERKUNDRAM & MADURAVOYAL													
11 BCL		METTUKULAM	31	RESETTLEMENT		NO	NO	NO	NO	NO	NO	NO		31
12 BCL		MSP NAGAR	405	RESETTLEMENT										405
13 BCL		OM SAKTHI NAGAR	146	RESETTLEMENT			P	P	P	P	NO	NO		146
14 BCL		NAGATHAMMAN KOIL STREET	12	IN SITU DEVELOPMENT	NO		NO	P	NO	NO	NO	NO	NO	0
15 BCL		KAMBAR NAGAR	122	RESETTLEMENT			P	P	P	P	P	P		122
16 BCL		PERUMAL KOIL STREET	8	ALREADY RESETTLED										ALREADY RESETTLED
17 BCL		SIVABOOTHAM	45	IN SITU DEVELOPMENT										0
	THIRUVERKADU MUNICIPALITY													
19 BCL		THIRUVERKADU VILLAGE		RESETTLEMENT							P	P		NOT AVAILABLE
20 BCL		AATHI SAKTHI KARUMARAIAMMAN NAGAR	205	IN SITU DEVELOPMENT	NO		NO	P	NO	NO	NO	NO	NO	0
21 BCL		MELPAKKAM	59	IN SITU DEVELOPMENT	NO		NO	P	NO	NO	NO	NO	NO	0
REST OF THE AREAS PROVIDED BY TNSCB ARE OUT OF THE AREA TO BE DEVELOPED BY COOOUM RIVER ECORESTA														
TOTAL			**1033**											**704**

SLUM N.	MUNICIPALITY	SLUM NAME	N. FAMILIES*	ACTIONS	JUSTIFICATION	N. FAMILIES RESETTLED

*** BASED ON GENERAL DATA PER SLUM PROVIDED BY TNSCB***

RESSETLEMENT	RST_URBAN REGENERATION NEEDINGS
IN SITU DEVELOPMENT	IMP_IMPROVEMENT IN THE BORDER NEEDINGS
ALREADY RESETTLED	IROW_INSIDE RIGHT OF WAY LINE
	ICRC_INSIDE CMDA RIVER CORRIDOR
	VLFR_VERY LOW FLOODING RISK (Q200)
	LFR_LOW FLOODING RISK (Q100)
	MFR_MEDIUM FLOODING RISK (Q10)
	HFR_HIGH FLOODING RISK (Q2)
	IPU_INCOMPATIBLE WITH URBAN RIVER FRONT
	P PARTIALLY

APPENDIX-7 IN-SITU RECONSTRUCTION ACTION OPTION AND ESTIMATION ON DWELLING TO BE DEVELOPED ON EACH LOCATION

RENEWAL FOR IN SITU RESETTLEMENT (RNW)														
IDENTIFICATION	LOCATION (PKs)		AREA (m2)	MAIN DIMENSIONS	LAND OWNERSHIP	PLATFORM LEVEL		F.S.I	PLOT AREA				DWELLINGS	DENSITY
				L:Length. W: Width. B:Base. H:Heigth										
SLUM 35ECP - SLUM 14	13+350 - 13+450		6484	Rectangle: L: 97 m. W: 65m.	PUBLIC	8.12 m.		0,97	6320				173	267
					HOUSING BOARD		MAXIMUN	1,10	7132			MAXIMUN	195	301
TYPE		M2/FLOOR	HEIGHT				UF (RESIDENTIAL)	N. BLOCKS	TOTAL	RESIDENTIAL GF	COMERTIAL GF	FACILITIES	DWELLINGS	
BL 1		140	4				560	2	1120	140	0		31	
BL 2		1300	4				5200	1	5200	800	0		142	
TOTAL							5760	3	6320	940	0		173	
SLUM 10	15+350 - 15+500		12170	Rectangle: L: 169 m. W: 70m.	PRIVATE	8.65 m.		0,74	8960				224	184
							MAXIMUN	1,10	13387			MAXIMUN	367	301
TYPE		M2/FLOOR	HEIGHT				UF (RESIDENTIAL)	N. BLOCKS	TOTAL	RESIDENTIAL GF	COMERTIAL GF	FACILITIES	DWELLINGS	
BL 1		640	4				2560	2	5120	192	448		128	
BL 2		480	4				1920	2	3840	144	336		96	
TOTAL							4480	4	8960	336	784		224	
SLUM 33ECP	13+000 - 13+300		11649	Rectangle: L: 348 m. W: 33m.	PUBLIC	7.99 m.		0,58	6720				184	158
					CoC - PWD		MAXIMUN	1,10	12814			MAXIMUN	351	301
TYPE		M2/FLOOR	HEIGHT				UF (RESIDENTIAL)	N. BLOCKS	TOTAL	RESIDENTIAL GF	COMERTIAL GF	FACILITIES	DWELLINGS	
BL 1		120	4				480	14	6720	1680	0		184	
TOTAL							480	14	6720	1680	0		184	
SLUM 11ECP	9+850 - 9+950		2129	Rectangle: L: 29 m. W: 44m.	PUBLIC - CoC - PWD	5.70 m.	MAXIMUN	1,10	2340			MAXIMUN	64	301
TYPE		M2/FLOOR	HEIGHT				UF (RESIDENTIAL)	N. BLOCKS	TOTAL	RESIDENTIAL GF	COMERTIAL GF	FACILITIES	DWELLINGS	
BL 1		195	4				780	3	2340	195	0		64	
TOTAL							780	3	2340	195	0		64	
SLUM 20	13+000 - 13+300		3425	Rectangle: L: 69 m. W: 42m.	PUBLIC - PWD	7.99 m.		1,10	3426			MAXIMUN	103	301
TOTAL			35857					0,77	27766				749	209
			35857					1,10	39443			MAXIMUN	1081	301
			AREA					F.S.I	PLOT AREA				DWELLINGS	DENSITY

PLATFORM LEVEL: MINIMUN PLATFORM LEVEL FOR URBAN DEVELOPMENT AND IN SITU RESETTLEMENT IN ORDER TO AVOID 100 YEARS RETURN PERIOD FLOODPLAIN

RENEWAL. AREAS AFFECTED BY COAST REGULATION ZONE NOTIFICATION (CRZ)													
IDENTIFICATION	LOCATION (PK)		AREA (m2)	MAIN DIMENSIONS	LAND OWNERSHIP	PLATFORM LEVEL		F.S.I	PLOT AREA			DWELLINGS	DENSITY
SLUM 2 - SLUM 4	2+100 - 2+550		17314	Curve: L: 185 m. W: 28m.	PUBLIC - PWD	2.73 m.	MAXIMUN	1,10	19045			522	301
SLUM 2ECP	2+600 - 2+950		10424	Curve: L: 294 m. W: 12m.	PUBLIC - PWD	2.94 m.	MAXIMUN	1,10	11466			314	301
SLUM 3ECP	3+450 - 3+700		12774	Curve: L: 183 m. W: 20m.	PUBLIC - PWD	3.38 m.	MAXIMUN	1,10	14051			385	301
SLUM 4ECP	4+350 - 4+600		13202	Curve: L: 195 m. W: 20m.	PUBLIC - PWD	3.84 m.	MAXIMUN	1,10	14522			398	301
SLUM 16	6+100 - 6+300		11286	Curve: L: 2370 m. W: 36m.	PUBLIC - PWD	4.49 m.	MAXIMUN	1,10	12415			340	301
SLUM 17	6+300 - 6+500		12834	Triangle: B: 220 m. H: 91m.	PUBLIC - PWD	4.52 m.	MAXIMUN	1,10	14117			387	301
SLUM 5 (adjacent to)	6+000 - 6+100		8309	Rectangle: L: 120 m. W: 58m.	PRIVATE	4.40 m.	MAXIMUN	1,10	9140			250	301
TOTAL			86143					1,10	94757			2596	301
			AREA					F.S.I	PLOT AREA			DWELLINGS	DENSITY

AREA: INCLUDES RIVERFRONT NOT DEFINED AS URBAN RENEWAL CRZ ON R.R.P.1 MAPS CUASE BEING UNDER FLOODING RISK BUT INCLUDED IN THE LAND/DWELLING STANDARD JUSTIFICATION
MAIN DIMENSION: ARE REFERED TO THE NON AFFECTED BY FOODPLAINS ARE TO BE DEVELOPED BY NEW BUILDINGS FOR IN SITU RESETTLEMENT
PLATFORM LEVEL: MINIMUN PLATFORM LEVEL FOR URBAN DEVELOPMENT AND IN SITU RESETTLEMENT IN ORDER TO AVOID 100 YEARS RETURN PERIOD FLOODPLAIN

RENEWAL. AREAS PROPOSED ZONE TO RESIDENTIAL (ZTR)														
IDENTIFICATION	LOCATION (PK)		AREA (m2)	MAIN DIMENSIONS	LAND OWNERSHIP	PLATFORM LEVEL		F.S.I	PLOT AREA			DWELLINGS	DENSITY
ZTR 1	9+450 - 9+600		3128	Rectangle: L: 129 m. W: 20m.	PUBLIC - PWD	5.24 m.	MAXIMUN	1,10	3440,8			94	301
(adjacent to slum 18)													
ZTR 2	11+700 - 12+000		22796	Rectangle: L: 233 m. W: 95m.	PUBLIC - CoC	7.10 m.		1,02	23210			636	279
							MAXIMUN	1,10	25076			687	301
(adjacent to 28ECP- 29ECP)													
TYPE		M2/FLOOR	HEIGHT				UF (RESIDENTIAL)	N. BLOCKS	TOTAL	RESIDENTIAL GF	COMERTIAL GF	FACILITIES	DWELLINGS
BL 1		725	4				2900	4	11600	425	300		310
BL 2		256	4				1024	7	7168	256	0		196
BL 3		180	4				720	4	2880	180	0		79
BL 4		528	4				2112	1	2112	278	250		51
TOTAL							6756	16	23760	1139	1450	600	636
ZTR 3	11+700 - 12+000		10049	Rectangle: L: 118 m. W: 86m.	PUBLIC - CoC	7.10 m.		1,04	10429			286	284
							MAXIMUN	1,10	11054			303	301
(adjacent to 30ECP- 31ECP)													
TYPE		M2/FLOOR	HEIGHT				UF (RESIDENTIAL)	N. BLOCKS	TOTAL	RESIDENTIAL GF	COMERTIAL GF	FACILITIES	DWELLINGS
BL 1		725	4				2900	3	8700	425	300		230
BL 2		576	4				2304	1	2304	301	275		56
TOTAL							5204	4	11004	726	1175		286
ZTR 4	12+450 - 12-550		3860	Curve: L: 168 m. W: 24m.	PUBLIC - PWD	7.33 m.	MAXIMUN	1,10	4246			116	301
(adjacent to lum 32ECP)													
ZTR 5	12+700 - 12+950		4706	Rectangle: L: 368 m. W: 30m.	PUBLIC - PWD	7.66 m.	MAXIMUN	1,10	5177			142	301
(adjacent to slum 20)													
ZTR 6	13+500 - 13+900		11391	Rectangle: L: 368 m. W: 30m.	PUBLIC - PWD - PRIVATE	8.23 m.	MAXIMUN	1,10	12530			343	301
(near Naduvakarai bridge)													
ZTR 7	14+350 - 14+550		3477	Triangle: B: 90 m. H: 62m.	PUBLIC - PWD	8.47 m.	MAXIMUN	1,10	3825			105	301
(near Inner Ring Road Bridge)													
ZTR 8	14+350 - 14+550		2241	Curve: L: 155 m. W: 30 m.	PUBLIC - PWD	8.47 m.	MAXIMUN	1,10	2465			68	301
(near Inner Ring Road Bridge)													
ZTR 9	15+500 - 15+700		4417	Rectangle: L: 354 m. W: 59 m.	PUBLIC - PWD	8.69 m.	MAXIMUN	1,10	4859			133	301
(slum 8)													
ZTR 10	23+450 - 23-800		24129	Rectangle: L: 354 m. W: 59 m.	PUBLIC - PWD	14.36 m.	MAXIMUN	1,10	26542			727	301
(adjacent to slum 19BCL)													
TOTAL			90194					1,07	93282			2650	294
			90194					1,10	95773		MAXIMUN	2718	301
			AREA					F.S.I	PLOT AREA			DWELLINGS	DENSITY
GRAND TOTAL			212194					1,03	215806			5995	283
			212194					1,10	229973		MAXIMUN	6395	301
			AREA					F.S.I	PLOT AREA			DWELLINGS	DENSITY

PLATFORM LEVEL: MINIMUN PLATFORM LEVEL FOR URBAN DEVELOPMENT AND IN SITU RESETTLEMENT IN ORDER TO AVOID 100 YEARS RETURN PERIOD FLOODPLAIN

APPENDIX-8 RESETTLEMENT AND FAMILY AFFECTED

SLUM N.	ZONE N.	WARD N.	SLUM NAME	N. FAMILIES*	ACTIONS	JUSTIFICATION									N. FAMILIES RESETTLED
						RST	IMP	ICRC	IROW	VLFR	LFR	MFR	HFR	IPU	
1	9	114/115/116	QUITH E MILLETH BRIDGE TO OLD JAIL	1140	RESETTLEMENT				P	P	P	NO	NO		1140
2	5	59	NAVALAR NEDUNCHELIAN NAGAR	1171	RESETTLEMENT					P	P	NO	NO		1171
3	5	60	BOOTHA PERUMAL NAICKAN STREET	145	RESETTLEMENT					NO	NO	NO	NO		145
4	8	100	ANJUKUDISAI	575	RESETTLEMENT					P	P	NO	NO		575
5	9	111	RANGOON STREET	315	RESETTLEMENT			P	P	NO	NO	NO	NO		315
6	9	109	RAJIV GANDHI NAGAR	224	RESETTLEMENT			NO	P	NO	NO	P	P		224
7	6	79	JOTHIAMMAL NAGAR	70	RESETTLEMENT			NO	P	NO	NO	NO	NO		70
8	7	93	PADIKUPPAM	275	RESETTLEMENT					P	P	P	NO		275
9	8	101	MEL NADUVANKARAI	48	RESETTLEMENT	NO	NO	NO	P	NO	NO	NO	NO	NO	48
10	8	99	SATHYASAI NAGAR	265	RESETTLEMENT			NO	P			P	NO		265
11	8	101	PONNUVEL PILLAI THOTTAM & MUTHU MARRIAMAN NAGAR	537	RESETTLEMENT			P	P	P	P	P	P		537
12	8	100/101	BERI BERI ROAD	-	ALREADY RESETTLED	ALREADY TAKEN BY ECP									ALREADY RESETTLED
13	8	105	NSK NAGAR	650	RESETTLEMENT			P	P	P	P	P	NO		650
14	8	100	MOOVENDAR NAGAR	105	RESETTLEMENT	NO		NO	P	NO	NO	NO	NO	NO	105
15	8	100	MGR COLONY	363	RESETTLEMENT			P	P	P	P	P	P		363
16	9	111	MAKKISH GARDEN	491	RESETTLEMENT					P	P	P	P		491
17	9	111	THIDEER NAGAR	595	RESETTLEMENT					P	P	P	P		595
18	8	107	JOTHIAMAL NAGAR	**	RESETTLEMENT			P	P	NO	NO	NO	NO		NO SURVEY DEVELOPED
19	8	107	AVAIPURAM - APARAO GARDEN - JOTHIAMAL NAGAR	**	RESETTLEMENT			P	P	P	P	P	P		NO SURVEY DEVELOPED
20	8	106	INDIRA CHANDI NAGAR	**	RESETTLEMENT			P	P	P	P	P	P		NO SURVEY DEVELOPED
TOTAL				6969											6969

SLUM N.	ZONE N.	WARD N.	SLUM NAME	N. FAMILIES*	ACTIONS		MAX. N. FAMILIES RESETTLED

* BASED ON GENERAL DATA PER SLUM PROVIDED BY TNSCB	RESSETLEMENT	RST_URBAN REGENERATION NEEDINGS
** Enumeration was not done for these slums as trying to get the enumeration done in those areas, concerning officials were not allowed in. Even though these areas were located and identified in RAY.	ALREADY RESETTLED	IMP_IMPROVEMENT IN THE BORDER NEEDINGS
		IROW_INSIDE RIGHT OF WAY LINE
		ICRC_INSIDE CMDA RIVER CORRIDOR
		VLFR_VERY LOW FLOODING RISK (Q200)
		LFR_LOW FLOODING RISK (Q100)
		MFR_MEDIUM FLOODING RISK (Q10)
		HFR_HIGH FLOODING RISK (Q2)
		IPU_INCOMPATIBLE WITH URBAN RIVER FRONT
		P PARTIALLY

SLUM N.	ZONE N.	WARD N.	SLUM NAME	N. FAMILIES*	ACTIONS	JUSTIFICATION									N. FAMILIES RESETTLED
						RST	IMP	ICRC	IROW	VLFR	LFR	MFR	HFR	IPU	
1 ECP	5	59	PALLAVAN NAGAR	632	RESETTLEMENT					P	P	P	P		632
2 ECP	5	60	EAST COOUM RIVER	575	RESETTLEMENT			NO	P	NO	NO	NO	NO		575
3 ECP	5	60	WEST COOUM RIVER	369	RESETTLEMENT					P	P	P	P		369
4 ECP	5	60	SOUTH COOUM RIVER	276	RESETTLEMENT					P	P	P	P		276
5 ECP	8	107	RETTAIMALAI SRINIVASAN NAGAR	34	ALREADY RESETTLED	ALREADY RESETTLED									ALREADY RESETTLED
6 ECP	9	110	MAYOR RAMANATHAN SALAI	470	RESETTLEMENT	NO		NO	P	NO	NO	NO	NO	NO	470
7 ECP	8	107	APPASAMY STREET	488	RESETTLEMENT	NO		NO	P	P	P	P	P	NO	488
8 ECP	8	107	CHARI ROAD	133	ALREADY RESETTLED	ALREADY RESETTLED									ALREADY RESETTLED
9 ECP	8	107	JOTHIAMMAL NAGAR	302	ALREADY RESETTLED	ALREADY RESETTLED									ALREADY RESETTLED
10 ECP	8	107	M.K.STALIN NAGAR	229	ALREADY RESETTLED	ALREADY RESETTLED									ALREADY RESETTLED
11 ECP	9	109	WSET NAMASIVAYAPURAM - SALAVAIYAR COLONY	338	RESETTLEMENT			P	P	P	P	P	P		338
12 ECP	9	109	WSET NAMASIVAYAPURAM - KALVAIKARAI					NO	P	NO	NO	NO	NO		
13 ECP	9	109	WEST NAMASIVAYAPURAM - KALAINAR KARUNANIDHI NAGAR					P	P	P	P	NO	NO		
14 ECP	8	106	VENKATAJALAPATHY	24	RESETTLEMENT	NO		NO	P	NO	NO	NO	NO	NO	24
15 ECP	9	109	OFFICERS COLONY	9	ALREADY RESETTLED	ALREADY RESETTLED									ALREADY RESETTLED
16 ECP	8	102	E.V.R. SALAI	41	RESETTLEMENT			P	P	P	P	P	P		41
17 ECP	8	106	KANNIAH STREET	237	RESETTLEMENT			P	P	NO	NO	NO	NO		237
18 ECP	8	106	SUNNAMBUKALVAIKARAI STREET	60	RESETTLEMENT			P	P	NO	NO	NO	NO		60
19 ECP	8	106	SOUTH KASARATH THOTTAM	251	RESETTLEMENT			P	P	NO	NO	NO	NO		251
20 ECP	8	106	NALLAMUTHU MARIAMMAN KOIL STREET	111	RESETTLEMENT			P	P	P	P	P	P		111
21 ECP	8	106	EAST ARASAMARATH STREET	41	RESETTLEMENT			P	P	P	P	P	P		41
22 ECP	8	106	S.S SAHIB STREET	67	RESETTLEMENT			P	P	P	P	P	P		67
23 ECP	8	106	PERUMAL KOIL STREET	132	RESETTLEMENT				P	NO	NO	NO	NO		132
24 ECP	8	106	VELLALAR STREET	395	RESETTLEMENT			P	P	P	P	P	P		395
25 ECP	8	106	EAST MADA STREET	16	RESETTLEMENT			P	P	P	P	P	P		16
26 ECP	8	106	SABAPATHI STREET	67	RESETTLEMENT			P	P	P	P	P	P		67
27 ECP	8	102	MANJAKOLLAI	249	RESETTLEMENT			P	P	NO	P	P	NO	NO	249
28 ECP	8	102	THIRUVEETHIAMMAN KOIL STREET	180	RESETTLEMENT	NO	NO	P	P	NO	NO	NO	NO	NO	180
29 ECP	8	102	KATHIRAVAN COLONY	49	RESETTLEMENT	NO	NO	NO	P	NO	NO	NO	NO	NO	49
30 ECP	8	101	BHARATHIPURAM	13	RESETTLEMENT	NO		P	P	NO	NO	NO	NO	NO	13
31 ECP	8	102	GAJALAKSHMI COLONY	57	RESETTLEMENT	NO		P	P	NO	NO	NO	NO	NO	57
32 ECP	8	101	RIVER VIEW COLONY	303	RESETTLEMENT			P	P	P	P	P	P		303
33 ECP	8	106	DR RADHAKRISHNAN NAGAR	341	RESETTLEMENT			P	P	P	P	P	P		341
34 ECP	8	106	MUTHUMARIAMMAN KOIL STREET	390	RESETTLEMENT			P	P	NO	NO	NO	NO		1337

SLUM N.	ZONE N.	WARD N.	SLUM NAME	N. FAMILIES*	ACTIONS	JUSTIFICATION									N. FAMILIES RESETTLED
						RST	IMP	ICRC	IROW	VLFR	LFR	MFR	HFR	IPU	
35 ECP	8	101	NADUVANKARAI	91	RESETTLEMENT	NO		NO	P	NO	NO	NO	NO	NO	91
TOTAL				6970											6263

SLUM N.	ZONE N.	WARD N.	SLUM NAME	N. FAMILIES	ACTIONS	JUSTIFICATION	N. FAMILIES RESETTLED

* BASED ON GENERAL DATA PER SLUM PROVIDED BY TNSCB

RESSETLEMENT	RST_URBAN REGENERATION NEEDINGS
ALREADY RESETTLED	IMP_IMPROVEMENT IN THE BORDER NEEDINGS
	IROW_INSIDE RIGHT OF WAY LINE
	ICRC_INSIDE CMDA RIVER CORRIDOR
	VLFR_VERY LOW FLOODING RISK (Q200)
	LFR_LOW FLOODING RISK (Q100)
	MFR_MEDIUM FLOODING RISK (Q10)
	HFR_HIGH FLOODING RISK (Q2)
	IPU_INCOMPATIBLE WITH URBAN RIVER FRONT
	P PARTIALLY

SLUM N.	MUNICIPALITY	SLUM NAME	N. FAMILIES*	ACTIONS	JUSTIFICATION									N. FAMILIES RESETTLED
					RST	IMP	ICRC	IROW	VLFR	LFR	MFR	HFR	IPU	
	NERKUNDRAM & MADURAVOYAL													
11 BCL		METTUKULAM	31	RESETTLEMENT		NO	NO	NO	NO	NO	NO	NO		31
12 BCL		MSP NAGAR	405	RESETTLEMENT										405
13 BCL		OM SAKTHI NAGAR	146	RESETTLEMENT			P	P	P	P	NO	NO		146
14 BCL		NAGATHAMMAN KOIL STREET	12	RESETTLEMENT	NO		NO	P	NO	NO	NO	NO	NO	12
15 BCL		KAMBAR NAGAR	122	RESETTLEMENT			P	P	P	P	P	P		122
16 BCL		PERUMAL KOIL STREET	8	ALREADY RESETTLED										ALREADY RESETTLED
17 BCL		SIVABOOTHAM	45	RESETTLEMENT										45
	THIRUVERKADU MUNICIPALITY													
19 BCL		THIRUVERKADU VILLAGE		RESETTLEMENT							P	P		NOT AVAILABLE
20 BCL		AATHI SAKTHI KARUMARAIAMMAN NAGAR	205	RESETTLEMENT	NO		NO	P	NO	NO	NO	NO	NO	205
21 BCL		MELPAKKAM	59	RESETTLEMENT	NO		NO	P	NO	NO	NO	NO	NO	59
REST OF THE AREAS PROVIDED BY TNSCB ARE OUT OF THE AREA TO BE DEVELOPED BY COOOUM RIVER ECORESTAURATION PLAN														
TOTAL			**1033**											**1025**

SLUM N.	MUNICIPALITY	SLUM NAME	N. FAMILIES*	ACTIONS	JUSTIFICATION	N. FAMILIES RESETTLED

*** BASED ON GENERAL DATA PER SLUM PROVIDED BY TNSCB***	RESSETLEMENT	RST_URBAN REGENERATION NEEDINGS
	ALREADY RESETTLED	IMP_IMPROVEMENT IN THE BORDER NEEDINGS
		IROW_INSIDE RIGHT OF WAY LINE
		ICRC_INSIDE CMDA RIVER CORRIDOR
		VLFR_VERY LOW FLOODING RISK (Q200)
		LFR_LOW FLOODING RISK (Q100)
		MFR_MEDIUM FLOODING RISK (Q10)
		HFR_HIGH FLOODING RISK (Q2)
		IPU_INCOMPATIBLE WITH URBAN RIVER FRONT
		P PARTIALLY

APPENDIX – 9 COMMUNITY DEVELOPMENT PROGRAM

COOUM ECO RESTORATION PLAN

Rehabilitation and Resettlement of the Slum Families living along Cooum River in Chennai

Community Development Activities

The proposed Integrated R & R Plan for 18,000 families living on the Cooum Basin envisages providing housing with social and other infrastructure facilities, livelihood assistance, capacity building and other support for overall upliftment of the families.

Objectives

The main objectives of implementation of integrated community development activities in Resettlement and rehabilitation project are

i. To facilitate social infrastructure like ICDS centres, schools, Public Health Centres, Public Distribution system, Bus facilities, Police station, milk supply etc. by converging the services of line departments.
ii. To provide livelihood opportunities to the affected families through skill development training, setting up of need based vocational training centres in the new habitation, Entrepreneurial development programme for improving managerial and marketing skills.
iii. Formation of Self Help Groups in coordination with Tamil Nadu Corporation for Development of Women Limited and provide other assistance for formation of Self Help Groups and issue of revolving fund
iv. To support the Project Affected Families with smaller and major livelihood activities
v. To establish database of families for job requirement and set up of placement centres through outsourcing agencies located at IT corridor.
vi. To promote hygiene promotion in environmental sanitation with main focus on solid waste management through capacity building and awareness creation
vii. To develop youth leadership through life skill education and youth development activities.
viii. To Implement other need based social welfare programmes in R & R areas

Project Duration

The integrated community development will be implemented for a period of three years. The social responsibilities under Resettlement and Rehabilitation Scheme, which is the lifeline component of the programme, will be carried out by the Community Development staff of the Board in three phases.

- Pre-Resettlement phase
- Project Implementation phase
- Post-Resettlement phase

Pre-Resettlement Phase

To ensure smooth, orderly willing translocation of the people in the slums to the rehabilitation site with community participation as detailed below:

Establishment of Rapport with the Beneficiaries:

i. Develop rapport with the beneficiaries in the proposed slums to be relocated. This will be achieved through regular interaction with the beneficiaries. All Meetings and decisions taken will be documented for future action.

ii. Arrange for information dissemination campaign with a result oriented approach at the commencement of the project in the slums to inform the beneficiaries about the positive aspects of resettlement.
iii. Sensitizing the families on the present living conditions which is objectionable for human habitation

Enumeration

The enumeration is done as per the latest guidelines of TNSCB. While enumerating the entire slum is being covered. A digital photograph of each beneficiary with family together in front of the structure where they reside has been taken. Each family will be issued with a bio metric card to avoid duplication.

Convergence during Resettlement Phase

i. In close association and interaction with the beneficiaries ensure beneficiaries co-operation for the smooth shifting of the beneficiaries and their business.
ii. Help in making suitable arrangements for the disabled, aged, or any other deserving condition of the family for the allotment of houses.
iii. Facilitate change of ration cards through single window system in coordination with Civil Supplies.
iv. Help beneficiaries in redressing their grievances. Make them aware of the grievance mechanism and assist those who have grievances to pursue a suitable remedy.

Post - Resettlement Phase

The families will be helped in admission of children in nearby schools, obtaining bus passes, facilitating for services like health, change of ration cards, Old age and widow pension, referrals and other services in convergence with Government departments, NGOs and Corporates.

The Community Development Wing plays an imperative role in coordinating with the various Government Departments and Non-Governmental Organisations in providing social infrastructure facilities. This requires consistent follow up with the stakeholders in providing facilities based on the standards. The staff would facilitate for coordination and executive committee meetings with the concerned departments to make the settlements liveable and comfortable as per the standards.

1. NEED BASED SOCIO ECONOMIC SURVEY & BIO-METRIC ENROLMENT

1.1 Pre-Resettlement period Enumeration

It is proposed to undertake need based socio economic survey, compilation and preparation of consolidated report. Under this activity, 18,000 families are proposed to be covered at a cost of Rs.18,00,000/- (18000 families x Rs.100/- each).

1.2 Bio-metric Enrolment

The families enumerated would be issued with Bio-metric cards for identification and allotment of houses at a cost of Rs.27,00,000/- (18,000 cards x Rs.150/- each).

On completion of Biometric process, the families will be issued with allotment orders for shifting to the new settlement scheme.

2. ECONOMIC DEVELOPMENT ACTIVITIES

The objectives of Livelihood Restoration are

a. Identification of locally suitable income generating or enterprise development activities for sustainable economic life in consultation with the beneficiaries.
b. Establishing linkages for skilled development, credit availability and marketing ensuring that the grants received will be used for skill development training to upgrade existing skills, purchase of small capital assets for them etc.,

c. Helping them to choose alternative livelihood schemes, where training on skill development, capital assistance in the forward backward linkages can be provided for making these pursuits sustainable for the beneficiaries.

d. Assisting beneficiaries in availing institutional credit facilities for enterprise development or income generating schemes.

2.1 Formation of new SHGs and strengthening the capacity of existing SHGs

The Resettlement and Rehabilitation Schemes will have heterogeneous communities shifted from various locations and mostly these settlements may not have organised structure to take up issues affecting them. The initial step would be to identify NGOs to work with these families, so as to have cluster wise strategic plans. TNSCB would coordinate with Tamil Nadu Corporation for Development of Women Limited in dovetailing various inputs for economic empowerment of women. TNSCB is proposed to form 1000 SHGs.

The main objective of this activity is to form new SHGs and strengthen the capacity of SHGs to take up livelihood activities. The activity aims to increase the knowledge of women on bank transactions, regular savings, life skill education, time management and positive thinking.

It is proposed to form 500 SHGs over a period of three years at a total cost of Rs.10,00,000/- (Rs.2000/- per SHG x 500 SHGs)

2.2 Skill Development Training Programme

Tamil Nadu Slum Clearance Board under Employment Training scheme is organizing skill up gradation training programmes for the past three decades. The main objective of this programme is to impart employable skills to the slum youth and schools drop outs living in slum areas through short term non-formal training courses. This target group otherwise has no scope for learning a skill and even if they complete school, they cannot compete with other sections of the society in the skill oriented employment with their academic background. Hence the proposed technical non-formal training courses facilitate the trainees either to find employment in small business establishments, workshops or to start their own self-employment.

Though there are number of Government Departments and technical institutions imparting skill development training courses, there is a need for strategic planning and approach in this area where training programmes are evolved after needs assessment of the current market. Innovative short term and long term training programmes to suit the needs of the industries need to be formulated. There is a dearth of skilled persons in sectors like plumbing, electrical works, painting, fitting, and repairing of electrical home and industrial appliances, construction trades, computer hardware and software, Tally and BPOs and paramedical field. The eligible candidates will be identified and provided training.

It is proposed to train 1000 youth and women from the three areas at a total cost of Rs.50,00,000/-(Rs. 5,000/- x 1000 Nos)

2.3 Establishment of "Hands on" Vocational Training Centre

It is proposed to set up Vocational Training Centre in each of the resettlement areas. The existing Vocational training centres will be upgraded to create more opportunities and meet the requirement of upcoming industrial and unorganized sector needs in IT Corridor. The public and private sector undertakings would be provided an opportunity to set up establishments to utilize the human resource as well as providing job prospects to the concerned.

It is proposed to provide job opportunities for 200 persons through hands on training for the project affected families. The Vocational training centres constructed in Kannagi Nagar and Semmancherri and vocational training centres proposed to be constructed at Perumbakkam scheme will be utilized through Public Private Partnership approach.

2.4 Entrepreneurial Development Programme

The main objective of this programme is to promote economic empowerment of women. This programme aims to impart entrepreneurial skill training to women to initiate income generation activities through skill development training, credit linkage and marketing support.

The following strategies would be adopted in this programme.

- Training of Non-Governmental and Community Based Organizations on various aspects of EDP
- Trainers to train women Self Help Groups to become economically independent

The expected outcome of the programme is to make additional income to the family through management skills, upgrade economic development activity and availing of loans wherever possible and make them self-reliant.

It is proposed to train 2000 persons who have already engaged in self-employment ventures at a total cost of Rs.10,00,000/- (Rs.500/- per person x 2000 Nos.)

2.5 Support for Smaller Economic Activities

There is a vast scope for extending smaller economic activities to the affected families who are either self-employed as hawkers, vendors, rickshaw pullers, load carriers, or working elsewhere to expand their business. Relocation and resettlement would affect their employment due to distance and lack of transportation facilities. Smaller economic assistance would help them to restore their livelihood in the new habitation or in the neighbourhood.

It is proposed to cover 1000 persons at a total cost of Rs.1,50,00,000/- (Rs.15,000 x 1000 Nos)

2.6 Major Livelihood Projects

The SHGs are promoting group and individual economic activities to increase their earning capacity. The existing demonstrated livelihood TEAP projects like autos, luggage carrier, Solid Waste Management, Departmental Stores and Sanitary napkin production are successfully implemented in Semmancheri and Kannagi Nagar and the similar initiatives would be replicated in the new Schemes for 50 SHGs and individuals at a cost of Rs.one lakh for each SHG and individual. A needs assessment would be conducted to identify the target SHGs and would be linked with Marketing Avenue.

It is proposed to extend major livelihood activities for 50 SHG members at a total cost of Rs.50,00,000/- (Rs.1.00 lakh x 50 Nos.)

2.7 Provision of Tool Kits

It is proposed to provide tool kits for 500 persons to take up self-employment ventures at a total cost of Rs.37,50,000/- (Rs.7,500 x 500 Nos.).

2.8 Establishing viable enterprises

It is proposed to establish viable enterprises for individual or group activities based on the demand. 50 beneficiaries may be considered under this category at Rs.50,000/- per SHG with a total cost of **Rs.25,00,000/-.**

3. SOCIAL DEVELOPMENT ACTIVITIES

3.1 Social Mobilization and Awareness Creation

The awareness level among slum community on solid waste management, alcoholism and drug addiction, life skills is limited and in the case of better awareness levels, adoption and practicing levels are absent. Constant motivation and mobilization of the community will certainly have a better impact and the quality of life can positively be improved with coordinated efforts of Government and Non-Governmental Organizations.

The general sanitation in most of these resettlement sites is not upto the standards. There is poor solid waste disposal by the residents resulting blockages in drains and poor hygienic environment. In Semancherri, TNSCB has hired Animators for solid waste management under Livelihood Support Programme of Tsunami Emergency Assistance Project. The families have been provided with waste bins for storage of solid waste and tricycles are provided for collection and disposal at household level. These trained members have been able to undertake few activities and daily upkeep of the general cleanliness of the area and educating the families about the use of waste bins.

The three main objectives of the intervention are:

- To ensure that drinking water is safe and available to everyone in affected communities.
- To make sure that families and children have access to adequate sanitation
- To educate families and children on practicing essential hygiene behaviours such as keeping environmental clean and safer solid waste management.

The intensive work that is possible through this project means that for families, accessibility to clean water, basic sanitation and hygiene education will be better than their previous settlements.

The activities include formation of block wise groups, training on collection, segregation, disposal and vermin composting, organizing cleaning camps and campaigns and awareness creation using multimedia strategy.

It is proposed to organize 50 programmes at a total cost of Rs.25,00,000/- (Rs.50,000/- x 50 Programmes) covering families from three Schemes.

3.2 Youth Welfare Programme

Youth is an important resource in the community that needs to be utilized for identification of issues affecting their community. The developmental programmes through leadership and capacity building on health, sanitation, leadership and personality development will be organized for their participation and involvement in the community.

Youth is an important resource for the future development of the society. They have great energy which needs to be diverted for concrete purposes. Slum youth are eager to learn a skill and participate in their self-development and community at large. The youth need to be supported with life skill education, sports and talent exhibits, personality development and leadership skills.

Objectives of the Youth Development Programme

The objectives of the programme are

a) To make the youth realize their self and what is expected of them as right citizens
b) To channelize the energy of the youth towards team building and positive competitive efforts towards oneness through sports
c) To divert the youth's attention through talent shows
d) To motivate youth to serve as role models in the society

The following activities are proposed to be implemented under Youth Development programme in Resettlement and rehabilitation schemes.

a. Counselling centres

The youth from scheme and youth clubs will be trained on life skill education which would enhance their capacity to meet the various challenges faced by them. The youth are exposed to anti-social activities like crime, drug abuse and alcoholism due to peer pressure and other destructive ventures. Hence Counselling centres will be established through Government, NGOs and other institutions for psycho social support for accepted behavioural change.

This resource will be utilized for improving their own areas and towards their personality development to function as responsible citizens. The youth from slum areas and youth clubs will be deputed to Youth Development projects implemented by Government, INGOs and NGOs and other institutions for learning and experiencing best models and replicate the same wherever possible.

It is proposed to establish three Counselling Centres in three schemes at a cost of Rs.3,00,000/- each (Rs.1,00,000/- x 3 areas) and organize 10 Youth Resource Development programmes at a total cost of Rs.1,00,000/- (Rs.10,000/- x 10 Programmes).

b. Organizing Job Fairs

'Job fairs' in resettlement and rehabilitation schemes will be a regular feature involving skilled youth trained through Tamil Nadu Slum Clearance Board and other slum youth seeking employment will be organized to link service providers and the beneficiaries.

It is proposed to organize 6 job fairs in coordination with outsourcing agencies and other establishments at a total cost of Rs. 12,00,000/- (Rs.2,00,000/- x 6 Job Fairs).

c. Inter-Slum Olympics

Sports competitions, which are conducted for one slum or within the nearby slums makes the title Inter slum Olympics. The youth of both the sex will be covered under Inter Slum Olympics. The youth in the age group between 15- 25 years will be covered. The Physical Instructors from Government and other institutions will be utilized for conducting the slum Olympics in a professional manner. The Inter Slum Olympics will be conducted with a motto of identifying youth sports talent and encouraging them to achieve greater heights.

It is proposed to organize 100 Inter slum Olympics at a total cost of Rs.15,00,000 (Rs.15,000 x 100 Programmes) covering three schemes.

d. Talent Recognition programmes

Talent Recognition Show is the talent hunt on dramatics and cultural skills for the slum youth. Events like Drawing, Essay and Poetry writing; oratorical competition and singing will be organized in coordination with NGOs, Community Based Organisations, Nehru Yuva Kendra, SHGs and Youth Clubs in R & R Schemes.

It is proposed to organize 100 Talent Recognition programmes at a total cost of Rs.10,00,000/- (Rs.10,000/- x 100 programmes).

e. Other Need Based Programmes

Apart from the above specific programmes, workshops and consultation meetings and other need based programmes will be organized to enhance the capacities of youth who form an effective force in the communities.

It is proposed to organize 10 other need based programmes at a total cost of Rs. 1,00,000/- (Rs.10,000/- x 10 Programmes).

4 FORMATION OF RESIDENT WELFARE ASSOCIATIONS

The objectives of Welfare Associations are community empowerment and transfer of responsibility to the community for self-reliance. The Residential Welfare Associations are the backbone of the project in maintenance and sustaining the project activities and also act as a bridge between the Government and community and facilitate smooth implementation of the programme,

The Resident Welfare Associations shall be trained and equipped to undertake the following responsibility.

1. The maintenance of basic facilities provided.
2. Maintenance of assets created.
3. Maintenance of lifts provided.
4. Solid Waste Management.
5. Prompt monthly payments by the residents.
6. Finding ways and means to attain financial stability.

The field functionaries i.e., Animators and Project Coordinators and other specialists deployed for the project will be involved in all the stages of the project implementation. For sustainability of the assets and further maintenance, it is proposed to establish a corpus fund of Rs.10.00 lakhs for each scheme. The resident welfare association may collect a nominal amount from the residents depending on the nature of service that require operation and maintenance.

It is proposed to establish a corpus fund (from the maintenance charges collected from people) of Rs.30,00,000/- for Resident Welfare Associations from three schemes for operation and maintenance of assets created and any other needs arises from time to time.

Budget Estimate

The proposed budget estimate towards implementation of activities for three years is **Rs.4.79 crore.** The break-up details are given in **Annexure I**.

ANNEXURE I

BUDGET ESTIMATE FOR "INTEGRATED RESETTLEMENT & REHABILITATION PLAN FOR SLUMS ON THE COOUM BASIN"

S. No	*Project Activities*	*No. Of Beneficiaries*	*Unit Cost (Rs)*	*Breakup Details (Rs)*	*Total Budget (Rs. In Lakhs)*
(i)	(ii)	(iii)	(iv)	(v)	(vi)
1. Need Based Socio Economic Survey & Biometric Enrolment					
1	Pre-Resettlement Period enumeration	18,000 families	100/-	18,000 families x Rs.100/- each	18,00,000/-
2.	Bio metric enrolment and issue of cards	18,000 families	150/-	18,000 Nos x Rs.150/- each	27,00,000/-
Sub-Total (1)					**45,00,000/-**
2. Economic Development Activities					
1	Formation of new SHGs and strengthening the capacity of existing SHGs	500 SHGs x 15 members (7500 members)	2,000/-	500 SHGs x Rs.2,000/- each	10,00,000/-
2	Skill Development Training programme	1000 Nos.	5,000/-	1000 Nos. x Rs.5,000/- each	50,00,000/-
3	Establishment of 'Hands on' Vocational Training centre	**Networking and collaboration with other agencies**			
4	Entrepreneurial Development programme	2,000 Nos.	500/-	2,000 Nos x Rs.500/-each	10,00,000/-
5	Support for Smaller Economic activities	1,000 Nos.	15,000/-	1,000 Nos. x Rs.15,000 each	1,50,00,000/-
6	Implementation of major livelihood activities	50 Nos.	1,00,000/-	50 Nos. x Rs.1,00,000/- each	50,00,000/-
7	Provision of Tool Kits	500 Nos.	7,500/-	500 Nos. x Rs.7,500/- each	37,50,000/-
8	Establishment of viable enterprises	50 Nos.	50,000/-	50 Nos. x Rs.50,000/- each	25,00,000/-
Sub-Total (2)					**3,32,50,000/-**
3. Social Mobilisation And Awareness Creation					
1	Social Mobilization & Awareness Creation	50 prog.,	50,000/-	50 prog., x Rs.50,000/- each	25,00,000/-
2	**Youth Welfare programme**				

A	i. Counselling Centres	3 Nos.	1,00,000/-	3 Nos. x Rs.1,00,000/- each	3,00,000/-
	ii. Youth Resource Development programmes	10 prog,	10,000/-	10 prog., x Rs.10,000/- each	1,00,000/-
B	Job Fairs	6 Prog.	2,00,000/-	6 prog., x Rs.2,00,000/- each	12,00,000/-
C	Inter-Slum Olympics	100 prog.	15,000/-	100 Prog., x Rs.15,000/- each	15,00,000/-
D	Talent Recognition programmes	100 Prog.	10,000/-	100 Prog., x Rs.10,000/- each	10,00,000/-
E	Other need based programmes	10 Prog.	10,000/-	10 Prog., x Rs.10,000/- each	1,00,000/-
Sub-Total (3)					**67,00,000/-**
4. Formation Of Resident Welfare Associations					
I.	Establishment of corpus fund for maintenance	3 Nos.	10,00,000/- each	3 Nos. Rs.10,00,000/- each	30,00,000/-
Sub-Total 4					**30,00,000/-**
Contingencies @ 1% of sub total (1-4)					**4,74,500**
Grand Total					**4,79,24,500**

COOUM RIVER RESTORATION PLAN

Community Development Activities

Sl. No	Project Activities	Cost Rs.
(1)	(2)	(3)
1	Need Based Socio Economic Survey & Biometric Enrolment	4500000
2	Economic Development Activities	33250000
3	Social Mobilisation And Awareness Creation	6700000
4	Formation Of Resident Welfare Associations	3000000
5	Contingencies	**474500**
	Total	**47924500**

APPENDIX – 10 AUTO NAGAR SCHEME

Auto Nagar scheme

The Tamil Nadu Slum Clearance Board vide GO.Ms.No.63/ Highways Department dated: 07.03.2008 had approved the Elevated Express Way Project from Chennai to Maduravoil to a distance of 17.5 KM. The alignment passes along coovam river banks. The government have also ordered that the rehabilitation and resettlement of slum families squatting on the alignment of Elevated Express Way may be implemented by Tamil Nadu Slum Clearance Board.

The Tamil Nadu Slum Clearance Board has identified 458 shops of old automobile spare parts in Pudupet and Cintharhipet area. For resettlement of the above shops, the proposal for Auto Nagar near Maraimalai Nagar was approved by the Board in BR.No.48/432 dt:29.12.04. The above land was taken over by Tamil Nadu Slum Clearance Board and fencing also was provided. Due to the heavy objections raised by the local people, the matter was discussed in the High Level Committee and the proposal was dropped.

An alternate site was proposed by TNSCB for this purpose in Appur and Perumalthangal village in Kancheepuram District. The scheme is situated in the Highway between Chengalpet and Sriperimbudur. It is located 7 km from Singaperumal koil and 3 km from Oragadam.

Enter upon permission was given in favour of Tamil Nadu Slum Clearance Board for 7.445 hect of land in Appur village vide G.O. No.250 dt:27.05.2010 and 9.46 hect. of land in perumal thangal village vide G.O. No.251/revenue dt:27.05.2010. The total extent of land taken over in Appur and Perumal thangal village was 16.91 hect. (41.73 acres). The above land was taken over from Revenue Department on 07.06.2010 by Tamil Nadu Slum Clearance Board.

Further the shop owners of Pudupet and Cinthathiripet, who were not affected by this project have also came forward, to vacate their shops and they have given assurance to move to Auto Nagar scheme.

Based on this, proposals were prepared for 1657 commercial plots of various sizes and approved by the DTCP vide approval No.LP/DDTP/CR/5/10 dt: 12.01.2011 (Details of no of plots and sizes enclosed)

The Board vide resolution No.32/434 dt:08.04.2010 has approved a Financial statement for 11.39 crores. An estimate was sanctioned for Rs.8.524 crores and the work was awarded to M/s R.S. Development and construction limited, Erode, to an amount of 7.21 crores. The work consists of filling low lying area, construction of storm water drain, formation of road and construction of 4 nos of 8 seated PC. units with septic tank. The site is low lying about 2 meters from the existing road level. The site was handed over to the contractor on 20.08.2010. The agreement period for the completion of the above works is 4 months. Due to local problems, the work could not be commenced in time. Then the work of filling low lying area was commenced on 08.03.2011. The earth quarrying permission given by the collector, Kancheepuram District, expired on 08.04.2011. At that time only 1.43 lks M^3 (i.e) 40% as against the agreement quantity of 3.62 lks M^3 of filling work has been completed. After that, the earth quarry permission could not be got due to the model code of general Assembly Election and also monson prevailed from may 2011 to December 2011. Even after that, the earth quarry permission could not be got till date. The work shall be resumed after getting permission for earth quarry from the Collector Kancheepuram District.

During the implementation of Elevated Corridor Project, 458 shops, which were affected along coovam river banks were enumerated by the community development wing of Tamil Nadu Slum Clearance Board. Among them, 324 shops were approved with 300 sft. area, for which the free allotment orders were issued on 24.01.2011. For other commercial plots the government have approved pricing at a rate of Rs.390/- per sqft. The plot cost should be collected as the initial payment of 20% of the total cost, and the balance amount in 36 months at the rate of 12 % interest on monthly instalment basis.

FUNDING PATERN OF THIS PROJECT

1.	Total Project cost	2963.71 lakhs
2.	Collection charges	(-) 13.41 lakhs
3.	Corrected cost	2950.30 lakhs
4.	Cost to be collected from beneficiaries (627091sftxRs.390 per sqft)	2445.65 lakhs
	Deficit	504.65 lakhs

Funds to be received from Port trust 50% 267.93 lakhs
50/100x458 Nosx300sftxRs.390/Sqft.

State Government funds (2011-12) 236.72 lakhs
already received

PLOT DETAILS

Sl No	No of plots	Plot size feet	Plot area of one plot	Cost of oneplot (area x Rs.390) Rs	Down payment 20% Rs	Monthly instalment for 36 months 12% interest Rs
a	319	20x32.50	651 sqft	253890	50778	6750
b	71	20x16.27	626 sqft	127140	25428	3380
c	315	20x30	601 sqft	234390	46878	6230
d	185	20x15	300 sqft	117000	23400	3110
e	151	11.75x17.00	200 sqft	78000	15600	2080
f	43	20x35	701 sqft	273390	54678	7270
g	115	20x17.50	350 sqft	13650	23700	3630
h	92	18.65x35	654 sqft	255060	51012	6780
i	366	20x17.50	350 sqft	136500	27300	3630
Total	**1657**					

APPENDIX – 11 MINUTES OF THE MEETINGS

MEETING NOTES

TNSCB Minutes

DATE	13/03/2014
LOCATION	TAMIL NADU SLUM CLEARANCE BOARD
TITLE	**DISCUSSION REGARDING R&R, COOUM RIVER – FINAL REPORT**

PRESENT	ORGANISATION	ABSENT
Mr. Vishwanathan	MD, TNSCB	
Mr. Elango	CE, TNSCB	
Mr. Rajashekar Nagyam	SE, TNSCB	
Mr. A. Raman	AM, TNUIFSL	
Dr. S. Viswanathan	Environment Specialist, CRRT	
Ms. Azucena Marquinez	LKS	
A. Srilaxmi	LKS	

AGENDA

a. Discussion regarding the proposals and the entire concept of R&R

b. Feedback: ask for their opinion, suggestions and comments to close the report.

KEY ACTIONS OF THE MEETING

COOUM RIVER RESTORATION PLAN – R&R FINAL REPORT

- The CRRT official has briefed the details of the project to the new Chief Engineer, TNSCB and also highlighted the proposals.
- CRRT official has explained the MD and the CE, the number of slums identified and people identified along the banks in the project study area.
- The details of the proposals i.e., in-situ development, in-situ re-construction and resettlement options have been explained to the TNSCB officials.
- The TNSCB officials has agreed for the proposals and given the following statements:

1. They have stated that there is a new law, stating that there must be no encroachments within the water course area.
2. The proposals must be not within the water course area, which was demarcated by the Revenue department.

- The Consultant and the CRRT officials have stated that the proposals are made based on a detailed analysis considering all the above points.
- The Consultant has requested for the suggestions and comments on the final report and approval of the same to submit it to the client.
- The MD has stated that, the proposals are acceptable, for the approval of the report the CE and the SE will review the entire report and get back with the comments in the 25-03-2014 meeting, if any.

TNUIFSL Minutes

DATE	21-08-2014
LOCATION	TNUIFSL-CRRT
TITTLE	**COOUM RIVER – Finalisation of the project**

PRESENT	ORGANISATION	ABSENT
Mr. Pandian	TNUIFSL	
Mr. Raman	TNUIFSL	
Mr. Pradeep John	TNUIFSL	
Mr. Viswanathan	CRRT	
Mr. Veeresha	LKS	
Mr. Rajakumar	LKS	
Ms. Lorena	LKS	

AGENDA

a. Discussion on the final steps for the Cooum river project.

KEY POINTS OF THE MEETING

The meeting was aimed at clarifying the last steps for finalizing the Cooum river project.

The consultant received recently a list of subprojects to be implemented under the Phase I of the Cooum river and which are intended to be executed in the short (60 subprojects), medium (7 subprojects) and long (2 subprojects) terms. The interventions left out in the Phase I will go for the Phase II. The consultant has been asked to prepare the tender documents for the Phase I by 15th September.

- Regarding the new subprojects added by the stakeholders, the client clarified that the same stakeholder should clarify and give the details of the interventions proposed along with their cost.
- The stakeholders are already aware of the need of handing the tender templates to the consultant.
- Given the short time available and the difficulties for conducting meetings with the stakeholders, the consultant requested TNUIFSL to call the stakeholders for meetings in their office in order to clarify the BOQ and the preparation of tender documents (template filling, clubbing subprojects…). It was suggested to meet one stakeholder at a time.
- Based on the meetings the tender documents will be prepared, which shall be submitted by 15th September.
- The consultant requested also the reports to be ready for that date. Several more details were requested to add in the reports:
    - Revenue generation assessment: they miss a chapter explaining which activities will generate revenue along the Cooum river, and the expected generation (boating, entrance fees, commercial activities, advertisement boards, parking lots…)
    - The main report should include the clearances required for the implementation of the project, their timeline and cost.
    - The flow expected in the river after the restoration should also come in the Main Report.
    - The time and cost (based on the number of subprojects executed) to achieve the different classes of water quality (B, C, D) shall be assessed and presented in a table.
- After the submission of the Reports and tender documents, all the softwares and raw data used shall be given to the client and a workshop shall be conducted to explain their use.
- Fence options 3D sketches have to be given by 26th August. 4 options of conventional fence and 4 options of FRP or any other fence free of maintenance, theft free, see through.

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