

# Community Participation in the Development of Walk-up Apartments

## Formal Sector Lower-middle Income Housing in Sri Lanka



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The importance of providing adequate dwelling with favourable qualities has become a compulsory need in the world because house is one of the basic requirements of human beings. Government built mass scale housing is the solution to the congregated urban population. The land extent is a constant when the population density increases. Therefore multistorey housing is a compromise to balance the demand and supply of houses.

## 1 Shelter Situation Analysis

### 1.1 Basic General Data

#### Geography and Administration

Sri Lanka is a tropical warm humid country with much wider range of climate types owing mainly to monsoonal influences and great differences in elevation. It is an island situated in the South Asia, near the Indian continent. It is a Pear-shaped island in 29 kilometres off south-eastern coast of India; total area is 65,610 square kilometres, of which land area is 64,740 square kilometres. 1.3% of the total land area is covered by the water, 29% of the land area is under cultivation, and 30% is covered by forests while 7% is covered by the wild pasture.

Sri Lanka is governed by a democratically elected president and a 225-member parliament. The president serves for a term of six years and has the power to dismiss the parliament, out of which the president selects cabinet members, a prime minister, and a chief justice. Although regular elections at all levels of government have been held since independence, there are increasing allegations of tampering and violence. The current leadership is considering a new constitution in which greater powers would be reserved for the provincial governments.

### Demography and Health

Sri Lanka has a population of 21,324,791 million of whom the majority are Sinhalese 74%. Other ethnic groups are made up of Tamils (12.6%), Indian Tamils (5.5%), Moors, Malays, Burghers (of Portuguese and Dutch descent) and other (7.9%). Although Sri Lanka is a multi-religious country, Buddhists constitute the majority with 69.3%. Other religious groups are Hindus 15.5%, Muslims 7.6% and Christians 7.5%. Sri Lanka's literacy rate of 88.6% is one of the highest in Asia.

Table – 1

(Source - CIA- The world Fact book, [www.cia.gov/ library/ publications](http://www.cia.gov/library/publications))

<b>Age structure</b>		<b>Life expectancy at birth</b>	
0-14 years	24.1%	Total population	74.9 years
15-64 years	68%	male	72.9 years
65 years and over	7.9% (2009 EST.)	female	77.0 years (2008 est.)

Table – 2

(Source - CIA- The world Fact book, [www.cia.gov/ library/ publications](http://www.cia.gov/library/publications))

Birth rate	16.6 births/1,000 population (2008 est.)
Death rate	6.0 deaths/1,000 population (2008 est.)
Population growth rate	0.9%
Net migration rate	1.1 migrant(s)/1,000 population (2008 est.)

Table – 3

(Source - CIA- The world Fact book, [www.cia.gov/ library/ publications](http://www.cia.gov/library/publications))

Total fertility rate	2.02 children born/woman (2008 est.)
People living with HIV/AIDS	3,500 (2001 est.)
HIV/AIDS – deaths	fewer than 200 (2003 est.)

### **Major infectious diseases**

(Source - Central Bank Report –1998 Ministry of Finance & Planning, Sri Lanka)

Degree of risk	: high
food or waterborne diseases	: bacterial diarrhea and hepatitis A
vector borne disease	: dengue fever and malaria
water contact disease	: leptospirosis (2008)

### **Economy**

Sri Lanka is a lower-middle income developing nation with a Gross Domestic Product (GDP) of about \$32 billion. This translates into a per capita income of \$1,600.

Industry accounts for 28% of GDP. Manufacturing is the largest industrial sub sector, accounting for 18% of GDP. The construction sector accounts for 6% of GDP. Mining and quarrying account for 2% of GDP. Electricity, gas and water account for 2% of GDP. Within the manufacturing sector, food, beverage, and tobacco are the largest sub sector in terms of value addition, accounting for 46%. Textiles, apparel, and leather is the second-largest sector with 24% of value addition. The third-largest sector in value added terms is chemical, petroleum, rubber, and plastic products.

Agriculture has lost its relative importance to the Sri Lankan economy in recent decades. It employs 31% of the working population, but accounts for only about 12% of GDP. Rice, the staple cereal, is cultivated extensively. The plantation sector consists of tea, rubber, and coconut; in recent years, the tea crop has made significant contributions to export earnings.

The national currency Sri Lanka Rupee, at present prevails around Rs.97.50@ 1 US \$ and Rs.88.5@ 100 Yen.

## 1.2 Shelter Related Facts and Figures

### Access to Shelter

Table 4- Housing Profile in Sri Lanka

(Source- National Housing Development Authority database, 2008)

Details	Housing Units
Housing requirement	4.985 million
Existing housing stock	4.326 million
Substandard houses (from existing stock)	0.915 million
Housing backlog	659,500 units
Annual housing demand	100,000 units
Annual addition to the housing stock	50,000 units
Annual shortfall	50,000 units
Fully or partly damaged by Tsunami	98,000 units
Destroyed or damaged due to war in the North & East	326,000 units

Table 5- Floor area of a person

(Source - Central Bank Report –1998 Ministry of Finance & Planning, Sri Lanka)

Floor area per person	Total	Urban	Rural
Average no. of persons per room	2.2	2.3	2.1

Table 6- Housing Profile in Colombo

(Source - Central Bank Report –1998 Ministry of Finance & Planning, Sri Lanka)

Details	Percentage
National housing stock (permanent)	42%
Temporary housing stock (slums /shanties)	51%
National ratio of home ownership	80%
Ratio of home ownership (in urban areas)	60%
Households with access to secure tenure	95%

Table 7- Access to water and improved sanitation in Sri Lanka

(Source - Central Bank Report –1998 Ministry of Finance & Planning, Sri Lanka)

Indicator	1994	2001	2015 (targeted)
Proportion of population with sustainable access to an important water source, urban and rural	72	82	86
Proportion of urban and rural population with access to improved sanitation	73	80	93

## **Building materials**

Rubble, bricks, cement blocks and concrete is used for construction of foundation. As building materials for the wall construction, bricks, cement hollow blocks, cement- stabilised soil blocks are common. Wall construction using quarry dust and cement and wall construction using cement- stabilised soil with the use of slip- form shutters are also rarely used. Lime-cement and sand or cement and sand are used to plaster the walls.

For the construction of floor slab, reinforced concrete slab is commonly used. Ferro cement panels with pre-cast, pre-stressed beams (The NURD floor-slab system) and the pre-cast cement blocks with pre-stressed beams (ICC floor-slab system) is also used for constructing the floor slab.

Timber, steel and pre-cast concrete purling are commonly used for the construction of roof structure and clay, tiles, corrugated asbestos cement roofing sheets, cement tiles, galvanised iron corrugated sheets, zink- aluminium coated profiled steel roofing sheets are used as roof cladding materials. For the rain water gutters and down pipes, UPVC and Zink-Aluminium coated Profiled are commonly used.

Timber, with joining of members, Pre-cast concrete frames, fabricated members of aluminium and PVC is used for making door/window frames and sashes. Glazing is used with above frames for the sashes of doors and windows. Iron Mongers is used as hinges for the door closers, door bolts, door handles, hooks and eyes, and hasp and staples.

For the construction of ceiling frames, timber and aluminium is used. asbestos cement sheets, timber planks and gypsum are used as ceiling panels.

Bricks, sand with cement and concrete are used to floor paving. Cement with sand, floor tiles, timber floor deck, terrazzo floor finish on concrete paving is used for finishing the floor. Lime, oil bound distemper, cement paint and plastic emulsion paint is used to painting and decoration of walls. Enamel paint, varnish and French polish are used to painting and decoration of woodwork. Anti-corrosive paint (primer) and enamel paint are used to painting of steel surfaces.

UPVC water supply and sewerage pipes are used in plumbing and engineering installation. PVC Cables, PVC conduits and accessories, PVC casing and

accessories, switches, plugs and sockets, lamps, fittings and bulbs etc. are used in internal wiring.

### 1.3 Housing Policy

First ministry of Housing was established in (1952)

National Housing Department established (1952)

Ceiling on Housing Property law (1973)

National Housing Development Department (1977)

Urban Development Authority (1977)

Hundred Thousand Houses Programme (self-help and direct construction of houses throughout the country (1972-1982)

Due to following facts this programme was considered as unsuccessful. The poor sites and services had escaped the scope of the programme; the improvement of the slums had not received the attention it deserved; the falling price of direct construction costs was neglected; there was little dialogue with the people concerned with housing.

Million Houses Programme (Involved 'enabling' strategy for housing and infrastructure (1984-1989)

This was the result of a critical consideration of the earlier programmes, in particular the Hundred Thousand Houses Programme. The State proposed to assist families in the building of their houses instead of direct building. It developed links with the local government who should intervene directly and actively in the formulation and application of programmes.

1.5 million Houses Programme (withdrawal of subsidised credit for housing (1990)

This programme aimed at reaching of families of all income groups in the country that aspire to secure basic shelter for themselves. Further it led to an increase in brick-built houses with permanent roofs. In terms of strategy, practically all the strategies used in the Million Houses Programme were being reinforced.

From these facts it is understood that developing a proper programme for Sri Lanka is not simply copy and adopt programmes coming from abroad. It should allow for the links between housing and cultural standards.

#### 1.4 Actors in Shelter Delivery and their Roles

Actors	Role
National Housing Development Authority(NHDA)	Facilitate the incremental housing process through housing credit, infrastructure, land and technical advisories. Upgrading, land regularisation, site and services etc. Apartment housing
Sustainable Townships Programme	Resolve the housing problem of urban poor
Real Estate Exchange Ltd (REEL)	To provide apartments for urban under served dwellers on the basis of house to house exchange.
Urban Settlement Improvement Project (USIP)	Upgrading and provision of water and sanitary facilities to poor settlements in the national urban context.
Urban Development Authority (UDA)	The regulatory authority of country's urban development
Condominium Management Authority (CMA)	Provision of regulatory services to the management of condominium complexes
Urban Local Authorities	Planning approvals for urban development projects. provision of infrastructure and basic utilities such as water supply, drainage, waste disposal etc.
Non Governmental Organisations (NGOs)	Capacity building and community mobilisation in urban under served settlements.

*Table 8- Number and Percentage of Occupied Housing Units*

*(Source - Central Bank Report –1998 Ministry of Finance & Planning, Sri Lanka)*

District	Total Occupied Housing Units	Type of Housing Unit					
		Permanent		Semi Permanent		Improvised	
		No	%	No	%	No	%
Total (18 Districts)	3,969,027	2,771,860	69.8	1,123,003	28.3	33,799	0.9

Table 8- Number of Slums and Shanties by District

(Source - Central Bank Report –1998 Ministry of Finance & Planning, Sri Lanka)

District	Total occupied housing units	Sector		
		Urban	Rural	Estate
Total (18 Districts)	3,969,027	488,365	3,262,505	218,157

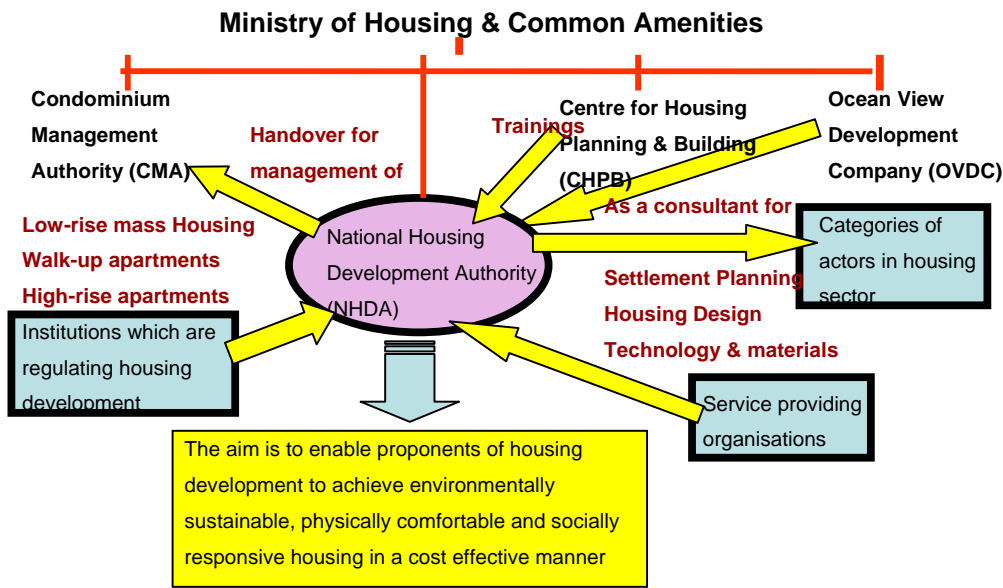
## 2 Organisation

The National Housing Development Authority (NHDA) is the main arm of the Government in implementation of housing development projects and programmes. The Ministry of Housing and Common Amenities, under whose supervision the NHDA functions, is responsible for formulation of policies and over seeing the activities of institutions under it, including NHDA.

NHDA is a partly government funded organisation with powers vested upon it to generate its own funds to invest on housing and related activities. It is typical for such an organization to function under a Board of Directors appointed by the Government, comprising of senior government officers including one from the Finance Ministry and one or few political figureheads representing the ruling Political party. The President of the country appoints the Chairman of the Board with the concurrence of the Minister. The General Manager (GM) functions as the Chief executive of the organization. Departments to perform different disciplines are headed by the Deputy General Managers (DGMm) who are supervised by two Additional General Managers, one for technical related departments and the other for sectoral development departments.

Development activities of the Authority are decentralized to the village level through a network of District Offices.





### 3 Shelter Problem

#### 3.1 Background

In Sri Lanka, as well as in other developing countries, rapid urbanisation is a deciding factor for all development proposals. Urbanization process is documented only after establishment of the Colombo Municipal Council in 1863 for the purposes of local administration. Therefore, it is very clear that urban and rural centers have to be planned in an integrated manner within the country.

According to the increase of population, there will be a demand of the additional 1.3 million housing units by the year 2030. Therefore, in 2030 there will be 6 million residential units in the country. That means approximately 3.5Mn housing units will have to be constructed over a period of 21 years to meet demand.

An additional land area of 34,000 Ha. Required for residential purposes and about 52,000 Ha. is required for the provision of urban facilities. In general, the settlement structure of the country would occupy about 25% of the total land in minimum. This could go up to 30% in the year 2030. This implies minimum of 86,000Ha of "New" lands are needed for ssettlement development in 2030 because of the addition of 1.335 million housing units by 2030.

### 3.2 The Housing as a Social Need and Large Scale Housing as an Appropriate Solution -

Housing is an extremely complex phenomenon. It is difficult to overview the nature of housing because housing belong to the people, who in most cases cannot afford to have their housing designed and built by professionals. In Sri Lanka, the governments launched several housing programmes to provide homeless families to an affordable cost to make them “homes”.

The housing, as an issue has been discussed seriously taken after independence in Sri Lanka. It was an easy task to build house during the pre independence period. Free availability of resources such as land and building materials may cause to that. Building construction was also not a difficult task due to the agriculture based social system and high degree of social interactions.

Official concerns about housing began in a limited way during the pre-independence (1931-1948). There was a colonial concept of housing to solve the housing problem of the workers who worked in government departments. Those workers were provided quarters from their relevant departments. Continuing its colonial concept, during the period of 1948 – 1949, in 1948, In Colombo “Torrington” housing scheme was constructed for the government servants.

Soon after the independence, a loans and funds for housing was established. It was to be administrated by a “Board” became a reality in 1949. This board made loans available to co-operative societies, companies, building societies and in some circumstances, even for individuals to construct houses. The government gave grants to the local authorities to building housing schemes for the lower and lower-middle income people of the urban and rural areas.

In 1953, the National Housing Department was established. In 1954, the National Housing Fund was established superseding the Housing Loan Board, which had difficulty in coping with the needs of the lower and middle income groups.

Some urban flats were constructed in the Colombo in the time period of 1950-1960. The Condominium Property Act Of 1970 and the Apartment ownership Act of 1973, which superseded the earlier law, were expected to encourage the building of flats. The Common Amenities Board was established to look after and maintain housing property. This was re-formed in 2003 as Condominium

Management Authority is the institution set up to ensure that the provisions in the Apartment Ownership Act are implemented. The government elected from the 1977, was aimed at improving or increasing the housing stock. The Hundred Thousand Housing Programme came into existence with large numbers of targets.

### 3.3 The Problem

Mainly the formal sector involves the housing in Sri Lanka and after the 'Tsunami' disaster there are some non governmental organisations came into existence in construction of houses.

However, the formal sector has not taken actions to construct rentable houses and there are less than 5% of rentable houses in the informal sector. Therefore people are very much concern about the property ownership. These houses are built in mass scales to the large number of people without any identification of their requirements and interests. Everybody expects to have live in a personalised home and takes efforts to show their identity by personalising their houses. . Therefore, it is very difficult to avoid modifications by the inhabitants both to the individual units as well as in the immediate surrounding.

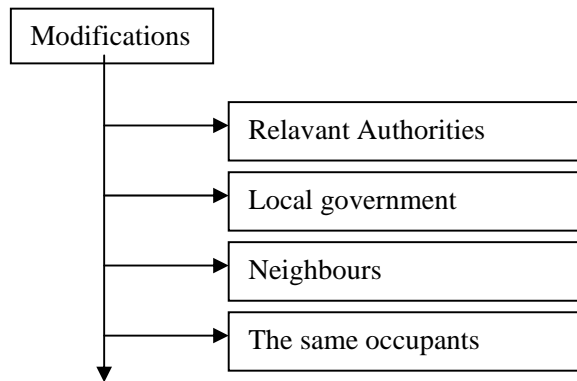
As a solution to the land scarcity within the cities, both formal and informal sectors have to go for multi storey housing and lot of walk-up apartments were constructed.

### 3.4 Visible results in walk-up apartments.

Because of the improper built environments, which are not fulfilling the requirements, occupants are unsatisfied and they may compel to use various modifications and mechanisms which may affect to the neighbouring community. This may cause lot of economic issues for a developing country like Sri Lanka.

Many modifications were done by the inhabitants in most of the housing projects in Colombo. Within a one housing scheme, at least 80% of the dwelling units are modified by the occupants. They have done lot of additions, changes, re-arrangements, expansions, encroachments and also reconstructions to fulfil the qualitative & quantitative requirements and to achieve psychological needs, socio-spatial needs and cultural needs.

### 3.5 The Most Affected Parties.



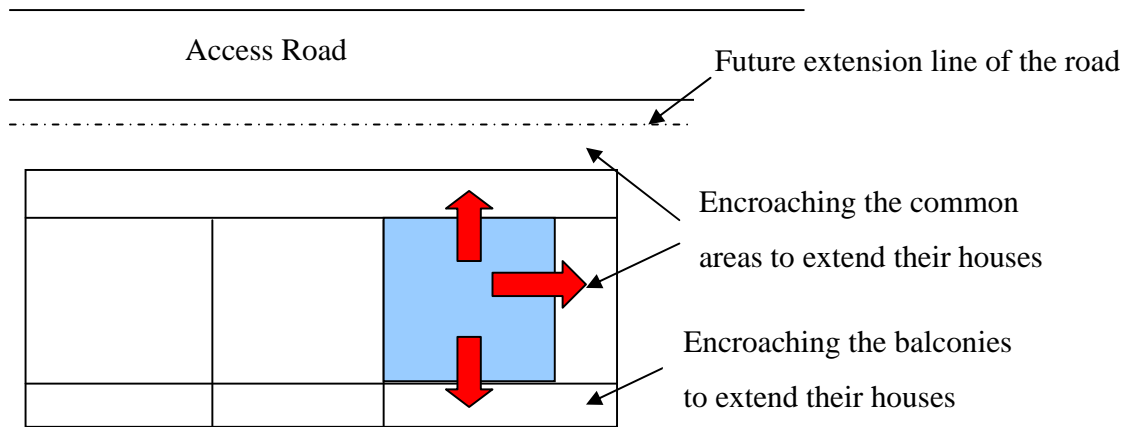
Upper income people have the opportunities to select houses with all necessary requirements in prime locations. The low income people can be satisfied with just a shelter. The middle income people have an urge for economic and social upward mobility and they are the common category that suffers from the housing problem. They are very much concerned about the qualitative requirements in optimum level and always attempt to gain the lost requirements in there built environment. This tendency is stronger among the lower middle income housing dwellers.

With the developments of open economy in Sri Lanka, various construction methods came into existence and the character of the street hazards were highly damaged by the dwellers that live in these walk-up apartments. In some locations, due to these huge modifications the structure of the building is unsafe.

The building regulations were violated and there are some places which have become unhygienic spaces without proper lighting and ventilation. There are some cases that all the occupants are in an unsafe and dangerous situation because the structure of the whole building was affected by the unprofessional constructions.

Theses modifications cause several problems to the relavant authorities who are engaging with the condominium management and the relavant local authorities. Most of the condominiums were provided by the National Housing Development Authority according to the basis of 30 years instalments. Therefore providing them ownership is a difficult task for both National Housing Development Authority and the Condominium Management Authority faced.

### 3.6 The magnitude of modifications



Common rear space has been used to construct another house



Ground floor house has been extended & constructed three shops.



Common rear space has been used to construct another house



1st floor house has been extended. Ground floor has been encroached to build a garage.



Unsafe extension in the 3rd floor



Violations of building regulations by extensions & encroachments.



No proper lighting & ventilation due to unauthorized constructions



1st floor house has been extended & converted for commercial activities without considering natural lighting & ventilation.

### 3.7 The Government's Influence on the Problem -

The government took several efforts to minimise these unauthorised and ad hock modifications. To carry out these policies, rules and regulations to avoid unplanned situations within the cities, several organisations were established. Condominium Management Authority is the key organisation established according to the Condominium Act for the implementation of Apartment Ownership Law. According to the Apartment Ownership Law, Condominium Management Authority can assist the Management Corporation which is formulated within the community.

Which institutions can influence the problem?

- The central government – By taking policy level decisions.
- The local government – By implementing the policies and regulations.
- Relavant authorities – By doing a participatory development through;

- Community participation from the planning level
- And make them involve to the designing also.
- Participate the community in the construction time.

## 4 Proposal for Change and Improvement

The modifications and alterations done by the habitants are due to the functional, psychological, socio-spatial and cultural factors. These modifications reveal un-satisfaction of user and the costly modifications cannot be accepted in developing countries. Therefore following proposals can be recommended for change and improvement.

- Giving more opportunities for the users (community) participation from the planning, designing, construction and for management of new housing projects.
- Upgrading / regenerating the existing walk-up apartments.

The main objective of this paper is to make a proposal and action plan for the new walk-up apartments and tries to find out;

- **How** - How can the community be involved in new developments?
- **What** - Up to what extent can they participate?
- **Where** - At what stages can they provide their support? and
- **When** - How long can they be involved in this process?

As the leading organisation of constructing apartments in the formal sector, the National Housing Development Authority has to do a proper overview of the project level housing programme. It can be identified basically in four stages as follows;

1. Planning stage
2. Designing stage
3. Construction stage and the
4. Maintenance stage of a project.

### 4.1 Solutions

When providing more opportunities for the community in new housing projects, the relevant authorities have to introduce a **bottom-up approach** rather than giving the final product and trying to fit the community in the houses. To be

successful with the bottom-up approach, several mechanisms and methodologies have to be incorporated as a tool of involving the community.

- **Assistance**

The facilitating organisation has to incorporate the informal sector as the funding agent and should assist the households. This will lead to a proper neighbourhood and the process of community participation will be efficient. This assistance can be provided through advices, training and support.

- **Community meetings and workshops.**

The most effective way of communicating with the people is through meetings rather than posting letters. Meetings provide proper opportunities to understand the requirements and share the ideas with several parties at the same time. They are very good opportunities for the formal sector to mobilize the community as well.

- **Societies and community leaders**

Leadership in a project is essential for making the project successful. Community meetings are good opportunities for them to appoint their leaders by themselves. Selecting leaders within the same community is a little proud for them and it is helping them to gather as societies. It will automatically provide some sort of responsibility on them on the other hand.

- **Capacity building on social development and gender awareness**

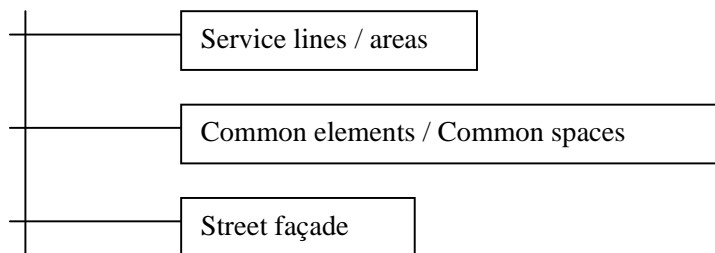
Working for a longer period together creates an opportunity to learn about their future neighbours and to identify the potentials of the community exercise. Both men and women can participate for the development project and it will lead to a good final outcome.

- Access to micro credit
- Floor area and the required spaces should be decided by the requirement of the target group with the commitment of professionals of the relevant authorities.

Several requirements can be found within the same target group and therefore all families should be given similar opportunities to raise their issues. Each and every issue should be recorded and they should be taken into consideration by the professionals. There should be some compensation with the limited resources and finally it should lead to an agreement.



- Incremental apartment in fills which can be developed in the future should be evolved with the community.
- The house plan should not be too much detailed and it should have provision to be enlarged and more developed according to the future and it should be evolved the community.
- Summing up the decisions and consider the limitations by the professionals.
- Taking into account all the proposals and requirements of both parties and evolve the house.
- Flexible type plans may be open plans with fitting the services areas.
- Introduce the probable design solutions and options
- Getting to know the cost effective construction methods and low-cost materials that can be used.
- Limitations of personalising the house.



#### 4.2 Project Action Plan

##### Planning Stage

Task	Role Players	Expected Results
Preparation of land use plans	Urban Development Authority, National Physical Planning Department.	The long term, sustainable development within the city.
Land selection / Acquire	Regional Authorities, Local Authorities.	Clear titles.
Infrastructure	Facilitating Organisation	Provide Electricity, Water, Sewerage, Social infrastructure.
Development of project proposal	Facilitating Organisation	Develop the project & achieve its objectives.

Feasibility study	Facilitating Organisation	Analyse the feasibility of land ownership, finance, physical condition of the land, supply of services.
Legal Status	Facilitating Organisation	Avoid the risk about land ownership.
Environmental Impact Assessment	Facilitating Organisation, Central Environmental Authority.	Minimise the damage to the existing environment by following the guidelines.
Selection of target group	Divisional Secretariat Office	Select the beneficiaries who have true necessity in transparent manner.
Community meeting	Facilitating Organisation, Community.	Get to know each other. Participants should know; The support they receive from the facilitating organisation, how they will pay, the magnitude of the construction process, and extent of their involvement, costs for the material, equipment & other resources. Appointment of community leaders.
Survey on community details	Facilitating Organisation, Community Leaders.	Aware of their major needs, to prepare a list of families.
Urban design	Facilitating Organisation, Community.	Share the expectations of house holders with the professional staff. Plot sizes, plot distribution & floor areas of houses.
Financial study	Facilitating Organisation	Feasibility on financially, Cost calculation of the project, Estimate of monthly cost for each family.
Technical study	Facilitating Organisation	Feasibility on technically, Durability of the construction, Affordability of the construction for the inhabitation.
Social study	Facilitating Organisation	Feasibility on socially, Well understanding of the project design by families, Affordability of recovery to the families, Sufficient participation by the participants, Clear picture of the involvement of different organisations.
Signing of agreements	Facilitating Organisation, Other organisations & Community.	Avoid the conflicts after initiation.
Finding of funding sources	Facilitating Organisation	Convince the Banks, Donor Agencies or Other Credit Institutes

### Designing Stage

Community workshops	Facilitating Organisation with the support of their Professional staff & the Community.	Participants' influence on designing the site plan, individual houses.
Negotiation	Facilitating Organisation with the support of their Professional staff & the Community.	Understand the limitations of walk-up apartments.
Lay-outing of spatial requirements (Schools, Commercial, Recreational etc.)	Facilitating Organisation, Community.	Prove better living standards
Evolving of Incremental apartment in fills through workshops	Facilitating Organisation with the support of their Architects & the Community	House designs which can be develop 2-3 stages.
Probable design options through workshops	Facilitating Organisation with the support of their Architects	Different interior designs which can be fit with the same column, beam structure.
Limitations of personalising through workshops	Facilitating Organisation with the support of their Architects	Outer facades cannot be altered. Only the interior can be done according to the probable options with favourable colour scheme. Services areas, toilets & bathroom positions cannot be changed. Cannot do any encroachments, attachments, extensions. Not allowed to violate regulations.
Structural designs	Facilitating Organisation with the support of their Structural Engineers.	Structural details of foundation, Column & beam structure.
Planning approval	Facilitating Organisation with the support of their Architects & Engineers.	Planning & design approval for the project.
Detailed feasibility study on financial matters.	Facilitating Organisation & funding organisations with the support of their Professional staff & the Community.	Costs for each & every stages & elements. Cash flow, income sources.
Detailed feasibility study on legal matters.	Facilitating Organisation with the support of their Professional staff & the Community.	Procedures to ensure the house ownership
Detailed feasibility study on environmental matters.	Facilitating Organisation with the support of their Professional staff & the Community.	Distribution of external & internal service such as electricity, pipe-borne water, telecommunication, the method of refuse disposal.
		Forming of social groups. Provision of tasks &

Detailed feasibility study on social matters.	Facilitating Organisation with the support of their Professional staff & the Community.	responsibilities among the groups, identify the skilled labour available within the group.
Workshops on capacity building	Facilitating Organisation with the support of their Architects, Engineers, Legal Experts, Sociologists, Field Officers, Technical Officers & the community.	Skill development on partitioning methods, use of different partitioning materials, plumbing, electrical wiring, painting. Introduction of cost effective construction methods and low-cost materials

### Construction Stage

Task	Role Players	Expected Results
Calling of tender	Facilitating Organisation with the tender committee.	Select a contractor.
Purchasing of material	Facilitating Organisation with Procurement committee.	Purchasing & distribution of materials.
Project Management	Facilitating Organisation, Project Director & Project Managers.	Clear picture of the role & approach of the organisation towards the beneficiaries. Everybody in the Facilitating organisation knows the short term & long term project objectives as well as the qualitative & quantitative objectives of the project.
Project implementation	Facilitating Organisation with the support of their Architects, Engineers, Field Officers, Technical Officers, Contractor & the community.	Lay the foundation & construct the column, beam structure, core house. Monitoring the progress.
Credit for housing construction	Facilitating Organisation with the support of their Administrators, Accountants & the community.	Loan instalments.
Technical assistance	Facilitating Organisation with the support of their Architects, Engineers, and Technical Officers.	Minimise the errors & weaknesses of construction. Knowledge of using equipments.
Supervision of	Facilitating Organisation with	

construction	the support of their Architects, Engineers, and Technical Officers.	Good quality product of construction.
Subsidies for purchasing of items.	Facilitating Organisation with the support of Factory Managers & Agents.	Minimize the cost for materials.
Interior design of the co house	Facilitating Organisation with the support of their Architects, community.	<b>Homes.</b>

### Maintenance Stage

Task	Role Players	Expected Results
Workshops for community education on maintenance	Facilitating Organisation with the support of Legal Experts, Sociologists, Architects, Engineers & Technical officers, community.	Knowledge on repair and running.
Ownership transfer	Facilitating Organisation with the support of Legal Experts.	Community receives clear titles without leaving doubts or future interpretations.
Forming of management corporations	Facilitating Organisation with the support of Condominium Management Authority.	Avoid conflicts through win-win solutions. Develop strength to face problems.

### 4.3 SWOT Analysis

SWOT analysis is a useful tool in strategy formulation and selection of better proposals as well as the project implementation. It will help to understand whether the “Community Participation in the Development of Walk-up Apartments” is a proper solution to the identified problems and to determine the effective strategies.

By analysing the situations of the proposal, it can be properly identified mainly in two aspects such as;

1. Within the organisation

**Strengths** - What will be the strengths of the proposal to the organisation when participating community should be analysed. The advantages to the organisation, the better ways of developing the walk-up apartments, the ways

of implementing with lowest- cost and the probable gains to the organisation can be analysed as strengths.

**Weaknesses** - The weaknesses of the proposal, faults, limitations and the constraints should be analysed. It is important to identify the weak points of the organisation and the constraints of the proposal when implementing.

2. Beyond the organisation but affect on it.

**Opportunities** – The options the organisation can be find good opportunities and the interesting trends that can be awared when implementing the proposal should be considered. The chances, prospects, potentials and the positive possibilities are the good opportunities.

**Threats** – An analysis on the obstacles that has to be faced and the threat causing factors should be done on the proposal. The risks, obstacles, difficulties and the impediments of the proposal can be grasped by this analysis.

a. SWOT Profile

Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Good experience of community work</li> <li>2. Can reduce the costs.</li> <li>3. Good opportunity to incorporate the informal sector to the development.</li> <li>4. Can obtain a social &amp; economic development</li> <li>5. Can reduce the maintenance &amp; the running cost of the houses.</li> <li>6. God chance to do a good team work within the organization.</li> </ol>	<ol style="list-style-type: none"> <li>1. Quality of the construction depends on the participants.</li> <li>2. Construction time may be longer &amp; it will increase the construction time.</li> <li>3. There can be conflicts among the community as well as between the community &amp; the organization.</li> <li>4. Has to spend more on training &amp; capacity building.</li> </ol>
Opportunities	Threats
<ol style="list-style-type: none"> <li>1. Can be reduced the capital cost of the project &amp; it is a good solution to cater housing need in the country.</li> <li>2. Can reduce the costs on modifications by the householders.</li> <li>3. Good opportunity to incorporate the informal sector &amp; the householders to the national development.</li> <li>4. Can seek the potentials to provide flexibility to respect participants own requirements.</li> <li>5. Social development of the community.</li> </ol>	<ol style="list-style-type: none"> <li>1. Difficult to get the approval &amp; the agreements by the community.</li> </ol>

4.3 Conclusion

Community participation in the construction of walk-up apartment will be a better solution for reducing the construction cost as well as to minimise the running and maintenance cost of the housing projects. It will help to obtain the social & economic development of a society and for a sustainable development of developing countries.

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