

Introduction

Rajiv Awas Yojana (RAY) scheme was launched in June 2011 by the Government of India to bring all existing slums, notified or non-notified within the formal system and enable them to avail the basic amenities that is available for the rest of the city. A Slum Free City Plan of Action (SFCPoA) envisages the objectives of RAY. SFCPoA encompasses two major strategies (i) Curative Strategy, a plan to bring about the improvement of the existing slums through the participation of the existing consent of slum dwellers, and (ii) Preventive Strategy to prevent the formation of future slum. The concept of Slum Free City could be achievable only through inclusive approach in development or relocation with the slum dwellers. The first step towards this is to carry out detailed survey and develop Geographic Information System (GIS) based management information management system which will in turn help to evolve slum management strategies. Hence, detailed socio economic surveys, has been carried out in Erode city by NITTTTR, Chennai, in accordance with the guidelines provided by Tamil Nadu Slum Clearance Board (TNSCB). This executive summary reports the exact condition of slums in Erode Corporation and suggestions to the upliftment of slum dwellers in terms of infrastructure development, way to overcome economic barrier and disaster risk, and also evolve strategies to prevent the formation of future slums.

Erode Corporation

Erode is familiar for Power loom Textile Industries and cultivation of turmeric in agriculture. It is located at a distance of about 100 kilometres east of Coimbatore. Erode got three major economic activities such as Textile Industry, Turmeric Industry and Oil Industry. In textiles prominent products such as Towels, Bed sheets and Lungis are exported worldwide. In addition, it has well developed infrastructure in the field of education.

In 2011 the Erode Corporation area limit was extended to 109.54 sq km, which is encompassing 60 wards, by merging the nearby local bodies such as Surampatti, VeerappanChatram, PeriyaSemur, Kasipalayam, Thindal, BP Agaraharam, Suriyampalayam,

Year	Population	Increase	% of Variation
1971	105111	31349	42.50
1981	142252	37141	35.34
1991	159232	16980	11.94
2001	151274	-7958	-5.00
2011	499645	348371	230.29

Ellapalayam, Villarasampatti and Gangapuram. Erode city now has an area of 109.54sq.kms with the population of 4.99 lakhs as per 2011 census. The population of Erode city has grown from 16,701 in 1911 to 4.99 lakhs in 2011. The population has increased nearly 30 times from that it was in the year 1911. Drastic increase in population is due to extend of corporation limit by adding four Municipalities, two Town panchayats and three village panchayats. Influx people are denied essentials service such as clean water,

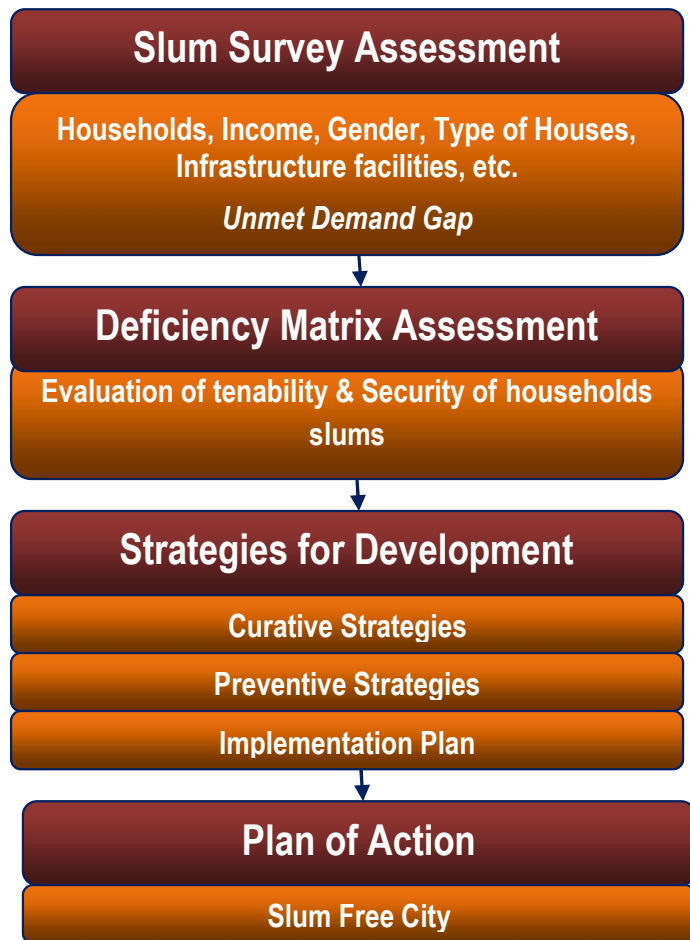
electricity and health care – even though they may live close to these services because of their economic background. Too many are forced to live in risky and unhygienic place in ramshackle dwellings and overcrowded settlements that are highly vulnerable to disease and disaster and also face a constant threat of eviction.

Methodology

The preparation of Slum-free City Plan will broadly involve Slum Redevelopment/Rehabilitation Plans based on (a) Survey of all slums – notified and non-notified; (b) Mapping of slums using the state-of-art technology; (c) integration of geo-spatial and socio-economic data; and (d) identification of development model proposed for each slum. Base maps to an appropriate scale would be a pre-requisite for the preparation of Slum Redevelopment Plan/Slum-free City Plan. The following steps have been meticulously followed for the preparation of Slum-free City Plan for Erode City.

→ Identification and inventory of all slum clusters of all descriptions in the urban agglomeration with the help of available data from TNSCB and the concerned corporation, along with the Quick bird Satellite images.

→ Conduct of Slum Survey based on the detailed formats provided by TNSCB which was modified after few trials in the Slum survey with mutual agreement with TNSCB, after due training of trainers, training of survey personnel /canvassers. For the purpose of community mobilization, the interaction with the Mayor and elected Ward Councilors, who have helped a lot in sensitization of the community through canvassers selected from the sourced slum or nearby slum pockets.



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- Entry of data from Slum Surveys in the web-enabled MIS application software (provided by Tamil Nadu Slum Clearance Board), collation and compilation of data, preparation of Slum-wise, City and State Slum Survey Database and Baseline Reports.
- Integration of Slum MIS with GIS Maps to enable the preparation of GIS-enabled Slum Information System that is to be used for the preparation of meaningful Slum Development Plans and Slum-free City Plan using a city-wide approach.
- For each slum identified as untenable, Slum Redevelopment Plan has been prepared based on models like Public Private Partnership (PPP) development, infrastructure provision only, community-based development etc. This decision-making has been done with the involvement of the community after community mobilization and dialogue for deciding the model to be adopted, through a well-organized consultative meeting.
- Inventory of all possible vacant lands in each zone of the urban agglomeration that could be used for slum redevelopment/ rehabilitation development purposes.

Status of Slums in Erode

Erode Corporation is divided into four zones. Each zone is having 15 wards. There are 120 slum pockets within the corporation limits. Out of 120 slums 5 had been developed already by TNSCB and by the urban local bodies, and 25 slums are not taken for the survey due to the non cooperation of slum dwellers. After detailed deliberation with corporation officials, community organizers, TNSCB officials, elected representatives etc., list of slums for

S. No	Name of the Slum	No. of Slums	House Holds
1	Developed Slums by TNSCB	5	1864
2	Slums not Surveyed under RAY due to opposition from Slum Dwellers (To be surveyed)	25	3303
3	Surveyed Slums under RAY	90	10743
Total		120	15910

No of Slums	Slum Population	No. of HHs	Area in Sq.Km
90	35514	10743	2.33

the project is finalized. Totally 90 slums have been identified for the enumeration purpose under RAY scheme. These 90 slums are distributed in 37 wards. Details of the slums in Erode (both notified and non-notified) have been collected from the Erode Corporation through Tamil Nadu Slum Clearance Board. The slum population of the Corporation constitutes nearly 7% of the total population of the Corporation. Gandhi Nagar is the largest slum of the city and has a population of 2078 with 575 households and is situated in ward No.6 of zone – I.

Because of power looms, Educational institution and other Industrial growth, the migration to the city is high. High rents, prohibitive land prices, very limited or no access to credit facilities for the urban poor, and lack of credit worthiness were found to be the important factors contributing to the growth of the slums in Erode Corporation area. Estimated statistics from the socio economic survey shows there are 10743 slum households in Erode Corporation covering an area of 2.33 sq.km.

Basic definition of Slum clearly categorizes based on the housing condition and surrounding environment. It usually refers to the adequacy of the structure and associated services; but it may also include aspects of security of tenure and affordability. Three most common indicators of housing adequacy are: (a) Space per person, (b) Permanent Structures and (c) Housing in compliance with local standards. Main objective of the slum development programmes is to provide decent shelter of minimum acceptable size.

Sl.No	Type of Houses	No. of Houses	%
1	Pucca	1622	15
2	Semi Pucca	7628	71
3	Kutcha	1493	14
	Total	10743	100

Kutcha and Semi pucca households need to be transformed to pucca structure with due consideration of the land ownership. In Erode Corporation 9121 households (consisting 85%) are Semi Pucca & Kutcha category which need to be transformed to pucca structure. In addition 386 households from untenable slums are to be relocated.

Water is one of the great necessities of human life. A supply of clean water is absolutely necessary for decent life and health. Yet many people of the world do not have access to clean water or can only obtain it a high prices in time or money. Households in informal settlements use less than half of the amount

Zone	Total HouseHold	Individual Tap Connection
Zone - I	3758	587
Zone - II	1199	281
Zone - III	2560	336
Zone - IV	3226	364
Total	10743	1568

of water as the average usage in the same cities, owing to poorer availability and greater costs. Irregular water supply leads to spend excess amount as well as more time towards procuring water for potable purpose. The average water price in informal settlements is almost five times the average price. In Erode Corporation 85 % of households are not having Individual water supply facility. There is a highest demand for water supply connection in the Zone - II which is having only 2.62%.

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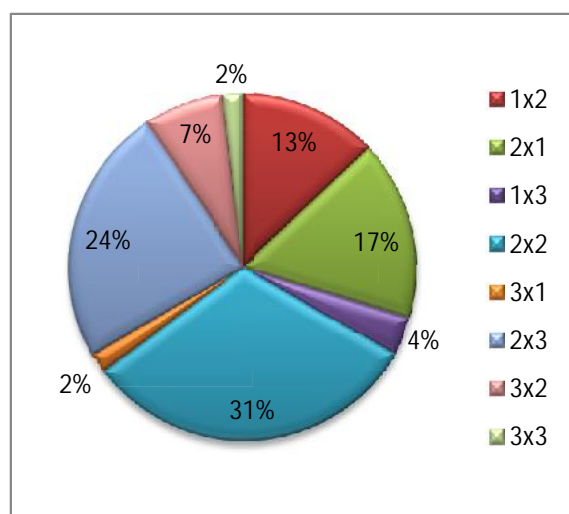
The difference among the levels of service largely owes to the availability of revenue. Cities in developed countries have 32 times as much money per person to spend on infrastructure and other urban services as cities in least developed countries. In Erode Corporation, the corporation made arrangements to collect the solid waste from the slums in different frequency namely daily, alternate days, once in fortnight. Totally 47 slums are not having the facility to dispose off the solid waste. In the surveyed slums of Erode Corporation, a total of 85.40 % of households are not having the individual toilet facility. Infrastructure improvement with proper facility and uninterrupted water supply for sanitation is must for the improvement.

Tenability analysis for the Erode Corporation slums has been carried out as per the standard procedure. Tenability analysis clearly shows the majority falls in the status of fitness of land for human habitation. A total of 36 slums are falling under the category of untenable.

	Zone - I		Zone - II		Zone - III		Zone - IV		Total	
	No. of Slums	No. of Households	No. of Slums	No. of Households	No. of Slums	No. of Households	No. of Slums	No. of Households	No. of Slums	No. of Households
Tenable	18	3720	13	1199	06	380	17	1504	54	6803
Untenable	01	38	--	--	17	2180	18	1722	36	3940
Total	19	3758	13	1199	23	2560	35	3226	90	10743

Slum Categorization - Development of Matrix

The RAY guidelines stresses on the prioritization of slums on the basis of assessment matrices. The parameters used in matrix include BPL, SC/ST population and infrastructure. As per the RAY guidelines the slums of the Erode Corporation are addressed by the three interrelated parameters namely (i) Poverty, (ii)



Vulnerability of housing and (ii) Infrastructure deficiency. During the field survey the enumerators collected socio-economic data of each slum dwellers and slum profile data for each slum through respective questionnaire. Based on these field data, poverty, housing vulnerability and infrastructure deficiency for all tenable and untenable slums have been worked out and discussed in detail. This arrangement would help authorities to prioritize interventions in slums for improving the

observed deficiencies. Such a prioritization is all the more necessary because funds are limited and the limited funds when deployed on predetermined priority areas and services will maximize benefits. The matrix was developed on eight parameters under two components and each parameter was given weights and the scores were generated. Around 13% of the surveyed slums in Erode Corporation come under the category of 1x2 matrix and 2% of slums falls under into a category of most vulnerability and poor infrastructure. Hence focus need to be towards providing basic infrastructure to improve the living environment of slums. There is a need for immediate attention in improving the housing condition and livelihood for six slums. The following table lists the tenable slums in the Erode city.

Tenable Slums					
S.No	Ward No	Slum Name	Notified / Non notified	Matrix	No. of Household
Zone - I					
1	2	Neelikkaradu	Notified	3x3	65
2	2	Balan Nagar	Notified	2x3	102
3	2	Perumal Malai	Notified	2x3	310
4	2	Mayapuram	Notified	2x2	166
5	3	CM Nagar	Notified	2x3	123
6	3	Suriyampalayam	Notified	2x2	489
7	3	Madeshwaran Nagar	Notified	2x2	127
8	3	Veerapannadiyur	Notified	1x2	72
9	4	Maravampalayam	Notified	2x2	319
10	4	Ambedkar Nagar	Notified	2x2	233
11	4	Sanarpalayam	Notified	2x2	152
12	5	Bharathi Nagar	Non Notified	3x2	253
13	5	Kamaraj Nagar	Notified	2x2	247
14	5	Gnanapuram	Notified	2x1	102
15	6	Gandhi Nagar	Notified	2x1	575
16	13	Madhavankadu Sinthan Nagar	Notified	2x3	16
17	13	Jayagopal street	Notified	2x1	46
18	15	Krishnampalayam colony	Notified	1x2	323
Total No. of HHs in Zone - I					3720
Zone - II					
19	17	Thaneer Pandal Palayam AD colony	Non Notified	2x3	37
20	17	Jeeva Nagar	Non Notified	2x2	61
21	17	MGR Nagar	Non Notified	1x2	18
22	18	MGR Colony	Notified	3x2	63
23	18	Adukkuparai	Non Notified	2x3	126
24	18	Muthu Manickam Nagar	Non Notified	2x1	69

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25	18	SSP Nagar	Notified	1x2	326
26	20	Indra Nagar	Non Notified	1x2	188
27	21	Kumalan Kuttai	Notified	2x1	36
28	27	Thiruvalluvar Kudusaigal	Notified	2x3	26
29	28	Jinnah Maithanam	Non Notified	2x3	59
30	28	Kavery Road	Non Notified	2x3	91
31	30	Rajajipuram	Notified	3x2	99
Total No. of HHs in Zone - II					1199
Zone - III					
32	31	Kamaraj Nagar	Notified	1x2	60
33	36	Sastri Salai	Notified	2x2	105
34	37	Muthampalayam Housing Unit II, Gandhji street	Non Notified	1x3	75
35	38	Palayapalayam odai medu	Non Notified	2x2	20
36	39	West Ambedkar Street	Notified	2x1	45
37	40	East Ambethkar Street	Notified	3x2	75
Total No. of HHs in Zone - III					380
Zone - IV					
38	32	Karattankadu	Notified	2x2	432
39	46	Sudhandhirapuram	Notified	3x1	74
40	46	Kallavarai	Notified	2x3	34
41	46	Narikuravar colony	Non Notified	2x3	54
42	46	Rangampalayam AD colony	Notified	2x3	20
43	46	Barathi palayam	Notified	2x2	22
44	46	Kalyana Sundram Street	Notified	2x2	68
45	46	Ragupathy Naikkanpalayam AD colony	Notified	2x2	33
46	46	Sangankurai	Notified	2x2	83
47	46	Vendipalayam Lakhmi Nagar	Non Notified	2x1	101
48	46	Sathya Nagar	Non Notified	1x3	257
49	49	J J Nagar	Non Notified	2x3	18
50	49	Sadayampalayam AD colony	Notified	2x2	72
51	49	Pudhukalli Valasu	Notified	2x1	32
52	49	Ceylone Colony	Notified	1x2	107
53	52	Easwaran Veethi	Notified	2x1	24
54	60	Loganathapuram	Non Notified	2x2	73
Total No. of HHs in Zone - IV					1504
Total No. of HHs in Tenable slums					6803

Untenable Slum Prioritization

The prioritization of untenable slums have been done based on the (i) environmental risk, (ii) Proportion of women population, (iii) SC/ST population, (iv) Minority population and (v) BPL family. The following table lists the untenable slums in the surveyed slums of Erode city.

Untenable Slums					
S.No	Ward No	Slum Name	Notified / Non notified	Rank	No. of Household
Zone - I					
1	11	Pithchaikkaran pallam	Non Notified	3	38
Total No. of HHs in Zone - I					38
Zone - III					
2	31	Valliammai Nagar	Notified	3	78
3	31	Therkupallam	Notified	2	14
4	33	Karaparai Pudhu Colony	Notified	3	59
5	33	Karaparai	Notified	2	232
6	37	Ramamoorthy Nagar	Non Notified	3	102
7	37	Ramamoorthy Street(Anaikkattu)	Non Notified	3	209
8	37	Bharathipuram	Notified	3	231
9	38	Nethaji Nagar	Non Notified	1	94
10	41	Santhan Karukku	Non Notified	3	32
11	41	Anna Nagar	Notified	2	85
12	41	Deva Nagar	Non Notified	2	19
13	41	Kulathupannai	Non Notified	2	75
14	41	Ashokapuri	Non Notified	1	209
15	41	Kallukuzhi	Non Notified	1	64
16	41	Stony Bridge Huts	Non Notified	1	92
17	45	Nethaji Nagar	Non Notified	3	68
18	45	Palaya Poondurai Road	Non Notified	1	517
Total No. of HHs in Zone - III					2180
Zone - IV					
19	46	Petrol bunk Anna Nagar	Non Notified	3	74
20	46	Subramania Nagar	Non Notified	3	102
21	46	Vaikalmedu Bharathi Nagar	Non Notified	3	94
22	46	Baladhandayutha Street	Non Notified	3	74
23	46	Senapathy Palayam	Non Notified	2	72
24	48	Shastri Nagar	Non Notified	3	251

25	48	Lakhmi Nagar(Sastri Nagar,Gandhi Nagar)	Notified	2	23
26	50	Kattabomman Street	Non Notified	2	92
27	51	Manalmedu Good Shed Huts	Notified	2	545
28	52	Poyerikarai	Notified	2	62
29	52	Kalaiankadu	Notified	2	82
30	54	Kuyavan Thittu	Non Notified	2	61
31	54	Nataraja Theatre slum	Non Notified	1	19
32	55	Kuppipalayam Vaikkal Road	Notified	1	10
33	56	Ayyanarappan Koil Street	Notified	3	24
34	57	Mosi Keeranur Veethi	Non Notified	1	57
35	58	Kuyilan Thoppu	Non Notified	2	20
36	60	Kaverikarai	Non Notified	3	60
Total No. of HHs in Zone - IV					1722
Total No. of HHs in Untenable slums					3940
Total No. of HHs in all slums					10743

Slum Development Options

i. Objectionable Slums

Out of 90 slums, 36 slums are found to be located in objectionable zone. This constitutes 3940 of the households. Around 14 acres of vacant lands are identified by TNSCB, Erode for the resettlement of the untenable slums. Densification of low density slums will also help in creation of land vacated by resettled slums. Option of relocation depends upon the availability of land and number of slum dwellers. Residential density and FSI to analyse whether the slum would be able to take additional population that may be shifted in case of necessary resettlement of nearby untenable slums/ high density slums. As per the guideline, around 100 housing units can be built in one acre land. Hence the requirement of the land for the curative measures is around 40 acres. At present the available land is not sufficient for the curative measures. The resettlement phasing for un-tenable slums and Improvement of the infrastructure and livelihood have been indicated.

ii. Unstable Land Tenure

Only 54 slums are falling under the stable land tenure, even though more than 80% of slum dwellers are not possessing patta in 17 slums. (A patta is a legal document issued by the Government in the name of the actual owner of a particular plot of land. It can also be issued for lands having buildings or individual houses etc. constructed on them.)

iii. Infrastructure

Few tenable slums (9 slums) are having very good infrastructure facility, but the housing condition is very poor. Hence, these slums are also need to be considered for the curative strategy. One slum is not at all having electricity facility namely, Jinna Mithanam. In core of the city few slums are located in the course of drains which are not having the proper solid waste disposal arrangement. Slum dwellers are dumping the waste in the drains which will cause the flood during the rainy season.

iv. Livelihood status

Livelihood status is mainly depending upon the educational status of the slum dwellers. Education is not a problem especially in Erode Corporation. The number of educational institutions are quite high. However, only the supply of educational facility does not ensure the education of the children in the slum area. From the socio economic survey, it has been observed that the population of uneducated people in slum is varying from 20% to 30%. Only 10% of slum dwellers are having diploma and higher qualification. Due to the vulnerable and weak socio-economic status, school dropouts are more in the surveyed slums of Erode city. A total of 40% of households in slum area of Erode city are getting income of less than Rs. 5000 which is inadequate to fulfill their day to day requirements.

Type of Slum Development Strategies

From the results of the deficiency matrix analysis, the following facts have emerged which play a key role in formulating the strategies of slum development, (curative strategies) for enhancing the slum-living environment:

- Improvement of livelihood of slum dwellers.
- Infrastructure development.

The above two development strategies are playing the vital role to improve the stats of living condition of slum dwellers to meet the basic amenities without any vulnerability.

To improve the livelihood of the slum dwellers, the data from the socio economic survey at Erode city, further helped to evolve different schemes that would be needed to improve their livelihood income, living-environment, and their education. Based on the discussion with the slum community, the following three schemes have been evolved and proposed for implementation.

- ✓ Community Development Training Institute (CDTI)
- ✓ Employment Web portal
- ✓ Community welfare schemes.

Further, the infrastructure development was analysed with the following parameters

- ❖ Development of infrastructure other than housing, roads, street light, sewerage, storm water drainage and Toilet facility.
- ❖ Development options of in-situ development of housing
- ❖ Remodelling of housing units, and
- ❖ Resettlement.

The parameters in the livelihood improvement and infrastructure development, improvement are represented with different schemes in curative measures for the formulation of slum development.

Community Development Training Institute

The proposed Community Development Training Institute (CDTI) is an Institute under the Tamilnadu Slum Clearance Board, for the purpose of development of slum community through proper training on skills required to make them self-sufficient to live a moderate life. Thus, major activities envisaged of CDTI are listed below:

- Poverty Alleviation (Supporting communities in savings, credits and loans and community development plan, etc.)
- Community Welfare Assisting in setting up of Community Development Organizations Councils throughout the State
- Promoting Skill Development, Sustainable livelihood and Environmental Management Solving land and housing disputes in slums to the extent possible.

Citywide slum upgrading the strategies or principles of CDTI are given below:

To play supporting role in community development process in Slums

Slum Dwellers, not CDTI, are the owners and key actors of the process

To coordinate with govt. agencies, NGOs, other civic groups

To promote Skill up-gradation, and community-based savings

To use finance as a tool for development

Employment Web Portal

Technology has changed the way job seekers search for jobs and employers find appropriate employees. An employment portal has been developed to empower the slum dwellers to get the appropriate job within their ward or zone. It also helps the employers to identify persons nearby places. In this way, the skilled person will get a job and salary commensurate to his / her talent or expertise, and thus avoiding the exploitation of slum workers with less salary.

Consultation and Citizen Participation

To prepare the Slum Free Action Plan, the Tamil Nadu Slum Clearance Board consults with appropriate public and private agencies and conducts consultative meetings to obtain inputs from elected people representatives as well as from progressive citizens. This assures that the document is comprehensive. This draft Slum Free Action Plan was made available to them for review and comment and a detailed presentation about the project was given in the consultative meetings.

Key Recommendations

The following key recommendations based on the detailed socio economic survey and interaction with slum dwellers in Erode was made to evolve slum free city. It is observed that number of slums is increasing due to the urbanisation process. The slum people must be afforded with improved housing, amenities and opportunities they need to realise their rights and potential. The following actions must be taken to

1. Plan out slum improvement strategies with respect to infrastructure in 90slums under RAY in a phased manner.
2. Improve the livelihood conditions of slum people by providing training in operation of earth moving equipment, Motor mechanic, Carpentry, Masonry, Office automation, and Tailoring through CDTI.
3. Promote development of (a) Community Development Training Institute (b) Affordable Housing (c) Employment Portal
4. Develop slums with proper approach, local transport, water & electricity, proximity to schools, primary health centre.
5. Involve different private agencies, NGOs at national/ International level for the supply of housing to the slum people.

Financial Requirements

It reveals from the surveyed slum data, out of 10743 households, 9507 HHs need to be intervened at total cost of Rs. 1105.45 crores. Housing is not an obligatory duty of the local body though planning of city is highly influenced by the housing sector and regulation mechanism. Housing reflects the economy & quality of life of any urban area. Poor planning mechanism leads to slums & illegal growth. Therefore it is necessary to form housing strategy for better city and reduce the proliferation of slums, other illegal developments. For the preventive strategy, based on 2011 census the future house demand has been arrived. The projected housing demand at the end of 2022 is 3916 households which require cost of Rs. 474.01 crores. For Erode city total cost is arrived to Rs. 1579.46 crores for both preventive and curative measures.