

# Udupi.....

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Innovating as awareness creation, dustbin free, segregation at source and innovations on secondary transportation

## Town profile:

Location	:	Longitude - ,Latitude –
District	:	Udupi
Constitution of Udupi	:	1935(upgraded as city municipal council on 1995 oct 20 th)
Type of town	:	` Education, Banking, Tourism, fishing and Agriculture based, pilgrimage centre , cultural heritage .
Population	:	1,35,629
Area spread	:	68.23 Sq. km.
Density	:	1, 988 person/sq. Km.
Number of wards	:	35
Number of house holds	:	32,315
Number of slums	:	18
Total Road length	:	700 K.M.
Total drain length	:	563 KM

Udupi is 56 KM away from Mangalore and 60 KM away from Bajpe airport and is a educational and commercial centre.

The town generated every day 58 tonns of waste. The town is residential type where in 10% of the population lives in slum.

## **Situation Before:**

Udupi had garbage dumps on road and drains. The waste generators use to throw the waste directly on street, open plots and drains thereby causing problems for health, environmental and aesthetics. Managing solid waste was burning problem requires immediate attention and care.

The Municipality was functioning in an any adhoc way without proper management plan for collection, transportation and disposal system for solid waste. The general health conditions, the weaken sections of the community and childrens and efficiency of the workers was at the lowest ebb. The waste was burnt in open places and solid waste dumped openly (at Beedinagudde landfill site) thereby degrading environment.

## **Inspiration:**

The initiative is commenced, integrated solid waste management is proposed under the Assian Development Bank. assisted KUDCEMP undertaken by KUIDFC. The govt. of Karnakara has formulated a state policy for SWM titled “Karnakata State Policy on integrated solid waste management.

The Nirmala Nagara programme has also emphasized on swm for the town. An action plan prepared for implementation of improved swm systems in Udupi. This action plan provides an overview of the existing systems of swm at Udupi, the existing staff, equipment, contracts and budgets etc, are provided to give a backdrop to the proposed changes. The overall strategy, equipment and manpower requirement qnd the mode of execution are presented.

## **Challenges faced by the CMC Udupi:**

1. To achieve effective solid waste management system.
2. To conduct awareness among the various target groups.
3. Bring in efficiency with in the sanitary workers.
4. To build the capacity of council, and health staff
5. To achieve MSW rules 2000.

## **Summary of the process:**

As in any Municipality, for any developmental activities, the support and approval of the council is very much required. Thus, the commissioner first approached the council and presented his views of having a proper collection systems for solid wastes . Later council agreed with the Commissioner by doing resolution on Karnataka Gov. order on user fee on 28.08.2006. Env. Eng explained the MSW Rules 2000. Awareness campaigns were being undertaken for the communitive. Through IEC programmes organized by the NGO (SKDRDP) under KUDCEMP project, (2002-03,

2003-04) then later on by CMC health staffs. Presently in 32 wards door to door collections of waste is being carried out by a SHGS'. Municipality has given 50% subsidy to procure 8 auto tipper 1 TATA 407 to self help groups. Municipality has donated plastic(Fibre) dustbins for distribution to households to encourage segregation in 2 wards. The Municipality identified a squad team(Karyapade) to monitor the activities regularly and action was taken on defaulters which were approved by the council and made a resolution. The CMC has proposed to set up a scientific landfill facility at the proposed site as a part of KUDCEMP project at the cost of Rs. 4.82 Crore. and the Plant is now functioning.

The process is explained in detail below:

### **1. Awareness creation:**

The Municipality thought of innovative and effective ways for creating awareness for various target groups, CMC had undertaken awareness programmes for SHG's, and various target groups as mentioned below CMC had undertaken awareness programmes for settings schools in Co-ordination with the NGO(SKDRDP), as mentioned below.

**a) Sanitary Staff:** To start with, CMC planned to arrange training and capacity building programmes, for sanitary workers(PKS ' ) and supervisory staff and then organized workshop for motivating and educating them on importance of personnel hygiene and cleanliness, intake of nutritious and personality development. CMC started interacting with the workers listening to their problems and encouraging them by telling that the work performed by them is good but it requires further improvement in it. CMC personally discussed the problems of workers like uniforms, on-time salary/increment etc. and tried to solve them. This gave a very good impressions and also encouraged the workers to deliver better results.

**b) Households & commercial:** Commissioner, Env. Engg, SJSRY staff and SHG's arranged "Ward Sabha" (Mahiti Shibira) in every wards where in all the residents were gathered and motivated to segregate and store the waste with in their premises. The CMC then installed a public addressing system to the SHGs' vehicles & Env. Engg's vehicle for SWM announcements. These tapes were played b/n 6AM to 10 AM. The municipality organized Swachata Andholana in all 35 wards (street plays, street Jatha, audio announcements etc.). Each shop was asked to maintain dust bin to collect the waste & deliver it to the SHG's collection vehicle.

**c) School & Colleges:** Competitions were organized among Primary, Highschool & College students regarding awareness of SWM. In each ward any one of the school was targeted. A small half an hour speech was delivered by the Env. Engg educating the students about the importance of segregation & banned plastic, recycle & reuse of waste, bio- compost etc. The message was publicized and implemented as these children forced their parents to follow segregation & deliver the waste only to the SHGs' vehicles.

**d) SHG's :** Many meeting have been organized up to the self help groups. 9 self – help groups have been identified for primary collection and necessary orientation & training programs have been undertaken in capacity building & SWM awareness.

- e) **Council body:** Work shops were conducted by Director of Municipal Administration, Govt.of Karnataka .

## 2. Primary waste Collections:

The entire town is divided into 15 command area in 35 wards. wardwise data i.e Area, population, households, shops, hotels, length of the roads etc were collected. 15 command area identified for door to door collection in non slum area through SHG's. 1 Autotipper, 1 tricycle and 3 pushcarts were allotted for each command area up to 8 command area and 1 TATA 407, 1 tricycle, 2 pushcarts for 01 command area and for 04 command area, private operators, have been working using their own vehicles viz. 2 mini lorry, 11 pushcarts, 1 Lorry, 1 Autotipper. And for remaining 2 command area no one was allotted.

- a. **House holds/ Commercial areas:** Door to door waste collecting starts at 7.00 am to 2 pm for residential, and Commercial and 3pm to 5 pm for bulk generators. Each Auto tipper has audio announcement so that people will come out to deliver the waste. The waste will be collected from both the sides of the streets by 2 workers. Each pushcart, tricycle also collect the waste (The worker will keep whistling in intervals)
- b. **Street sweeping :** All 35 wards were outsourced for street sweeping. The roads are classified into daily, once in three days and once in a 7 days sweeping schedule. A group of workers were allotted with timings and roads which they have to sweep as per the schedule. ( one sweeper/ 1000 metre). one worker will sweep and make the heaps at regular intervals. Another worker from tractor/Lorry will collect the heaps in a basket and transfer it to the vehicle at defined location. Two Lorry and 2 tractor have been allotted for these purpose from contractors.
- c. **Construction debris & desilted waste collection:** ULB is insisting all the builder to clean the debris by themselves and transport the waste to a lowlying areas. Desilted waste from drains is part and parcel of the street sweeping work.
- d. **Bio-medical waste:** All Hospitals, Nursing homes, Clinics manage themselves their medical wastes as per Biomedical waste (Managements & handling) rules 1998.

**3. Transportation of waste:** The waste from the Auto tippers, pushcarts, tricycles are then transported directly to the secondary storage (container ) of 3m<sup>3</sup>, 4.5m<sup>3</sup>, 7m<sup>3</sup> capacity. These containers will be lifted by CMC through 2 Number of dumper placer vehicle & will carry it to the landfill site. In 01 command area on experimental basis 01 Tipper is using for secondary transportation which collect the waste from primary vehicle directly. So we are avoiding secondary storage point . Keeping 5 secondary containers in one spot, which covers 5 command area, CMC is innovating new concept for secondary transportation. By doing so, CMC would avoid extra 4 secondary container spots.

**4. Processing & Disposal :** KUDCEM under KUIDFC, has built a sanitary landfill site in 22 Acres area at Alevoor village which is 10 K.M away from the city. Landfill site would accepted 46 tonns mixed Municipal solid waste at door steps and using pourakarmikas CMC segregates the larger non bio-degradable material, recycle material such as paper, metal, glass, plastic etc. & store them at one place & sale it.

The Inertisation facility, inertise the waste for 35 days by windrows method & then the waste would be land filled . The plant also has Leachate treatment facility & ground water monitory well, Office building, vehicle parking facility, security room, Borewell, electricity supply, compound wall and vegetation cover in side the plant.

In the landfill site, so many companies have come forward for O & M of landfill site. viz REMONDIS Aqua (India) Pvt., Pune, Maharashtra, Deccan Eco-Tech energy (p) Ltd, pune, Mars vapours, carbon foot print Pvt Ltd, Manglore, JMS (P) Ltd, Bangalore. Among above companies Remondis Aqua(India) Pvt Ltd has been done several meeting with ULB. We are looking for those company which would offer less O & M cost and give maximum optimum service.

#### **Innovation in the Process**

1. The Municipality has effectively utilized the resources. None of the SWM activities except street sweeping are outsourced.
2. The recyclable waste is collected at the source and at landfill site.
3. The Sanitary workers are trained about the personal hygiene which indirectly strengthened the bond between municipality and the workers
4. The awareness program was conducted in a very effective way involving all the target groups. The IEC materials i.e audio cassettes, posters, handbills etc are distributed in a wide way by the municipality
5. The council has passed a resolution on userfee and also ban on particular plastics.
6. The most effective and unique feature of this initiative is that a public addressing system is attached to the SHG's vehicle and Env. Engg vehicle and Keep going on rounds.
7. The Ideas given by various models like Namakkal, Suryapet etc were tried and tested by the municipality . The Commissioner and President is open to suggestions and frankly tries to implement the same for the benefit of town and municipality.
8. One secondary spot has been identified for 5 secondary containers by avoiding four extra secondary spots
9. SWM Awareness stickers have been displayed as CMC Env.Engg's vehicle.
10. Red & Green bins are distributed in 2 wards for encouraging solid waste segregation among residence by CMC 'S own fund.

11. old open dumping unscientific landfill site at Beedinagudde have been closed.

**Management Plan**

A) The Municipality's present working details of the SWM staff

<b>Present municipality staff for SWM</b>	<b>Number</b>
Workers	56
Drivers	05
Supervisors	04
Health Inspectors	03
Environmental Eng	01

**Deployment**

**Workers:**

- 12 : Absentees (15-20%)
- 15 : Waste collection in slum
- 09 : task force (East, Central , West)
- 02 : Supervisor
- 06 : Fogging
- 06 : Spraying
- 06 : Secondary transportation
- 02 : Landfill site

**Vehicle:**

- 02 dumper placer : Secondary transportation
- 01 Tipper : Secondary transportation
- 01 Tempo tracks : Task Force work
- 01 TATA Sumo : Env. Eng. Vehicle

**B) Primary collection Plan**

<b>primary collection</b>	<b>Number</b>
SHG's	11

## **Deployment**

### **Vehicle:**

09 Auto tipper : primary Collection  
01 TATA 407 : primary Collection & Secondary transportation  
2 Min lorry : : primary Collection & Secondary transportation  
1 Auto tipper : : primary Collection & Secondary transportation  
1 Lorry : primary Collection & Secondary transportation  
11 pushcarts : primary Collection & Secondary transportation  
09 Trycycle : : primary Collection  
21 Pushcarts : : primary Collection

### **Workers:**

14 : Drivers  
60 : Workers

## **C) Street Sweeping Plan**

<b>Street Sweeping</b>	<b>Number of Package</b>
Outsource	3 Nos

## **Deployment**

### **Vehicle:**

2 Lorry : Collection & transportation of Street Sweeping waste, and desilated waste, dead animals  
3 Tractors : Collection & transportation of Street Sweeping waste, and desilated waste, dead animals  
15 Pushcarts : Collection of Street Sweeping waste

### **Workers:**

Total workers : 86  
33 women workers : Street Sweeping  
20 Loaders : 4 loaders in each vehicle  
5 : Drivers  
35 workers : Desiltation work , dead animal transportation

### **Results achieved**

The Municipality is successful in achieving

1. All the 280 concrete bins are now removed and 70% door to door waste collection is being achieved
2. Clean environment and odour free atmosphere (ban on burning of solid waste)
3. Free from stray animals and Mosquitoes (Fogging, spray have been under taken)
4. Sanitation related complaints have been reduced to nearly 80%
5. occurrence of communicable diseases (chickungunya, Malaria etc) in the town rapidly decreased.
6. People have got confidence in municipality

### **Lessing to be Learnt from this initiative** :

1. Along with the street sweeping, the vegetation removal and cutting has to be taken up in a gang work systems.
2. Continuous awareness program is required for effective implementation of the SWM
3. The Health inspectors should be empowered to levy penalty on defaulters
4. Municipality should encourage use of compost made out of MSW
5. Municipality should encourage target groups(residents, commercial, bulk generators ) for reused and recycle waste.