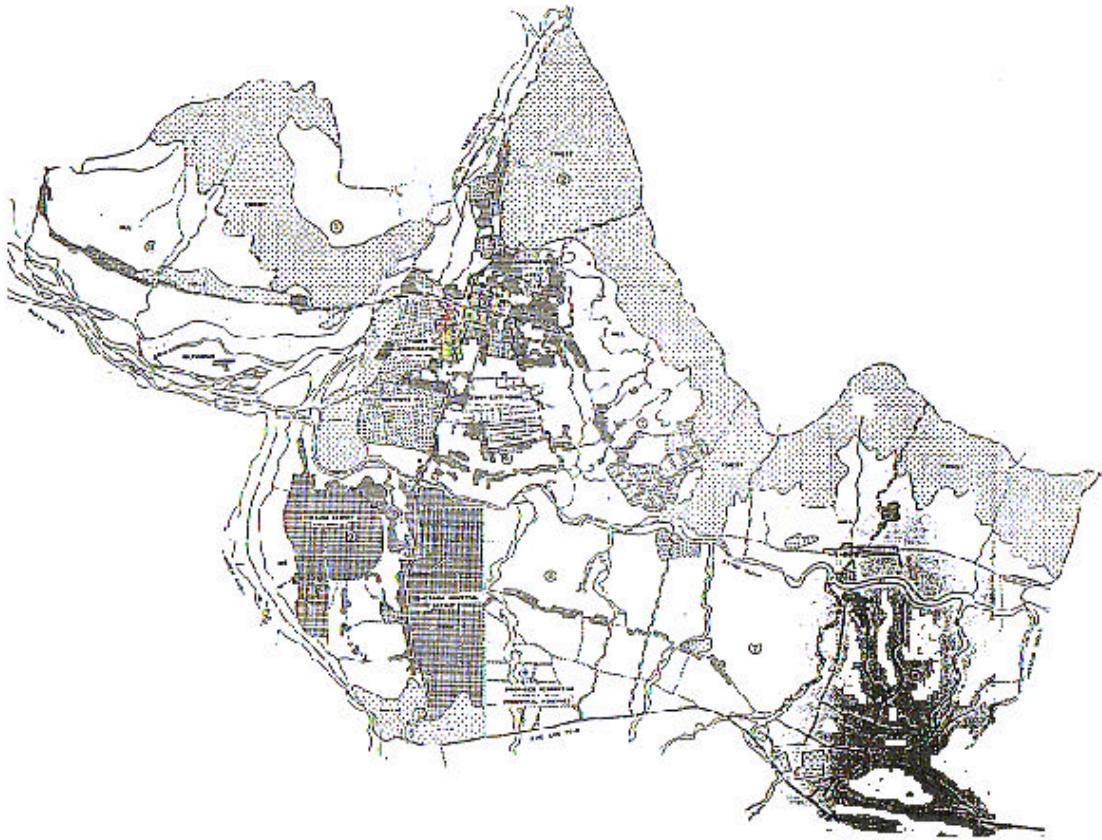


Hetauda Municipality

Solid Waste Management: Local Initiatives For Sustainable Communities



Martyr's Memorial Park, Hetauda

1. Introduction

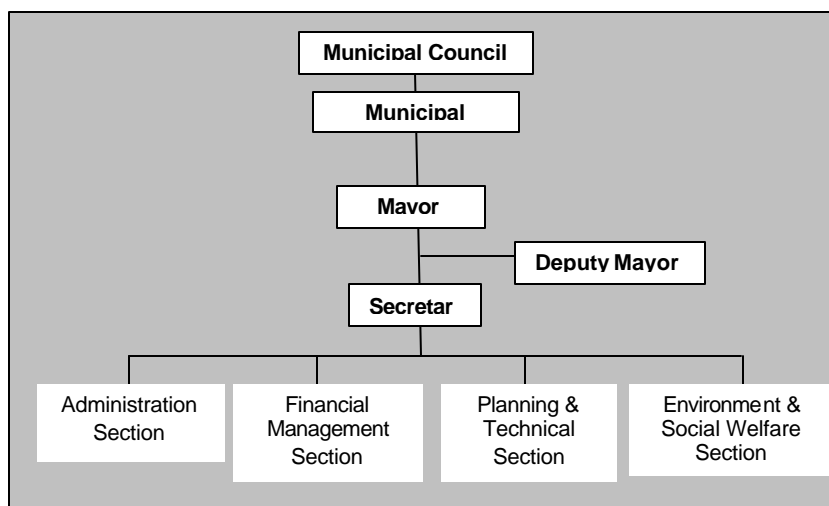
Hetauda is a typical mid size town of 80,000 population with an urban growth rate of 4.5 %. It is located in the south of the country approximately 100 km from Kathmandu. As being an industrial town, Hetauda's economy is considerably dependent on the manufacturing and transport sector apart from agriculture.

The town is divided into 11 wards and each ward sends 5 members including one chairperson to the council. Altogether there are 77 members¹ where 20% are women. The mayor exercises the executive power while the secretary, deputed from the central government, carries out the day-to-day activities. Altogether 220 staff are working in the municipality under different sections and sub-sections. The sections are, Administration, Finance, Environment and Social Welfare, Planning and Technical

Last year 2000, the municipality has mobilized the revenue of Nepalese rupees 40,830,472 (US \$ 53,7243²) and 47% of the revenue comes from the local development fee transferred

from the central government in lieu of octroi which was abolished 5 years ago. Hetauda spends around 15% of its total budget on solid waste and environment management. Which is a meager resource compare to the task it has to perform.

The Local Self-governance Act 1999 has made the municipalities responsible for the management of solid waste in their jurisdiction including many other municipal services like drinking water, education, road, electricity, sanitation etc.



2. Situation of Solid Waste Management

Though the responsibility of solid waste management fall solely under the municipality since long time ago, a very few efforts had been made before by the municipality until 1996. Mobilization of the communities and applying innovative approaches were greatly lacking with weak institutional capacity of the municipality itself. Moreover, lack of education on sanitation attributed to the deteriorating situation of the town.

Sweeping and Collection

Recently in August 2001, the Environment and Social Welfare Section of Hetauda Municipality had done a survey on solid waste management. The survey has revealed that

¹ 55 ward councilors, 20 nominated, mayor and deputy mayor

² US\$ 1 is approximately equal to Nepalese Rs. 76 (exchange rate Nov. 2001)

the town is currently producing approximately 20 MT waste per day (i.e. per capita 250 gm per day) of which approximately 10 – 12 MT reach to the dumping sites. The core city center areas mainly ward number 1,2,3,4 and 10 are covered by the municipal services. About 65 sanitation staff are working to collect the waste from the public places by sweeping mainly roads and streets and the household waste dumped nearby in the containers along the sides of the streets and roads. Approximately, 15 sq km areas are covered by the services. The street sweeping and waste collection works have been rescheduled based the volume of waste generated in the areas. Still primitive technique i.e. hand brooms are used to sweep and collect the waste. Other equipment employed in the primary collection of the waste are wheel barrow (25 no.), rikshaw (2 no.) shovels and plastic buckets etc.

Transfer

The two tractors and two tippers transfer municipal waste. The trolleys that carry waste are uncovered which sometimes spillover or spread the waste while ferrying to the dumping site. The waste collection and transportation routine has been fixed according to the volume of waste generated on daily and weekly basis.

Disposal

There are no any well-managed sanitary landfill sites in Hetauda. The wastes that are collected are dumped openly in the forest areas nearby the riverbanks of Rapti River. The municipality has been looking for an appropriate place for waste dumping.

The box on the right side shows the composition of waste collected by the municipality. This does not show the composition of industrial hazardous wastes that are produced in the industrial estate and other industries in other areas.

Organic	68.55%
Paper/Cartoon	12.72%
Plastics	7.83%
Plastics goods	1.30%
Glasses	2.28%
Clothes	1.63%
Leather	1.00%
Rubber	0.32%
Wooden Materials	0.52%
Others	3.87%
Total	100%

Hazardous Waste

Industrial wastes are handled by the industries themselves as they are mostly confined in the industrial estate. However, the treatment of their affluent is not properly done. A year ago the Danish Environmental Project is helping to set up the appropriate environmental measures in the estate. However, some industries lying out side the estate required observing the certain environmental standards to protect Rapti River and its environs.

3. Municipality Initiatives

Structure and Policy Reform

From 1997, Hetauda municipality had seriously taken up the environmental issue particularly focusing on the solid waste management of the town. As part of institutional



capacity building the municipality had defined its long-term vision including waste management strategy. Accordingly, structure has been created with additional staff and budget also increased to handle the waste. The strategy also included the massive campaign, awareness building, and community and private sector involvement in the waste management. This also entails the promotion of integrated waste management practices.

To address the problem more effectively the municipality had declared the town “Plastic Bag Free” which has made considerable impact on the solid waste situation. This has also shown the commitment of the municipality to the management of waste. More campaigns have been geared towards for awareness building of communities.

Community Participation

Considering the settlement patterns and the financial resource of the municipality, different approaches have been adopted for the management of solid waste. For city core areas, efforts are being made to involve the private sector and business community where as in the outer/ outskirts areas community based organizations are involved.

Understanding the scale of waste management problem, which the municipality alone cannot tackle, a substantial number of women volunteers (more than 26) have been trained by the municipality with the help of udle-gtz. As a result over 500 households have been directly covered by the campaigns. An assessment jointly done by the municipality and udle-gtz in the early 2000 shown that –

- 30 to 40 % people in the campaign areas had developed a habit to collect and segregate the plastics from other waste;
- 15% had dug ground holes within the compound or nearby houses to dispose the waste;
- 70% had burnt out the waste including plastics;

Nava Jyoti Jeevan Youth Club

The club has 100 members of which 70 % are women. The club is involved in many social activities in Chaugada, Ward No. 6 of Hetauda. The municipality with the help of udle-gtz project had initiated waste management awareness programme. The programme included the education on waste management at the community level by taking the simple measures like segregation of waste at source and making the compost from biodegradable waste. The campaign has become so successful that many communities in the other part of the municipality are following. In fact, the original idea of banning the plastic bag came from this club. The club still performs the street drama to make aware the public.

- 10% had started segregating the bio-degradable and non-degradable waste;
- a few had found selling the metal waste to traders.

To sustain the campaigns, the municipality has been providing support to the local Community Based Organizations (CBOs) through Urban Development Through Local



Efforts (udle) -gtz for the dissemination of information and training by developing the resource persons. A small demonstration project has recently been established in the vegetable market area for composting the waste.

Encouraged with the positive results of CBOs' participation in the waste management, the municipality has initiated another Steel Drum Compost Scheme in ward no. 10 as a pilot programme. Refer annex –1 for project details.

Private Sector Initiative

A year ago the municipality had tried to get involve the private sector in the management of solid waste in the city core area of Hetauda. There are a few municipalities in the country who have tried to involve the private sector in the country in the past. Poor understanding of service procurement and transactions, perceptual barriers, mistrust and lack of management on the both parts (municipality and private sector) have attributed to the failure of the initiative³. Recently, the municipality has made another attempt to get private sector involvement in the municipal services the management of butchery shops. However, the proposed private sector participation project also takes care of the waste produced by the meat shops. The general Private Sector Participation (PSP) policy framework has been developed. The pre-feasibility study on butchery shops was also carried out. The outline of the project is also being discussed widely with the meat shop owners, local chamber of commerce and the municipality. Further activities in this regard will be carried out in due course of time.

Nonetheless, the participation of the private sectors through the chamber of commerce is very encouraging; the business communities in Hetauda effectively supported particularly plastic waste buying back scheme. This has made considerable impact on in the city core areas.

Other Policy Measures

To have a long-term sustainable impact on environment particularly from the solid waste management point of view, the municipality has adopted following policies.

³ The project study done by PPPUE Programme of UNDP, 2000; and the working paper prepared by DFID, GHK, UNDP and the University of Birmingham on 'Just Managing the Solid Waste Management Partnership in Biratnagar, Nepal' January 2001, have clearly indicated the similar issues on the participation of private sector in the municipal services.

- Efforts shall be made to reduce the waste at source, recycle and re-use; thus letting a very few waste for disposal;
- Construction of a sanitary landfill site;
- Tax exemption for tree planters and growing them;
- 5 grade marks given to the students who plant and grow one tree;
- At least the plantation of two trees has been made compulsory for obtaining the building permit;

4. Issues

Most of the towns and cities in Nepal grossly suffered from the environmental problems particularly solid waste management. Due to rapid urbanization process in the country (which is 5.2%), the towns and cities are in fact in the threshold of urban crises. Many municipalities have already perceived this as a present and future challenge for the betterment of towns and cities. The issues or challenges posed to the municipalities in general and Hetauda particularly are:

- lack of a well managed solid waste disposal system;
- treatment of industrial pollution (solid, affluent, air⁴);
- a need for drainage facilities for storm surface water and sewerage system⁵;
- lack of civic consciousness towards waste management;
- a weak legal system to support the local government for environmental infrastructure development;
- weak municipal institutional capacity to manage the waste and environment.

5. Lessons Learnt

In the last five years, Hetauda has remarkably improved the living environment of the city core areas and some communities in the wards. This is made possible through the involvement of the local communities in every aspect of waste management. Other lessons learnt are:

- the municipality itself has framed conducive policies and initiatives to make the community participation in the waste management;

⁴ Cement factory that produces a large volume of smokes.

⁵ In the city core area

- integration of the solid waste with greenery (tree plantation) has further improve the environment of the city core area;
- linking the drinking water with sanitation and solid waste is essential to have a greater impact on environment;
- education and awareness building is very important for community participation;
- private sector participation is also important when and where solid waste management complexity is involved and socio-economic condition justifies;
- municipality must build regulatory capability to monitor and facilitate the community and private sector;
- municipality should also be aware of the resource that need to be generated to meet some vital costs of the waste management.

6. Strategy and Programme

Owing to its success in managing solid waste to a considerable level, despite its financial difficulties to meet the growing environmental challenges, the municipality had adopted the following corporate strategy to address the issues of solid waste management in an integrated manner with other environmental issues and sub-issues. Most of these initiatives are already taken place and some are under considerations.

Waste reduction

The massive awareness building campaigns has already produced significant results at the communities that the waste can be reduced drastically at the source i.e. households through -

- Minimum use of waste
- Separation of waste
- Recycle of waste
- Re-use of waste

This has not only reduced the financial burden on the municipality but also provided congenial social atmosphere in the communities.

Long-term waste disposal system

Hetauda municipality is well aware of its present disposal system of the waste. The municipality is currently seeking the external support to conduct the feasibility study for the construction of a sanitary landfill site for waste disposal. Part of the forthcoming Asian Development Bank's assistance⁶ will be used for this purpose.

⁶ Hetauda is one of the eight municipalities, which will receive a substantial amount of grant and loan from ADB under the Urban Environment Improvement Project, which will start from 2002.

Integrated waste management system

The efforts shall be made to integrate all types of wastes and pollutions so that a holistic approach can be made to mitigate the challenges. Coordination will be maintained at the local and national level for the management of waste. For example, the air pollution, watershed preservation, food and drugs adulterations need to be coordinated at the central level policies too.

Waste as a source of income generation

The economic importance of the waste will be made aware among the households and business communities. As mentioned earlier several financial benefits will be provided from the municipalities to those who adopt the environmental norms set by the municipality. For example, the use of plastics and buy back scheme of used plastics.

Community participation

Further thrust will be given on to the education and awareness building programmes for solid waste management and environmental activities at the community levels. All schools will be covered with urban sanitation and hygiene education curriculum, CBOs and clubs will receive educational materials free of costs, and particularly women groups will be encouraged to treat the household waste at source.

Appropriate number of volunteers, facilitators and teachers will also be developed further in sanitation and hygiene.

More demonstration projects on waste collection, composting, re-cycling will be further initiated to motivate the communities

Private sector participation (PSP)

Understanding the complexity of the waste management and also the management deficiency on the part of the municipality and the private sector, effort shall be made to involve the private sector by building the private sector participation capacity not only in the waste management but also in the other municipal services which have cross environmental impacts on the society. The project so far identified for PSP are:

- Existing bus park management
- Construction and management of a shopping complex
- Town hall
- Children park
- Local hat bazaar reconstruction and management
- Slaughterhouse
- Drinking water
- Vegetable and fruit market
- Cold storage

All these projects have to comply with the certain environmental (particularly solid waste) standard set by the municipality that will be in-built in the contract agreement of each PSP transactions.

Reform in Policy Framework

Hetauda municipality believes that an enabling policy and legal framework is essential to support the on-going solid waste and environmental management initiatives to achieve a long-term sustainable impact in the society. With different mix policies and programmes, the municipality shall devise various measures to overcome the environmental issues, which directly or indirectly support the above-mentioned strategies of Hetauda Municipality. Some of them are:

Tax incentives to those industries and business communities that deal with the waste in a proper manner. For example paper, plastic and food industries etc.;

Subsidy to the schools and CBOs for environmental education and demonstration initiatives;

Using building permit and other permit and licensing to address the environmental issues;

Integration of environment in local community and municipal level planning;

Preparation of environmental (solid waste) management by-laws/ directives;

Advocacy and lobbying at the central level to formulate an appropriate policy framework for private sector participation in the municipal services

Advocacy will also be made on to streamline many inconsistencies and anomalies that exist in the current Local Self-governance Act 1999. These require to be amended to make the municipalities autonomous bodies so that they can deliver the urban services on their own.

7. Conclusion

Solid waste management including other environmental responsibilities fall under the jurisdiction of the municipal government in Nepal legally and functionally. With limited resources the municipalities are finding increasingly difficult to meet the growing solid waste and environmental management challenges. Rapid urbanization has further aggravated the urban environmental problems. However, innovative ideas and partnership approaches have shown and proven that how such issues can be addressed successfully through local initiatives. Community participation is one of the effective ways to address such issues. The initiatives taken by Hetauda municipality show that the municipality can manage their waste and other municipal services by building the trust in communities and private sector.

Annex –1

A Brief Introduction of "Small Scale Steel Drum Compost Scheme"

Title: "Small Scale Steel Drum Compost Scheme"
Status: Testing Pilot Program
Benefited Area: Selected Ward/Tole
Benefited House Hold: 110

Objectives of Scheme:

- To Reduce Volume of Solid Waste Production from households.
- To Dispose Solid waste Materials in Steel Drum Compost Plant.
- To Use Compost to their garden as well as farm.

Scheme Activities:

- Scientifically Designed Steel Drum Compost Plant will be distributed by paying fixed reasonable cost to the each household in projected ward.
- Training will be given to the household's women to make them able to categories organic solid waste materials.
- Technical knowledge will be provided to use compost on their farm or field.

Involving Section:

Environment and Social Welfare Section

Budget:

Approximately 4000 - 5000 USD

Note : Within 40 - 60 days compost will be ready for use.
