

Waste Free Communities: Local Chapter

A Joint proposal of Rotary Clubs in Nepal (RCN), Zero Waste Nepal (ZWN) and Local Municipality

Rtn. Badan L Nvachyon, July 24, 2005

Abstract

Solid waste management in Nepal is in critical stage with deteriorating environmental conditions in Kathmandu Valley. Waste Free Communities-Local Chapter is proposed as a joint program of Rotary Clubs of Nepal, Zero Waste Nepal and Local Municipality and will be carried out under a broader concept of Community Based Urban Waste Management.

WFP Phase-1 activities and Sources of Funds

Major activities proposed under “Waste Free Communities” are described in Appendix-1. The implementation of these activities would be carried out by Phases. WFP Phase-1 activities would comprise of following activities. The Funds required and sources are also identified.

Table 1: Activities and Fund, NRs./annum /Household

SN	Activities	Cost per Household, Rs/HH/Annum					Municipality	Funds Required	Total Funds Required
		Local Rotary Club	Community	Donor Club	RCME	ZWN			
1	Community Awareness campaign at selected pilot areas and Training of Volunteers								
	- Resource Persons			200				200	4,000
	- Training Materials/Manuals					100		100	2,000
	- Equipment/Photographs	400						400	8,000
	- Certificates	50			25			75	1,500
	- Banners Boards	500						500	10,000
2	Composting of Organic waste at domestic level, Rs/HH							-	-
	- Purchase of Compost Bin	50	1,200					1,250	25,000
	- Manual/Posters					50		50	1,000
	- Supervisor/Secretarial Support			1,000				1,000	20,000
3	Production of Clean Waste and Marketing,							-	-
	- Supervisor/Secretarial Support			150				150	3,000
4	Essay and Painting Competition in Schools,	1,000			25	50		1,075	21,500
5	Establishment of Waste Management Demo Park, and	200		4,000			*	4,200	84,000
6	Development of Incentive Schemes	500		2,000			2,500	5,000	100,000
	Sub-Total/HH	2,700	1,200	7,350	50	200	2,500	14,000	280,000
	No. of Households	20	20	20	20	20	20	20	
	Total	54,000	24,000	147,000	1,000	4,000	50,000	280,000	

Note: * Municipality provides existing park to develop as Waste Demo Park and support for part of resource required.

Implementation and Roles

It is proposed that the clubs in Nepal shall carry out activities 1), 2) & 3) at their club level and activities 4), 5) & 6) shall be carried out jointly. A joint coordinating committee comprising of all partner clubs shall be nominated. The committee shall enter into agreement with the Municipality for their partnership and obtaining support for the programme including sharing of resource that would be saved due to the implementation of the program. The Rotary clubs will be responsible for mobilising the resources and facilitation whereas Zero Waste Nepal will be responsible for providing Technical assistance and Knowledge sharing and Municipalities will be responsible for resource sharing and policy support.

Waste Free Communities

A proposal for Cooperation of Rotary Clubs in Nepal (RCN), Zero Waste Nepal (ZWN) and Local Municipality

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1 Background and Introduction

The Solid Waste Management issue had been a notorious subject for the Government, Municipal authorities and local residents in Kathmandu Valley and all over the country. The citizens were the direct victims of the Solid Waste mismanagement because of ever-increasing environment hazards, deteriorating urban environment and related diseases. In 1990s, the lack of ability and innovativeness of Kathmandu and Lalitpur Municipalities lead to the collapse of the tourism industry. The loss of trees along Satdobato Ring Road is a living example of the hazards of solid waste mismanagement. The people of Gokarna suffered to the limits before they were compelled to be agitated. Bagmati, and Bishnumati River corridors from Gokarna to Chobhar are today turned to graveyard for garbage disposed from the civilized megha cities of Kathmandu Valley. These rivers will never come back to its original life. This is the unforgettable crime of our time made in the history.

The Current trend worldwide has indicated that there is no limit for waste generation and it continues to grow as the societies become modernised. Here is some statistics: SW generation ranges from 0.2 Kg per capita per day in Nepal to 2.5 kg in US. The dumping areas, as our leaders like to bank on, would never be available in the magnitude they for dumping the garbage from the urban areas. Why should a rural area accept garbage from urban or other areas? There is no rationale behind. More and more rural communities will resist the dumping of waste from the urban areas. There is no reliable and sustainable solution to the burgeoning solid waste problem unless we look from a different perspective and adopt innovative approach towards managing the waste.

The innovative approach is to utilise the synergy developed through mobilisation of the public private partnership where the community, business, industries, organisations are intensively involved in the waste management at source, formal and informal private sector are involved for providing waste management services and the municipality and the government are providing policy support, facilitates and provides motivation, incentives and monitor the environmental conditions.

The JICA funded Clean Kathmandu Valley Solid Waste Management Project has concentrated on transfer of urban waste outside valley without taking much care of the content of waste. The mixed waste as collected is transferred to Sisdol Landfill site, 25 Km away from Kathmandu, in a very environmentally unacceptable manner. The sustainability of the method is already questioned. What happens when JICA support will be ceased? The Environmental and economic damage done by CKV cannot be reversed and monitored by the communities.

2 Current Practice

Currently, the domestic waste is collected is mixed, collected in a bag and throw away in the streets, in open areas, in the municipal containers, or municipal collection vehicles. There are few private informal sector or NGO that collect and transfer the waste from households. The waste is generally transferred to Bagmati and Bishnumati River Banks and covered with sand layer excavated from the riverbed. Thus the Solid Waste management system ahs totally interfered into the natural river regime and had invited environmental problems. Part of the waste is transferred to Teku Transfer station, where certain part of waste is segregated by women and children and remaining part is transferred to Sisdol Land Fill site located 25 Km away from Kathmandu Valley. A lot of resources and particularly, the foreign currency are spent for mixing and transfer of the mixed waste.

The Waste generated per day is estimated at 300 Tons/day to 600 Tons/day. Only a part of the total waste generated is collected and transferred by the Municipality. The remaining waste is dumped in the nature by NGO/CBO and waste generators. It is estimated that Kathmandu and Lalitpur Municipalities spend over NRs. 800 million per annum for collection

and dumping of waste. The composition of waste in Kathmandu comprises of Organic Waste 60, Market Waste 20%, Hazardous Waste 5%, and Inert waste (Landfill) 15% (Figure 1).

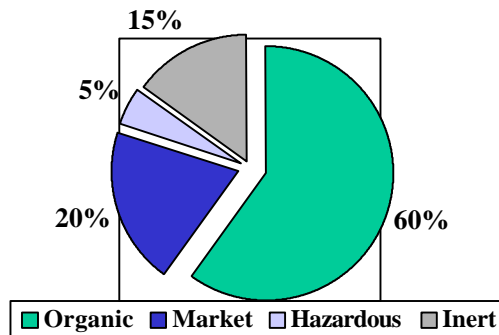


Figure 1- Waste Composition

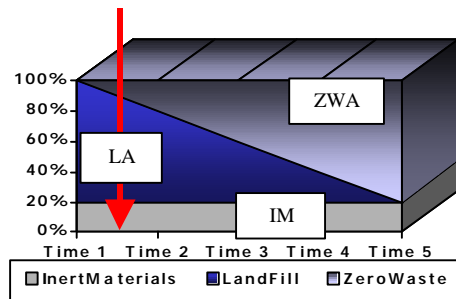


Figure 2- Relationship of Landfill site and Zero Waste approach

3 The Proposal

3.1 Project Description

The Waste management approach as practiced worldwide is listed herewith. They are:

- Dumping in nature,
- Collection and Transfer to Landfill site,
- Sanitary landfill with segregation,
- Waste Reduction at Source, and
- Waste Management at source.

The proposed project is based on the method of Community Based Waste Reduction at Source (WRS) that invites for public and private participation including active involvement of local communities, the prime source of domestic waste. The Figure 2 illustrates that with application of Zero Waste Approach (ZWA) the need for Landfill Approach (LA) will gradually reduce. The need for landfill site will be limited for disposing inert materials.

The Proposed Project will comprise of following Activities:

- Activity 1: Coordination, Management and Technical Assistance
- Activity 2: Awareness Campaign in Selected Pilot Areas and Training of Volunteers
- Activity 3: Composting at Domestic Level and Clean Waste Marketing at Sources
- Activity 4: Trial change for waste collection by Municipality and Introduction of Outsourcing
- Activity 5: Establishment of Waste Management Demonstration Parks
- Activity 6: Benchmark study of waste disposal in streets and nature
- Activity 7: Waste Management Education in Schools and Campus levels
- Activity 8: Assistance for Business Incubation of Waste Recycling Enterprises
- Activity 9: Develop Schemes for Motivation, Incentives, and Rewards
- Activity 10: National Conference on Waste Management.

3.2 Concept of Waste Management at Source

The Concept of Waste Management at Source is popularly known as Zero waste concept. As practiced today, the concept has **six strong legs**:

- ❖ Avoiding Bringing Home unnecessary Items
- ❖ Production of Clean Waste
- ❖ Sending back the Waste to its original source of generation
- ❖ Disposal Ban of the Waste in public place or nature
- ❖ Mass participation by the communities for management of the waste source
- ❖ Continued Rethinking on the methods of final disposal used.

For details refer Appendix-1.

3.3 Vision

The vision of the Partnership Programme would be:

- To enhance cleanliness of selected Pilot Areas,
- To encourage the citizens to adopt Zero Waste Concept as a way of life style,
- To encourage Local Municipality to adopt ZWC in Solid Waste Management,
- To extend support to Community Based Initiatives,
- To Encourage Motivation, Incentives and Recognition, and
- To eliminated Landfill sites by next 10 Years.

3.4 Objectives

The objectives of the project will be:

- To contribute towards application of ZW Concept for reduction of Solid Waste hazard in the selected Pilot Area by 70% by within a year,
- To encourage the local residents and NGO to be partners of the programme,
- To identify various ways of application of ZW concept,
- To establish relationship with the Municipality for policy matters and programme support, and
- To encourage Formal and Informal sector for Waste Recycling Enterprises.

3.5 Strategy

- To develop Partnership with various stakeholders in Solid Waste Management,
- To identify a Pilot Area for taking initiatives for application of ZWC,
- To identify NGO/CBO working in Solid Waste Management and develop a program for taking initiatives in application of ZWC,
- To encourage programmes for 4R (Rethink, Reduce, Reuse and Recycling) with community participation, and
- To encourage for outsourcing of Waste Recycling Enterprises.

4 Public Private Partnership

The partnership between Public and Private Sectors basically comprises Local Communities, Rotary Clubs in Nepal, Zero Waste Nepal, and Local Municipality. The partnership is proposed as an institutional model for operating the programme in a sustainable way:

- The Local Communities will be involved as the primary partners and waste generators. They will be responsible for actual implementation of the program.
- The Rotary Clubs will be particularly responsible for facilitating the activities designed to achieve the target, monitoring the progress and mobilising the resources,
- Zero Waste Nepal will be responsible for Developing Community Awareness Programs, providing Technological Assistance, Training to the local communities volunteers, Training of Trainers, Providing Technical Assistance for execution of the activities, and progress reporting, Outsourcing for utilisation of capabilities of local NGO and small informal sector enterprises.
- Local Municipality will be responsible for Policy matters, Resource mobilisation, developing Rules and Regulation and their implementation.

5 Proposed Activities

Of the several activities, it is proposed to initiate a Pilot Programme on SW Management in step-by-step manner in various Activities and Tasks:

Activity 1: Coordination, Management and Technical Assistance

Task-1: Establishment of Formal and informal Partnership

This part will comprise of following Sub-Tasks:

- Developing contacts with the partners of formal sector through Agreement between **Sponsoring Clubs**, Developing contacts with **Partner Organisations** as Local Municipality and Zero Waste Nepal,
- Developing contact with **Donor Organisations** and concluding initial understanding.
- Identifying **Local Communities** and interest groups as NGO and CBO,

Task-2: Coordination and Management

- Identifying Partnership model
- Defining Roles and Responsibilities
- Developing Rules and Regulations

Task-3: Developing Detailed Programmes

- Defining Objectives and Scope
- Defining Tasks and Schedules
- Develop Materials and Tools for Program Execution
- Develop Manuals of Procedures, Training Materials, Posters, Banners, Brochures, Hoarding Boards.

Activity-2: Awareness Campaigns in selected Pilot Areas and Training of Volunteers

- Develop Campaign materials
- Conduct Awareness Campaigns on ZWC at Households
- Conduct Interactions with Households
- Agree for Composting of degradable waste and Waste Managing at source
- Produce clean waste through separation of waste generated at domestic level

Activity-3: Composting at Domestic level and Clean Waste Marketing at Source

- Purchase Composting Bins and install
- Conduct Training for use of bins
- Develop Composting Manuals, Procedures, Posters, Banners and Hoarding Boards
- Extension Services for Marketing of compost produced
- Extension Services for Marketing of Clean Waste collected at Households

Activity-4: Trial change for waste collection by Municipality and Introduce Outsourcing

- Planning for trial change of waste collection from neighbourhood
- Public Announcement of changes in waste collection pattern
- Introduce of new schedule of waste collection by category
- Outsource waste collection by category or area
- Establish Clean Waste Market in appropriate location

Activity-5: Waste Management Demo Park

- Identify Areas for Park Development – One of the existing Parks in the City will be used as Waste Management Demo Park. The Park shall be preserved as cultural element of the city.
- The area would be used as demonstration of concept of Community Based Waste Management at Sources. A premise will be constructed using recycled materials with areas for Recycling of Usable Throw away items
- The place will be developed as Information Centre and Community interaction place. The place will be equipped with Audio-Visual and other necessary Equipment.
- Exhibition of Waste Sculptures, Best Painting, Cases of Best Practices,
- Provide Information about Best Zero Waste Communities, Award Winners, Zero Waste Volunteers, Zero Waste Experts.

Activity-6: Benchmark Study of waste disposal in public place and nature

- Survey and Photographic documentation of major areas of waste disposal within the municipality area
- Survey of River Banks, Public Places, Streets, Hill Slopes and Photographic documentation

These data and documentation will be useful for monitoring the progress and achievements during the execution of the project.

Activity-7: Waste Management Education

- Carry out awareness Campaigns in Schools and Campuses
- Carry out Essay, Painting and Sculpture making Competition
- Carry out Poster Competition
- Discuss with Authorities for introduction of Environmental Education in Schools and Campuses

Activity-8: Assistance for Business Incubation of Waste Recycling Enterprises

- Identification of feasible business in waste recycling
- Assistance for Business Enterprise development

- Assistance for Trial production
- Assistance for Quality Management

Activity-9: Schemes for Motivation, Incentives and Rewards

- Develop Schemes for motivating the communities, business and industries to practice Waste management at Source approach
- Develop Schemes for providing economic incentives for application of Waste Management at Sources
- Develop Schemes to recognising Rewards for innovative activities and best practices adopted by the communities, business, industries, formal and informal sectors

Activity-10: National Conference on Waste Management

- To share best practices applied
- To strengthen public and private partnership
- To share Experience and Knowledge
- To develop the Technological base of Recycling Industry

6 Beneficiaries and Benefits

6.1 Beneficiaries

The Beneficiaries of the Waste Free Communities Program will be:

- **The participating communities**
They will directly contribute for:
 - Enhancing Environmental Condition of the Area
 - Enhancing Aesthetics of the City and quality of Life
 - Reducing burden to Nature and Municipality
 - Reducing cost to Municipality for collection, handling, Transport and Disposal of waste
 - Reduce the need for landfill sites or enhance life of existing land fill sites
 - Resource generation production of Compost and clean waste products
 - Enhancing the value of waste products and reducing raw materials
 - Reducing Health Hazard of Waste Pickers
 - Enhancing Image of the Area
 - Contributing to Technological Development
 - Demonstration of Best Practice to other community for taking initiatives and following innovative approach
 - Being Pioneer in the Field
- **Formal And Informal Sector**
The Sector will be benefited from the production of clean waste products at the source of generation. The benefits are:
 - Reduced cost of collection, multiple handling of waste and transportation
 - Reduced cost for cleaning of waste collected
 - Enhanced quality of final products
 - Employment generation
- **Municipality and the Government**
 - Saving of Resources spent on Waste Collection, handling, transport, sorting, and final disposal
 - Saving on operation of landfill site
 - Saving on administrative burden
 - Saving on Streets cleaning and Infrastructure Maintenance
 - Enhance Urban Environment and aesthetics
 - Saving of Investment on capital expenditure for Transport Equipment, and Landfill site development
 - Rapport with Citizens and services to Citizens will be improved.
- **Promoters of the Program**
 - The rotary Clubs will be benefited with the Enhanced Image and Reputation, contributing to vocational development in the society, opportunity created for poverty alleviation through employment generation to formal and informal sector, contribution to reduced health hazard of waste workers,
 - Zero Waste Nepal will benefit from application of their objectives and concepts, their leadership will be established, Resources generated for research and development, and developing innovative approach in Waste Management.

6.2 Financial Benefits

The Financial Benefits from the Waste Free Communities are briefly assessed as follows:

- Tangible Benefits - It is estimated that the program if implemented will bring saving to the municipality and the community to a tune of figures indicated herewith:
 - Saving in collection, handling and transport of waste, **NRs. 2/Kg/Family**
 - Resource generated from clean waste production, **NRs 1.5/Kg/family**
 - Levy of fees for waste transfer to landfill site, **NRs. 150 Ton-Km.**
- Intangible Benefits
 - Saving from prevention of Environmental Hazard
 - Saving from prevention of Urban Infrastructure damage
 - Saving from enhanced aesthetics and health improvement
 - Employment generation in Recycling Enterprises.

7 Implementation

7.1 SMART Approach

The overall approach of the management of the proposed actions will be based on the SMART principles of Management comprising following focus points as Simplicity, Morality, Accountability, Responsiveness and Transparency. All administrative and managerial procedures will be open and transparent and Internet based for accessibility of information to all. The credibility will maintained at highest level through periodic audit by independent Chartered Accountants and publication of periodic reports.

7.2 Independent Club Approach

Each club may carry out the activities as Activity –2, 3, 6, 7 and 9 independently. For this, they may nominate a member and coordination and information may be obtained from RC Mount Everest and Zero Waste Nepal.

Other Activities as Activity-1, 4, 5, 6, 7, 8, 9, and 10 requires large and broader partnership with various organisations as Municipality. The Rotary Clubs of Nepal may carry out these activities.