



Environment

Water Community



Solution Exchange for the Water Community Consolidated Reply

***Query: Waste Management at Tourism Sites- Experiences;
Referrals***

**Compiled by Pankaj Kumar S., Resource Person and Ramya Gopalan, Research Associate
31 March 2007**

**From R. K. Anil, Endogenous Tourism, UNDP, New Delhi
Posted 21 February 2007**

Dear members,

UNDP is implementing the Endogenous Tourism Project (ETP) in 36 villages spread over 20 states across the country, in collaboration with Government of India. The objective of this project is to provide sustainable livelihoods to communities in rural areas through tourism based on art, craft, and natural endowment. The project is being implemented in the field through grassroots NGOs and Panchayats.

One of the major challenges faced by the project is waste management in these villages, which is not only a desirable feature for the success of tourism but also essential for enhancing the quality of life of inhabitants in terms of sanitation and public health.

We are planning to design a mix of location-specific social and technical solutions (low cost and appropriate) to address the issue of waste management comprehensively in a sample of our project villages, in close coordination with existing NGOs and Panchayat partners. I am aware that some organizations such as Thanal (Kerala) and Sulabh have successfully demonstrated models and projects in different areas related to waste management.

I would be grateful if members could provide me the following:

- Names of organizations (NGOs or otherwise) based anywhere in India which have developed models for waste management in tourism sites
- Details such as costs, method of implementation, learnings, etc. of models developed by them

This will help us explore seeking their help in achieving our objectives on waste management at various sites under the Endogenous Tourism Project.

Responses were received, with thanks, from

1. [Vikram Rajola](#), Sulabh International, New Delhi
2. [Shalini Kumar](#), People's Association for Research and Development (PARAD), Bihar
3. [S. Kalyani](#), Confederation of Indian Industry (CII), Hyderabad
4. [R. Sreedhar](#), Environics Trust, New Delhi
5. [Anand Rudra](#), USAID/India, New Delhi
6. [Bilal Ahmad Pandow](#), South Asian Voluntary Association of Environmentalists (SAVE), Srinagar
7. [Ramakrishna Nallathiga](#), Centre for Good Governance, Hyderabad
8. [M. S. Gupta](#), Sarvangeen Vikas Samiti, Gorakhpur
9. [Surendra Kumar Yadav](#), National Institute of Health and Family Welfare, New Delhi
10. [Ajit Seshadri](#), The Vigyan Vijay Foundation, New Delhi
11. [Sachin Tendulkar](#), Mineral Foundation of Goa, Panaji
12. [Anshuman Tripathi](#), National Mineral Development Corporation Ltd., Bellary
13. [Jyotsna Bapat](#), New Delhi
14. [Manish Thakre](#), Pragmatix Research and Advisory Services Pvt. Ltd., Gurgaon
15. [S. Livingston](#), ADRA India - Port Blair Field Office, Andaman and Nicobar Islands
16. [Prabhjot Sodhi](#), UNDP GEF Small Grants Program and Centre for Environment Education (CEE), New Delhi

Further contributions are welcome!

Summary of Responses

The query sought experiences of agencies, which, designed, and implemented waste management programmes in tourism sites in India, in the context of the UNDP SGP project on Endogenous Tourism (ETP). Members responded by providing broad strategies for applying such a programme on the basis of the experience of several successful case studies.

Respondents affirmed the **urgent need** to ensure adequate waste management at tourist places, and pointed out that both religious and other tourist places were facing an increasing pressure of the need to manage their wastes. They underscored the need to evolve a planned approach to waste management to effectively collect and treat municipal solid wastes, biodegradable, non-biodegradable wastes and hazardous wastes.

Elaborating the **crucial ingredients of the strategy** for waste management in ETP sites, members stressed the need to involve both the local residential population as well as the transitory tourist population. They presented a flow chart displaying the various steps for setting up a sustainable community-based waste management programme and outlined the following major steps in the design and deployment of a waste management strategy:

- **Awareness raising** for sensitization and full involvement of local populations living in and around these tourism sites was of paramount importance for an effective waste management programme (WMP), stressed members. The communication strategy would evolve from current consciousness levels and prevailing local conditions. Citing examples from various states, they suggested using multiple media such as campaigns, street plays, folk theatre, print, film and other means. Further, they emphasized that school children be also targeted in campaigns for waste management, basic hygiene and sanitation. There was a need to inculcate the habits of using waste bins, hand washing and cleanliness in school premises and in villages. For sensitizing tourists, they suggested that the promotional material for the ETP programme could highlight the need to maintain these villages as clean, eco-friendly and plastic free zones.

- **Capacity building** of local sanitation staff in maintaining cleanliness, being sensitive to reuse and recycling and in using protective gear would be another major plank of the strategy. Additionally, respondents highlighted the need to orient tourist populations, tour operators, guides, village guest house owners and shopkeepers towards waste management and sanitation.
- **Institution building** for long-term sustainability at village level needed to be done by crafting institutions (such as a Village Tourism Councils). Discussants expected village level bodies to prepare and enforce guidelines for ensuring hygienic behavior by tourists and village people. Moreover, members proposed that Community-tourist partnerships could ensure a favourable community-environment-tourist interface. This could be done by asking tourists to participate in conservation of village environment by planting trees, and by exposing them to cultural programmes on local environmental themes.
- **Waste management techniques** through a wide range of steps such as :
 - Listing types of waste generated leading to a waste management plan.
 - Appropriate technology to produce energy from waste - e.g. Biogas plant.
 - Employment generation through recycling of paper & other wastes
 - Using Water Purifiers in village to discourage plastic water bottles
 - Use of local material (terracotta, cane, etc.) as dustbins
 - Use steel, glass, biomass-based cups/ utensils to deter use of plastics
 - Tying up with local waste collector for regular collection and sale of waste
 - Using income from recycle of waste by village body for waste management
 - Adequate hygienic sanitation facilities and protective gear to sanitation staff
 - Adequate garbage bins around tourist attraction sites and in the village
 - Scientific dumping of waste in landfills at suitable distance from village

The group also presented a number of **successful examples of waste management** in other tourist destinations in India. [Sulabh](#) was providing sanitation facilities in various locations with an aesthetic appeal. Also, members quoted the cases of [Shirdi](#) in Maharashtra, where sanitation for thousands of devotees has been coupled to biogas generation. Similarly, a USAID project is working on developing community awareness around heritage sites in [Agra](#). Members also mentioned steps taken by the [Maharashtra Tourism Development Corporation](#) in the Ajanta-Ellora and the Elephanta caves where cleanliness and hygiene have been ensured successfully. In [Varanasi](#), a group of volunteers collected and disposed wastes, and provided income from the same to local communities. They also mentioned an initiative involving Panchayats for waste management in [Andaman and Nicobar Islands](#) and an example of getting village communities to take up waste management and vermicomposting in **Bihar**. Further, respondents presented strategies used by various projects under the UNDP GEF Small Grants Programme in [Puri](#), [Tirupati](#) and [Goa](#), where the involvement of local municipal bodies, district administration and civil societies has ensured waste management while also generating local employment.

Finally, members looked at the issue of waste management in **broader societal and environmental context** and discussed the need and options for recycling various kinds of wastes. They pointed out that municipal and other solid waste could be recycled to prepare nutrients suitable to meet the vast need of agriculture, thus developing a symbiotic relationship between cities and villages. Respondents also elaborated an example from **Patna**, where the poorest sections involved in waste management (such as rag pickers) are being effectively integrated into city waste management programmes. In addition, participants mentioned futuristic concepts such as bio-methanation and for bio-solid stabilization, and the harmful impact of using hazardous wastes in landfills. Respondents also cited the experience of a hotelling industry engaged in [corporate social responsibility](#) and discussed the urgent need to orient the **larger tourism industry** in cities towards waste management and suggested that stakeholders

such as staff of civic amenities, tour operators, guides, corporate hotels, etc. be urged to enforce sustainable and eco-friendly waste management.

Citing numerous examples from various parts of India, members presented elaborate approaches for designing and executing sustainable waste management programmes for ETP sites. They accentuated the importance of building capacities and awareness of local and tourist populations. In the final analysis, waste management in tourist sites can only be a subset of a larger societal response to take up waste management in an eco-friendly and socially just manner, they felt.

Comparative Experiences

Maharashtra

From [Vikram Rajola](#), *Sulabh International, New Delhi*

Community Toilet Complex in Shirdi, Nasik

The complex at Shirdi is provided with 120 WCs, 108 bathing cubicles, 28 special toilets, six dressing rooms and 5000 lockers for keeping the belongings of pilgrim travellers. The complex caters to the need of 30,000 to 50,000 people each day, and has coupled these facilities with a biogas generation system that enables production of electricity generation for use within the complex.

Community Contribution for Maintenance of Facilities

Sulabh Toilet facilities are maintained with people's participation without any burden on the public exchequer or the local authorities. A nominal amount is charged from the users. Children, disabled persons and those who cannot afford to pay are allowed to use the facility without charge. Use of urinals is free for all people. The earnings from the users are used for the operation, upkeep and maintenance of community toilets.

Aesthetic Appeal of Facilities Created

Complexes built by Sulabh have lighting arrangements to facilitate night use and continuous water supply. For washing hands, soap powder is provided free of cost. Evergreen trees and shrubs are planted to create shade and to make the complexes pleasing. These also act as a buffer zone between the complex and the surroundings. They are designed architecturally to make them aesthetically attractive and to effectively blend with the existing surroundings.

Waste Management and Habitat Protection (from [Jyotsna Bapat](#), *New Delhi*)

The Bombay Natural History Society and other NGOs took up initiatives in three different national parks to increase awareness of the local communities about the impact of their solid waste on wild life since way back in 1996. Awareness creation of impact of pesticide on birds and the impact of slums encroaching into wild life sanctuaries on leopards and elephants was part of the project.

From [Shalini Kumar](#), *People's Association for Research and Development (PARD), Bihar*

Implementing Total Sanitation Campaign through Shekhpura WATSAN Committees

Under this, PARP constructed toilets for Below Poverty Line families with 20% contribution from beneficiary. The hygiene and sanitation volunteers prepared under this programme are being given a comprehensive training on the concept of WASTE (Water, air, soil, treatment exercise) Management and include campaigns and capacity-building exercises of local people. Campaigns are being designed and local SHG are involved in creating awareness on vermicomposting.

Vermicomposting in Army Units

PARD helped two Army units in Hiranagar tehsil of Kathua district to build Vermicompost units which promote reuse, recycle and conserve. PCRA Posters and Pamphlets are being used for water conservation. CSE had been the main source of inspiration for water related activities.

Uttar Pradesh

Toilet Linked Biogas Digesters in Gagha Block, Gorakhpur District (from [M. S. Gupta](#), *Sarvangeen Vikas Samiti, Gorakhpur*)

In this project supported by UNDP, MoEF and community contributions, Sarvangeen Vikas Samiti, is implementing a project based on efficient utilization of organic wastes through promotion of biogas plants along with toilet linked biogas plants and construction of NADEP composts for production of organic fertilizers in the area. Similar models for biogas and composting of various capacities can be constructed at tourism sites to utilize organic wastes at tourism sites.

Cross Cutting Agra Program (CAP) (from [Anand Rudra](#), *USAID/India, New Delhi*)

CURE is the implementing partner to this USAID supported initiative in Agra. The program is working at low income sites across the Yamuna along a lesser known heritage trail. Waste management is one component of this cross sectoral program. CAP is working closely with the Nagar Nigam in implementing awareness education programs in 5 communities across the Yamuna. Read more.

Swatch Ganga Volunteers Campaign (from [Anshuman Tripathi](#), *National Mineral Development Corporation Ltd., Bellary*)

Sankat Mochan Foundation volunteers collect and dispose biodegradable material from riverbanks along the 7km stretch of river Ganga in Varanasi at suitable places, using four boats round the clock. Communities earn an income through recycling and by converting non-biodegradables into crafts. Dance/folklore etc. help in providing livelihoods to locals. The ethno-botanical uses of available plants in that locality also ensure sufficient royalty for stakeholders.

Andaman and Nicobar Islands

Waste Management as a Livelihoods Activity (from [S. Livingston](#), *ADRA India- Port Blair Field Office, Andaman and Nicobar Islands*)

ADRA India started a new project in the islands to take up cleaning of the environment as a livelihood activity by preparing Panchayats and the village community in the area to create a livelihood activity based on solid waste. The Andaman District Administration is interested in this and is contributing towards supporting Ad in this venture. Read more.

Multiple States

Corporate Social Responsibility in the Hotelling Industry (from [Jyotsna Bapat](#), *New Delhi*)

The Neemrana group of hotels train local communities for the service industry and take great pains to install solar water heaters and waste water treatment facilities for their hotels so that these become 'green'. The group is conscious of their corporate social responsibility towards local communities and the environment.

Related Resources

Recommended Organizations

Saahas, Bangalore (from [S. Kalyani](#), Confederation of Indian Industry (CII), Hyderabad)
Vijaya Enclave, SA 2-31, Vijaya Bank Layout, Bangalore 560076; Tel.: 6783525;
response@saahas.org; <http://www.saahas.org>

For details on its programs aimed at addressing issues related to municipal solid waste management particularly their experiences in the city of Bangalore

South Asian Voluntary Association of Environmentalists (SAVE), Srinagar (from [Bilal Ahmad Pandow](#))

C/o Bilal Ahmad Pandow, P.C. Depot, Parimpora, Opposite Transport Yard, Srinagar, Jammu and Kashmir 190017; Tel.: 91-9419017366; save_environ@yahoo.co.in/ bilal4u2@gmail.com
http://www.geocities.com/save_environ/projects.htm

The motivation behind forming SAVE is to work for protecting the ecology of Kashmir which is facing alarming threat and which the tourism economy is dependent on

Maharashtra Tourism Development Corporation, Mumbai (from [Ramakrishna Nallathiga](#), Centre for Good Governance, Hyderabad)

Express Towers, 9th Floor, Nariman Point, Mumbai 400021; Tel.: 91-22-2202 4482/4522/4584;
Fax: 1-22-2202-4521; webmaster@maharashtratourism.gov.in; Click [here](#) to view link

For details on successful waste management efforts at the World Heritage Site - Elephanta Caves in Mumbai, which kept the site intact in terms of a clean environment

People's Movement for Civic Action (PMCA), Panjim (from [Sachin Tendulkar](#), Mineral Foundation of Goa, Panaji)

General Secretary, People's Movement for Civic Action, E-74, Campal, Panjim;
wellplumb@satyam.net.in; <http://www.goacom.org/community/pmca/footpaths.html>

Promotes environmental and civic consciousness to citizens and government of their responsibilities as a measure to protect, restore and preserve the environment in Goa

ADRA India, Gurgaon (from [S. Livingston](#))

<http://www.adraindia.org/whatwedo.php>

DLF-I, Behind Summerfield School, Gurgaon 122002 Haryana; Tel.: 91-124-5056634; Fax: 91-124-5056635; adra@adraindia.org

Port Blair Field Office is interested to know networking opportunities to take up on cleaning the environment and promoting tourism/sustainable livelihoods to communities

Swayam Shikshan Prayog (SSP), Mumbai (from [Manish Thakre](#), Pragmatix Research and Advisory Services Pvt. Ltd., Gurgaon)

Room No. 20, 1st Floor, Shahaji Raje Municipal School, Shahaji Raje Road, Vile Parle (East), Mumbai 400 057; Tel.: 91-22-22907586/26826871; Fax: 91-22-26820905; sspindia@vsnl.net
<http://www.sspindia.org/>

Involved in community led water and environmental sanitation, access to community health services, savings and credit groups and promotion of Sustainable livelihoods

Recommended Documentation

Waste Management at Tourism Sites (from [Manish Thakre](#), Pragmatix Research and Advisory Services Pvt. Ltd., Gurgaon)

Manish Thakre

<http://www.solutionexchange-un.net.in/environment/cr/res21020704.doc> (Size: 49 KB)

Provides suggestions to manage wastes at tourism sites, identifies key stakeholders and elaborates on the significance of IEC, capacity building and participation of communities

Biosolid and Liquid Wastes Management Using Biosanitiser Based Stabilisation Process and Methanation (from [Shalini Kumar](#), People's Association for Research and Development (PARD), Bihar)

R. Santhanam

Click [here](#) to view PDF (Size: 230.9 KB)

Discusses the Biosanitiser process as a holistic approach to managing solid and liquid wastes

Linking Sanitation and Livelihoods: Agra Communities and Private Sector at the Cutting Edge of Poverty Reduction (from [Anand Rudra](#), USAID/India, New Delhi)

Dr. Renu Khosla; Second South Asian Conference on Sanitation; 20-21 September 20-21, 2006

Click [here](#) to view PDF (Size: 144.9 KB)

Details Agra's local sanitation agenda built in an inclusive arrangement between poor people, local governments and private sector, linked to the city's economy of tourism

From [Ajit Seshadri](#), The Vigyan Vijay Foundation, New Delhi

Identification of Environmental Elements on Water and Solid Waste with Appropriate Initiatives for Sustenance at Site Pinjore Garden

Project No. 72-2, The Vigyan Vijay Foundation; March 6, 2006

<http://www.solutionexchange-un.net.in/environment/cr/res21020701.doc> (Size: 72 KB)

Discusses the environmental assessment of Pinjore garden and provides details on the process and methodology of Water Management and restoration of heritage/ecology

Project Proposal for Environmental Elements Water and Waste Initiatives at Pinjore Gardens, Haryana Tourism for CRCI, New Delhi

Project No. 72-2, The Vigyan Vijay Foundation, 7 March 2006

<http://www.solutionexchange-un.net.in/environment/cr/res21020702.doc> (Size: 182 KB)

Provides key points that will emerge on making surveys to prepare for implementing the environmental protection plan of Pinjore Gardens regarding water and waste elements

List of Environmental Projects Implemented

The Vigyan Vijay Foundation, February 2007

<http://www.solutionexchange-un.net.in/environment/cr/res21020703.doc> (Size: 128 KB)

Provides a list of the environmental projects undertaken by The Vigyan Vijay Foundation which includes waste and water management at tourism sites

From [Prabhjot Sodhi](#), UNDP GEF Small Grants Program and Centre for Environment Education (CEE), New Delhi

Project Partners

UNDP-GEF-SGP India

<http://www.solutionexchange-un.net.in/environment/cr/res21020705.doc> (Size: 26 KB)

Provides addresses of project partners supported by SGP and which have been involved in addressing waste management in tourism sites

Nirmal Shreekshetra (NS) - A Community Building Approach

UNDP-GEF-SGP India

<http://www.solutionexchange-un.net.in/environment/cr/res21020706.doc> (Size: 35 KB)

Encourages community management and operations of the waste management program with other related stakeholders in the internationally acclaimed tourist spot, Puri

Vrindavan Initiative for Sustainable and Holistic Waste Administration Systems (VISHWAS)

UNDP-GEF-SGP India

<http://www.solutionexchange-un.net.in/environment/cr/res21020707.doc> (Size: 37 KB)

The objective is to maintain Vrindavan's economic vitality by providing visitors a clean town and conserve natural resources

Rapid Enhancement of Decentralized Municipal Waste Processing Capacity within Stakeholders in the State of Goa, through Community Actions

UNDP-GEF-SGP India

<http://www.solutionexchange-un.net.in/environment/cr/res21020708.doc> (Size: 37 KB)

Seeks to implement long term, institutional choices/solutions to the problem of solid waste management generated from commercial and residential sources in Goa

Model Ecosystems Management Involvement of Community Action (MESMICA)

UNDP-GEF-SGP India

<http://www.solutionexchange-un.net.in/environment/cr/res21020710.doc> (Size: 41 KB)

The rationale of the project is to make the Tirupati temple city and its environment clean, to make use of biodegradable wastes for organic manure facilitating land development

A Manual for Water and Waste Management: What the Tourism Industry Can Do to Improve Its Performance (from [Satish Vangal](#), UNDP, New York)*

Walter Jamieson, Amit Kelovkar, Pawinee Sunalai and Pallavi Mandke, UNEP Publication, 2003

http://www.uneptie.org/pc/tourism/library/waste_manual.htm

Provides guidelines/examples of solid waste/water management and how tourism operations can succeed and minimize harm to a community's ecological/physical systems

**Offline Contribution*

Tourism and the Environment- Case Studies on Goa, India, and the Maldives (from [Ramya Gopalan](#), Research Associate)

Kalidas Sawkar *et al.*; The Economic Development Institute, The World Bank; 1998

<http://siteresources.worldbank.org/WBI/Resources/wbi37134.pdf> (Size: 495 KB)

Review the impacts of tourism on the environment in depletion and deterioration of natural resources particularly groundwater, and disposal of solid waste and sewage

Responses in Full

[Vikram Rajola](#), Sulabh International, New Delhi

In India, where spiritual values and social mores lay utmost stress on the need to cleanse ones body before offering prayers to their deity, the need for provision of adequate sanitation facilities at religious places – giving pilgrims a proper place to cleanse themselves, is paramount.

As far as possible, public toilets should be preferred to individual toilets; the space requirement and management and maintenance of public toilets can be much better regulated vis-à-vis individual toilets.

Sulabh has provided Public Toilets at various religious and tourist destinations in India. The most prominent among these are the ones at Taj Mahal in Agra and the community toilet complex at Shirdi, Nasik (Maharashtra). The complex at Shirdi is provided with 120 WCs, 108 bathing cubicles, 28 special toilets, six dressing rooms and 5000 lockers for keeping the belongings of

pilgrim travellers. The complex caters to the need of 30,000 to 50,000 people each day, and has coupled these facilities with a biogas generation system that enables production of electricity generation for use within the complex.

The lessons learnt from the provision of community toilets are:

Community Contribution for Maintenance of Facilities: Sulabh Toilet facilities are maintained with people's participation without any burden on the public exchequer or the local authorities. A nominal amount is charged from the users. Children, disabled persons and those who cannot afford to pay are allowed to use the facility without charge. Use of urinals is free for all people. The earnings from the users are used for the operation, upkeep and maintenance of community toilets.

Aesthetic Appeal of Facilities Created: These complexes have lighting arrangements to facilitate their use at night and continuous water supply. For washing hands, soap powder is provided to all the users, free of cost. Evergreen trees and shrubs are planted to create shade and to make the complexes pleasing. These also act as a buffer zone between the complex and the surroundings. They are designed architecturally to make them aesthetically attractive and to effectively blend with the existing surroundings.

Shalini Kumar, People's Association for Research and Development (PARAD), Bihar

Your concern for managing wastes in the rural areas is real and needs innovative methods and a team of committed professionals to build replicable models.

In the rural areas, the main wastes are human excreta and animal excreta. Total sanitation Campaign, wherever it has been successful, has shown some improvements. We are implementing TSC through Shekhpura WATSAN committee, under which we are constructing toilets for Below Poverty Line families with 20% contribution from beneficiary. This will bring in more concern from the user group. The hygiene and sanitation volunteers prepared under this programme are being given a comprehensive training on the concept of WASTE Management. WASTE stands for Water, air, soil, treatment exercise – and also includes campaigns and capacity-building exercises of local people. This will build synergies with programmes such as National Rural Employment Guarantee Act and village health committees of the National Rural Health Mission. The programme will also include Vermi composting for soil treatment, Yoga classes for motivating youth to plant trees, Jal yatra to sensitize citizens for water conservation and revive old traditions of Pyne, ahar and Gomama for water recharging. A beginning has been made in the four Panchayats of Shekhpura by soft deliveries campaigns and faith building through physical delivery of toilets. Campaigns are being designed and local SHG are being roped in to create awareness on vermicomposting.

Our organization PARAD has helped two Army units in Hiranagar tehsil of Kathua district to build Vermicompost units. We promote reuse, recycle and conserve. PCRA Posters and Pamphlets are being used by us for water conservation. CSE had been the main source of inspiration for water related activities.

We have to make agriculture environmentally sound and in harmony with nature's own cycles. I am providing below the link to an article of Mr. R. Santhanam on waste management. http://www.wesnetindia.org/fileadmin/newsletter_pdf/Aug06/Waste_Management.pdf (Size: 1 GB)

Wish you best of luck in your endeavors for clean rural India.

S. Kalyani, Confederation of Indian Industry (CII), Hyderabad

I was working with an NGO called Saahas (Bangalore), which works on issues related to municipal solid waste management. For more information you can visit their website -- <http://www.saahas.org> or email -- response@saahas.org

R. Sreedhar, Environics Trust, New Delhi

We were a part of the multi-country research programme on Mountain Tourism for Local Community Development under the aegis of ICIMOD. As part of the process, manuals were prepared on waste and energy management in tourist destinations. Please contact Dr Kamal Banskota at ICIMOD who was deeply involved with the process.

Anand Rudra, USAID/India, New Delhi

You may wish to get in touch with the CAP - Cross Cutting Agra Program. CURE is the implementing partner to this USAID supported initiative in Agra. The program is working at low income sites across the Yamuna along a lesser known heritage trail. Waste management is one component of this cross sectoral program. CAP is working closely with the Nagar Nigam in implementing awareness education programs in 5 communities across the Yamuna.

CURE contact details – Dr. Renu Khosla C2, Green Park, New Delhi; renukhosla@cureindia.org

Bilal Ahmad Pandow, South Asian Voluntary Association of Environmentalists (SAVE), Srinagar

Thanks for the mail. You may look at the following website:

http://www.geocities.com/save_environ

Ramakrishna Nallathiga, Centre for Good Governance, Hyderabad

One such successful effort was made by Maharashtra Tourism Development Corporation at the World Heritage Site - Elephanta Caves in Mumbai, where successful waste management efforts keep the site and its premises intact in terms of the features and in cleanliness of the environs.

M. S. Gupta, Sarvangeen Vikas Samiti, Gorakhpur

I would like to share that our organization, the **Sarvangeen Vikas Samiti**, is implementing a project based on efficient utilization of organic wastes in block Gagha, District – Gorakhpur in Uttar Pradesh through promotion of biogas plants along with toilet linked biogas plants and construction of NADEP composts for production of organic fertilizers in the area. I suggest that models for biogas and composting of various capacities can be constructed at tourism sites to utilize organic wastes at tourism sites.

The above project is being supported through UNDP, MOEF and contributions of the community.

Surendra Kumar Yadav, National Institute of Health & Family Welfare, New Delhi

Being an Environmentalist, I can suggest the following few points:

1. Effective Communication at all the sites, which may be through:

- a) Involvement of local rural people - maybe through one or two meetings at all sites.
- b) Installing boards/ banners at all sites with the clear & simple messages to keep surroundings & environment clean.
- c) Educating local people about sanitation and health at all the sites.

2. Construction of Toilets

- a) Employing at least one person for cleaning at each site
- b) Employing two rag/waste pickers at all sites (as employed at Juhu beach in Mumbai).
- c) Frequent visits/ vigil by a supervisor at all sites.

These are I think very important points if one has to design execution of the project from the point of view of clean environment in tourist areas. The above may be made more effective by employing more manpower depending upon the funding. The whole project may be headed by a Project in-charge/ Project Leader for over all management and supervision.

Ajit Seshadri, The Vigyan Vijay Foundation, New Delhi

Our NGO has had some experience in diversified sites and has also conducted an assessment at a heritage site-Pinjore Garden off Chandigarh for a Conservation Architects firm. Given below is a list of environmental projects on Solid Waste Management in Tourism related sites, for the information of members:

<http://www.solutionexchange-un.net.in/environment/cr/res21020701.doc> (Size: 72 KB); <http://www.solutionexchange-un.net.in/environment/cr/res21020702.doc> (Size: 182 KB); <http://www.solutionexchange-un.net.in/environment/cr/res21020703.doc> (Size: 128 KB)

Sachin Tendulkar, Mineral Foundation of Goa, Panaji

Goa, as you know, is a very sought-after tourist destination. The beaches in Bardez specially attracts hordes of tourist visiting all round the year. A number of organizations have tried different methods to contain the problem of solid waste management here. Prominent among them are the Goa Foundation, Mapusa, People's Movement for Civic Action, Panaji and The Energy Resource Institute, Panaji. These can give you more insight into their activities.

Anshuman Tripathi, National Mineral Development Corporation Ltd., Bellary

Swatch Ganga Campaign of Sankat Mochan Foundation at Varanasi can act as model for your waste management project. Varanasi is a holy city and receives millions of pilgrims every year and many religious activities are practiced along the seven km stretch of river Ganga in this city. Volunteers from the above foundation collect all bio-degradable material from river banks and dispose the same at suitable places. They are using four boats round the clock for this purpose. Similarly, at your projects sites waste can be collected and recyclable material can be picked up for recycling. Communities residing in your project site can earn an income through such

recycling. If the non biodegradable material can be converted into suitable crafts, then this can be a model for other places. You may try to convince local people that their practices, art and crafts are of utmost importance and make these saleable. You may also arrange suitable markets to ensure livelihoods of them. Dance, folklore, etc. can also be helpful in providing livelihoods to locals. The ethno-botanical uses of available plants in that locality can ensure sufficient royalty for stakeholders.

Jyotsna Bapat, Independent Consultant, New Delhi

I am aware of some corporate initiatives in waste management related to tourist sites. Thus the ITC Welcome group has set up in CII an advisory cell for those interested in carrying forward such sustainable 'green' initiatives in hotels and hospitality industry that support tourism in India. You may check their website for this.

I am also aware of Neemrana group of hotels who are very conscious of their corporate social responsibility towards local communities and the environment. They have trained local communities for the service industry and take great pains to install solar water heaters and waste water treatment facilities for their hotels so that these become 'green'.

The Bombay Natural History Society and other NGOs has taken up initiatives in three different national parks to increase awareness of the local communities about the impact of their solid waste on wild life since way back in 1996. Awareness creation of impact of pesticide on birds and the impact of slums encroaching into wild life sanctuaries on leopards and elephants was part of the project.

Also, look at the USAID project in Agra where less important monuments are being developed as tourism sites in collaboration with the administration. The main problem here is slums and so community based projects on 'cleaning up slums' with the involvement of local communities are being implemented.

Hope these fit in the kind of experiences you are looking for.

Manish Thakre, Pragmatix Research and Advisory Services Pvt. Ltd., Gurgaon

Please find below some suggestions for Waste Management at Tourism Sites. To view the complete document, click on link below:

<http://www.solutionexchange-un.net.in/environment/cr/res21020704.doc> (Size: 49 KB)

Hope it will make some sense.

Endogenous Tourism Project

Waste Management at Tourism Sites

The word Endogenous means produced or growing from within. The waste originating within the village will be monitored or checked by the inhabitants of the village and also by the people who are coming to this village as a project staff or as a tourist. This involves the participation of local community, ETP staff, and the tourists.

As there are three main stakeholders in this project:

- a) **Community** who will remain in the village and has the responsibility for its sustainable development.
- b) **ETP Staff** who will remain in the village for some period of time and handover the project to the community.
- c) **Tourists** who is mobile and keep changing.

Therefore there will be a major emphasis on the capacity building of local community on waste management and basic hygiene & sanitation practices.

INFORMATION, EDUCATION & COMMUNICATION (IEC)

Information, Education & Communication (IEC) campaign for waste management has to be planned and organized across the 36 villages based on their existing local practices of waste management and level of hygiene & sanitation, education level, socio-economic characteristics and topography of these villages. For example SSP's IEC campaign on sanitation and hygiene in Bornadiwadi & Jalkotwadi villages in Oasmadabad district, Maharashtra. These villages are now 100% open defecation free and are also model clean villages in the district.

CAPACITY BUILDING

Training for cleanliness staff: Training program will be organized for the cleanliness staff to make them aware of the modern waste management techniques. The staff should be made aware of segregation of waste (biodegradable & non-biodegradable waste, and recyclable waste). The staff should be oriented towards the use of gloves, mask, use of soap for hand washing and bathing after the completion of their days work. They should be made aware about the health and hygiene issues related to their job.

Training for Tourism Stakeholders: During the training, local stakeholders of tourism – tour operators, guides, village guest house owners and shopkeepers will also be oriented towards importance & need of eco-tourism; waste management; cleanliness and sanitation.

INSTITUTION BUILDING

Village Tourism council (VTC): Village Tourism council (VTC) will be form to monitor the progress of tourism, waste management, sanitation and cleanliness in the village. This council along with ETP staff will prepare the guidelines for cleanliness and waste management in the village and also for tourists visiting the village. VTC will also be responsible for identifying and reviving of the traditional/old waste management practices, if any, in the village.

COMMUNITY-TOURIST PARTNERSHIP (CTP)

Community-Tourist Partnership (CTP) Model: A Community-Tourist partnership model has to be prepared where community along with tourists will organize the Eco-Tourism drives in the village. This model will exhibit a good interface between community, environment and tourists (Fig.2). For example the tourists will participate in village environment conservation drive by planting a tree.

Activities:

- Planting trees

- Inviting suggestion from the tourists on Eco-tourism
- Display of music and dance to tourists with theme on environment
- Planning *Eco-museum*
- Minimizing the use of plastic

WASTE MANAGEMENT

Waste –Water- Energy: Appropriate technology to produce energy from waste – water has to be initiated e.g. Biogas plant.

Recycling of waste paper & employment generation: Recycling of waste paper has to be encouraged by imparting training to locals on the techniques of recycling of waste paper and alternate paper products like paper bags, greeting cards etc.

Use of Water Purifiers: In order to avoid usage of plastic water bottle by the tourists in these villages, the village guesthouses will be encourage installing reverse osmosis water purifiers/ aqua guard. This will to some extent reduce the use of plastic in these villages.

Use of local material: Mud or cane basket will be encouraged to use as dustbins. For example the mud pot (called *Gamala in hindi*) can be nicely decorated with natural colours & local art, to be used as dustbins.

Steel/ Glass Utensils: As far as possible not use the plastic utensils in the ETP village guesthouses, this will help deter the use of plastic.

Tying up with local waste collector: Other than waste paper all waste will be collected and sold to the identified waste collector. The Village Tourism Council (VTC) is responsible for managing - collection and selling of waste. The income from this waste will go into the VTC account and will be utilized for waste management in the village.

Urinals & Toilet facilities: Tourist attraction sites in these villages should have provision of urinals and toilets. The cleanliness staff should be provided with gloves, mask, phenyl & other necessary materials for the cleaning of these facilities. There will be a provision of washroom for cleanliness staff.

Garbage bins: Provision of garbage bins around the tourist attraction sites as well as in the village. The cleanliness staff has to be provided with gloves, mask, broom and other necessary material for the collection, segregation and disposal of waste. The Village Tourism Council (VTC) will monitor the collection, disposal and segregation of waste.

Landfill site: The landfill site has to be constructed for scientific dumping of waste.

Endogenous Tourism Promotion: The promotional campaign, brochure, pamphlet, website etc. for these ETP villages must convey the message like eco-friendly tourism; neat & clean villages; plastic free zone etc. to make the tourists aware of the eco-sensitivity of these villages.

Involvement of School Children: The school children should be involved in campaigns for waste management, basic hygiene and sanitation. They should be encouraged to practice the use of bins, hand washing, and cleanliness in the school premises and in the village. For example Jalkotwadi village in Osmanabad district, the school children commences the cleanliness

campaign through *Prabhat Pheri* & by enacting plays based on sanitation & hygiene issues in Gram Sabha meetings. The involvement of school children in cleanliness drive has helped in improving sanitation and hygiene condition in the village.

Enlisting Waste: It is also important to enlist the type of waste generated in these villages and accordingly, the waste management plan has to be designed.

Swayam Shikshan Prayog (SSP) <http://www.sspindia.org/>

SSP's portfolio of programs and services are organized along the following sectors:

- **Community led water and environmental sanitation**
 - Access to community health services
 - Savings and Credit groups and federation
 - Promotion of Sustainable livelihoods
-

[S. Livingston](#), ADRA India – Port Blair Field Office, Andaman and Nicobar Islands

Greetings to you from ADRA India, Port Blair, Andamans.

ADRA India has started a new project in the island to take up cleaning up the environment as a livelihood activity. Managing solid waste is a challenge, and we are preparing the Panchayats and the village community in this area to create a livelihood activity based on solid waste. The Andaman District Administration is very much interested in this and is willing to go an extra mile in supporting us in this venture.

We are keenly interested to know about possible networking to take up both cleaning up of the environment as well as promoting tourism and to provide sustainable livelihoods to the community.

[Prabhjot Sodhi](#), UNDP GEF Small Grants Program and Centre for Environment Education (CEE), New Delhi

This is an interesting query.

I wish to share with members that the Small Grants Programme (SGP), funded by the United Nation Development Program, Global Environment Facility (GEF) seeks to support initiatives which demonstrate community-based, innovative, gender sensitive, participatory approaches and lessons learned from other development projects leading to reduced threats to local and global environment. The emphasis is on establishing low cost, low external input & easy to manage technologies and social mechanisms for enhancing better livelihoods. For further details, see <http://www.sgpindia.org/>

The details (addresses & summaries) of projects supported by SGP and which have been involved in addressing waste management in tourism sites are as follows:

- <http://www.solutionexchange-un.net.in/environment/cr/res21020705.doc> (Size: 26 KB)
- <http://www.solutionexchange-un.net.in/environment/cr/res21020706.doc> (Size: 35 KB)
- <http://www.solutionexchange-un.net.in/environment/cr/res21020707.doc> (Size: 37 KB)
- <http://www.solutionexchange-un.net.in/environment/cr/res21020708.doc> (Size: 37 KB)
- <http://www.solutionexchange-un.net.in/environment/cr/res21020709.doc> (Size: 39 KB)
- <http://www.solutionexchange-un.net.in/environment/cr/res21020710.doc> (Size: 41 KB)

A Flow chart on Solid Waste Management is given in following link:
<http://www.solutionexchange-un.net.in/environment/cr/res21020711.doc> (Size: 443 KB)

Many thanks to all who contributed to this query!

If you have further information to share on this topic, please send it to Solution Exchange for Water Community at se-wes@solutionexchange-un.net.in with the subject heading "Re: [se-watr] Query: Waste Management at Tourism Sites- Experiences; Referrals. Additional Reply."

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