THE STUDY
ON
WATER QUALITY MANAGEMENT PLAN
FOR
GANGA RIVER
IN
THE REPUBLIC OF INDIA

FINAL REPORT

VOLUME III   MASTER PLAN FOR PROJECT CITIES

VOLUME III-6   SOCIAL CONSIDERATION AND HYGIENE EDUCATION PLAN

JULY 2005

TOKYO ENGINEERING CONSULTANTS CO., LTD.

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FINAL REPORT
ON
WATER QUALITY MANAGEMENT PLAN FOR GANGA RIVER
JULY 2005

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SOCIAL CONSIDERATION AND HYGIENE EDUCATION PLAN

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ABBREVIATIONS

CBO   Community-based organization
CGWA   Central Ground Water Authority
CGWB   Central Ground Water Board
CMC   Citizens Monitoring Committee
CP   Community Participation
CPCB   Central Pollution Control Board
DPR   Detailed Project Report
FASID   Foundation for Advanced Studies on International Development
FGD   Focused Group Discussion
GAP   Ganga Action Plan
GLOBE   Global Learning and Observations to Benefit the Environment
HIG   High Income Group
HRD   Human Resource Development
IDC   Information Dissemination Centre
IEC   Information, Education & Communication
JBIC   Japan Bank for International Cooperation
LCS   Low Cost Sanitation
LIG   Low income groups
LNN   Lucknow Nagar Nigam
MHRD   Ministry of Human Resource Development
MIG   Middle Income Group
MOEF   Ministry of Environment and Forests
MOHFW   Ministry of Health and Family Welfare
NEAC   National Environment Awareness Campaign
NGO   Non-government organisation
NLCP   National Lake Conservation Plan
NPPC   National Public Participation and Coordination Cell
NRCD   National River Conservation Directorate
NRCP   National River Conservation Plan
O&M   Operation and Maintenance
PCM   Project Cycle Management
PIA   Project Implementation Agency
PMC   Project Management Consultant
PP   Public Participation
PP/PA   Public Participation and Public Awareness
PRA   Participatory Rural Appraisal
RRA   Rapid Rural Appraisal
STP   Sewage Treatment Plant
ULB   Urban Local Body
UNEP   United Nations Environment Programme
UT   Union Territories
VNN   Varanasi Nagar Nigam
VO   Volunteer Organisation
WTP   Willingness to Pay
YAP   Yamuna Action Plan

CHAPTER 1

PRESENT SITUATION ON SOCIAL CONSIDERATION
AND
PUBLIC PARTICIPATION ACTIVITIES

CHAPTER 1   PRESENT SITUATION ON SOCIAL CONSIDERATION AND PUBLIC PARTICIPATION ACTIVITIES

1.1   PREFACE

Generally, activities on heightening public awareness, public participation & enlightenment, and education in the field of hygiene, sanitation, environment and health are covered by several official entities at central, state and municipality levels as well as NGOs.

Based on a discussion between the JICA Study Team and a counterpart of National River Conservation Directorate (NRCD), several such entities at the central level in India have been identified as shown in Table 1.1.

Table 1.1   Ministries & Official Entities Concerned at the Central Level

Ministries and Official Entities	S/C	Main Issues
1. Ministry of Environment and Forest		
1.1 National River Conservation Directorate (NRCD)	√	Environmental education, Public Participation and IEC
1.1 Central Pollution Control Board (CPCB)	√	
2. Ministry of Health & Family Welfare		Health Education, Public Participation and IEC
3. Ministry of Human Resource Development (MHRD)		Public Education
4. Ministry of Information and Broadcasting		Awareness programmes on development issues
5. Ministry of Urban Development and Poverty Alleviation	√	Urban Development / Poverty alleviation / Primary education / Drinking water / Road / Infrastructure development
6. Ministry of Rural Development		Rural Development / Poverty alleviation / Primary education / Drinking water / Road / Infrastructure development
7. The National Waste Management Council		Waste
8. Ministry of Water Resources		
8.1 Central Ground Water Board (CGWB)		Drinking Water and public participation issues
8.2 Central Water Commission (CWC)	√	

Note: S/C; Steering Committee for the JICA Study,   √: Members of the Committee,   IEC: Information, Education and Communication

In addition, the state and the Municipality level, there are several official entities handling said field as summarized in Table 1. 2.

Table 1.2   Official Entities Concerned at State and Municipality Levels in UP

Entities	S/C	Levels	Related Section	Main Issues
1. UP Jal Nigam	√	State	Human Resource Development Cell	Water supply and Public Participation
2. Nagar Nigam	√	Municipality	Health related department	Environmental Sanitation and Health

Note: S/C, stands for the Steering Committee for the JICA Study, √: Members of the Committee

As for NGOs, several outstanding NGOs in the field of hygiene, sanitation, environment and health are identified as summarized in Table 1.3.

Table 1.3   Major NGOs in the Field of Development and Public Awareness

NGOs/ Voluntary Agencies	Main Field
Voluntary Health Association of India (VHAI)	Health
Population Foundation of India (PFI)	Family Planning, Reproductive health, capacity building of Panchayati Raj Institutions, etc.
Rajiv *Gandhi* Foundation	Health, Water shed development, Education
Care India	Health, nutrition, watershed development, Rehabilitation &Resettlement, Housing
TERRI	Environment, Health & sanitation
Sulabh International	Sanitation
CRY (Child Relief &You)	Child education, health
Eco Friends	Environment and Sanitation in Kanpur

The following shows the detailed information and activities of some of the entities mentioned above

and others, which have been identified by the JICA Study Team.

1.2   CENTRAL LEVEL

1.2.1   Indian Constitution (74th Amendment) Act 1992

The Constitution of India was amended (the 74th Amendment Act) in 1992 to incorporate a separate Chapter on 'Urban Local Bodies (ULBs)'. The amendment empowered ULBs' functions and finances and so on. The key points of the amendment are summarized in Table 1.4:

Table 1.4   Key Points of 74th Amendment of Indian Constitution in 1992

- Urban Local Bodies, to be known as Municipal Corporations, Municipal Councils and Nagar Panchayats depending on the population shall be constituted through universal adult franchise in each notified urban area of the country.
- These shall be constituted for a period of five years and if dissolved earlier, and election to reconstitute it shall be completed before the expiration of a period of six months from the date of its dissolution.
- One-third of total number of seats in each urban local body shall be reserved for women.
- The Legislature of a State may by law entrust on these bodies such power and authority as may be necessary to enable them to function as institution of local self government, including those listed in the Twelfth Schedule.
- The Twelfth Schedule of the Constitution has listed the following functions of the urban local bodies:

1. Urban Planning including town planning.	10. Slum improvement and up gradation.
2. Regulation of land-use and construction of buildings.	11. Urban poverty alleviation.
3. Planning for economic and social development.	12. Provision of urban amenities and facilities such as parks, gardens, playgrounds.
4. Roads and bridges.	13. Promotion of cultural, educational and aesthetic aspects.
5. Water supply for domestic, industrial and commercial purposes.	14. Burials and burial grounds; cremations, cremation ground and electric crematoriums.
6. Public health, sanitation, conservancy and solid waste management.	15. Cattle pounds: prevention of cruelty to animals.
7. Fire services.	16. Vital statistics including registration of births and deaths.
8. Urban forestry, protection of the environment and promotion of ecological aspects.	17. Public amenities including street lighting, parking lots, bus stops and public conveniences.
9. Safeguarding the interests of weaker sections of society, including the handicapped and mentally retarded.	18. Regulation of slaughterhouses and tanneries

- In order that the urban local bodies can perform the functions assigned to them, the Legislature of a State shall assign them specific taxes, duties, tolls and levies and authorize them to impose, collect and appropriate the same.
- Each State shall also constitute a Finance Commission, which shall review the financial position of the urban local bodies and recommend the principles, which should govern the devolution of resources, including grant-in-aid from the Consolidated Fund of the State to these bodies.
- The superintendence, direction and control of the preparation of electoral rolls for, and the conduct of, all elections to the urban local bodies shall vest in the State Election Commission.
- In each district a District Planning Committee shall be constituted to consolidate the plan prepared by the urban and rural local bodies.
- Similarly for each metropolitan area, a Metropolitan Planning Committee shall be constituted to prepare a development plan for the metropolitan area as a whole.
- All the States (except *Jammu & Kashmir*) have either enacted new Municipal Law or amended the existing laws to conform these to the Constitution (74th Amendment) Act, 1992.
- All the State (except *Bihar* and Pondichery) have constituted the State Finance Commissions and most of the Commissions have submitted their reports to the State Governments, recommending significant devolution of resources to the urban local bodies.

Source: A Quest for Dream Cities, 2002, J.S. Mishra, Har-Anand Publication PVT Ltd.

Therefore, positive involvements of ULBs such as Municipal Corporations empowered by the 74th

amendment in the public participation activities and related programmes are expected.

1.2.2   Planning Commission of India

Planning Commission of India has prepared a 'Guidelines of Departments/Ministries'. The guidelines clarifies a basic idea of the Commission regarding the utilisation of Volunteer Organisations (VOs) and NGOs, which could effectively contribute in mobilizing community participation for various priority programmes and schemes to be implemented by Ministries and Departments of India.

Furthermore, it mentions the budget implications and financial assistance for the VOs/NGOs as well as the necessity of Government - VOs partnerships and so on.

1.2.3   Ministry of Environment & Forests (MOEF)

The Ministry of Environment & Forests (MOEF) is the nodal agency in the administrative structure of the Central Government of India, for the planning, promotion, co-ordination and overseeing the implementation of environmental and forestry programmes. In addition, MOEF is also the nodal agency in the country for the United Nations Environment Programme (UNEP).

(1)   Principal Activities and Main Tools

Table 1.5 shows the principal activities and main tools utilised for functions of MOEF. According to the table, "Creation of environmental awareness among all sectors of the country's population" is identified as one of the main tools for the activities of MOEF.

Table 1.5   Principal Activities and Main Tools

Principal Activities	Main Tools utilized for the Activities
- Conservation & survey of flora, fauna, forests and wildlife - Prevention & control of pollution afforestation & regeneration of degraded areas - Protection of environment	- Surveys - Impact assessment - Control of pollution - Regeneration programmes - Support to organizations - Research to solve solutions - Training to augment the requisite manpower - Collection and dissemination of environmental information - Creation of environmental awareness among all sectors of the country's population

Source: -   MOEF, -Annual Report, 2002-2003,
*   -   Ministry of Environment &Forests*

(2)   Environmental Education Division

MOEF at national level has taken up the public awareness and environmental education and a number of public awareness programmes have been taken up. Those education and programmes are implemented and coordinated by the Environmental Education Division of MOEF. Figure 1.1 shows the organisation chart of the division at MOEF.
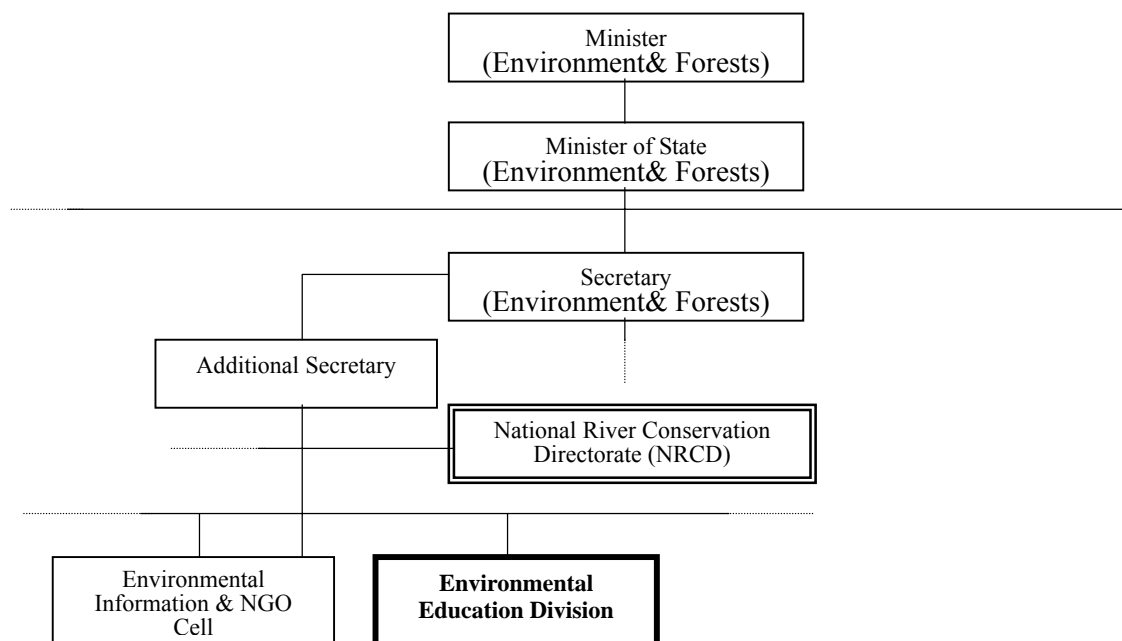
Source: Annual Report, 2002-2003, Ministry of Environment &Forests

Figure 1.1   Environmental Education Division at MOEF

(3)   Environmental Education and Training scheme

The major scheme implemented for imparting environmental education and for creation of environmental awareness among the general public is "Environmental Education and Training" of which objectives are as follows;

- To develop educational/teaching materials and aids in the formal education sector;
- To encourage non-governmental organisations, mass media and other concerned organizations for promoting awareness among the people at all levels;
- To promote environmental education through existing educational/scientific/research institutions;
- To ensure training and manpower development in environment education; and
- To mobilise people's awareness for the preservation and conservation of environment.

The Environmental Education and Training consists of activities shown in Table 1.6.

Table 1.6   Activities on Environmental Education and Training

Environmental Education and Training	Activities and Others
i. Formal environmental education	- Seminars/Symposia/Workshops/Conferences
ii. Non-formal environmental education	- Grant-in-aid to professional Societies and Institutions
iii. National Green Corps	- Publication of resource material related to environment
	- Centre of Excellence

Source: MOEF

The programmes conducted / initiatives launched as part of this scheme are categorized as follows.

- Programmes under Formal Environmental Education are:
    Environment Education in School System
    Environmental Appreciation Courses
    Environmental concepts in Management and Business Studies

- Programmes under Non-Formal Environmental Education are:
    National Environment Awareness Campaign (NEAC)
    Eco-clubs (National Green Crop)(NGC)
    GLOBE
    Mass Awareness

1) Formal Environmental Education

Though formal education is the mandate of the Ministry of Human Resource Development (MHRD), MOEF has been interacting with the MHRD, National Council of Educational Research and Training (NCERT), State Departments of Education etc. to ensure that environmental components are adequately covered at the school levels by infusion into the school curricula at various levels. The major initiatives taken by MOEF in this direction recently are mentioned below:

a) A Pilot Project on Environment Education in School System:

This project was launched during 1999 with the World Bank support with the objectives of strengthening environmental education in the formal school system. Under this project, an exercise to strengthen environmental education in the formal school curriculum has been undertaken as follows;
- During the first phase of this project, a comprehensive study was conducted to assess the status of infusion of environmental content in the school curriculum in the country and to assess the effectiveness of classroom teaching.
- The study was conducted in all the States/UTs (Union Territories) of the country and textbooks of all the classes from standards I to XII were analysed.
- Based on the findings of the study, the textbooks in Science, Social Science and Languages of middle school level in eight States (100 schools in each State) are being modified to strengthen the infusion of environmental concepts.
- The modified textbooks would be used for one academic session (2002-2003) in the selected schools of the selected States on pilot basis.
- The concerned teachers of the selected schools would also be trained to effectively teach the modified textbooks.
- The States participating in this project are Andhra Pradesh, Assam, Goa, Jammu & Kashmir, Maharashtra, Orissa, Punjab and Uttaranchal.
- Depending upon the success of the pilot implementation, the revised curriculum may be taken up in the remaining schools.
- The findings of the Phase I study are also being shared with the States/UTs, which are not participating in this project so that they can also environmental conceptualise their textbooks.

b) Environmental Appreciation Course

- Though there are several courses on environmental sciences at present in the formal system, there are no structured courses available outside the formal system for people who desire to learn about environmental issues.
- MOEF has taken an initiative in this regard and it presently working out a framework for environmental appreciation courses in consultation with IGNOU (Indira Gandhi National Open University).

c) Environmental Concepts in Management & Business Studies

- Realising that the industry Managers and leaders need to be sensitised towards environmental issues and concepts of Environmental Management so that they can

play an important role in introducing environmentally sound practices in their operations, MOEF has taken an initiative to introduce / enhance environmental concepts in the Business / Management Education.

- A committee comprising representatives from Management Institutions, AICTE, University Grants Commission (UGC), Industry and MOEF is already looking into various aspects like course content and syllabi of the existing courses so that gaps could be identified and suggestion could be given for enhancing / introducing the environmental content where necessary.

2) Non-formal Environmental Education and Awareness

Environmental Education, Awareness and Training plays a significant role in encouraging and enhancing people's participation in activities aimed at conservation, protection and management of the environment, essential for achieving sustainable development. MOEF, therefore, accords priority for the promotion of non-formal environmental education and creation of awareness among all sections of the society through diverse activities using traditional and modern media of communication. Some of the major activities undertaken in this regard are as follows:

a) National Environment Awareness Campaign (NEAC)
- The NEAC was launched in mid 1986 with the objective of creating environmental awareness at the national level.
- It is a multi-media campaign, which utilises conventional and non-conventional methods of communication for disseminating environmental messages to a wide range of target groups.
- Under this campaign, nominal financial assistance is provided to registered NGOs, schools, colleges, universities, research institutions, women and youth organizations, army units, State Government Departments etc. from all over the country for organising / conducting awareness raising activities.
- These activities which include seminars, workshops, training programmes, camps, padyatras, rallies, public meetings, exhibitions, essay / debate / painting / poster competitions, folk dances and songs, street theatre, puppet shows, preparation and distribution of environmental education resource materials etc., are followed by action like plantation of trees, management of household waste, cleaning of water bodies etc.
- Diverse target groups encompassing students, youth, teachers, tribal, farmers, other rural population, professionals and the general public are covered under NEAC.
- The programme is being implemented through 28 designated Regional Resource Agencies (RRAs) for specific states/regions of the country.
- The applications for participation in this programme are invited every year through advertisement in major national and regional newspapers during the months of May/June.

b) Eco-Clubs and National Green Corps

i.   Eco-Clubs

The main objectives of Eco-Clubs are as follows.
- To educate children about their immediate environment and impart knowledge about the eco-systems, and their inter-dependence and their need for survival, through visits and demonstrations.
- To mobilise youngsters by instilling in them the spirit of scientific inquiry into environmental problems and involving them in the efforts of environmental

preservation.

Since the modification of the scheme in 1993, more than 10,000 Eco-clubs had been provided grants during 2000-2001 in various parts of the country. Considering that the total number of schools covered were grossly inadequate compared to the total number of schools in the country and keeping in view the potential of this programme in sensitising the school students. It was, therefore, decided to intensify the programme, which was named as 'National Green Corps', to cover each and every district of the country.

ii. National Green Corps

As mentioned above, a programme of 'National Green Corps' through the Eco-clubs was launched during 2001-2002 with the following aims.

- To spread environmental awareness among school children.
- To involve them in environmental related activities.

Under this programme, Eco-clubs are being set up in 100 schools of each district of the country. 47,000 Eco-clubs have been set up so far in the country. This programme is being implemented in each State/UT through the nodal agency appointed by the State/UT Govt.

Figure 1.2 shows the conceptual structure of Eco-Clubs and National Green Corps.
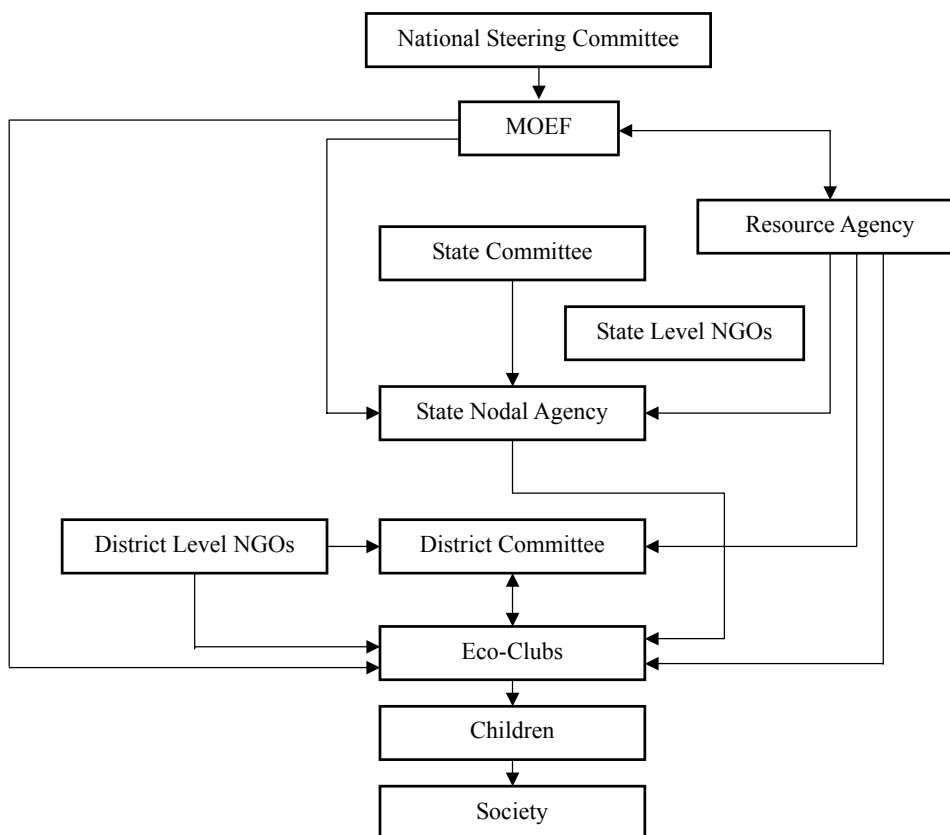
Source: National Green Corps, A movement of environment friendly children, Ministry of Environment and Forests

Figure 1.2   Conceptual Structure of Eco-Clubs and National Green Corps

iii. Financial Assistance

The Government of India provides financial assistance for establishment of Eco-clubs at Rs.1000 per Eco-club, Training of Master Trainers, teacher training and distribution of resource materials.

3) Global Learning and Observations to Benefit the Environment (GLOBE)

- GLOBE is an International Science and Education Programme, which stress on hands-on participatory approach.
- India joined GLOBE in August 2000.
- GLOBE, which unites students, teachers and scientists all over the world, is aimed at school children.
- The students of GLOBE schools are required to collect data about various basic environmental parameters under the supervision of a GLOBE trained teacher and use it for explaining hypothesis as well as to enhance their scientific understanding of the earth.
- These data are also used by scientists in their research work.
- GLOBE also provides an opportunity to the students to interact not only with the GLOBE scientists but also with the students from GLOBE schools in other parts of the world.
- About 100 schools spread over different parts of the country have already joined this programme.
- The teachers of these schools have also been trained in various GLOBE protocols.
- An International training workshop for trainers was successfully organised at New Delhi during January 2002.
- The participants at this workshop, which included representatives from Nepal and Thailand besides India, were trained in Basic and Advanced GLOBE Protocols by a training team from GLOBE Headquarters in USA.

3) Mass Awareness

Despite great efforts to spread environmental awareness by MOEF through several schemes, it is felt that a large population especially in rural areas is still left out. The best way to reach out to them and make them aware of the environmental problems is through media, particularly the electronic media. "Mass Awareness" has therefore been identified as one of the thrust areas of MOEF, not only to intensify the efforts already being made in this direction but also to launch new initiatives as follows.

- The Doordarshan and few other television channels are proposed to be extensively used for telecasting environment based programmes and infomercials.
- Professional Media agencies, which are hired to assist MOEF in carrying out the campaign, also play a major role.
- To encourage individual efforts in producing films/documentaries on environment/wildlife related themes in the country, MOEF has sponsored the organization of a film festival "Vatavaran – 2001" by Centre for Media Studies, Delhi in April 2002.

1.2.4   National River Conservation Directorate (NRCD)

(1)   Background and Future Perspective on public participation and awareness

- Need for public involvement, participation and awareness was recognized by NRCD in 1986.
- NRCD took steps in the light of experience gained in the implementation of development programmes of the Ganga Action Plan.
- It is now recognized that programmes of conservation of water bodies and town improvement can succeed only if communities are aware that they will be benefited from the conservation programme and they are willing to provide their share and bear part of the cost of the programme.
- The entire programme of river conservation now will be conceived, formulated, implemented, monitored and evaluated in close consultation with the stake holding communities and undertake the approach of participatory appraisal.
- NRCD and States may launch campaigns through a programme of volunteers called National Green Corps.
- The public participation is being given high priority by involving local bodies, social organizations and NGOs through wider publicity and voluntary involvement.

(2)   Approach for River Cleaning Programme

In the National Conference of State Ministers of Environment and Forests held in January 2001 at Coimbatore, all states unanimously resolved to adopt an integrated approach to river cleaning programmes with public participation by way of funds and/or kind shall become an essential part of future proposals. NRCD in its 10th meeting also endorsed this approach.

Excerpts of the Coimbatore Charter on river cleaning programme are as follows;

- The focus shall shift from cleaning rivers to cleaning riverside towns and cities in a holistic manner i.e. subject such as solid waste, municipal garbage must become a part of cleaning processes.
- The State and Union Territory Governments, Municipal Bodies and public shall also participate by making funds available.
- The participation of local bodies by way of contributing funds and/or in kind shall become part of future proposals.
- In the absence of local bodies, the State Government shall take burden.
- Public Participation by way of funds and/or in kind become an essential part of future proposals
- A detailed plan for recovering operational maintenance costs shall become part of the project proposals in future.
- Efforts will be made to eradicate open defecation particularly in the urban and semi-urban areas.
- All institutions of Local Governments, NGOs, educational institutions shall be involved in a process leading to a succinct code of practices for citizens including conduct places of worship on the banks of river.

(3)   Organization Arrangements and Experts for PP/PA

At present, NRCD does not have a department or cell to handle "public participation and public awareness (PP/PA)" exclusively. Only 2-3 persons from the Administration Department who function under overall supervision of the Director Administration are involved to oversee PP/PA programmes. However, they are not exclusively devoted to PP/PA only and discharge other functions of Directorate mainly related to general administration. Namely, NRCD does not have special social planners and experts on PP/PA for this purpose and generally managed by the existing officials who are engineers and administrative personnel.

As for the regional and branch offices for the PP/PA, NRCD does not have such offices and all activities are monitored from the NRCD head office in Delhi only. In addition, NRCD does not plan or intend to have such system in the near future.

(4)   Past Experiences on PP/PA programmes in the YAP

1)   Objectives

The main objectives for which the public participation and awareness programme have been envisaged/ undertaken are summarized as follows;

- To promote awareness regarding the problem of pollution of rivers and importance of the clean rivers for aquatic life, human health and recreation.
- To disseminate information about the measures/initiatives taken towards the cleaning of rivers and people's role in keeping the rivers free from pollution.
- To enhance motivation and performance level of those engaged in the river pollution abatement programme.
- Promote awareness on related issues such as siltation of rivers, soil erosion, afforestation, industrial pollution and conservation of water resources.
- Secure public cooperation and participation in the implementation of various core and non-core activities
- To create demand for the assets/ facilities created under the programme and ensure its optimum utilization such as electric/Improved Wood Crematoria, community toilets, river front facilities etc.
- To ensure public participation and cooperation in proper operation and maintenance of the facilities created under the programme.

2)   Target Towns

Target towns of YAP were as shown in Table 1.7.

Table 1.7   Target Towns

Project	Target towns		
YAP Phase I	- Delhi	- Panipat	- Noida
	- Faridabad	- Sonepat	- Ghaziabad
	- Gurgaon	- Mathura	- Saharnpur
	- Yamuna Nagar	- Vrindavan	- Muzzafar Nagar
	- Karnal	- Agra	- Etawa

Source: NRCD

3)   Major Activities

The major activities/programmes that were undertaken with the help of NGOs and state level implementing agencies include following:

- Organization of padyatras/green rallies using tableau etc.
- Display of banners by students at prominent places
- Holding street plays and folk media
- Screening of documentary films on awareness followed by feature films at community level
- Airing /telecast of message on radio and television at prime hours
- Organizing cultural programmes at community/city level involving famous stars
- Installation of hoardings at prime locations
- Exhibitions
- Publication and dissemination of reference material
- Training of watch dog groups/beneficiary groups
- Shramdan (voluntary activities)
- School programmes (Essay competitions, quiz programme)
- Publicity through print media

4)   Institutional Structure for the implementation of PP/PA programmes under YAP-I

The institutional arrangement for the implementation of PP/PA programmes under YAP-1 was illustrated as shown in Figure 1.3.

Note: PHED; 'Public Health Engineering Department'
Source: NRCD
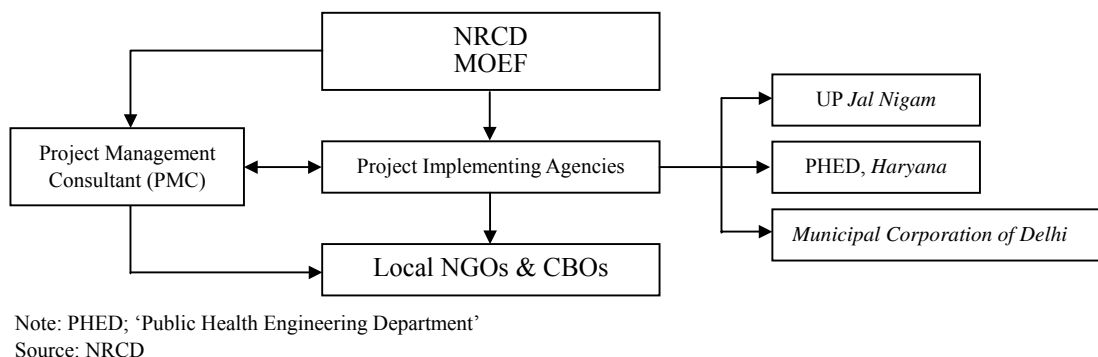
Figure 1.3   Institutional Structure for PP/PA under YAP-1

(5)   Some other important activities on Public Awareness by NRCD

-   NRCD has endeavoured to bring about public awareness by participating in the India International Trade Fare at Pragati Maidan by setting up pavilions at three occasions.
-   Exhibitions were held at Teen Murti Bhawan and Ashok Hotels
-   Setting up exhibition stalls at regular intervals in Kumbh Mela at regular intervals.
-   Fifty-Nine episodes of a popular programme named "Kinare-Kinare" were broadcast on FM radio during the period 2001-2003 that was focused on Yamuna River.

(6)   Study on Institutional Arrangements & Guidelines for Effective Collaboration Between Government, NGOs and CBOs for Conductive Community Participation

In order to review the effectiveness of the collaborative arrangement and to suggest ways of strengthening the institutional framework for the Yamuna Action Plan (YAP) Phase II, JBIC (Japan Bank for International Cooperation) in corroboration with NRCD has implemented a study on "Institutional Arrangements & Guidelines for Effective Collaboration Between Government, NGOs and CBOs for Conductive Community Participation".

For the study, the "Strategy Formulation Workshop" was organized under the aegis of JBIC and NRCD, held on 27th August 2003 at New Delhi. The primary objective of the study presented at the time of the workshop was to evolve a PP/PA strategy for YAP II, which included the following;

-   A conducive institutional framework for effective community participation
-   Guidelines for Government –NGO-CBO collaboration

Table 1.8 shows the key issues to be focused upon in the study.

Table 1.8   Key issues to be focused in the Study

Category	Key issues
Institutional Issues	- Need for a robust institutional framework for collaboration between PIAs-NGOs-CBOs. - Need for directives identifying roles and responsibilities of PIAs and NGOs. - Impact of the lack of a systematic approach in planning and implementation of PP/PA in YAP I. - Appropriate stage of YAP II project cycle to engage NGOs for PP/PA tasks. - Procedures and criteria for short listing and appointment of a nodal NGO and partner NGOs. - Transparency and streamlining of process between PIAs and NGOs/CBOs. - Evolving simple and clear financial mechanisms.
PP/PA process related Issues	- Methodologies to identify all direct and indirect stakeholders whom PP/PA will seek to address. - Differentiating awareness from participation and evolving appropriate strategies for each. - Implications of time and money constraints on PP/PA implementing NGOs and CBOs. - Need for a cohesive PP/PA campaign backed by a lager strategy spanning all the phases of the project. - Role of media in PP/PA and effective ways of utilizing media relations for PP/PA objectives. - Methods of assessing PP/PA effectiveness involving communities in assessments and undertaking participatory monitoring and evaluation. - Ways of ensuring continuity and sustainability of PP/PA activities.
Other factors influencing PP/PA	- Impact of larger issues such as pollution from industries, agricultural fertilizes, pesticides and solid waste management

Source: Proceedings, Institutional Arrangements & Guidelines for Effective Collaboration Between Government, NGOs and CBOs for Conductive Community Participation, Strategy Formulation Workshop, September 2003, Development Alliance

At the termination of the workshop, concluding remarks were presented as follows.

- All the river systems in India, especially the Ganga and the Yamuna are in urgent need for attention given the enormous quantities of pollutants being released into them daily.
- Given the socio-cultural and religious issues associated with these rivers, it is necessary for all the stakeholders to be involved in the process of sustainable management of the rivers.
- However, despite their best intentions and efforts, very marginal impacts have been visible on the ground.
- This is because all the stakeholders are not adequately aware of the importance of river conservation and of their role in the sustainable management of river systems.
- Hence, public participation and awareness becomes a critical component in any river conservation projects.

At a subsequent time of the workshop, the draft final report on the study was presented to NRCD on 12th March 2004 at New Delhi. The presentation has identified the revised study objectives as follows.

- Review and analyse the available secondary literature related to PP/PA in YAP I.
- Analyse the existing institutional arrangement and its appropriateness for the conducive to PP.
- Suggest the framework for a PP/PA strategy for YAP II.
- Prepare Guidelines for generating PP/PA under YAP II.

In the presentation, in addition to the revised study objectives noted above, the following topics were discussed.

a. Suggested Institutional Framework for YAP II   (Figure 1.4)
b. PP/PA roles& Responsibilities   (Table 1.9)
c. NGO selection
d. Steps to operational guidelines for implementing PP/PA strategy   (Table 1.10)
e. PP/PA strategy and VAACH
f. State level stakeholder workshops

NRCD → PP/PA Cell (with responsibly to oversee PP/PA in all states)

Project Management Consultant (PMC) (with moderate/substantial PP/PA role)

Independent Evaluation & Impact Assessment Experts (for PP/PA activities undertaken under YAP II in all towns)

Information Dissemination Center (Government PR Dept. or Independent Agency)??

Project Implementing Agencies (PIAs) in *Haryana*, Delhi & UP (with primary PP/PA management, (concurrent) monitoring & grievance redress responsibility)

PP/PA Advisor (Individual Professional or Competent Agency to advise and assist each PIA on State/town specific PP/PA related issues)

YAP II Implementing Government Department

NGOs in selected YAP II towns in 3 states (with primary PP/PA Implementation responsibility)

CBOs & Other stakeholders

YAP Watch Group
(eminent persons, media, legal experts, academics/students, corporate/private sector, NGOs/CBOs, other civil society, organizations, political representatives, donor agencies. Etc.)

Source: Presentation to NRCD, Study on Institutional Arrangements & Guidelines for Effective Collaboration Between Government, NGOs and CBOs for Conductive Community Participation, Draft Final report, New Delhi 12th March 2004, Development Alliance

Figure 1.4   Suggested Institutional Framework for YAP II

Table 1.9   PP/PA Roles & Responsibilities

Stakeholder	Indicative Role	Nature of Responsibility	Scale/Level of Responsibility	Frequency of Action/Duration
NRCD	Overall responsibility for the processes and outcomes of all project related activities (including PP/PA)	Strategic and supervisory	National	Through the course of implementation
	Identification & selection of state-wise PIAs	Strategic/Operational	State	At the start of the project
	Appointment of State level PP/PA advisors	Strategic/Operational	State	At the start of the project
	Identification & appointment of organization to act as Information Dissemination Centre (IDC)	Strategic/Operational	National	At the start of the project
NRCD-PP/PA Cell	Operate as the primary contact point within NRCD vis-à-vis all PP/PA activities in YAP II	Operational	National and/or State	Continuous
	Facilitating the preparation & approval of Detailed Project Reports (DPRs)	Facilitatory/Strategic	National and/or state	Annual/as required
	Providing authentic and timely information to the IDC on project activities	Facilitatory	National and/or state	Frequency to be decided as per the nature and frequency of activities
IDC	Collate and disseminate accurate information on all aspects of YAP II	Strategic/Operational	National and/or State	Continuous (through the duration of the project)
	Organize regular meetings, seminars, workshops and press briefings on project related activities	Facilitatory/advocacy	National and/or State	As decided/necessary
	Organize tall shows, public interest programmes on radio and TV channels	Facilitatory/advocacy	National	Regularly/as necessary
PMC	Assisting NRCD and PIAs in all aspects of project management	Strategic/Facilitatory/ Advisory/Operational	National and/or State	Through the course of the project
PIAs	Project implementation/management/administration	Operational/Facilitatory	State	Continuous
	Facilitating DPR/annual action plan preparation and approval	Facilitatory/ Administrative	State	In the 1st year of the project and annually (as desired)
	Grievance redress related to PP/PA but can be extended to 'core' components as well	Operational	State	As desired
	Concurrent monitoring of all activities in the PP/PA strategy	Operational/Facilitatory	Town/Local/ State	Continuous/as desired
PP/PA Advisors to PIAs	Assist PIA in preparation of PP/PA Strategy for the State	Facilitatory/advocacy	State	In the 1st year of the project
	Assist in identifying appropriate NGOs for the YAP II towns and developing their TOR	Facilitatory/advocacy	State	In the 1st year of the project
PP/PA implementing NGOs/CBOs	Recognition & acknowledgement of role for enabling 'participation' or 'awareness' activities or both	Operational	Town/Local	Continuous/as desired
Independent Evaluation and Impact Assessment Experts	Development qualitative and quantitative indicators and other methodological approaches to assess impact of activities being undertaken	Operational/Facilitatory	Town/Local/ State	Continuous/as desired
	Evaluation & impact assessment	Operational/Facilitatory	Town/Local/ State	Annual
	Suggestions for change and mid-course corrections	Operational/Facilitatory	Town/Local/ State	Post-review exercise
	Assess additional capacity requirements of agencies involved in PP/PA activities and undertake capacity building	Operational/Facilitatory	Town/Local/ State	As required
YAP Watch Group	Providing inputs towards formulation of the PP/PA strategy for YAP II	Strategic/Advisory	National and/or State	Continuous/as desired
	Approving and owing the final PP/PA Strategy and work plan	Supervisory	National and/or State	On submission of final DPRs for PP/PA Activities
	Developing a Corporate Social Responsibility role for the private sector to participate in	Advocacy/Strategy/ Facilitatory	National and/or State	Frequency to be decided as per envisaged role
	Enabling the establishment of YAP Watch Group chapters in all YAP towns and cities	Advocacy/Facilitatory	National and/or State	Continuous

Source: Presentation to NRCD, Study on Institutional Arrangements & Guidelines for Effective Collaboration Between Government, NGOs and CBOs for Conductive Community Participation, Draft Final report, New Delhi 12th March 2004, Development Alliance

Table 1.10   Steps to Operational Guidelines for Implementing PP/PA Strategy (1)

	Steps	Primary Agencies	Support Agencies	Frequency
STEP I	Developing a Mission Statement for PP/PA Strategy for YAP II	NRCD (PP/PA Cell)	- External Experts - State-level PIAs - State-level PP/PA advisor	Once (as start of YAP II)
STEP II	Categorizing 'Awareness' and 'Participation' activities	State-level PIAs	- State-level PP/PA Advisor - NGOs	Annual (following concurrent monitoring and annual impact assessment exercise)
STEP III	Identifying, Collecting & Collating Key Information & Other Resources	IDC	- Internal/External Experts - State-level PIAs - State-level PP/PA advisor - NGOs	Concurrent throughout duration of YAP II
STEP IV	Institutional Capacity Assessment & Capacity Building	NRCD (PP/PA Cell)	- External Experts - State-level PIAs - State-level PP/PA advisor	Once (as start of YAP II) and thereafter as required
STEP V	Develop an Inter-Institutional Partnership Model	PMC External Experts	- NRCD (PP/PA Cell) - State-level PIAs - State-level PP/PA advisor - NGOs	Once (as start of YAP II) with periodic review
STEP VI	Assigning Roles & Responsibilities to Operational Guidelines	NRCD (PP/PA Cell) PMC	- External Experts - State-level PIAs - State-level PP/PA advisor	Once (as start of YAP II) with periodic review
STEP VII	Developing a Work Plan	State-level PIAs	- NRCD (PP/PA Cell) - State-level PP/PA advisor - NGOs	Once (as start of YAP II) and thereafter annual
STEP VIII	Developing Program Indicators	IDC	- NRCD (PP/PA Cell) - External Experts - State-level PIAs - State-level PP/PA advisor - NGOs	Once (as start of YAP II) subject to review
STEP IX	Developing a Public Relations & Media Strategy	NRCD (PP/PA Cell) IDC	- External Experts - State-level PIAs - State-level PP/PA advisor - NGOs	Once (as start of YAP II) thereafter implemented following annual review
STEP X	Initiation of PP/PA activities	NGOs	- CBOs & Other Stakeholders	Concurrent subject to annual review

Source: Presentation to NRCD, Study on Institutional Arrangements & Guidelines for Effective Collaboration Between Government, NGOs and CBOs for Conductive Community Participation, Draft Final report, New Delhi 12th March 2004, Development Alliance

Table 1.11   Steps to Operational Guidelines for Implementing PP/PA Strategy (2)

Steps	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
STEP I																				
STEP II																				
STEP III																				
STEP IV			x			x			x			x			x			x		
STEP V					>>				>>				>>				>>			
STEP VI			>>			>>			>>			>>			>>			>>		
STEP VII																				
STEP VIII																				
STEP IX			>>			>>			>>			>>			>>					
STEP X							>>				>>				>>				>>	

Note: 1.   x indicates 'as required'
          2.   >> indicates 'subject to review'
          3.   The timeline presented above if for indicative purpose only. The periodicity of the reviews etc. is to be decided by the project managers/Implementers
          4.   Q indicates 'quarter'
Source: Presentation to NRCD, Study on Institutional Arrangements & Guidelines for Effective Collaboration Between Government, NGOs and CBOs for Conductive Community Participation, Draft Final report, New Delhi 12th March 2004, Development Alliance

(7)   Guidelines for Public Participation and Public Awareness under NRCD Schemes

MOEF, on the basis of lessons leant and experience gained under the National River Conservation Plan (NRCP) and National Lake Conservation Plan (NLCP) recognized the need to formulate guidelines for public participation and public awareness (PP/PA).

At "the Strategy Formulation Workshop" for the study noted above, an Additional Director of NRCD as one of eminent participants in the workshop presented a discussion paper of "Guidelines for Public Participation and Public Awareness under NRCD Schemes", which covers following contents.

- The historical experiences of the works and public participation in YAP I, particularly in the Extended Phase of the project.
- Recognition that PP/PA is an essential part of infrastructure improvement projects such as YAP, and needed to be supported.
- A brief description of the PP/PA module is provided which covers a menu of different activities.
- The institutional/administrative arrangements under YAP I are highlighted.
- The guidelines are intended to cover all future projects across the country, with YAP II presenting the first opportunity for operationism.
- Various PP/PA schemes are suggested which included involvement of NGOs, CBOs and other local bodies in site selection, design feasibility and other parameters.
- The establishment of a National Public Participation and Coordination Cell (NPPC) is proposed to be created under NRCD with specific roles and responsibilities to facilitate participation and awareness in river and lake projects.
- It is also suggested that an organization of national repute will assist NRCD in planning, executing and monitoring PP/PA activities in future projects.
- Criteria for short-listing NGOs for PP/PA are developed and will be applied in YAP II.
- An overview of PP/PA performance in YAP I is also provided.

Thereafter, NRCD modified the discussion paper to the draft version in October 2003. At present, NRCD is working on to finalize the draft version of the Guideline for Public Participation and Public Awareness under NRCD Schemes. Table 1.12 shows the Contents of the draft guidelines.

Table 1.12   Contents of the Draft Guidelines for PP/PA under NRCD Schemes

Chapter	Section
1. History & Introduction	1.1 Background
	1.2 The need for Public Participation & Awareness
	1.3 Brief description of PP/PA programmes
2. Experience from PP/PA in NRCD works	2.1 Assessment of field programmes
	2.2 Assessment of administrative arrangements
3. PP/PA under future NRCD Schemes	3.1 Suggested PP/PA schemes and Improvements
4. Integrating PP/PA with Works	4.1 Public announcements of schemes proposed
	4.2 Inviting stakeholders groups
	4.3 Holding Public Hearing / Consultations / Forums between stakeholders groups and PIAs
	4.4 Obtaining consensus for site selection, design feasibility and other parameters involving public stakeholders
	4.5 Sustaining Stakeholders' interest in execution of schemes & Mobilizing CBOs
5. Organizational/ Institutional Aspects	5.1 Role of PIA
	5.2 Suggested Structure of PP/PA Cells at NRCD, State, Town/Circle levels
	5.3 Role of PP/PA Consultants to GOI
	5.4 Suggested Operational Modalities
	5.5 Capacity Building of PIAs for more effective PP/PA
6. Administrative	6.1 Scheme announcement and empanelment of NGO Consultant at town level
	6.2 PP/PA DPR preparation
	6.3 Eligibility criteria & short listing of NGOs
7. Field Implementation of PP/PA programmes	7.1 Modifications/Improvements based on assessment of previous phase
	7.2 Activity/Item-wise suggestions
8. Cost	8.1 Cost Break-up

Note: PIA: Project Implementation Agency
Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

The draft version of the guidelines discusses almost same topics of the discussion paper of the guidelines presented at the Strategy Formulation Workshop noted above. The key points of the discussion and proposed ideas and actions noted in the draft guidelines are summarized as follows.

    1)   PP/PA activities under NRCP and the Assessment

    Several PP/PA activities were conducted in NRCP and assessments of the PP/PA were made as summarized in Table 1.13.

Table 1.13   PP/PA Activities under NRCP and the Assessment

PP/PA Activities under NRCP	Brief Assessment of the PP/PA under NRCP
1. Seminar/workshops 2. Rallies, Padyatras, meetings and exhibition 3. Publication of resource material 4. Preparation & installation of hoardings 5. Organizing quiz and other competitions among school and college students 6. Training of community groups/beneficiary groups/watchdog groups 7. Awareness camps 8. Shramadaan 9. Meetings with religious leaders 10. Folk media and street theatre performance 11. Meetings with Media persons 12. Preparation of films & audio-visuals (only in Delhi)	- PP/PA concept was introduced for the first time as a scheme linked to NRCP projects under YAP works - The same PIA was responsible for engineering/civil works as well as for PP/PA. - PIA and NGO contract was tried for the first time: it needs more improvement from a pure works contract to a more NGO-based contract. - Most of the NGOs claimed to have relevant experience, but lacked it in actuality. - Gaps were seen in their implementation despite providing DPRs, regular guidelines and briefings. - There wasn't enough institutional strengthening and capacity building of PIAs in PP/PA issues beforehand and they were expected to coordinate activities in fields unrelated to their background.

Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

In addition, the field programmes and administrative arrangements were assessed and evaluated in the Guidelines as shown in Table 1.14.

Table 1.14   Assessment of Field Programmes and Administrative Arrangements

Assessment of field programs	Assessment of administrative arrangements
- Advance publicity of PP/PA activities was not done, as a result, information about events reached only a few sections of the communities - Target groups, topics and activities were more or less the same in all towns. These should be town-specific. - Urban local bodies were not involved from the beginning of the project in almost all the towns. - Planning of PP/PA activities was not done properly in terms of duration, venue and frequency of implementation. - Possibilities of sponsorship were not explored to get additional financial support as well as publicity of the project. - Local eminent personalities and dignitaries were generally not involved, this could have enhanced the publicity of the programme.	- Nodal officers were extremely occupied with the heavy workload of engineering and civil works and could not devote much time for PP/PA. - Nodal officers had very little previous experience in working with NGOs, community and other local bodies. - Nodal officers had very little knowledge of socio-environmental issues related to sanitation, river pollution etc. - Nodal officers had very little experience in dealing with non-contractor situations, therefore tended to treat voluntary bodies too as contractors. - Nodal officers were also bound to some degree by the inflexible procedures laid down by State Government and parent departments.

Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

2)   PP/PA under Future NRCD Schemes

Based on the above assessment and reviews of NRCP, NRCD has identified activities to be oriented and focused the issues as shown in Table 1.15.

Table 1.15   Issues to be oriented and Focused

Issues to be Oriented and Focused
- Lifestyle leading to environmental degradation - Solid Waste Management - Low Cost Sanitation/Bathing Ghats - Health & Sanitation - Water pollution in general - Electric and improved wood crematoria - Emphasis should be given on individual's contribution in preventing pollution

Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

As well, based on the pervious experiences, NRCD has suggested certain additional activities in the next phase as shown in Table 1.16

Table 1.16   Additional Activities Suggested by NRCD

Additional Activities	Details
Mobile Publicity Unit (MPU)	MPU shall be well equipped with exhibits, films, projection and sound equipment & resource material. It could be sent to the various towns of the zone, and provide field publicity to the communities.
Preparation of films and other AV aids	For each town, a film should be produced by professional filmmakers to highlight the various issues related to pollution in the concerned river or its tributaries. The film can be shown on local cable networks or it can be broadcast over national channels.
General Suggestion	- The PP/PA activities topics should be conducted for all the cross sections of the community. - All the possible topics should be covered. - There should be advance publicity of all the programmes. - In all the programmes, the link of local public to rivers should be clearly established i.e. the topics should be town-specific and river specific. - Eminent personalities, local leaders, CMCs & ULBs should be actively involved in all PP/PA programmes. - There should be regular media coverage of all activities.

Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

3)   Integration of PP/PA with Programmes and Schemes

NRCD has identified integration of PP/PA with programmes and schemes as summarized in Table 1.17.

Table 1.17   Integration of PP/PA with Programmes and Schemes

PP/PA	Description
1. Public announcements of schemes	- As soon as the basic package of schemes to be taken up has been decided upon, the PIA/Nodal Agency at town level should announce these schemes for the information of the general public and interest groups. - Newspaper ads, radio/TV slots and talks, hoardings, and all other regionally popular media should be employed for this.
2. Inviting stakeholders groups	- The PP/PA scheme should be announced/advertised similarly through all popular media and NGOs/CBOs/Voluntary Bodies invited to submit expression of interest along with detailed of experience. - From this pool of the agencies, the PIA should invite more detailed applications/proposal for all or part of the PP/PA schemes
3. Holding Public Hearing /Consultations /Forums between stakeholders groups and PIAs	- A public platform such as public hearing/open house/discussion forum should be widely announced and NGOs/CBOs/Voluntary Groups and people's representatives should be invited and encouraged to participate meaningfully. - The diversity of views and feedback gathered through such a process should be collated and studied to assess the public perception and concerns, and this knowledge used in further planning of various project components.
4. Obtaining consensus for site selection, design feasibility and other parameters involving public stakeholder	- A large part of the success of a River Action Plan is hinged crucially to the public acceptance and use of the public assets created under the Plan. - It is critical to integrate schemes of public participation right from the planning and design stages of various engineering and civil works schemes
5. Sustaining Stakeholders' interest in execution of schemes & Mobilizing CBOs	- The PP/PA programmes should, in addition to awareness and capacity building, also lead to the identification, setting up and strengthening of local groups, who would be ultimately the CBOs/VOs with direct stake in YAP, and will eventually be able to take over O&M, or monitoring, wherever possible. - These groups will also be strengthened for eventual public take over of certain assets, eg. Crematoria or ghats, by social groups.

Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

4)   Organizational/Institutional Aspects

NRCD has proposed, in the draft guidelines, a "National Public Participation & Coordination Cell (NPPC)" under NRCD with specific roles and responsibilities to facilitate participation and awareness in river and lake projects as shown in Figure 1.5.

In addition, NPPC is expected to work as a bridge between different implementing agencies associated for hardware and other allied parts of the project.
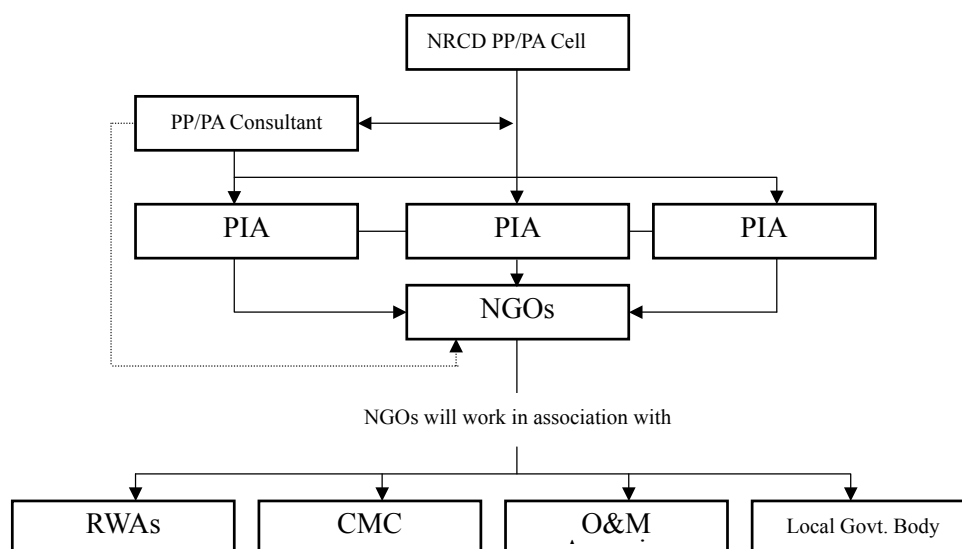
Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

Figure 1.5   Proposed National Public Participation & Coordination Cell

This proposed NPPC will work under NRCD and in close collaboration with its consultant organizations, along with other concerned departments. Table 1.18 shows functions of NPPC envisaged by NRCD.

Table 1.18   Envisaged Functions of NPPC

- Preparing annual action plan for Public Participation & Coordination Cell.
- Conducting IEC activities through eminent NGOs and network of social activists and functionalizing the project in latter and spirit.
- Identifying and engaging functionaries of the cell on deputation/loan/contractual basis as per norms of NRCD and developing their managerial and social skills for archiving higher end results.
- Developing adequate conceptual appreciation among the community functionaries regarding environmental conservation and personal health and Hygiene.
- Training the health and community supervisors/organizers, NGOs, Cell officials and sector professionals related with the task.
- Controlling and supervising the Public Participation work to ensure its effectiveness and quality.
- Preparing IEC materials required for social mobilization and distributing them.
- Coordinating workshops, seminars and meetings as and when required.
- Selecting and engaging NGOs and social activists for conduct of IEC activities.
- Orienting and sensitizing the functional groups/committees, Sector professionals, PHEDs and other related government officials, NGOs, social activists and media persons etc.
- Engaging institutions/experts to conduct case studies/evaluation of the work under the plan.
- Submitting quarterly progress report and utilization report to NRCD & Consultant organization.

Note: PHED stands for 'Public Health Engineering Department'
Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

As for PIA (Project Implementing Agency), necessary roles of PIA are identified by NRCD as shown in Table 1.19.

Table 1.19   PIA Necessary Roles identified by NRCD

- To monitor the utilization of the facilities by public as the ultimate owners.
- To identify potential O&M agencies from local NGOs/CBOs and enthuse them to participate.
- Continuously liaise with appointed O&M agencies in respect of maintenance of NRCP assets, obtaining feed back of use public, and solving day-to day issues.
- To set up grievance cell and round-the-clock repair and maintenance cell.
- Monitor and evaluate PP/PA activities simultaneously with implementation.
- Self-assess the sewerage and non-sewerage works.

Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

NRCD has suggested staffing pattern of NPPC as shown in Table 1.20. According to the draft guidelines, there could be one National Unit at Delhi and one State Coordination unit in each of the states at the most suited locations.

Table 1.20   Suggested Staffing

National/State	Designation	Staff	Status
National Unit of NPPC	Director	1	Unit in-charge
	Deputy Director	2	1. Technical 2. IEC/Social Specialist
	Assistant Director	3	1. Social Scientist 2. Environmental Specialist 3. Extension/public relation specialist
Each State Coordination Unit	State Coordinator	1	Unit in-charge (of Deputy Director rank)
	Regional Coordinator	2	Assist Director Rank
	District Coordinator	2-4	No. to be based on district taken up
	Field Officer	2 /district	No. to be based on district taken up

Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

5)   Topics/Activities under taken for PP/PA

As shown in Table 1.21, Table 1.22 and Table 1.23, NRCD has suggested topics/activities, which may be under taken for PP/PA activities under NRCP and NLCP programmes of NRCD.

Table 1.21   Suggested Topics under taken for PP/PA

General Topics	Town-specific topics
- Environmental pollution - Water pollution, water conservation - Health & Sanitation with special reference of Jan Suvidha toilets. - Solid waste management	- Eco-tourism with focus on rivers as the central resources. - Water pollution through industries - Religious practices leading to water pollution

Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

Table 1.22   Suggested Activities under taken for PP/PA (1)

Activities	Contents
Publications	- Town specific resource materials shall be published for all the towns with different set of slogans, messages, illustrations and appeals.
Exhibitions	- Exhibitions should be developed to cover all the suggested topics. - The exhibits should reflect the actual condition of the environment and the water bodies of the town. - Models of YAP assets should be displayed during the exhibition and should be well explained to the public. - Subject-related films could also be displayed during the exhibitions and public meetings. - Puppet shows and magic shows could be performed while organizing the workshops. - Exhibitions could be tied up with the local public events like melas. - The developed exhibits could be displayed during public meetings or other PP/PA activities also.
Seminars & Workshops	- Seminars and workshops should be conducted for literate and elite groups like industries, media persons, RWA leaders, administrative officials, leaders of trader associations, etc. - These should be interactive sessions rather than being only lectures. - Experts from different subject-related fields should be involved. - Venues of the seminar or workshops should be near the YAP work site such as STPs etc., if feasible.
Public Meetings	- Public Meetings should be organized preferably near YAP work sites. - Local political leaders should be invited to attend the public meetings in their zones or wards. - However, the events should be prevented from becoming political. - There should be enough participation of public. - The public should be given opportunity to interact with the competent and concerned authorities.
Rallies/ Padyatras	- Rallies should be conducted in suitable weather conditions. - Placards should be subject-related. - Local leaders, eminent personalities, politicians, administrative officers, religious leaders, NCC cadets etc. should also be involved along with the school children, women & general public. - Rallyists should make an attempt to interact with general public on the route and help to arouse interest.
School programmes	- It is recommended to award the contracts for implementation of school programme directly to school principals. - The programmes should be organized at different Govt. and private schools of the town. - Students above class VII could be given assignments and considered for various school competitions. - Children & teachers should be motivated to conduct sustainable environment activities ever after the completion of the project. - Water quality monitoring kits should be used for knowledge sake and demonstrating public monitoring of water resources. - Inter school competition should be encouraged in the towns
Training Courses for Target Groups	- Training courses should be conducted for various target groups as follows <table><tr><td>Target Group</td><td>Topics</td></tr><tr><td>Women</td><td>Sanitation, health & hygiene, waste reduction and segregation, forming SWGs.</td></tr><tr><td>Teachers & Students</td><td>Spreading EE, water conservation, SWM, river pollution, water quality monitoring.</td></tr><tr><td>O& M NGOs</td><td>Better upkeep of NRCD assets</td></tr><tr><td>Municipal workers</td><td>Waste segregation, collection & disposal, water conservation</td></tr><tr><td>Beneficiary public</td><td>Sanitation, health & hygiene, waste reduction & segregation, water conservation, better upkeep of assets created under NRCP & NLCP programmes.</td></tr></table>

Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

Table 1.23   Suggested Activities under taken for PP/PA (2)

Activities	Contents
Awareness Camps	- Awareness camps should be conducted for all the target groups at appropriate sites/venues. - These sites may be near residential areas, STP sites, nature parks, and riverbanks near YAP site etc. depending on the convenience of the participants. - Small grants or incentives could be given to smaller NGOs, RWAs etc. to organize and maintain Eco-Clubs for imparting training to beneficiary groups for construction and maintenance of non-core works. - Eminent personalities should be involved.
Folk media & Street theatre	- The subject of the street plays should be relevant to achieve objectives of YAP. - The topics should be town specific. - It is recommended to contract some professional street play troupe to effective performance the plays. - The plays should not be repeated at the same location. - These should have the town-wise coverage.
Meetings with Media	- Depending on the previous experience, it is advisable to have the meeting with media people as separate component. - Instead Media persons should be invited in all other PP/PA activities and they could be bimonthly/quarterly seminars or workshops exclusively for them.
Sharmdaan	- The advanced publicity should be done and dignitaries should be involved to mobilize masses/ - The community should be motivated to commit their regular voluntary services in free time on holidays and Sundays to clean up the river front areas.
Meetings with religious leaders	- Target-specific resource material related to religious practices should be provided to the religious leaders and distributed to the communities through various religious bodies. - Popular and influential leaders should be involved. - The possible leaders should be motivated to attract mal practices and wrong beliefs and rituals - They should be motivated to gain acceptance of public for IC &EC.
Training Courses for Volunteers	- The river stretches of certain length could be allotted to groups of volunteers and the volunteers should be trained to keep their stretches clean. - Some incentives could be given to the owners of the cleanest stretch.

Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

6)   Cost

A breakdown of the costs for the various activities to be undertaken as per the guidelines has been proposed by NRCD as shown in Table 1.24.

Table 1.24   Proposed Costs Breakdown for PP/PA

Actives	% of Project Cost
Seminars, workshops, Rallies, *Padyatras*, Meetings, Exhibitions and competitions	25
Training Courses	5
Camps	15
Shramdan	15
Folk, Documentary Films, Media and Street Theatre	15
Forming and Training beneficiary groups which could take up construction and maintenance of non-core works	25

Source: Draft Guidelines for Public Participation & Awareness under NRCD schemes, Oct.2003, NRCD

(8)   General Guideline for Processing Proposals on Public Awareness Programmes to be conducted through NGOs

NRCD has proposed a 'General Guideline for Processing Proposals on Public Awareness Programmes to be conducted through NGOs". The guideline is a kind of provision of NRCD to utilize of national NGOs for public awareness programmes and will be applied not for specific projects like YAP but for projects and programs of NRCD in all India. The guideline sets forth a procedure to select suitable NGOs to be employed for public awareness programmes of NRCD. The guideline, however, has not been applied yet for NRCD projects.

(9)   Budgetary implications

- An amount of Rs. 4.80 Crores has been spent towards publicity and awareness during the period 1990-91 to 2002-2003 through State Governments, Local bodies, NGOs, Voluntary Agencies.
- The budgetary allocation for PP/PA schemes under the River Action Plans is based on the individual need based schemes and requirements from the Project Implementing Agencies (PIAs) in the respective states which is proposed in the Detailed Project Report (DPR) submitted by the concerned PIAs in the states. Also, NRCD has provision of some special budget to take up general public participation and awareness activities.
- As far as earmarking of funds for future public participation works is concerned, NRCD would be making efforts to allocate Rs. 60 to 80 Lakhs for the works of the types mentioned above each financial year.

1.2.5   Central Pollution Control Board (CPCB)

(1)   Related Regulation

The Central Pollution Control Board is a statutory organization responsible for implementing anti-pollution laws. Table 1.25 shows principal regulations on public (mass) awareness exist in India related to anti-pollution.

Table 1.25   Principal Regulations on Public (Mass) Awareness for Anti-pollution

Related Regulation	Year	Outline
Water (Prevention and Control of Pollution) Act	1974	**Section 16 of CHAPTER IV "POWERS AND FUNCTIONS OF BOARDS"** mentions that the CPCB may perform all or any of the following function. Namely - Plan and organize the training of persons engaged or to be engaged in programmes for the prevention, control or abatement of water pollution on such terms and conditions as the Central Board may specify; - Organize through mass media a comprehensive programme regarding the prevention and control of water pollution; - Collect, compile and publish technical and statistical data relating to water pollution and the measures devised for its effective prevention and control and prepare manuals, codes or guides relating to treatment and disposal of sewage and trade effluents and disseminate information connected therewith; - Plan and cause to be executed a nation-wide programme for the prevention, control or abatement of water pollution;
		Section 17 of CHAPTER IV "POWERS AND FUNCTIONS OF BOARDS" have provisions for mass awareness as follows - To collect and disseminate information relating to water pollution and the prevention, control or abatement thereof; - To collaborate with the Central Board in organizing the training of persons engaged or to be engaged in programmes relating to prevention, control or abatement of water pollution and to organize mass education programmes relating thereto;
Environment (Protection) Act	1986	**Section 3 of CHAPTER 2 "GENERAL POWERS OF THE CENTRAL GOVERNMENT"** has provisions for information dissemination as follows - Collection and dissemination of information in respect of matters relating to environmental pollution; - Preparation of manuals, codes or guides relating to the prevention, control and abatement of environmental pollution;

Source: - Water (Prevention and Control of Pollution) Act, 1974
            - Environment (Protection) Act, 1986

(2)   Public Relation Office

CPCB has the Public Relation Office to coordinate public awareness and information dissemination activities in the field of pollution with other departments/sections of CPCB. Total 15 officials work in the office at present. However, most of them are scientists and administrators. There is no specialist on

public awareness and social consideration at all.

(3)   Activities

As for public (mass) awareness, CPCB as a whole carries out several activities as follows.

- CPCB collects, compiles and disseminates information on pollution, prevent, control and sanitation.
- CPCB also publishes on regular basis newsletters on various issues related to environmental pollution and sanitation.
- CPCB produces documentary films and advertisements on pollution control and prevention. These documentaries are shown on national channel and the advertisements are shown on regular basis in national news channel of Durdarshan.
- CPCB also disseminates regularly ambient air quality data of large cities in India on a TV news channel (Aaj Tak).
- CPCB also organizes several public meetings, seminars, symposia and school programmes to educate public including school children on various aspects of pollution control and sanitation.
- CPCB also contributes to various universities, schools and colleges as visiting faculty and examinations.
- CPCB also participates in various national, international symposia, seminars and contribute its findings on surveys/inspections/research activities.
- Large numbers of visitors including media people are getting information on regular basis from CPCB & publishing in newspapers.

(4)   Educational Tools and Equipment

Educational Tools and Equipment available in CPCB are as follows.

- Numbers of documentary films, advertisements are being shown on TV-National News and other media, ambient air quality data of many important cities are shown on TV News Channel.
- Scientists of CPCB gave several TV and Radio talks
- Articles on various issues of national importance are published in National News Papers

Table 1.26   Equipment and Tools

Equipment and Tools	CPCB
Television set	6
VTR	2
OHP	10
Slide Projector	8
Computer	120
Photocopy	25
Related posters & publications	Many
Educational Videos	Several
Others (If any)	-

Source: CPCB

(5)   Problems and difficulties

Problems and difficulties to be overcome to heighten efficiently public awareness on environment, sanitation and health aspects and implement hygiene education, which are perceived by CPCB, are as follows.

- Lack of budget
- Lack of experts in this fields

(6)   Cooperative Relationship

There is an official cooperative relationship between CPCB and other Ministries such as Ministry of Environment & Forest, Ministry of Health, Ministry of Education and official entities conducting public awareness on environment and sanitation, and environmental education. However, CPCB does not have such a relationship with local bodies including a Nagar Nigam and an NGO.

(7)   Annual Budget

Table 1.27 shows annual budgets (the latest five years) for executing related activities on public Awareness on Environment and Sanitation, and Environmental Education by CPCB.

Table 1.27   Annual Budget for related Activities

Unit: Rs in Lakhs

Year	1999	2000	2001	2002	2003
Mass awareness	57.15	50.55	56.13	38.20	58.25

Source: CPCB

CPCB spends about 5% of a project budget for public awareness activities in related projects

1.2.6   Ministry of Water Resources (MOWR)

The India Government has declared 2003 as Year of the Freshwater in keeping with the United Nations Resolutions declaring 2003 as International Freshwater Year, of which objectives and activities to be taken up are summarized in the Table 1.28.

Table 1.28   Freshwater Year

Item	Description
The Mission Name	Freshwater for All
The objectives	Increasing awareness among stakeholders regarding scarcity value of freshwater Conservation and efficient use of Freshwater Freshwater Preservation-quality and its ecosystem Augmentation of freshwater resources Community partnership for informed decision making
Activities	Freshwater Conservation Campaigns Initiatives for preserving Freshwater Eco-System Initiating New Programs on freshwater

Source: Freshwater for All, 2003, Ministry of Water Resources

In this regard, the Ministry of Water Resources is the nodal agency for initiating and coordinating activities relating to the Freshwater Year among various central ministries and state governments.   An organization framework for smooth implementation and monitoring of the proposed activities has been drawn up and consists of the following stakeholders.

-    Advisory Group of Ministers
-    Inter Ministerial Steering Committee
-    Core Group
-    Implementation Committees for each Target Group
-    Technical Groups for each item
-    Mass Communication Committee
-    Finance Committee

The outline of the activities to be undertaken during the year is as follows:

(1)   Fresh Water Conservation Campaign

Water conservation has the following three dimensions.

- *Water resources conservation;* efficient management of rainwater through storage, allocation and transfer for use and preservation of the quality of the resource including. Its supporting ecosystems.
- *Water use conservation;* water supply and distribution with minimal losses and consumption through prevention of wastage.
- *Efficient use of water;* through adoption of water saving technologies & cropping patterns.

While creating awareness, the main thrust of the program shall be " Water Conservation". Therefore the Water Conservation Campaign forms the most important component of the Year of the Freshwater observation program. Various target groups are to be reached. Table 1.29 shows the target groups and participating Agencies. In addition, focus Issues and events with respect to each target Group are summarized in Table1.30.

Table 1.29   Targets and Participating Agencies

Target Groups	Participating Agencies
- Youth and Children; School Children, Rural, Urban, College Students and teachers through general and professional courses. - Women: Agriculture, Domestic use and Issues of Water and Health workers. - Farmers and Villagers - Policy and Opinion Makers; Politicians, Community Leaders, Voluntary organizations, Bureaucrats, Administrators, Industrial and Business Community, Professional including Engineers	- Government Departments at the Central, and State level, - Educational centres, - Professional Associations, - Women, Youth and Farmers Association, - NGOs, Religious - Philanthropic Organizations, - International Institutes.

Source: Freshwater for All, 2003, Ministry of Water Resources

Table 1.30   Focus Issues and Events per Target Groups

Targets	Issues For Focus	Indicative list of Events
Youth and Children	- Importance of Freshwater - Multiple uses of water - Protection of water sources - Efficient Use of water in Agriculture, Domestic Sector, and Industries	- State level Inter-school Quiz on Radio and regional TV Channels - National Level Quiz on National Program of *Doordarshan* - Science Program on Freshwater Jingles, Talks on Youth Programs of Music on FM Channels - Debate and Essay writing competition at State level and National level - Exhibits in Science and other local fairs - Participation in Science Clubs - Advertisement/messages in Sports Magazines - Article and messages through the Internet Training Camps - Visit to water infrastructure - Cartoon Films on TV - Cartoon Strips in Children's magazines
Women	- Efficient use of water including recycling in domestic sector - Purification of Drinking Water - Health aspects of Water and Sanitation - Maintenance of Drinking water infrastructure	- Radio Talks - Television Program - Sponsored Articles and advertisement messages on water in Women's magazines like Women's Era, Vogue, Sarita and other regional language journals. - Training Camps
Farmers and villagers	- Efficient use of water in Irrigation- - Optimal application of water and harmful affect of excess water applications - Conservation of water in rain fed areas - Use of sub standard quality of water in Irrigation - Getting more crop per drop - Artificial recharge of groundwater - Effect of use of chemical fertilizers and pesticides on water quality - Benefits of Participatory Irrigation Management - Protection of village water sources including its quality - Integrated development and management of water resources	- *Krishi Darshan* Type programs on TV - Radio talks for Agriculture Programs - Jingles and songs in Farmers Programmes on TV and Radio - Agriculture and other Fairs - *Jal Yatras* - Visit to Demonstration Farms of ICAR and KVKs Training Camps
Policy and Decision makers	- Conservation and protection of freshwater - Integrated and sustainable development and management of water - Preparedness for floods and droughts - Need for community capacity building	- Lectures/ Workshops (1/2 day) on Water Resources - Development in Induction Training and other Professional Training Programs - Articles in Economic and Political Weekly, Swagat and other similar magazines and popular dailies. - Articles in Professional Journals and News Papers (e.g. Institution of Engineers etc) - Special Lectures for the MPs, Legislative Assembly Members, Municipal Corporations, Chambers of industries etc.

Source: Freshwater for All, 2003, Ministry of Water Resources

The following shows disseminating mechanisms on the campaign proposed by the Ministry.

- Traditional Medial Fairs, Exhibitions, Yatras, Street Plays, Processions, Religious Discourses, Postal Stamps, Calendars.
- Modern Media Television, Radio, Print Media, Water Curricula for Schools, Guest Lectures, Internet, Murals at prominent Public Places
-

(2)   Preservation of Freshwater Ecosystem

A number of water bodies, rivers, lakes and tanks, are going out of use mainly because of abuse of

these water bodies as garbage dumps or are being encroached upon due to pressure on land. This has resulted in fast depletion of the groundwater tables and also the deterioration of quality of ground as well as surface water. There is need to bring awareness among all about the necessity and usefulness of maintaining water quality and assuring its pristine environment.

Preservation and restoration of the water bodies is essentially an activity within the purview of the State Governments. Organizing the community, especially the school and college children to clean the existing water bodies with the help of the Voluntary Organizations is undertaken in close co-ordination with the Ministry of Environment and Forest, City Municipal Corporations and other local self-government organizations. Mass mobilization campaigns are launched for cleaning and upgrading water bodies.

(3)   Initiating New Programs

-   Implementing the Action Plan for operating National Water Policy 2002
-   Launching the Benchmarking of Irrigation Systems for performance improvement and improving efficiency. Capacity Building of Communities through awareness and partnership
-   Comparative study on water rights, water laws and attendant provisions.
-   Gramin Jal Samwardhan Yojna
-   Institutionalization of Participatory Irrigation Management (PIM) and Water Users' Associations (WUAs)
-   Freshwater website – Launch
-   Water profile and Ground water Maps for all the Districts of the country
-   Augmentation of Freshwater Resources through rainwater harvesting, artificial recharge, roof water
-   Harvesting

1.2.7   Central Ground Water Board (CGWB)

(1)   CGWB

Central Ground Water Board (CGWB) is a subordinate of the Ministry of Water Resources as a national apex organization on ground water constituted in 1972. The mandate of CGWB is;

-   To develop and disseminate technologies, monitor and implement national policies for the scientific and sustainable development, and management of India's ground water resources including their exploration, assessment, conservation, augmentation, protection from pollution and distribution, based on principles of economic and ecological efficiency and equity.

In addition, the Ministry constituted the CGWB as the Central Ground Water Authority (CGWA) in pursuance of the Honourable Supreme Court's Order vide Gazette Notification dated 14th January 1997.   The mandate of the CGWA is:

-   To regulate and control ground water management and development of the country.

Table 1.31 shows related strategy on public (mass) awareness and education of CGWA.

Table 1.31   Related Strategy

Related Strategy	Year	Outline
Central Ground Water Authority Mass awareness & Education	Constituted in 1997	In addition to control the ground water development, CGWA is adopting proactive approach to educate and create mass awareness as a management strategy.

Source; CGWB

(2)   Structure of CGWB

Figure 1.6 shows the organizational structure of CGWB.

Member Secretary, Central Ground Water Authority
(CGWA)
(Central Headquarter)

Regional Directors (18)
Regional Directorates of Central Ground Water Board (CGWB)
Covering all the 27 states

Source; CGWB

Scientific & Technical Officers
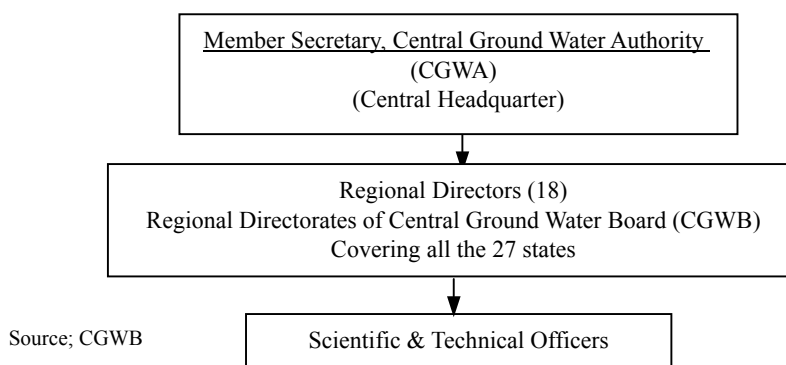
Figure 1.6   Organizational Arrangement for Awareness Programmes

(3)   Related Programmes and Activities

Table 1.32 and 1.33 shows programmes and activities related to public awareness in the field of water use, pollution and safety.

Table 1.32   Related Programmes

Program	Year	No. of Programs	No. of States covered	Target Groups	Funds
Mass Awareness	1998-1999 1999-2000 2000-2001 2001-2002 2002-2003	04 20 34 27 33	04 12 19 16 19	Representative of Central& State Govt. officials, Panchayats, Institutes, Group housing societies, Residential Welfare Associations, Industries, NGOs, VOs, and ground water users.	CGWA
Training on Groundwater management	1999-2000 2000-2001 2001-2002 2002-2003	04 12 21 32	01 10 14 19	Central & State Govt. Organizations, Panchayats, Representatives of Group Housing societies, Residential Welfare Associations, Institutions, Hotels, Industries, Farm houses, ground water users etc.	CGWA

Source; CGWB

Table 1.33   Mass Awareness Programmes conducted in UP

Activities	Date/Year	Place	Organizers	Outline	Funds
Mass Awareness	March & 24 May1999 March 1999 30 May 1999 16.December.2000 07 March.2003	Ghaziabad Meerut Baghpat Kanpur Jhansi	CGWB	Awareness about ground water conservation, augmentation, Protection & management	CGWA

Source; CGWB

(4)   Educational Tools

All the audio-visual equipments are available in the Central Ground Water Board to achieve the desired results.

1.2.8   Ministry of Health and Family Welfare (MOHFW)

(1)   Background

The union Ministry of Health & Family Welfare is instrumental and responsible for implementation of various programs on national level in the areas of family welfare, Prevention and Control of major communicable diseases and promotion of traditional and indigenous system of medicines. Apart from these, the Ministry also assists states in preventing and controlling the spread of seasonal disease out breaks and epidemics through technical assistance.

(2)   Organization

The Union Ministry of Health and Family Welfare comprises the following departments, each of which is headed by a Secretary to the Govt. of India. These are;

1) Department of Health

The department of health of the ministry is implementing National programme to tackle the menace of communicable and non-communicable diseases. These are;

- National Anti Malaria Programme (NAMP)
- National Filaria Control Programme (NFCP)
- Kala-Azar Control Programme
- Japanese Encephalitis
- National Leprosy Eradication Programme
- National TB (tuberculosis) Control Programme
- National Programme for Control of Blindness
- National Iodine Deficiency Disorders Control Programme
- National Mental Health Programme
- National AIDS Control Programme
- National Cancer Control Programme
- National Surveillance Programme
- Nutrition Programme
- Drug De-addiction Programme
- Medical Care for Remote and Marginalized Tribal &NOMADIC Communities

2) Department of Family Welfare

The department of Family Welfare is also implementing several programme at national scale. Some Important of them are outlined as follows;

- Maternal Health Programme: Reproductive and Child Health, Reproductive Tract Infection
- Child Health Programme: Immunization Strengthening Programme, Administration of Vitamin A
- Adolescent Health Programme
- Universal Immunization Programme
- Pulse Polio Immunization Programme

3) Department of Indian Systems of Medicine and Homeopathy

The term Indian Systems of Medical and Homeopath (ISM&H) covers both systems, which originated in India as well as outside but got adopted and adapted here in the course of time. These systems are Ayurveda, Siddha, Unami, Yoga, Naturopathy and Homoeopathy. The department promotes those systems in India.

(3)   Information Educations and Communication Programme (Public Awareness)

The public awareness i.e. Information Education and Communication (IEC) has been the integral component in the entire aforesaid programme undertaken by MOHFW. The prominent objective and tools used for public awareness conducted by MOHFW are summarized in Table 1.34.

Table 1.34   Public Awareness by MOHFW

Disease	Objectives, Activities and Tools used for Public Awareness
Malaria	IEC for Prevention and Control of Malaria using interpersonal communication, Audio-Visual aids and print materials
Kala-Azar	IEC for awareness and community involvement in control of Kala-Azar
Japanese encephalitis	IEC for Community Awareness to promote early case reporting, personal protection, isolation of the amplifier host
Dengue	IEC for vector control through community participation and social mobilization for control and prevention of dengue
Tuberculosis	IEC for early detection and treatment of Tuberculosis is underway at large scale through out country through Inter-Personal Communication and other methods. A mass media agency at national level has been engaged to carry out public awareness activities. States and districts in local language prepare IEC materials.
Eye care and blindness	IEC activities are undertaken at Central, State and District Level on eye care and blindness control. In this regard, a special campaign for mass awareness were undertaken during Eye Donation forte night (25th August to 8th September 2003) and world Sight Day (2nd Thursday of October)
Iodine Deficiency Disorders	Health education and Publicity for controlling Iodine Deficiency Disorders
HIV/AIDS	Information Education and Communication for prevention and control of HIV/AIDS
Reproductive and Child Health	IEC on Reproductive and Child Health (RCH) and family Welfare

Source: Annual Report, 2002-2003, Ministry of Health & Family Welfare

1.3   LOCAL LEVEL

1.3.1   UP Jal Nigam

(1)   Human Resource Development (HRD) Cell

UP Jal Nigam has its Human Resource Development (HRD) Cell by which various activities including IEC (Information, Education & Communication) and CP (Community Participation) programmes are carried out. The purpose of these programmes is not only to create awareness among rural and urban masses regarding use of safe drinking water, water related diseases, safe disposal of waste water, health & hygiene etc., but also to conduct training programmes for capacity building of various *Panchayat Raj* Institutions and Local bodies. The Indian Government as well as International agencies such as UNICEF, DFID, SIDA and so on fund these programmes.

(2)   Organizational Structure of HRD

An Executive Director who holds the rank of Chief Engineer heads the HRD Cell as shown in the Figure 1.7. The Executive Director is assisted by the Director of Superintending Engineer rank.

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┌─────────────────────────┐
│    Executive Director    │
│     (Chief Engineer)     │
└─────────────────────────┘
            │
┌─────────────────────────┐
│        Director          │
│ (Superintending Engineer)│
└─────────────────────────┘
      │               │
┌──────────────┐  ┌──────────────────┐
│ Human Resource│  │Community Participation│
│Development(HRD)│  │       (CP)        │
│               │  │                   │
│ - Training    │  │ - IEC programme for│
│   Programmes  │  │   creating awareness│
│   for capacity│  │                   │
│   building    │  │                   │
└──────────────┘  └──────────────────┘
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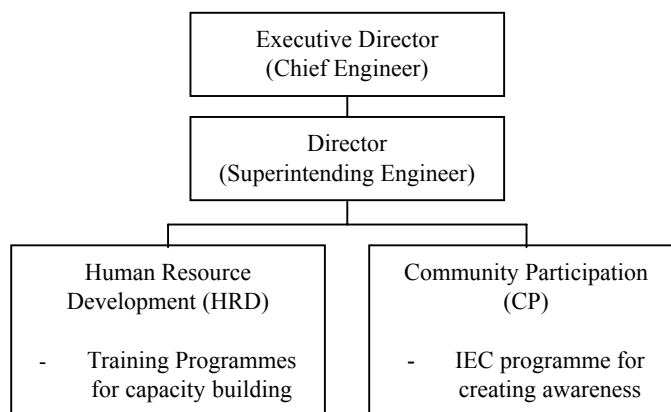
Source: UP Jal Nigam (Drawn by the JICA Study Team)

Figure 1.7   Human Resource Development Cell, UP Jal Nigam

The cell comprises of the following two wings.

1)   Human Resource Development (HRD) wing

HRD wing is carrying out various training programmes for capacity building of Panchayat Raj Institutions and other local bodies as well as professionals working in the field of water supply, sanitation and other hygiene related areas.

2)   Community Participation (CP) wing

CP wing which is looking after IEC (Information, Education & Communication) programmes for creating awareness in rural and urban masses regarding health and hygiene and safe use of drinking water and disposal of waste water and other related themes. Mobilization of Community for their active participation is also one of the important work assigned to this wing.

Both wings are headed by the Joint Director of the rank of Executive Engineers and are working under the Director, the Deputy Director, Field Officers and other supporting staffs assist them.

(3)   Related Projects

Table 1.35 and Table 1.36 shows past and present projects related to IEC and CP, which have been taken up in the past/are being conducted at present by HRD respectively.

Table 1.35   Past IEC and CP related Projects Taken Up by HRD

Projects	Project Sites	Organizers/Funds
C.D.D. WATSAN Project	Shankargarh District Allahabad	UNICEF – DFID (IEC Projects)
Awareness for fluoride control in four districts	Farrukhabad, Unnao, Barabanki and Raebareli.	UNICEF – DFID (IEC Projects)
Child Environment Project – in three districts	Balrampur, Badaun and Lalitpur	UNICEF – DFID (IEC Projects)
Capacity building of rural and urban people in three districts	Balrampur, Badaun and Lalitpur.	UNICEF – DFID (IEC Projects)
Child Environment Project	Tehri Garhwal.	UNICEF – SIDA Projects
School Sanitation	Saharanpur.	UNICEF – SIDA Projects
Integrated Water Supply and Sanitation Project	Jhansi.	UNICEF – SIDA Projects
Capacity building of technical sector for better output	-	UNICEF – WATSAN
Water Sanitation Supervisors Capacity Building.	-	UNICEF – WATSAN
Periodic Water Quality Surveillance.	-	UNICEF – WATSAN
Ground Water and Surface water resources.	-	UNICEF – WATSAN
Computer orientation and technical and non-technical sector under capacity building project	-	UNICEF – WATSAN
Promotion of sanitation through alternative delivery system	Allahabad	UNICEF – WATSAN
Urban Environment Development	Allahabad	UNICEF – WATSAN
Health and Hygiene education in Urban Slums within Municipal Corporation limit	Allahabad	UNICEF – WATSAN
Safe Drinking Water Programme.	-	DUTCH Project
Grass Root Level Training programme for sustainability of water supply and sanitation schemes	-	Indian Govt. - Drinking Water Mission
Environment, Health & Sanitation, Health – Hygiene education and Motivation for Community support	-	Indian Govt. - Drinking Water Mission
Capacity building of technical sector under Sector Professional Project	-	Indian Govt. - Drinking Water Mission
IEC – in four districts	Raebareli, Banda, Hathras and Varanasi	Indian Govt. - Drinking Water Mission
Integrated rural water supply and sanitation	Lalitpur district	SWAJAL Project

Source; HRD, UP Jal Nigam

Table 1.36   Ongoing IEC and CP related Projects by HRD

Projects	Project Sites	Organizers/Funds
Promotion of sanitation through Alternate Delivery system	Allahabad	UNICEF
Child Environment Project	Balrampur, Badaun and Lalitpur	UNICEF – DFID
Capacity Building Plan	Balrampur, Badaun and Lalitpur	UNICEF – DFID
Integrated WATSAN project	Jhansi	SIDA
IEC Programme	Raebareli, Banda, Hathras and Varanasi	Rajiv Gandhi National Drinking Water Mission

Source; HRD, UP Jal Nigam

(4)   Educational Tools and Equipment

Table 1.37 shows a list of educational tools and equipment, which are available in HRD.

Table 1.37   Educational Tools Available in HRD

Audio Visual Aids	Printed Materials	Audio Visual Materials
- Over Head Projectors - Televisions - Video Cassette Recorders	- A book of School Sanitation. - Water and Sanitation (A set of seven books). - Manual of Hand Pump installation and maintenance. A Guide to Mason. - IEC: Information, Education and Communication Aid Material – Posters and Leaflets. - Handbook on Rain Water Harvesting.	- Women empowerment in Health, Hygiene and Sanitation Education (Stree Shakti). - Sanitation. - District level Committee sensitization report. - Spot for radio and TV. Publicity.

Source; HRD, UP Jal Nigam

(5)   Problems and difficulties

Problems and difficulties to be overcome to heighten efficiently public awareness on environment, sanitation and health aspects and implement hygiene education, which are perceived by HRD of UP Jal Nigam are as follows.

- Age-old traditions, habits such as open defecation on riverbanks and religious faith like disposal of dead bodies and animal carcasses into the rivers are the biggest hurdle in having desired effects of mass awareness campaign.
- The problem can be overcome by extensive IEC methods for awareness on a regular basis, which is not possible at present due to non-availability of adequate funds.

(6)   Cooperative relationships with other entities

- For effectively implementing public awareness activities, advisory committees have been formed at different levels comprising of officers of UP Jal Nigam, Municipal Corporation and State Govt. departments. These committees are also responsible for inter departmental coordination at various level.
- In Allahabad town, IEC activities are being carried out in urban slums, which are planned in consultation with advisory body comprising of representatives of the Municipal Corporation, UP Jal Nigam, Education and Health Departments. Their active involvement and Cooperation are always available.
- HRD Cell of UP Jal Nigam has a network of 102 NGOs spread all over Uttar Pradesh. All the IEC and HRD activities are being carried out with the help of these NGOs, which are acting as support organization in all the activities.
- HRD and IEC projects are being implemented with the financial assistance of UNICEF under different projects of DFID and SIDA and other funding agencies.

1.3.2   Varanasi Nagar Nigam (Municipality Corporation)

(1)   Health Department

Related activities on public awareness on health, environment, sanitation and hygiene are occasionally taken up and conducted by the Health Department, which however is not specific department exclusively in charge of those activities, at the Varanasi Nagar Nigam (VNN). The department consists of the health section and the sanitation section as shown in Figure 1.8.

```
┌─────────────────────────────────┐
│        Health Department        │
│  N.S.A. (Nagar Swasthya Adhikari) │
│       (City Health Officer)     │
└─────────────────────────────────┘
          │
    ┌─────┴─────┐
    │           │
┌─────────┐ ┌─────────┐
│ Health  │ │Sanitation│
│ Section │ │ Section │
└─────────┘ └─────────┘
```

- Z.O. Health Officer   - Sentry Supervisor
- Sentry Inspector   - Sweeper

Source: Varanasi Nagar Nigam
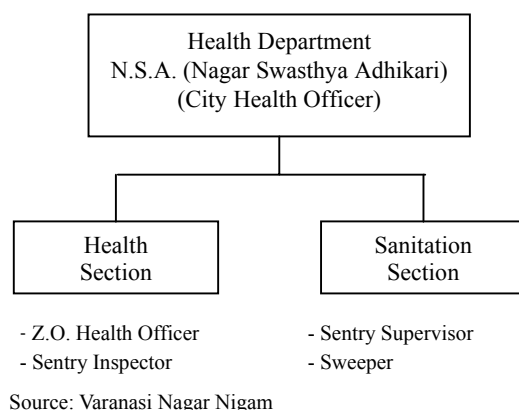
Figure 1.8   Health Department at Varanasi Nagar Nigam

1)   The Health Section

The Health Section concentrates on health consciousness through the following activities;

-    During summer and rainy season public population is made aware of what to eat and what not to eat. This kind of information and instruction is disseminated through newspaper and handbills.
-    Health camps are organized in different areas of the Municipality, especially focusing on low-incomer areas.

2)   The Sanitation Section

The Sanitation Section concentrates on environmental sanitation and hygiene through the following activities;

-    General public is made aware of putting the domestic garbage into bags and putting them on the specialized places.
-    Not to use and polythene and plastics materials.
-    The public is made aware not throw the garbage on roads and streets.
-    Related information on sanitation is taken up newspapers, handbills and display of hoardings.

(2)   Related Activities

In addition, as one of the outstanding activities, VNN is under way to prepare three ordinances as shown in Table 1.38.

Table 1.38   Related Ordinances of Varanasi Nagar Nigam

Name of ordinance	Year to be came into existence	Outline	Target groups	Section in charge
Death & Birth Registration	2003	- Benefits of registration of death and Birth	Promoting people to get the registration done	Schools* colleges* Audio/visual*
Area cleanliness	2003	- To heighten awareness among the people about the cleanliness of their surroundings	School colleges & Media	Sanitation
Use of polythene	2003	- Putting awareness regarding health hazard of use of polythene - The enactment has been done	Schools, colleges & Media, public authorities	Health

Note: * Executing entities and methods
Source: Varanasi Nagar Nigam

As well, VNN is conducting several public awareness activities at present, namely;

- Cleansing Campaign is taken up from time to time in particular areas.
- At present a program is being launched for cleanliness awareness such as throwing garbage in drains, putting of garbage bins in shops and sale of unhygienic fruits and other edible material.

(3)   Educational Tools and Equipment

As for educational tools and equipment, no audiovisual devices are available in VNN for implementing public awareness program effectively at present.

(4)   Cooperative Relationships with Other Entities

- In regard to certain programmes, cooperative relationship with educational institutions, help is taken up.
- There is no cooperative relationship directly with other Municipal Corporations.
- Certain NGOs active for public awareness programmes and necessary cooperative relationship is given to them.

(5)   Problems and difficulties

The following are problems and difficulties to implement efficiently Public Awareness on environment, health, sanitation and hygiene education, which are perceived by VNN.

- Lack of budget
- Lack of experts
- Lack of equipment (A certain set up/ devices are required)

1.3.3   Allahabad Nagar Nigam (Municipality Corporation)

- Allahabad Nagar Nigam does not have a specific department and section in charge of related public participation/public awareness
- However, there is a department handling health and sanitation issues. The department occasionally conducts related activities such as campaigns, advertisement in Newspaper, and preparation of Pamphlets and handbills.
- Several cooperating relationships with NGOs have been seen in public awareness programs.
- There are no specific policy, budget, experts, and educational tools and equipment for awareness and participation activities in Allahabad Nagar Nigam.

1.3.4   Lucknow Nagar Nigam (Municipality Corporation)

(1)   Policy

In order to keep the city hygiene and sanitation clear and sound environment, the Lucknow Nagar Nigam (LNN) has introduced related concepts into their policy as follows.

- To ensure the healthy and an environmentally friendly management system for LNN.
- To make Lucknow a clean city.
- To develop a " Roll Model"
- To make Lucknow pollution free.
- To develop a healthy environment for an individual.
- To make Lucknow a green city.

(2)   Organizational Structure

There is no specific department/sanction handling public awareness and education on hygiene and health issues in LNN. The Health Department of LNN, however, is in charge of health and environment matters. The Department consists of three sections as shown in Figure 1.9, which occasionally coordinates health and hygiene awareness and education activities in LNN. Among them, the Environmental Sanitation Section exclusively handles hygiene and sanitation issues.
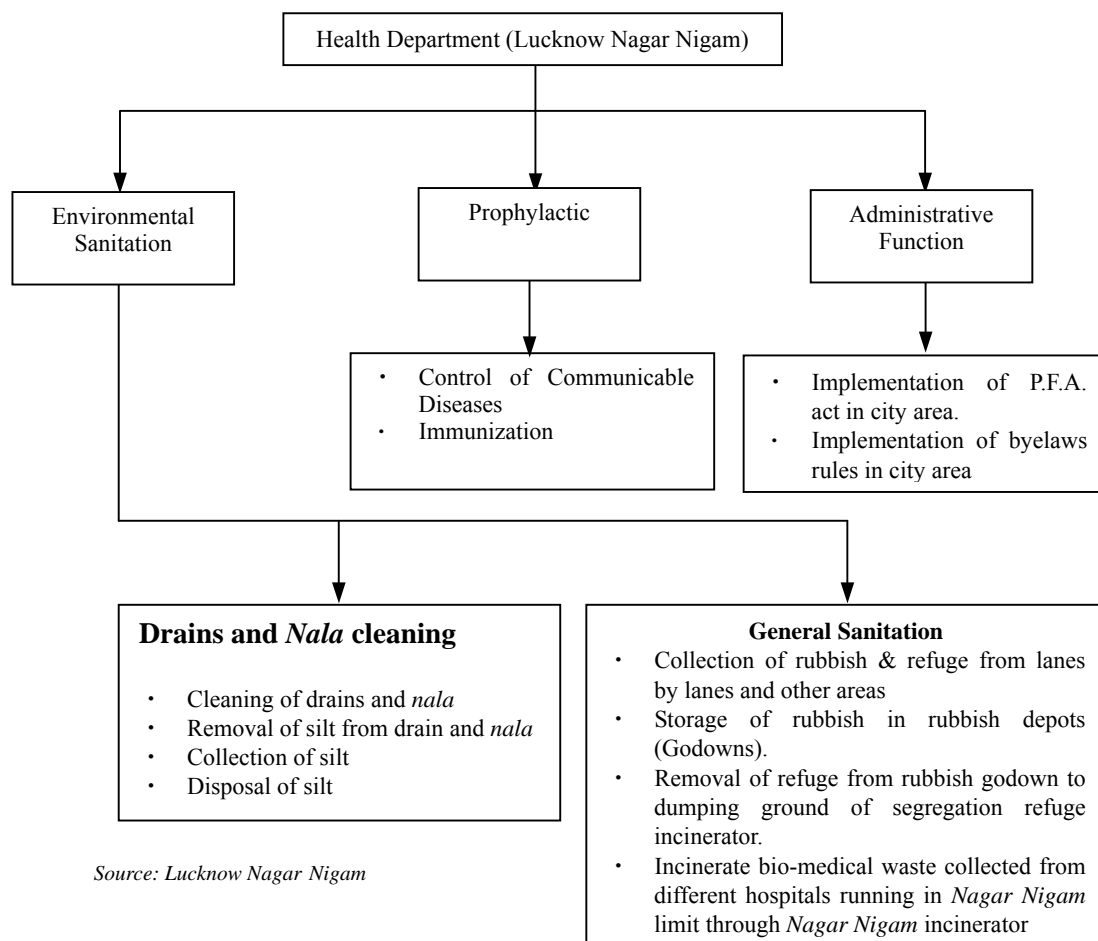
Figure 1.9   Health Department at Lucknow Nagar Nigam

(3)   Related Projects

The following shows public awareness projects implemented by LNN so far.

-    Solid waste Management project
-    Bio-medical waste management project
-    Vital statistics project
-    Safer water supply and sanitation
-    Slum Up-gradation project
-    Urban Drainage project

As well, LNN is conducting several public awareness activities at present, namely;

-    To aware the public not to used polythene bags through the organizing the camps and rallies.
-    Segregation of organic waste from the other waste at source of its generation.
-    Organizing health education camps, Control of AIDS, Pulse polio programme etc.

(4)   Educational Tools

As educational tools, LNN prepares printed materials, which are distributed from time to time in the camps.

(5)   Problems and difficulties

Problems and difficulties to be overcome to heighten efficiently public awareness on environment, sanitation and health aspects and implement hygiene education, which are perceived by LNN, are as follows.

-   Lack of funds
-   Lack of staff
-   Lack of public awareness

(6)   Cooperative relationships with other entities

-   Coordination with the Ministry of Education, Ministry of Environment, Ministry of Health, and UP Jal Nigam is maintained.
-   Meetings are organized time to time with other Municipal Corporations.
-   Relation with the NGO/NPO is maintained.
-   Cooperation with the WHO, UNICEF and USAID is maintained through the health department time to time.

1.3.5   Kanpur Nagar Nigam (Municipality Corporation)

Kanpur Nagar Nigam (KNN) has a structural origination called the Urban Community Development (UCD) Department under the supervision of the Assistant Municipal Commissioners and the Municipal Commissioner of Kanpur as shown in Figure 1.10. The UCD is in charge of public involvement and awareness activities for the population of Kanpur to the rural level.

In addition, there is the Health Department by which health and sanitation awareness programs are occasionally conducted.
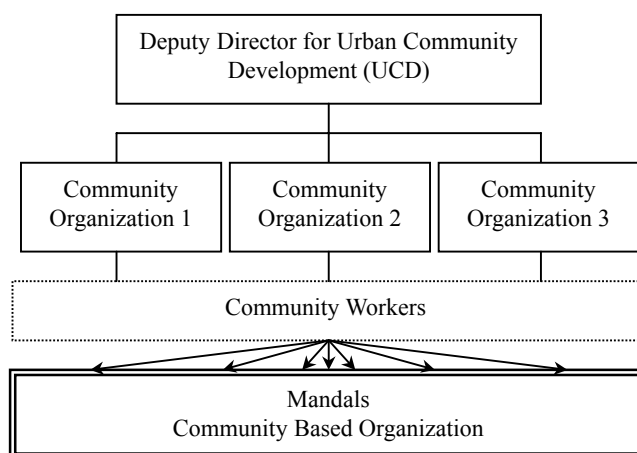
Source: Kanpur Nagar Nigam

Figure 1.10   Urban Community Development (UCD) at Kanpur Nagar Nigam

So far KNN has done several actives related to public awareness in the field of sanitation, health and environment. Some of them were conducted at the GAP project and by a Dutch assistance. However, KNN has no specific budgets, experts and equipment.

1.4 BUDGETS FOR PP/PA

1.4.1 Past Expenditures on PP/PA to NGOs

Table 1.39 shows past expenditures for PP/PA related activities paid to NGOs under YAP and others.

Table 1.39 Past PP/PA Expenditures to NGOs (Rp. in Lakhs)

Name of the NGO	Till 31.03.90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	Total
DELHI											
1 INTACH	24.93	-	0.20	-	-	-	-	-	-	-	25.13
2 INTACH (SPIC NACAY)	1.00	-	-	-	-	-	-	-	-	-	1.00
3 Centre for Environment Education	5.00	-	-	-	-	-	-	-	-	-	5.00
4 Himalayan Environment Trust	-	-	-	-	-	15.00	-	-	-	-	15.00
5 Uttarakhand Kala Sangam	-	-	-	-	-	1.00	0.60	-	-	-	1.60
6 Science & Kainat Society of India	-	-	-	-	-	-	0.02	-	0.05	1.08	1.15
7 Organizing Public Awareness camp in Delhi on YAP by Anusuchit Jati Jan Kalyan Sanstha (Regd.)								-	0.28	-	0.28
8 Sulabh International: Institute of Rural Development, Research & Training, New Delhi to organize mass community awareness programme and few training programme for the officers of NRCD/UPJN under YAP. (Total) Sanction: Rs. 3.45 lakhs								-	1.50	-	1.50
9 Seminar by Dev Bhoomi Vikas Sansthan, Delhi to create public awareness for prevention of increasing, pollution in origin of Ganga								-	0.30	-	0.30
TOTAL DELHI	30.93	0.00	0.20	0.00	0.00	16.00	0.62	0.00	2.13	1.08	50.96
HARYANA											
10 Sulabh International: for the Pilot Project on Awareness, Motivation & Training for four towns of Haryana namely Yamunanagar Jagadhiri, Panipat, Sonipat & Faridabad under YAP (Total Sanction: Rs. 1.19.600 29.10.96:	-							0.299	0.831	-	1.13
TOTAL HARYANA	-	-	-	-	-	-	-	0.299	0.831	0	1.13
UTTAR PRADESH											
11 Ganga Sewa Shivir	-	0.26	-	-	-	-	-	-	-	-	0.26
12 National Council of Dev. Communication	0.14	-	-	-	-	-	-	-	-	-	0.14
13 Academy for Environmental Science, F'bad	0.84	-	-	-	-	-	-	-	-	-	0.84
14 Academy for Environmental Science, Garmuketshwar	0.68	-	-	-	-	-	-	-	-	-	0.68
15 Himalaya Vanya Jeev Sansthan	0.58	-	-	-	-	-	-	-	-	-	0.58
16 Rashtrya Garmin Shoob Sansthan	-	0.35	-	-	-	-	-	-	-	-	0.35
17 Shri Kashi Ganga Ghat Sudhar Samiti	1.09	0.32	0.40	-	-	-	-	-	-	-	1.81
18 Shri Sankat Mochan Nidhi Amar Bhavan	-	0.30	-	-	0.04	-	-	-	-	-	0.34
19 Rashtriya Jal Avam Vayu Pradushan Nivaran Sansthan			-	-	0.80	-	-	-	-	-	0.80
20 Ganga Maha Samiti, Kanpur	-	-	-	-	-	0.74	-	-	-	-	0.74
21 Vayared Research Society	-	-	-	-	-	0.10	-	-	-	-	0.10
22 Eco-Friends workshop, Kanpur	-	-	-	-	-	-	0.16	-	-	-	0.16
23 Bhardwaj Sanskritik & Paryavaran Chetna Samiti, Allahabad					-	-	0.44	-	-	-	0.44
24 Samantar Intimate Theater Allahabad	-	-	-	-	-	-	0.30	-	-	-	0.30
25 Gangotri Conservation Project	-	-	-	-	-	-	-	-	6.33	-	6.33
26 Snena Samiti, Mirzapur	-	-	-	-	-	-	0.30	-	-	-	0.30
27 Exhibition in connections with Maga Mela, 1998 at Allahabad	-	-	-	-	-	-	-	-	1.59	-	1.59
TOTAL UP	2.10	1.84	0.62	0.40	0.00	1.68	1.20	0.00	7.92	0.00	15.76

Source: Ganga Action Plan MIS Report

1.4.2   Cost Estimation of PP/PA in YAP Extended Phase

The cost estimation of Public Participation/Public Awareness programs for the 15 implementing towns under YAP extended phase has been proposed under YAP extended phase as follows.

(1)   Budgets Allocations for 14 PIAs

Table 1.40 shows proposed activities and budgetary allocation for 14 PIAs excluding Delhi. As well, the budget breakdown by those PIAs is shown in Table 1.41.

Table 1.40   Proposed Budgetary Allocation for 14 PIAs in YAP Extended Phase

Proposed Activities	Rs. (Lakhs)
1. Events such as human chain, road shows and other related activities along the riverside	3.00
2. Meetings, *Padyatras*, Rallies, Painting Competition for children, Exhibition and Workshops	2.00
3. Training of trainers such as NGO's, Teachers of the Respective Schools selected for the awareness activities and training of beneficiaries to take up construction and maintenance of non core works	3.00
4. Printing and publishing cost for publicity material such as stickers, leaflets and resource material for distribution in the schools and in the community	1.50
5. Folk media, street theatre by the local community and school children or children of the area concerned, cinema slides and video film for the cable and local consumption	1.50
6. *Shramdan*	1.50
7. Public relations cost with local press such as *dainik jagran, Amar ujala* and *ajj*, local radio	1.00
8. Capacity building and familiarization program for PIA staff	0.75
Total Cost at the Town level	**14.25**

Note: The budget allocation for towns like *Agra, Mathura, Ghaziabad, Yamunanagar* may be increased by 20% keeping in view the size of their participation. Likewise the smaller towns such as *Etawah, Gurgaon budgetery* allocation may be decreased keeping in view the size of their participation. The cost against the above mentioned items are approx. costs; there could be a variation of rates in each concerned town.
Source: YAP Extended Phase

Table 1.41   Budget Breakdown by City/Town

Towns/Cities	Rs. (Lakhs)
1. Yamunanagar	15.0
2. Karnal	12.5
3. Panipat	12.5
4. Sonepat	12.5
5. Gurgaon	10.0
6. Faridabad	15.0
7. Noida	12.5
8. Ghaziabad	10.0
9. Vrindavan	10.0
10. Mathura	15.0
11. Agra	15.0
12. Etawah	10.0
13. Muzaffarnagar	10.0
14. Saharanpur	12.5
Total Budgetary Estimation	**172.5**

Source: YAP Extended Phase

(2)   Budget Allocations for Delhi

For the Delhi, another budgetary allocation has been proposed as shown in Table 1.42. The total cost estimation for the entire implementing town/city for public participation and public awareness

programs for the extended period/second phase of the project are as shown in Table 1.42.

Table 1.42   Proposed Budgetary Allocation for Delhi in YAP Extended Phase

Proposed Activities	Rs. (Lakhs)
1. Conferences, Meetings, *Padyatras*, rallies, painting competition for children, exhibition and workshops	25
2. Events such as human chain, road shows and other related activities along the riverside	35
3. Training of trainers such as NGO's, Teachers of the Respective Schools selected for the awareness activities and training of beneficiaries to take up construction and maintenance of non core works	30
4. Printing and publishing of resource material, stickers, leaflets, hoarding/billboards etc. and releasing of TV/print ads	40
5. Making a documentary film* in two parts depicting the present condition of river Yamuna and its surrounding with reference to YAP (first part). The second part of the film* should depict the progress of the project implemented by the respective PIA's	10
6. Folk media, street theatre, cinema slides and video film for cable consumption	20
7. Shramdan	30
8. Public relations cost with print and visual media	3
9. Capacity building and familiarization program for PIA staff	3
10. Launching of the second phase of the project by holding a regional conference in New Delhi to be inaugurated by PM and attended by respective PIA's and allied agencies	4
Total Cost for Delhi**	200

Note *These films would be shown on *DoorDarshan* as it has higher reach. For distribution to PIA's copies would be made.
Note**This cost estimation for Delhi has very less margin to slash down. It is very close to actual cost per items mentioned above.
Source: YAP Extended Phase

(3)   Total Cost Estimation for PP/PA

Total Budgetary requirement for PP/PA is Rs. 433.5 Lakhs, which includes budgets allocations for 14 PIAs and Delhi as shown Table 1.43. The cost estimation is merely and estimate based on approximate rates and not actual. The rates of the various items may vary depending upon the town, agency involved and services provided.

Table 1.43   Total Cost Estimation for PP/PA

Breakdown for the Budgets	Rs. (Lakhs)
1. The cost at the implementing level for 14 towns	172.5
2. The cost for Delhi	200.0
Total Cost	**372.5**

Source: YAP Extended Phase

1.5   PUBLIC PARTICIPATION PROJECTS IN INDIA & OTHERS

In India as well as other south Asian and other developing countries, a lot of development projects, large or small, in the field of wastewater management, sewerage and non-sewerage, and urban environment have been implemented with public participation schemes so far.

1.5.1   Slum Networking Project (India) & Orangi Pilot Project (Pakistan)

For example, in India and Pakistan, two different types of urban environment improvement projects were implemented in 1980's. One was the 'Slum Networking Project' in Ahmedabad and Bhopal in India. Another was the 'Orangi Pilot Project' in Karachi of Pakistan. It has been said that the former one is a 'Master-Plan Type' Project for the Objective Oriented, and the latter is a 'Non-Master-Plan Type Project for the Process Oriented' as summarized in Table 1.44.

Table 1.44   Slum Networking Project (India) and Orangi Pilot Project (Pakistan)

Projects	Participants and the process to participation	Form of participation	Effects of participation in the project
'Slum Networking Project' Ahmedabad and Bhopal, India [1]	The Slum Networking Project in *Ahmedabad* and *Bhopal*, India. Himansh Parikh conceptualised the project in the course of his work in *Indore*. Since then, he has been associating with the project in *Varodara*, *Ahmedabad* and *Bhopal* as a facilitator cum civil engineer. Institutional networking plays a key role in the project. Municipal Corporation, slum dwellers, industrial house, NGOs, and micro finance agency constitute the actors in the institutional networking.	The Slum Networking Project is a unique urban movement for improving both environment and the living standard of urban dwellers by physical works and community development.	It is necessary for all the actors to learn know-how to achieve common goals jointly and efficiently. The 74th amendment of Indian Constitution paved the way for empowering Municipal Corporations. As a result, the institutional networking as being reorganized in favor of Municipal Corporation.
'Orangi Pilot Project', *Karachi*, Pakistan (Spontaneous squatter development) [2]	The Christy *Nagar* community of Orangi slum area (approx. 500 dwellings) participated in this project. Every Friday afternoon, community meetings were held in the local mosque. The community leader was decided upon and told a proposal for sanitation improvement (shallow sewerage) for discussion. The community decided to implement the project and meetings were held to discuss methods for fund raising and to designate a trustworthy person from the community to manage the funds. A committee was set up to supervise the operation and maintenance of the facilities once completed.	The community funded the entire construction cost and operated and maintained the facilities once completed.	The community participated in the project from the planning stages. Funding for the entire construction cost was successful because the community understood project goals and content (There were some difficulties caused by the weakness of community organizations)

Note: The Table has been modified by the JICA Study Team
Source: 1) 'Urban Environmental and Institutional Networking in India: A case of Slum Networking Project', Shinoda Takashi, 2001, Discussion Paper No.18 Urban Environment Management in South Asia, issued 'Orient Culture Research Institute', the University of Tokyo
           2) Guidelines for Management of Sewerage Facilities in Developing Countries (draft), July 2002, Infrastructure Development Institute (IDI) – Japan

1.5.2   Public Participation Projects in Other Developing Countries

In addition, public participation projects have been implemented in other developing countries as shown in Table 1.45.

Table 1.45   Public Participant Projects in Other Developing Countries

Projects	Participants and the process to participation	Form of participation	Effects of participation in the project
Rocas and *Santos Reis*, *Natal*, Brazil (Two spontaneous squatter settlements)	The local community participated in this project. Resident workshops discussed sanitation issues and the advantages and disadvantages of various improvement options (including shallow sewerage). Residents expressed anxiety regarding technology, operation and maintenance of shallow sewerage. A pilot project comprising one area (28 dwellings) was implemented. After over one year of problem-free operating, the representatives of the remaining 85 areas (3,100 dwellings, 15,000 people) were invited to inspect pilot area. As a result, all remaining areas agreed to adopt shallow sewerage.	People of each dwelling agreed to the laying of pipes on their land and to the responsibility of operating and maintaining those pipes. A local operator undertook the area pipe-laying. Residents were employed for pipe laying and pump station construction. Residents learnt how to operate and maintain the area wastewater conduit during the construction period.	The percentage of the population connected (97%) and the brief amount of time it took were unprecedented. The system has since operated virtually problem-free for five years. In cases of the sewer blocking, residents solved this themselves.
Colombo, Sri Lanka, JICA Social Development Survey (Survey for detailed design of improvements in Colombo City water supply services). Implementation of a pilot project for decreasing water not accounted for.	The residents of three North Colombo City slums (pilot project area) were chosen to participate. Local NGOs retained by JICA survey team supervised the creation of community organizations and consensus, and mediated between the water supply service provider, the National Water Supply and Drainage Board.	Residents participated in excavating and relaying community drains. With the condition of labor being provided by the community for this work, the National Water Supply and Drainage Board lowered connection fees from the normal charge of 20,000 to 4,000 rupees.	By promoting the change from a communal water tap to individual water tap (installation of meters), the amount of water not unaccounted-for has decreased.
Gray water treatment model area pilot project (Survey on Principal Cities Sanitary Environment Development Plan, Nicaragua, JICA Development Survey 1996 - 1998)	This survey was made in four fields, water supply, garbage collection, domestic wastewater, and storm water drainage. A pilot project was undertaken in some of these fields.	The objectives were: - Verification of the feasibility of technology proposed in the master plan - Acquisition of fundamental data for an outline design of the F/S - Request for enhanced awareness and cooperation of residents concerning development of a sanitary urban environment - Verification of the appropriate cooperation level among central and local governments and NGOs - Presentation of the actual improvement method to residents and persons concerned for the sanitary urban environment project	Definite evaluation could not yet be made because not enough time had passed since completion of the pilot treatment plant. A survey by questionnaire was conducted on 42 beneficiary households after completion. The result indicates that all of them replied that (1) the village environment was improved, (2) they are satisfied with the constructed domestic wastewater treatment facilities, and (3) they will implement operation and maintenance of the domestic wastewater treatment facility. Moreover, most (67%) of residents replied that they would reconstruct toilets to a flush type in the future at their own cost.

Note: The Table has been modified by the JICA Study Team
Source: -   'Guidelines for Management of Sewerage Facilities in Developing Countries (draft)' July 2002, IDI
            -    'Tentative Guidelines for Optimisation of Operation and Maintenance of Sewage Works in Developing Counties', IDA Water Series No.12, Oct. 2001, Infrastructure Development Institute (IDI) – Japan

Those past experience shall be reviewed and could be adapted to the future projects and programmes.

CHAPTER 2

PUBLIC HEALTH AND OTHER SOCIAL ASPECTS

CHAPTER 2   PUBLIC HEALTH AND OTHER SOCIAL ASPECTS

2.1   PUBLIC HEALTH

One of the negative impacts caused by a bad management of sewerage facilities and less awareness of population on practices on and attitudes to discharging wastewater (black and grey water) to the surrounding environment are increase in the number of water related diseases like diarrhea, namely "health impacts".

As well, generally, reviews on health situation are necessary to elaborate a suitable hygiene education plan to reduce health impacts based on infectious and parasitic diseases that are prevalent in target areas in developing countries.

The attempts were made, therefore, to get a basic understanding of health situations in India UP and the Four Cities, on several limited available data and information as follows.

2.1.1   Communicable Diseases in India

Table 2.1 shows reported cases and death due to six major communicable diseases in India in 2001.

Table 2.1   Six Major Communicable Diseases in India (2001)

Cases due to Six Major Communicable Diseases (%)		Death due to Six Major Communicable Diseases (%)	
1. Acute Respiratory Infection (ARI)	64.5	1. Tuberculosis (TB)	39.0
2. Acute Diarrhea Diseases	29.2	2. Pneumonia	18.0
3. Tuberculosis (TB)	2.6	3. Acute Respiratory Infection (ARI)	17.0
4. Pneumonia	1.7	4. Acute Diarrhea Diseases	15.0
5. Enteric Fever	1.5	5. Viral Hepatitis	6.0
6. Viral Hepatitis	0.5	6. Meningitis	5.0

Source: Health Information of India 2000 & 2001, Central Bureau of Health Intelligence, Ministry of Health & Family Welfare

2.1.2   Communicable Diseases in UP

(1)   Communicable Diseases

Table 2.2 shows communicable diseases (infectious diseases and parasitic diseases) in UP from 1994 to 2002.

Table 2.2   Communicable Diseases in UP

		1994	1995	1996	1997	1998	1999	2000	2001	2002
Acute Respiratory Infection (ARI)	Cases	-	1,235,088	1,301,635	277,408	547,133	-	510,463	406,777	-
	Death	-	561	585	121	154	-	300	56	-
Acute Diarrhoeal Diseases[1]	Cases	1,097,442	1,750,778	1,396,469	258,136	564,587	464,254	289,008	269,323	-
	Death	859	2,047	671	115	405	104	118	56	-
Pulmonary Tuberculosis (TB)	Cases	-	-	-	-	-	-	61,692	168	-
	Death	-	-	-	-	-	-	70,816	91	-
Pneumonia	Cases	-	96,036	150,743	32,951	47,081	-	36,873	45,973	-
	Death	-	514	433	162	127	-	64	44	-
Enteric Fever	Cases	-	70,541	34,885	8,712	70,541	-	15,666	18,135	-
	Death	-	182	100	16	182	-	182	13	-
Viral Hepatitis	Cases	-	489	258	355	2,779	-	988	1,885	-
	Death	-	16	12	10	25	-	24	14	-
Meningococcal Meningitis	Cases	-	-	-	-	-	-	251	212	-
	Death	-	-	-	-	-	-	32	5	-
Malaria[2]	Cases	89,617	195,235	169,367	134,362	112,291	99,362	96,971	94,524	-
	Death	0	0	0	11	0	0	0	15	-
Dengue[3]	Cases	-	-	-	29	0	28	0	11	0
	Death	-	-	-	1	0	0	0	0	0
Kala-Azar (leishmaniasis)	Cases	-	-	-	2	68	81	47	22	14
	Death	-	-	-	1	0	5	0	3	2
Japanese Encephalitis	Cases	-	-	-	351	1,051	1,371	1,170	1,005	-
	Death	-	-	-	76	195	275	253	199	-
Cholera	Cases	485	292	59	21	-	-	0	0	-
	Death	3	0	0	0	-	-	0	0	-

Note;   1) Data including Gastro Enteritis, 2) 2001 is provisional, 3) 2003 up to the October,
4) 2001-2003 are provisional, 2002 data is up to the September
-: Data not available/not found

Source: - Indiastat.com (http://www.indiastat.com)
- Health Information of India, 1999, Ministry of Health and Family Welfare
- Health Information of India 2000 & 2001, Ministry of Health and Family Welfare

In addition, Table 2.3 shows data related to Filariasis in UP. UP is one of 19 states in India where Filariasis is designated as an endemic disease by the Ministry of Health and Family Welfare.

Table 2.3   Estimated Filaria in UP (in Million)

As of 31st Dec. 2001		Estimation
Population at Risk	Rural	93.2
	Urban	16.84
	Total	110.09
Micro Filaria Carriers		0.70
Diseased Person		4.51

Source; Health Information of India 2000 & 2001, Ministry of Health and Family Welfare

(3) Classification of the Communicable Diseases in UP

According to WHO (World Health Organization), "water contaminated by human, chemical or industrial wastes can cause a variety of communicable diseases through ingestion or physical contact". WHO summarizes these communicable diseases to four categories as shown in Table 2.4.

Table 2.4   WHO Categories on Communicable Diseases

	Categories	Causes	Typical Diseases
1	Water-Borne Diseases	Caused by the ingestion of water contaminated by human or animal faeces or urine containing pathogenic bacteria or viruses	Cholera, Typhoid, Bacillary Dysentery, Other Diarrhoeal Diseases
2	Water-Washed Diseases	Caused by poor personal hygiene and skin or eye contact with contaminated water	Scabies, Trachoma, Flea, Lice and Tick-borne Diseases
3	Water-Based Diseases	Caused by parasites found in intermediate organisms living in water	Dracunculiasis, Shistosomiasis, Other helminthes
4	Water-Related Diseases	Caused by insect vectors, which breed in water	Dengue, Filariasis, Malaria, Onchocerciasis, Trypanosomiasis, Yellow Fever

Source; WHO (http://www.who.int/inf-fs/en/fact112.html)

Therefore, the situations of communicable diseases in UP can be roughly evaluated that Water-Borne Diseases (Acute Diarrhea Diseases, Viral Hepatitis), Water-Related Disease (Malaria, Filariasis, Japanese Encephalitis) are prevalent in accordance with the WHO categories.

In addition to the WHO categories, respiratory ailments and related diseases such as Acute Respiratory Infection (ARI), Pulmonary Tuberculosis and Pneumonia, and Meningococcal Meningitis are prevalent in UP as well which are categorized as, what is called, "Air Born Diseases". The pathogenic organisms and viruses caused to air born diseases are spread by droplets of those patients and/or particles like dusts contaminated with faeces of those patients through air. Those ailments/diseases particularly occurred in dry seasons when dusts and other particles contaminated with the pathogenic organisms and viruses derived from wastewater and human excreta of the patients can easily be dried up and be flown into air, finally reached to the mouth of human being of which circumstances develop those ailments/diseases generally.

2.1.3   Public Health of the Four Cities

As a matter of fact, relevant data and information on health are not available at local levels or if available, there are cases that those data are out of dated, fallen-off or somehow biased. The attempt has been made with limited data and information available to express health situations in the four cities as follows.

(1)   Varanasi

According to 'A report of State of Environment Varanasi' October 2000, CPCB, MOEF, the Health risk in the City and the prominent diseases are described as follows.

>   1)   Health Risk in the City
>
>   Varanasi is a city of narrow streets and lanes. The largely populated city is also very dense and congested. No proper sunlight and air is being received by the residents in many areas of the city. Sanitation and sewerage is also very poor, water logging and improper handling of garbage resulting in the grown of insects and flies, the carriers of many infectious diseases. Narrow streets also hinder the smooth flow of traffic, creating more health hazard due to vehicular pollution.
>
>   2)   Prominent Diseases

The diseases observed in Varanasi city in the year 1995 shown in Table 2.5, it is clear from the table that the major group of diseases spread mainly due to the bad environmental quality. These are skin diseases, infections of intestine & respiratory tract, anemia, mental diseases, eye diseases, ear diseases and tuberculosis.

Table 2.5   Prominent Diseases in Varanasi (1995)

	Diseases	Cases
1.	Skin & muscle diseases	1,98,903
2.	Infectious diseases of intestine	1,95,803
3.	Gynecological diseases	1,71,191
4.	Eye diseases	1,19,804
5.	Respiratory tract infections	98,881
6.	Diseases of digestive tract parts	77,062
7.	Anemia	76,219
8.	Bone related diseases	68,677
9.	Injuries and accidents	65,724
10.	Burn Cases	65,271
11.	Urinogenital diseases	64,635
12.	Injury of blood vessels and nerves	58,590
13.	By birth diseases	57,953
14.	Heart diseases	55,616
15.	Mental diseases	41,140
16.	Diseases of blood circulation	33,142
17.	Ear diseases	28,995
18.	Other bacterial diseases	24,607
19.	Under nutritional diseases	20,800
20.	Other infectious and parasitic diseases	14,191
21.	Rati rog	13,020
22.	Endocrinal diseases	12,633
23.	Attempt of murders, suicide and other offenses	11,637
24.	Diseases of oral cavity	10,419
25.	Tuberculoses	9,268
26.	Arthritis	8,984
27.	Cancer diseases	7,595
28.	Viral diseases	6,003
29.	Diseases spread by insects	3,919

Source: 'A report of State of Environment Varanasi' October 2000, CPCB, MOEF

According to the above description, which was noted from the viewpoint of environmental impacts, however, it can be evaluated that it explains the environmental sanitation and health as well. In addition, based on Table 2.5, 'Infectious diseases of intestine' is rampant in Varanasi, which may be classified as "Water Boren Diseases" by the WHO Classification.

(2)   Lucknow

According to 'A report of State of Environment Lucknow' January 2002, CPCB, MOEF, the Health risk in the City and the prominent diseases are described as follows.

1)   Health Risk in the City

The natural dust and lack of cleanliness in some parts of the city together with unplanned development and very rapid encroachment of new areas by slum dwellers are creating a serious health risk in Lucknow city. Faulty and lack of sewerage system are the main causes of such dirtiness. Improper collection of garbage and stagnation of sewage along the roadside often create very bad sanitary conditions in city. Stagnation of garbage attracts number of insects and flies, which acts as a vector or agent for spreading different infectious diseases. The situation is worse in old part of the city. Old and broken sewer lines and water supply system are responsible for propagation of gastro-enteric diseases, diarrhea and other infections. The problem of unhealthy environment has been compounded by the presence of cattle sheds. Pigs contribute a lot to the in-sanitary condition in colonies inhabited by the poor. An epidemic of gastroenteritis struck the city in 1994 for above reasons.

2)   Prominent Diseases

According to the office of Chief Medical Officer, the Govt. hospitals have recorded 63 broad categories of diseases in 1994-95. Eight such diseases according to order of occurrence are shown in Table 2.6. From the table, it is clear that environmental quality plays a major role in diseases like mental retardation, respiratory tract infection and asthma, dental diseases, nervous disorder, deafness etc.

Table 2.6   Prominent Diseases in Lucknow (1994-1995)

	Diseases	Cases
1.	Mental Retardation	17,920
2.	Respiratory Tract Infection	17,850
3.	Dental Diseases	15,620
4.	Anemia	14,720
5.	Blindness & Night Blindness	12,530
6.	Nervous Disorder	10,150
7.	Deafness	7,150
8.	Asthma	1,070

Source: 'A report of State of Environment Lucknow' January 2002, CPCB, MOEF

According to the above description, which was noted from the viewpoint of environmental impacts, however, it can be evaluated that it explains the environmental sanitation and health as well. As for health situation, the explanation of 'an epidemic of gastroenteritis struck the city in 1994' that is supposedly Diarrhoeal Diseases, but Table 2.6 does not indicate such Diarrhoeal Diseases. The data was eight diseases among 63 categories of diseases as mentioned above. Therefore, more detailed review of the disease data shall be studies to rectify the Table.

(3)   Kanpur

According to 'A Cost Benefit Analysis of the Ganga Action Plan (GAP)' January 1998, All India Institute for Hygiene and Public Health Calcutta (AIIH&PH) has conducted the health benefit study for GAP as follows.

1)   AIIH& PH study

The AIIH&PH study selected areas of six towns on the Ganga River to conduct a health survey and a contingent valuation survey. For the towns of Haridwar, Kanpur, Chandannagar and Titagrh corresponding studies were conducted among a group of controls in the same towns, with similar characteristics as the study areas except that they have not been affected by the GAP, selected for comparative evaluation with the study areas. For the towns of Patna and Nabadwip no such control studies were undertaken.

2) Proportional Death Rate

Details of Proportional Death Rates (PDR) due to specific water borne diseases for each of the study and control areas, calculated as the following formula, are given in Table 2.7.

$$PDR = A/B*100$$

PDR: Proportional Death Rate
A: Death due to a specific disease in the last year
B: Total Cases of Water Borne Death in the last year

Table 2.7   Proportional Death Rate from Water Related Disease (12 Months)

Town	Sample Size		Diarrhoea (%)		Entric Fever (%)		Infective Hepatitis (%)		Poliomyelitis (%)		Parasitic Infestation (%)		Others (%)	
	Control	Study	Control	Study	Control	Study	Control	Study	Control	Study	Control	Study	Control	Study
Haridwar	834	2,065	8.2	3.96	8.2	1.59	8.2	-	3.27	-	-	2.39	72	92.06
Kanpur	218	778	-	6.25	-	-	-	-	-	-	-	-	-	93.50
Patna	-	1124	-	-	-	4.76	-	4.76	-	4.76	-	-	-	85.72
Napadwip	-	544	-	9.99	-	9.99	-	18.18	-	-	-	-	-	61.84
Chandannagar	379	1,345	-	-	-	3.03	-	3.03	-	-	-	-	100	93.94
Tiagarh	310	849	-	18.18	-	9.09	-	-	-	-	-	-	100	72.73

Source: A Cost Benefit Analysis of the Ganga Action Plan (GAP)' January 1998, (AIIH&PH)

3) Prevalence of specific water borne diseases

The prevalence of specific water borne diseases is given by the study and control area in Table 2.8.

Table 2.8   Prevalence of Water Related Disease (6-month study)

Town	Diarrhoea (%)		Entric Fever (%)		Infective Hepatitis (%)		Helminthic Infection (%)		Poliomyelitis (%)		Skin Diseases (%)		Others (TB/Asthma, Anemia) (%)	
	Control	Study	Control	Study	Control	Study	Control	Study	Control	Study	Control	Study	Control	Study
Haridwar	0.71	0.65	1.43	0.53	0.59	0.09	0.23	0.43	0.11	0.14	0.23	0.09	1.07	0.67
Kanpur	3.66	11.44	4.58	6.17	0.45	1.54	5.04	7.33	-	-	3.21	7.2	3.21	10.41
Patna	-	3.82	-	6.31	-	3.82	-	0.35	-	0.08	-	0.08	-	15.39
Napadwip	-	11.39	-	1.83	-	1.1	-	12.86	-	0.36	-	7.35	-	7.72
Chandannagar	2.76	5.58	2.15	2.08	0.61	0.82	2.76	6.47	-	-	4.91	6.25	3.68	5.5
Tiagarh	4.52	9.42	1.29	1.53	0.65	1.4	2.58	10.71	-	0.59	3.55	9.2	4.19	10.2

Source: A Cost Benefit Analysis of the Ganga Action Plan (GAP)' January 1998, (AIIH&PH)

4) Health Status of Kanpur

The crude death rate in the study area is 27.6, compared to 20.6 in the study area. The mortality breakdown shows that 6.25% of deaths were due to diarrhoeal diseases in the study area, compared to none in the control area. The prevalence of water borne diseases is

also greater in the study area for all the diseases as shown in Table 2.8.

2.1.4   Primary Health Care

As the primary health care system infrastructure a three-tier system has been developed and is based on the population norms as shown in Table 2.9. Namely, Community Health Centres (CHCs), Primary Health Centres and Sub-Centres have been built up in rural areas to provide an easy access to health care facilities. Meanwhile, in urban areas, the public health care system consists of hospitals and health posts.

Table 2.9   Three Infrastructure for Primary Health Care

Centre	Population Norms	
	Plain Areas	Hilly/Tribal Areas
Sub – Centre	5,000	3,000
Primary Health Centre (PHC)	30,000	20,000
Community Health Centre (CHC)	1,20,000	80,000

Source: Annual Report 2002-2003 Ministry of Health and Family Welfare

(1)   Sub-Centre (SC)

The Sub-Centre is the most peripheral contact point between the primary healthcare system and the community. Each Sub-Centre is manned by one Auxiliary Nurse Midwife (ANM) and one Male Health Worker. One Lady Health Worker (LHW) is entrusted with the task of supervision of six Sub-Centres. The staff at Sub-Centres are assigned tasks relating to interpersonal communication in order to bring about behavioural charge in relation to maternal and child health, family welfare, nutrition, immunization, diarrhoeal control and control of communicable diseases programmes. The Sub-Centres are provided with basic drugs for minor ailments needed of women and children. Since March 2002, total 137,311 sub-centres are being funded by Government of India.

(2)   Primary Health Centre (PHC)

The Primary Health Centre is the first contact point between the village community and a medical officer. These are established and maintained by the State Government under the Minimum Needs/Basic Minimum Services Programme. A PHC is manned by a medical officer and is supported by 14 paramedical and other staff. It acts as a referral unit for six Sub-Centres and has 4-6 beds. The activities of PHCs include curative, preventive and promotive health care as well as family welfare services.

(3)   Community Health Centre (CHC)

The Community Health Centres are established and maintained by the State Governments under the MNP/BMS Programme. It is manned by four medical specialists, i.e., surgeon, physician, gynaecologist and paediatrician supported by 21 paramedical and other staff. It has 30 Indoor beds with X-ray, labour room, operation theatre and laboratory facilities. It serves as a referral centre for four PHCs, and also provides facilities for obstetric care and specialist consultations. At present, 3,043 CHCs are functioning.

2.2   RELIGIONS

2.2.1   Population by Religion

Religion is a key factor for taking account of "social consideration" in development projects and programmes. In the national census of 1991, the religious wise population was studied in India. Table 2.10 shows the data on the religious wise population identified in the census in the Districts and Divisions of Allahabad, Kanpur, Lucknow and Varanasi in UP.

In India, generally, people accede each family religion. Therefore, the proportion of religions in the four Districts of Allahabad, Kanpur, Lucknow and Varanasi has not widely changed during this decade. That is to say, it can be roughly estimated that approximately 80 % and more of the population in the four Districts believes in Hindu religion at present, followed by Islam of approximately 12 % and more of the population.

A statistical data on religion in India in 2002 shows Hindu 81.3%, Muslim 12%, Christians 2.3%, Sikh 1.9% and others 2.5 (Source; India, At a Glance 2004, Statistical Overviews & Development Indicators, Jagran Research Centre). The data supports the estimation of religious status of Hindu 80% and Muslims 12% of the four Districts as reasonable ratios.

Table 2.10   Population by Religion (1991)

		Hindu	Muslims	Christians	Sikhs	Buddhists	Jains	Others	Not stated
Allahabad District	People	4,271,348	636,680	7,268	3,626	566	1,342	191	292
	%	86.79	12.94	0.15	0.07	0.01	0.03	0.00	0.01
Allahabad Division	People	7,843,297	1,168,382	8,854	4,720	3,483	1,587	478	453
	%	86.85	12.94	0.10	0.05	0.04	0.02	0.01	0.01
Kanpur (Nagar) District	People	1,922,176	430,492	19,881	38,576	1,252	4,596	382	1,132
	%	79.48	17.80	0.82	1.60	0.05	0.19	0.02	0.05
Kanpur Division	People	7,969,177	1,064,933	21,765	43,274	10,717	9,412	1,018	1,429
	%	87.36	11.67	0.24	0.47	0.12	0.10	0.01	0.02
Lucknow District	People	2,181,785	543,045	13,155	19,688	2,816	2,051	191	70
	%	78.97	19.66	0.48	0.71	0.10	0.07	0.01	0.00
Lucknow Division	People	12,825,780	2,320,030	20,439	100,581	37,422	3,359	452	1,270
	%	83.78	15.15	0.13	0.66	0.24	0.02	0.00	0.01
Varanasi District	People	4,221,267	624,225	5,344	4,369	3,358	1,605	413	1
	%	86.85	12.84	0.11	0.09	0.07	0.03	0.01	0.00
Varanasi Division	People	9,274,686	1,180,613	8,414	5,263	19,364	1,682	816	997
	%	88.40	11.25	0.08	0.05	0.18	0.02	0.01	0.01

Note: % is calculated by the JICA Study Team
Source: Uttaranchal and Uttar Pradesh, At a glance 2003, District wise Statistical Overview, Jagran Research Centre

2.2.2   Hindu and Muslims in the Four Cities

The public awareness survey conducted in the four Cities by the JICA Study Team shows that most of them are Hindu, namely 85% - 93% as the simple arithmetic average of all income groups by each city, followed by Muslim as summarized in Table 2.11. (See Chapter 3)

Table 2.11   Hindu and Muslims in the Four Cities (Public Awareness Survey)

City	Group	Hindu	Muslim	City	Group	Hindu	Muslim
Varanasi	LIG	97.60	2.40	Lucknow	LIG	79.70	20.30
	MIG	85.00	12.20		MIG	92.40	3.80
	HIG	94.50	2.70		HIG	87.20	3.50
	Average	*92.37*	*5.77*		*Average*	*86.43*	*9.20*
Allahabad	LIG	92.90	6.30	Kanpur	LIG	89.60	7.00
	MIG	93.10	5.60		MIG	89.70	8.30
	HIG	93.90	4.90		HIG	75.70	12.90
	Average	*93.30*	*5.60*		*Average*	*85.00*	*9.40*

The JICA Study Team

Based on the table, it is understood the followings;

- In Allahabad and Varanasi, more than 90% of the respondents are Hindu.
- In Lucknow and Kanpur, more than 85% of the respondents are Hindu.
- Therefore, Allahabad and Varanasi has slightly more people (15%) of Hindu respondents than Lucknow and Kanpur.
- Similar trend between Hindu and Muslim of four Cities is seen in Table 2.10 Religious wise population (1991) in those Districts and Divisions.

2.3   LANGUAGES

2.3.1   Official Languages

Based on a recent study conducted by the 'Anthropological Survey of India', 325 languages are spoken in the country.

Though, according to Article 343 (1) of the Constitution, the government India has designated 'Hindi' as the official language of India. In addition, the Constitution Article 343 (3) empowered the parliament to provide by law for act, 1963 (amended in 1967) was use of English in official work after 25th January 1965. The act also lays down the both Hindi and English shall compulsorily be used for certain specified purposes, such as resolution, general orders, rules, notifications, press communiqués administration and other reports, license, permits, contracts agreements, etc.

Furthermore, there are 14 other official languages. Namely Bengali, Telugu, Marathi, Tamil, Urdu, Gujarati, Malayalam, Kannada, Oriya, Punjabi, Assamese, Kashmiri, Sindhi and Sanskrit are spoken in India. That is to say, for each state and Union Territory, official language(s) is designated by respective states and UTs as shown in Table 2.12.

According to the Table, Hindi is the official language of UP. As a matter of fact, Hindustani is a popular variant of Hindi/Urdu spoken widely throughout northern India but is not an official language.

Table 2.12   Official Languages of each State/UT

No.	States & Union Territories	Official Language(s)	Other Language(s) Spoken
1.	Andhra Pradesh	Telugu	Urdu
2.	Arunachal Pradesh	*	Hindi, Monpa, Nissi, Apatani
3.	Assam	Assamese (Bengali for Borak Valley)	Bengali
4.	Bihar	Hindi	Urdu, Bengali, Bhojpuri
5.	Chhattisgarh	Hindi	Halbi, Gondi, Matri, Dorli, Parji, Abujmani
6.	Goa	Konkari (Marathi Associate)	Gujarati, Hindi, Kannada, Marathi
7.	Gujarat	Hindi & Gujarati	Sindhi
8.	Haryana	Hindi	Punjabi
9.	Himachal Pradesh	Hindi	Punjabi, Pahari
10.	Jammun & Kashmir	Urdu	Kashmiri, Hindi, Dogri, Ladkhi
11.	Jharkhand	Hindi	Urdu, Santhali, Oriya, Mundari
12.	Karnataka	Kannada	Telugu
13.	Kerala	Malayalam & English	Tamil
14.	Madhya Pradesh	Hindi	Marathi
15.	Maharashtra	Marathi	Urdu, Hindi
16.	Manipur	Manipuri	Manipuri
17.	Meghalaya	*	Khasi, Garo & English
18.	Mizoram	Mizo	English
19.	Nagaland	English	Ao, Konayak, Angami, Sema, Lotha
20.	Orissa	Oriya	Hindi, Telugu
21.	Punjab	Punjabi	Hindi
22.	Rajasthan	Hindi	Punjabi, Rajasthani
23.	Sikkim	Nepali, Bhutia, Lepcha & Limbu	-
24.	Tamil Nadu	Tamil	Telugu
25.	Tripura	Bengali & Kok Borak	Kokborak, Manipuri
26.	Uttaranchal	Hindi	Garhwali, Urdu, Punjabi, Bengali
27.	Uttar Pradesh	Hindi	Urdu
28.	West Bengal	Bengali	Hindi
29.	Andaman & Nicobar Islands	Hindi & English	Nicobarese, Malayalam, Bengali, Tamil, Telugu
30.	Chandigarh	Hindi & English	Punjabi
31.	Dadra & Nagar Haveli	Hindi & English	Gujarati, Marathi
32.	Daman & Diu	Gujarati	Sindhi, Hindi
33.	Delhi	Hindi	Punjabi, Urdu, English
34.	Laksha Dweep	Hindi & English	Malayalam
35.	Pondicherry	Tamil	English, French

Note: * No act has been passed declaring any languages as the official ones. English is used in official work
Source; India, At a Glance 2004, Statistical Overviews & Development Indicators, Jagran Research Centre

2.3.2   Scheduled Languages in UP

In addition, the national census of India in 1991 has clarified that more than 90% of the people in UP speak Hindi, followed by Urdu (8.9%) as shown in Table 2.13.

Table 2.13   Scheduled Languages* in UP (1991)

Language	People	%
Hindi	125,348,492	90.139
Urdu	12,492,927	8.984
Punjabi	661,215	0.475
Bengali	263,917	0.190
Nepali	99,859	0.072
Sindhi	52,168	0.038
Sanskrit	44,847	0.032
Marathi	17,698	0.013
Malayalam	15,721	0.011
Tami	15,569	0.011
Oriya	14,742	0.011
Gujarati	11,311	0.008
Telugu	10,597	0.008
Kashmiri	5,227	0.004
Kannada	3,727	0.003
Assamese	2,844	0.002
Manipuri	576	0.000
Konkani	364	0.000

Note: * No. of persons who returned the language (and the mother tongues
         grouped under each) as their mother tongue
Source; India, At a Glance 2004, Statistical Overviews & Development Indicators,
         Jagran Research Centre

2.4   LITERACY

2.4.1   Literacy Rate in the Study Area

Literacy rate is one of the critical indicators to consider public participation and public awareness programmes in the target communities and cities. Table 2.14 shows literacy rate of the four Cities targeted by the JICA study and the Districts and Divisions of UP in which those four Cities are located.

Table 2.14   Literacy Rate (2001) (%)

	Total	Male	Female
Allahabad City	82.00	87.00	76.00
Allahabad District	62.89	77.13	46.61
Allahabad Division	59.58	74.16	43.45
Kanpur City	82.00	83.00	80.00
Kanpur (Nagar) District	77.63	82.08	72.50
Kanpur Division	70.72	78.76	61.35
Lucknow City	78.00	82.00	73.00
Lucknow District	69.39	76.63	61.22
Lucknow Division	55.56	66.84	42.67
Varanasi City	72.00	91.00	50.00
Varanasi District	66.75	83.68	48.07
Varanasi Division	62.00	78.33	45.20

Source: Uttaranchal and Uttar Pradesh, At a glance 2003, District wise Statistical
          Overview, Jagran Research Centre

Based on the table, it is easily understood the followings;

- As a whole, more than 72% of the population of four Cities can read and write.
- Literacy rate of Female is low compared to Male in respective administrative levels.
- There is a certain reduction in the rate in order of each administrative level from City to Division.
- The disparities between Female and Male in the rate are from 9% to 41%.
- The City where shows the largest number of the disparity is Varanasi City of 41%.
- Among those Cities, the City where shows the least literacy rate, i.e. 72%, is Varanasi City.
- Among those Cities, the group that shows the highest rate, i.e.91%, is the Male of Varanasi City.
- Among those Cities, the group that shows the least rate, i.e.50%, is the Female of Varanasi City.

2.4.2   Literacy Rate by Population Group

As points to keep in mind in literacy rate, generally, there are disparities among population groups in a community, village, city, district, division or state. As one of the example data on literacy rate in India, Table 2.15 shows a result of a social survey conduced in rural area of UP of which selected sample household were 4,251 (of which 215 were non-response), spread over 217 village and 23 districts in the sate.

According to the Table, the disparities in literacy rate among population groups, namely, income, landholding, occupation, cast, religion and so on, are evident.

Therefore, those identifications and acknowledgements on literacy rate shall be utilized and referred when prepare a plan on hygiene education, and PP/PA programmes and activities.

Table 2.15   Literacy Rate and Gender Disparity by Population Group in rural of UP

Population Group		Literacy Rate (aged 7 and above) (%)			
		Total	Male	Female	F/M
Household Income (Rs.)	Up to 20,000	36.70	51.70	19.30	0.37
	20,001 – 40,000	48.00	64.00	28.10	0.44
	40,001 – 62,000	58.90	73.60	40.80	0.55
	62,001 – 86,000	64.80	79.80	46.40	0.58
	Above 86,000	74.00	89.90	56.50	0.63
Landholding	Landless Wage Earner	24.40	38.20	7.40	0.20
	Marginal	43.70	60.10	24.50	0.41
	Small	52.90	66.80	36.20	0.54
	Medium	62.20	77.00	44.60	0.58
	Large	68.80	82.20	51.80	0.63
	Landless others	42.20	58.80	21.80	0.37
	All land owners	49.90	65.40	31.60	0.48
	All land non-owners	34.20	49.50	15.40	0.31
Occupation	Agriculture	48.50	63.30	30.60	0.48
	Salaried + prof. + S. Empl.	62.40	80.30	41.10	0.51
	Wage Earners	26.80	40.30	10.20	0.25
	All others	41.50	57.20	23.50	0.41
Caste	STs	33.60	46.50	16.00	0.34
	SCs	32.40	48.10	13.70	0.29
Religion	Hindus	48.20	64.00	29.30	0.46
	Muslims	35.00	47.10	20.20	0.43
Household Size	Up to 4	32.00	46.50	14.40	0.31
	5 - 7	46.00	61.00	27.30	0.45
	8 and above	51.80	67.90	33.30	0.49
Poverty line	Lower Segment Below	38.20	53.10	21.50	0.41
	Upper Segment Below	37.90	52.90	20.10	0.38
	Lower Segment Above	48.00	63.80	29.10	0.46
	Upper Segment Above	61.50	76.20	42.90	0.56
Adult Literacy	None Literate	9.60	13.90	4.30	0.31
	Female Literate	47.20	61.70	26.20	0.42
	Male Literate	46.30	71.90	13.60	0.19
	Both Literate	78.80	89.50	67.20	0.75
Village Development	Low	43.90	59.00	25.60	0.43
	Medium	49.20	65.50	29.90	0.46
	High	55.90	69.10	40.90	0.59
All Groups		**46.70**	**62.00**	**28.30**	**0.46**

Note: - ST: Scheduled Tribes
              - SC: Scheduled Caste

Source; North India, Human Development Report, National Council of Applied Economic Research, 2003, OXFORD

2.5   PRIMARY EDUCATION

Public Primary / Secondary Education is one of the major functions that may instruct the purples / children, who are the actors and stakeholders in the next generation, in health, hygiene and river environmental issues through the public education scheme.

2.5.1   Article 45 of the Indian Constitution

In India, public primary / secondary education for all children up to the age of 14 years is compulsory and free as set forth in Article 45 of the Indian Constitution. Public Education for all children by 1960 was initially sought to be attained by the year, but the goal has not been attained successfully due to a lot of constraints.

2.5.2   Primary and Secondary Education

The basic system of primary and secondary education is as follows.

-   Primary Education or Junior Basic : 6-11 years age group or 1st to 5th Class
-   Senior Basic   : 6th to 10th Class
-   Higher Secondary   : 11th to 12th Class

Table 2.16   Primary and Secondary Schools/Students/Teachers

District/Division	Junior Basic			Senior Basic			Higher Secondary		
	School	Student	Teacher	School	Student	Teacher	School	Student	Teacher
Allahabad District	1,435	230,087	4,745	444	81,637	2,265	342	152,259	3,389
Allahabad Division	5,945	794,231	17,257	13,309	216,957	6,502	726	398,655	8,911
Kanpur Nagar District	1,319	226,802	6,124	386	70,539	2,184	302	169,259	5,296
Kanpur Division	6,653	1,064,019	24,783	1,882	297,452	10,079	834	506,778	13,234
Lucknow District	1,329	186,669	3,774	242	47,534	1,580	321	125,497	3,395
Lucknow Division	10,713	1,389,266	30,366	2,295	277,991	10,907	881	506,645	11,379
Varanasi District	1,429	1,093,095	24,157	1,412	280,811	8,003	770	554,181	11,035
Varanasi Division	5,483	12,554,938	291,929	19,639	2,938,650	98,925	8,459	5,321,830	123,516

Note: Data as on 30 Sept. 2000 (Provisional)
Source: Uttaranchal and Uttar Pradesh, At a glance 2003, District wise Statistical Overview, Jagran Research Centre

2.6   MASS MEDIA

Mass media is a useful tool for disseminating messages and information on hygiene, health and environment as well as to mobilize public and community participation in related activities and programmes. As a matter of fact, a great number of mass media including newspapers, periodicals, air media and so on are active all over India.

2.6.1   Newspapers and Periodicals in UP

Newspapers and periodicals, and the languages published in UP are summarized in Table 2.17 and Table 2.18 respectively.

Table 2.17   Newspapers and Periodicals in UP

Category	Variety
Dailies	841
Tri/biweeklies	24
Weeklies	4,824
Fortnightlies	946
Monthlies	1,277
Quarterlies	352
Annual	15
Other Periodicals	118
Total	8,397

Source; Statistical Abstract, India 2002, Central Statistical Organization

Table 2.18   Newspaper/Periodicals by Language in UP

Language	Variety
Hindi	6,794
English	373
Bengali	7
Gujarati	2
Punjabi	4
Sanskrit	18
Sindhi	6
Telugu	1
Urdu	858
Bi-lingual	301
Multilingual	17
Others	16
Total	8,397

Source; Statistical Abstract, India 2002, Central Statistical Organization

2.6.2   Air Media in UP

In addition, air and cable media are very active in UP. Table 2.19 and Table 2.20 show Air media and Cable media available in UP. According to the Table, the Doordarshan Network, a national TV network, covers 90% of the UP area and 96.2% of the population, as well as the Metro Channel Network, another national TV network, covers 40.7% of the UP area and 54% of the population.

Table 2.19   Air Media in UP

Media			Number
AIR broad casting centres (as of Sept. 2000)			14
Doordarshan Network (as of Jun. 2002)	Studio Centres		7
	DD-1 Transmitters		66
	Coverage DD-1	Area (%)	90.0
		Population (%)	96.2
Metro Channel Network (as of Jun. 2002)	DD-2 Transmitters		19
	Coverage DD-2	Area (%)	40.7
		Population (%)	54.0

Note;   - AIR is 'All India Radio
        - Doordarshan Network: A national TV network
        - Metro Channel Network: Another national TV network
Source;   India, At a Glance 2004, Statistical Overviews & Development Indicators, Jagran Research Centre

Table 2.20   Cable TVs in the Four District and Division of UP

	Cable TV Centres	Cable Connection
Allahabad District	117	9,271
Allahabad Division	133	11,535
Kanpur (Nagar) District	256	26,107
Kanpur Division	328	29,301
Lucknow District	21	1,078
Lucknow Division	355	35,243
Varanasi District	152	12,400
Varanasi Division	191	15,576

Source: Uttaranchal and Uttar Pradesh, At a glance 2003, Districtwise Statistical Overview, Jagran Research Centre

CHAPTER 3

PUBLIC AWARENESS SURVEY

CHAPTER 3   PUBLIC AWARENESS SURVEY

The public awareness survey was conducted using a quantitative method in all four target cities. The quantitative survey was done through structured questionnaire methods focusing on households and facilities such as Crematoria, Low Cost Sanitations (LCS) and Bathing Ghats.

3.1   SURVEY DESIGN

As the quantitative survey included households and facilities, separate designs were opted for both, as they were different in objective and nature. As the objective of the household survey was to have broad understanding of the Knowledge, Attitude and Practices (KAP) and Behaviour of the population and also to analyse the various issues related to public awareness on sanitation, environment and river pollution aspects, on the other hand, the facility survey focused on usage of public toilets, crematoria and bathing Ghats and also on the factors preventing the usage.

3.2   SAMPLING CONCEPT

3.2.1   Household Survey

In the household survey, in order to ensure appropriate representation from each segment of the population and solicit comprehensive information, the survey area was stratified on the basis of High Income, Low Income and Middle Income Groups. Further, the percentage of representation from the different income groups was decided on the basis of distribution and proportion of numbers of households and the population. Since, on consultation with officials and assessment it was observed that Middle Class and Low Class always formed the largest part of the households, maximum representation was from Middle Income Groups (MIG) with a view to ensure appropriate and proportional representation. Further, while selection of target areas for the aforementioned Income Groups, coverage from different pockets of the town was taken in to consideration in order to have holistic and diverse views from each category of respondents. In this regard, areas across the riversides, mid of the city, outer stretch with rural characteristics were identified and covered with a view to have broad understanding of the issues and varied behavioural patterns of the population across the town. After the selection of sample areas and size, households (respondents) were taken randomly from across the specified areas.

3.2.2   Facility Survey

In facility survey, similarly, an outline was set for the coverage of area and sample size. The criteria decided for the selection of areas was based on distribution of LCS, ghats and crematoria across the cities. But, while executing the questionnaires near Ghats, at many occasions it was found the all three facilities existed together, so, making the demarcation of area very difficult. However, selection of LCS Sites was easier as it existed largely in low income areas and slums, market places, bus stands and others. As far as sample size was concerned, major size was taken from the LCS areas because of their greater numbers in comparisons to ghats and crematoria. However, the criteria for conducting Facility Survey were followed up as it was decided but near ghat and crematoria a general view was taken from different category of respondents.

3.3   EXECUTION OF SURVEYS

3.3.1   Preparation

(1)   Surveyors

Based on the concept and idea of participatory approach, the surveyors were selected from the respective cities. Namely, surveyors as themselves are considered one of the constituents of possible

actors to be involved in this study as information disseminators. One survey team for the survey organized in each city consisted of one team leader and nine surveyors, viz. total 10 surveyors were in each city surveyed.

(2)   Training

A one-day training programme was organized for the orientation of surveyors. In this regard, two training programmes were held in Varanasi and in Lucknow covering all the surveyors from all four cities as shown in Table 3.1.

Table 3.1   Training Program

Surveyors (number)		Venue	Date
Varanasi	(10)	Hotel Diamond, Varanasi	April 23rd, 2003
Allahabad	(10)		
Lucknow	(10)	Hotel Maharaja, Lucknow	May 1st, 2003
Kanpur	(10)		

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(3)   Mapping

In the training programs, a mapping preparation by each survey group was held to identify the Low Income, High Income, and Middle Income areas in each city, apart from the location of various facilities such as LCS, crematoria and bathing ghats in the towns. (See Appendix 1. Mapping for the household survey). The criteria referred for the demarcation of each income group were as follows:

- General understanding based on the socio-economic conditions including household numbers and population distribution, etc.
- Living standards
- Viewpoints from the Nagar Nigams
- Viewpoints from opinion leaders
- Others

The mapping further substantiated by the Nagar Nigams and opinion leaders of the respective areas brought clarity on the identification/demarcation of areas. It was also instrumental in finalizing the sampling and brought clarity among the surveyors.

3.3.2   Sampling Numbers

Taking account of the sampling concept and the mapping preparation mentioned above, the sampling number in every income group of household survey in each city was considered. In addition, keeping in view the possibility of mistakes and human error, the numbers were decided as show in Table 3.2.

Table 3.2   Sampling Numbers

	Household Survey				Facility Survey			
	HIG	MIG	LIG	Subtotal	LCS	Ghat	Crematoria	Subtotal
Varanasi	73	147	124	**344**	76	92	63	**231**
Allahabad	82	144	126	**352**	108	65	42	**215**
Lucknow	86	185	74	**345**	207	36	>	**243**
Kanpur	70	156	115	**341**	125	111	>	**236**
Total	311	632	439	**1,382**	516	304	105	**925**

Note: LIG; Low Income Group, MIG; Middle Income Group, HIG; High Income Group
Source; The JICA Study Team

3.3.3 Questionnaires

Two kinds of questionnaire forms were prepared for the household survey and the facility survey. The forms are designed to suit the conditions of the survey areas. They are composed of several conceptions as described in Table 3.3. The questionnaires appear in Appendix 2.1 and 2.2.

Table 3.3 Questionnaires

Household Survey	Facility Survey
1. Respondent Profile	1. Respondent Personal Profile
2. House Profile of the respondent	2. General
3. Water & wastewater issues	3. LCS (Public Toilets)
4. Solid Waste	4. Bathing Ghats
5. Sanitation	5. Crematoria
6. Health & hygiene	6. River Environment Issues
7. River Pollution	7. Participation
8. Participation, behaviour and perception	-

The JICA Study Team

3.4 RESULTS OF HOUSEHOLD SURVEY

3.4.1 Respondent Profile

Table 3.4, 3.5and 3.6 show the respondents' profile. Approximately 80% of the respondents are Male as well as 60 % of them are household heads. Their average age is 40 years old. As for religion aspect, most of them (90%) are Hindu, which are followed by Muslim.

Table 3.4 Respondents' Profile (1)

		Sex (%)		Age (years old)			Status in Household (%)						
		Male	Female	Max.	Min.	Ave.	Head	Housewife	Retired Elderly	Youths	Children	Others	N
Varanasi	LIG	76.6	23.4	66.0	14.0	39.0	61.3	21.8	0.80	13.7	0.8	0.80	0.80
	MIG	78.2	21.8	68.0	18.0	37.5	51.0	17.0	0.00	31.3	0.0	0.00	0.00
	HIG	78.1	21.9	76.0	20.0	44.8	58.9	19.2	1.40	15.1	0.0	4.10	1.40
Allahabad	LIG	84.9	15.1	85.0	15.0	39.2	69.0	11.9	0.00	17.5	1.6	0.00	0.00
	MIG	96.5	3.5	80.0	17.0	39.5	66.7	3.50	0.70	27.1	1.4	0.70	0.70
	HIG	91.5	8.5	80.0	18.0	42.2	72.0	6.10	0.00	22.0	0.0	0.00	0.00
Lucknow	LIG	86.5	13.5	79.0	17.0	35.5	60.8	13.5	0.00	23.0	1.4	1.40	0.00
	MIG	76.8	23.2	85.0	17.0	33.7	36.2	14.6	3.20	43.8	0.5	1.60	1.60
	HIG	87.2	12.8	77.0	19.0	41.6	64.0	11.6	1.20	19.8	0.0	3.50	0.00
Kanpur	LIG	89.6	10.4	65.0	15.0	37.6	64.3	7.00	0.90	22.6	0.9	0.00	4.30
	MIG	85.3	14.7	75.0	1.00	35.4	60.3	6.40	0.00	27.6	4.5	0.60	0.60
	HIG	77.1	22.9	66.0	14.0	35.6	31.4	17.1	2.90	41.4	4.3	1.40	1.40

Note: "N" stands for "No Answerer"   *The JICA Study Team*

Table 3.5   Respondents' Profile (2)

		Religion (%)							Income/Month (Rs.)		
		Hindu	Muslim	Sikhism	Buddhist	Jaina	Others	N	Max	Min.	Ave.
Varanasi	LIG	97.6	2.4	0.0	0.0	0.0	0.0	0.0	18,000	600	3,017.1
	MIG	85.0	12.2	0.0	0.0	0.0	0.0	2.7	40,000	1,500	9,123.1
	HIG	94.5	2.7	1.4	0.0	0.0	0.0	1.4	50,000	5,000	19,338.0
Allahabad	LIG	92.9	6.3	0.8	0.0	0.0	0.0	0.0	8,000	500	2,659.9
	MIG	93.1	5.6	1.4	0.0	0.0	0.0	0.0	30,000	1,500	9,174.3
	HIG	93.9	4.9	1.2	0.0	0.0	0.0	0.0	55,000	12,000	20,902.4
Lucknow	LIG	79.7	20.3	0.0	0.0	0.0	0.0	0.0	25,000	500	3,382.4
	MIG	92.4	3.8	2.2	0.0	0.5	1.1	0.0	55,000	2,000	10,975.5
	HIG	87.2	3.5	8.1	0.0	0.0	1.2	0.0	120,000	3,000	31,884.7
Kanpur	LIG	89.6	7.0	0.9	1.7	0.0	0.9	0.0	14,000	1,000	3,046.9
	MIG	89.7	8.3	1.3	0.6	0.0	0.0	0.0	72,000	1,000	7,965.4
	HIG	75.7	12.9	7.1	0.0	4.3	0.0	0.0	40,000	6,000	16,446.2

Note: "N" stands for "No Answerer"   *The JICA Study Team*

Table 3.6   Respondents' Profile (3)

		Own House (%)		Dwelling (Years)							Farm Animal (%)		
		Yes	No	N	<2	3 to 5	6 to 10	10 to 20	>20	N	Have	Don't have	N
Varanasi	LIG	55.6	44.4	0	4.0	10.5	11.3	11.3	62.1	0.8	25.0	71.8	3.2
	MIG	79.6	20.4	1.4	2.0	23.1	17.7	10.2	46.3	0.7	12.9	83.7	6.8
	HIG	89.0	9.6	1.4	4.1	9.6	23.3	16.4	45.2	1.4	20.5	72.6	6.8
Allahabad	LIG	81.7	17.5	0.8	0.8	9.5	29.4	4.0	55.6	0.8	21.4	77.8	0.8
	MIG	98.6	1.4	0.0	2.1	11.1	36.8	16.0	31.9	2.1	13.2	86.1	0.0
	HIG	93.9	6.1	0.0	1.2	8.5	23.2	14.6	52.4	0.0	14.6	85.4	0.0
Lucknow	LIG	63.5	36.5	0	12.2	23.0	20.3	8.1	31.1	1.4	33.8	66.2	0.0
	MIG	75.7	22.7	1.2	9.2	44.3	24.3	7.0	13.5	1.6	35.7	63.8	0.0
	HIG	91.9	7.0	1.2	2.3	37.2	37.2	8.1	12.8	2.3	57.0	43.0	0.0
Kanpur	LIG	79.1	20.0	0.9	3.5	10.4	33.0	10.4	35.7	2.6	13.9	84.3	1.7
	MIG	80.1	19.9	0.0	1.9	17.9	23.7	15.4	40.4	0.6	17.9	80.1	0.0
	HIG	75.7	24.3	0.0	4.3	17.1	27.1	5.7	45.7	0.0	15.7	84.3	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

3.4.2   Water and Waste Water

Water supply systems are the dominant in four cities, which are followed by hand pumps. Table 3.7 shows availability ratio of water supply systems in Kanpur is relatively low (60%) in HIG areas as against HIGs in other three cities.

Table 3.7   Source of Drinking Water

(%)		Source of Drinking Water											
		W/S	H. Pump	Well	CW/S	River	Vendor	Rain	Others		Combination		N
Varanasi	LIG	43.5	37.9	4.8	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
	MIG	68.7	28.6	1.4	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.8
	HIG	84.9	4.1	1.4	1.4	0.0	0.0	0.0	4.1	2.7	0.0	0.0	1.4
Allahabad	LIG	55.6	37.3	0.8	2.4	0.8	0.0	0.0	0.0	1.6	1.6	0.0	0.0
	MIG	95.8	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0
	HIG	95.1	2.4	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	0.0	0.0
Lucknow	LIG	27.0	60.8	1.4	6.8	1.4	0.0	0.0	0.0	0.0	2.7	0.0	0.0
	MIG	75.7	10.8	0.5	0.5	0.0	0.5	0.0	7.0	0.0	4.3	0.0	0.0
	HIG	90.7	0.0	1.2	0.0	0.0	0.0	0.0	2.3	0.0	4.7	0.0	0.0
Kanpur	LIG	33.9	44.3	0.0	18.3	0.0	0.0	0.0	0.0	0.0	1.7	0.0	1.7
	MIG	46.8	34.6	0.0	0.0	0.0	0.0	0.0	10.9	0.0	7.7	0.0	1.7
	HIG	60.0	32.9	0.0	0.0	0.0	0.0	0.0	5.7	0.0	1.4	0.0	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

As for common practice on treatment of water before drinking, a general trend as HIGs are more active in the practice than the lower groups is identified in four cities. However, such practice of HIGs in Allahabad and Kanpur shows pretty low (20-30%) as against HIGs in Varanasi and Lucknow.

Correspondingly, there is a trend as LIGs are more frequently drink river water directly than HIGs in four cities. However, such practice of HIGs in Allahabad and Kanpur shows pretty high (33-38%) as against HIGs in Varanasi and Lucknow (14-28%) as shown in Table 3.8. This is an important finding to considerer a master plan for four municipalities.

Table 3.8 Drinking Water and Waste Water

(%)		Treatment of water before drinking			Drink river water directly?			Connect with an existing sewerage system?			
		Yes	No	N	Yes	No	N	Yes	No	Don't know	N
Varanasi	LIG	3.2	96.0	0.8	54.8	44.4	0.8	39.5	59.7	0.0	0.8
	MIG	31.3	67.3	1.4	47.6	51.7	0.7	70.7	28.6	0.7	0.0
	HIG	86.3	12.3	1.4	17.8	80.8	1.4	71.2	26.0	1.4	1.4
Allahabad	LIG	2.4	94.4	3.2	51.6	48.4	0.0	11.9	85.7	0.0	0.0
	MIG	14.6	85.4	0.0	44.4	55.6	0.0	41.7	57.6	0.0	0.7
	HIG	29.3	70.7	0.0	37.8	62.2	0.0	43.9	56.1	0.0	0.0
Lucknow	LIG	10.8	85.1	4.1	36.5	58.1	5.4	20.3	74.3	0.0	5.4
	MIG	48.1	51.4	0.5	28.1	71.4	0.5	57.8	41.1	0.5	0.5
	HIG	88.4	11.6	0.0	14.0	86.0	0.0	88.4	11.6	0.0	0.0
Kanpur	LIG	7.0	91.3	1.7	19.1	78.3	2.6	32.2	63.5	0.0	1.7
	MIG	15.4	84.6	0.0	21.2	78.8	0.0	53.2	46.2	0.6	0.0
	HIG	20.0	80.0	0.0	32.9	67.1	0.0	57.1	12.9	30.0	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

For payments for charges of sewerage systems, Table 3.9 shows a general trend as HIGs pay well than the lower income groups. However, the ratio on the payment of HIGs in Kanpur is pretty low (47.5%) as against HIGs in other three cities (72-100%).

Table 3.9 Sewerage and Payment

(%)		If yes, pay for charges of the sewerage?				If yes, how much (Rs)			If not, where does your wastewater flows?				
		Yes	No	Don't know	N	Max	Min	Ave.	Open drain	Unmanaged across the area	To river	Others	N
Varanasi	LIG	40.8	46.9	12.2	0.0	90	8	42.0	46.7	40.0	9.3	0.0	4.0
	MIG	73.1	2.9	21.2	2.9	400	25	89.6	50.0	28.6	0.0	21.4	0.0
	HIG	84.6	3.8	11.5	0.0	1,600	30	332.7	50.0	10.0	0.0	30.0	10.0
Allahabad	LIG	66.7	33.3	0.0	0.0	300	10	74.4	50.9	23.1	23.1	0.9	1.9
	MIG	86.7	1.7	10.0	1.7	400	10	100.5	78.6	11.9	6.0	2.4	1.2
	HIG	100.0	0.0	0.0	0.0	700	10	169.0	89.1	8.7	2.2	0.0	0.0
Lucknow	LIG	40.0	40.0	13.3	6.7	100	30	57.7	56.4	25.5	9.1	5.5	3.6
	MIG	63.6	22.4	14.0	0.0	1,500	10	273.1	60.5	31.6	1.3	1.3	5.3
	HIG	72.4	9.2	18.4	0.0	2,000	50	428.8	80.0	10.0	0.0	10.0	0.0
Kanpur	LIG	73.0	8.1	16.2	2.7	400	10	88.8	75.3	17.8	1.4	5.5	0.0
	MIG	73.5	7.2	15.7	3.6	700	15	87.5	58.3	20.8	12.5	1.4	6.9
	HIG	47.5	35.0	15.0	2.5	700	100	373.1	44.4	33.3	0.0	11.1	11.1

Note: "N" stands for "No Answerer"   *The JICA Study Team*

On a question "If wastewater treatment services with a suitable sewerage system will be established, will you be willing to pay for this?" more than 62% of all income groups of Allahabad show a positive reply for it. Contrary to Allahabad, HIG of Kanpur shows the lowest ratio of 32.9% among other groups in four municipalities on WTP for the improvement. (See Table 3.10)

Table 3.10   WTP for Improving Present Sewerage Systems

(%)		If improved sewerage systems, WTP?				If yes, how much (Rs)		
		Yes	No	Don't know	N	Max	Min	Ave.
Varanasi	LIG	37.9	33.9	9.7	18.5	100	5	22.4
	MIG	44.2	14.3	10.2	31.3	200	10	65.0
	HIG	54.8	9.6	5.5	30.1	500	50	182.9
Allahabad	LIG	63.5	25.4	7.9	3.2	100	1	14.6
	MIG	73.6	16.7	4.9	4.9	500	2	41.5
	HIG	62.2	20.7	1.2	0.0	200	5	70.7
Lucknow	LIG	50.0	28.4	2.7	18.9	500	2	37.8
	MIG	70.8	8.1	0.0	21.1	500	5	95.6
	HIG	51.2	7.0	0.0	41.9	3,000	40	331.4
Kanpur	LIG	45.2	25.2	14.8	14.8	200	5	32.0
	MIG	57.1	21.8	10.3	10.9	500	10	77.5
	HIG	32.9	25.7	37.1	4.3	1,000	20	177.9

Note: "N" stands for "No Answerer"   *The JICA Study Team*

3.4.3   Solid Waste

As for willingness to cooperate to separate solid waste, nearly 50% and more respondent show their positive will as shown in Table 3.11. In this matter, it is identified a trend of affordable prices for the separation it that less than Rs. 10 is for LIGs, Rs.10-30 is for MIGs and RS. 10-30 and more are for HIGs as shown in Table 3.12.

Table 3.11   Disposal Custom and Willingness to Separation of Solid Waste

(%)		How do you dispose domestic waste							WT Separation of Solid waste			
		Municipal services	Private collection	Dispose on roads/gali	Dispose in rivers	Others	Combination	N	Yes	No	Don't know	N
Varanasi	LIG	23.4	0.0	57.3	4.8	13.7	0.8	0.0	48.4	31.5	20.2	0.0
	MIG	61.9	0.7	35.4	0.0	2.0	0.0	0.0	79.6	17.0	2.7	0.7
	HIG	56.2	4.1	35.6	0.0	2.7	0.0	1.4	80.8	12.3	4.1	2.7
Allahabad	LIG	13.5	5.6	72.2	5.6	3.2	0.0	0.0	74.6	11.1	9.5	4.8
	MIG	50.0	17.4	29.9	0.0	2.1	0.7	0.0	81.9	9.7	8.3	0.0
	HIG	64.6	14.6	18.3	1.2	1.2	0.0	0.0	89.0	4.9	6.1	0.0
Lucknow	LIG	16.2	5.4	51.4	4.1	16.2	1.4	5.4	67.6	21.6	5.4	0.0
	MIG	39.5	7.6	29.7	0.5	20.5	0.0	2.2	92.4	4.3	2.7	0.5
	HIG	75.6	9.3	4.7	0.0	10.5	0.0	0.0	90.7	5.8	3.5	0.0
Kanpur	LIG	47.0	3.5	43.5	0.0	4.3	0.0	1.7	67.8	21.7	8.7	0.0
	MIG	46.8	14.1	31.4	0.0	7.1	0.0	0.6	76.9	19.2	3.2	0.6
	HIG	88.6	0.0	11.4	0.0	0.0	0.0	0.0	60.0	17.1	22.9	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

Table 3.12   Affordable Prices for WT Separation

(%)		If yes, how much (Rs)							
		<10	10 to 30	30-50	50-100	>100	Others	Don't know	N
Varanasi	LIG	70.0	21.7	1.7	0.0	0.0	3.3	3.3	0.0
	MIG	29.1	47.9	17.1	2.6	0.0	1.7	0.9	0.9
	HIG	3.4	13.6	42.4	30.5	8.5	0.0	0.0	1.7
Allahabad	LIG	86.2	5.3	4.3	0.0	0.0	4.3	0.0	0.0
	MIG	67.8	11.9	10.2	4.2	5.1	0.0	0.8	0.0
	HIG	21.9	35.6	30.1	4.1	5.5	2.7	0.0	0.0
Lucknow	LIG	72.0	12.0	0.0	2.0	0.0	10.0	2.0	2.0
	MIG	29.2	33.9	17.5	12.3	4.1	1.2	0.6	1.2
	HIG	2.6	15.4	34.6	25.6	19.2	1.3	1.3	0.0
Kanpur	LIG	84.6	9.0	1.3	1.3	0.0	3.8	0.0	0.0
	MIG	49.2	27.5	14.2	2.5	1.7	2.5	1.7	0.8
	HIG	23.8	23.8	11.9	4.8	11.9	21.4	2.4	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

3.4.4 Sanitation

A practice of open defecation is identified in LIG and MIG in the four Municipalities. Especially, those of Allahabad and Lucknow are higher than others. As for the toilet, pour flash latrines are dominant in all income groups in four municipalities. (See Table 3.13)

Table 3.13   Toilet Facilities

(%)		Where do you go for toilets?							Type of Toilet (for own toilet)				
		Own toilet	Public toilet	Open field	Rivers	Others	Combination	N	Pour Flash	Kuccha	Bore hole	Others	N
Varanasi	LIG	35.5	45.2	13.7	4.0	0.0	0.8	0.8	81.8	11.4	2.3	0.0	4.5
	MIG	61.9	0.7	35.4	0.0	2.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0
	HIG	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0
Allahabad	LIG	43.7	1.6	38.9	15.9	0.0	0.0	0.0	85.5	10.9	0.0	0.0	3.6
	MIG	50.0	17.4	29.9	0.0	2.1	0.0	0.0	97.1	2.2	0.7	0.0	0.0
	HIG	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0
Lucknow	LIG	40.5	5.4	45.9	2.7	0.0	0.0	5.4	90.0	10.0	0.0	0.0	0.0
	MIG	39.5	7.6	29.7	0.5	20.5	0.0	2.2	99.4	0.0	0.6	0.0	0.0
	HIG	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0
Kanpur	LIG	77.4	14.8	5.2	0.0	0.0	0.9	1.7	60.7	18.0	1.1	1.1	19.1
	MIG	46.8	14.1	31.4	0.0	7.1	0.0	0.6	86.7	1.3	0.7	0.0	11.3
	HIG	100.0	0.0	0.0	0.0	0.0	0.0	0.0	98.6	1.4	0.0	0.0	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

More than 64.5 % of the respondents perceive that open defecation is hazardous for health and environment as shown in 3.14.

Table 3.14   Toilet and Defecation

(%)		Is the toilet connected to sewer line			If no, treatment facility connects to your toilet?						Open defecation is hazardous for health and environment		
		Yes	No	N	Septic tank	To drainage	Community sewer	Others	Don't know	N	Yes	No	N
Varanasi	LIG	70.5	29.5	0.0	23.1	69.2	7.7	0.0	0.0	0.0	64.5	25.0	10.5
	MIG	71.2	28.1	0.7	85.4	7.3	0.0	0.0	0.0	7.3	95.2	1.4	3.4
	HIG	72.6	27.4	0.0	75.0	5.0	0.0	0.0	0.0	20.0	94.5	2.7	2.7
Allahabad	LIG	21.8	74.5	3.6	97.6	2.4	0.0	0.0	0.0	0.0	78.6	20.6	0.8
	MIG	36.7	62.6	0.7	90.8	5.7	2.3	1.1	0.0	0.0	95.1	4.2	0.7
	HIG	42.7	57.3	0.0	95.7	0.0	4.3	0.0	0.0	0.0	96.2	3.8	0.0
Lucknow	LIG	56.7	43.3	0.0	76.9	7.7	0.0	0.0	7.7	7.7	73.0	18.9	8.1
	MIG	61.6	38.4	0.0	95.6	1.5	1.5	0.0	0.0	1.5	89.7	2.7	7.6
	HIG	87.2	12.8	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
Kanpur	LIG	50.6	31.5	18.0	67.9	7.1	10.7	7.1	0.0	7.1	72.2	12.2	15.7
	MIG	62.0	26.7	11.3	83.7	4.7	2.3	0.0	2.3	7.0	78.8	17.9	3.2
	HIG	82.9	15.7	1.4	54.5	27.3	18.2	0.0	0.0	0.0	80.0	20.0	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

HIGs perceive that availableness and numbers of LCSs are not sufficient in their surroundings. In addition, especially, all groups in Allahabad and Lucknow that not enough LCSs are available in each municipality. (See Table 3.15)

Table 3.15   Availableness of LCSs

(%)		Sufficient public toilet in your neighbourhood			If yes, do you use it?(excluding respondents for public toilet on 5-1)			No public toilets, need for such facilities in your area			
		Yes	No	N	Yes	No	N	Yes	No	Don't know	N
Varanasi	LIG	78.2	21.8	0.0	25.0	75.0	0.0	51.5	5.9	2.9	39.7
	MIG	53.7	44.9	1.4	3.8	94.9	1.3	36.7	17.7	7.5	38.1
	HIG	15.1	72.6	12.3	9.1	81.8	9.1	11.0	53.4	9.6	26.0
Allahabad	LIG	28.6	71.4	0.0	8.8	85.3	5.9	96.7	3.3	0.0	0.0
	MIG	14.6	85.4	0.0	4.8	95.2	0.0	74.3	25.0	0.7	0.0
	HIG	2.4	96.3	1.2	0.0	100.0	0.0	70.7	25.6	3.7	0.0
Lucknow	LIG	12.2	82.4	5.4	33.3	55.6	11.1	88.7	8.1	3.2	0.0
	MIG	21.1	78.4	0.5	28.2	69.2	2.6	56.6	42.8	0.7	0.0
	HIG	10.5	89.5	0.0	22.2	77.8	0.0	27.5	66.3	3.8	2.5
Kanpur	LIG	50.4	40.0	9.6	72.3	27.7	0.0	68.6	15.1	4.7	11.6
	MIG	40.4	58.3	1.3	24.2	72.6	3.2	48.9	43.6	6.4	1.1
	HIG	35.7	64.3	0.0	8.0	92.0	0.0	21.7	69.6	8.7	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

More than 71% of the respondents who answered "yes" for the question of "In case of there are no public toilets in your area do you think there is need for such facilities in your area?" represent willingness to pay (WPT) for using the public toilets. Most of them answer that the affordable price is less than Rs. 1 (one) per using as shown in Table 3.16.

Table 3.16 WTP for using Public Toilets

(%)		If yes, WTP for using the public toilets?				If yes, how much will be the affordable price (Rs.)				
		Yes	No	Don't know	N	0.5	1	Others	Can't say	N
Varanasi	LIG	71.4	28.6	0.0	0.0	48.0	48.0	4.0	0.0	0.0
	MIG	92.6	5.6	1.9	0.0	24.0	70.0	4.0	2.0	0.0
	HIG	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0
Allahabad	LIG	85.2	14.8	0.0	0.0	73.3	24.0	2.7	0.0	0.0
	MIG	94.4	5.6	0.0	0.0	46.5	51.5	2.0	0.0	0.0
	HIG	96.6	3.4	0.0	0.0	19.3	66.7	14.0	0.0	0.0
Lucknow	LIG	90.9	9.1	0.0	0.0	42.0	52.0	4.0	2.0	0.0
	MIG	74.4	22.0	3.7	0.0	26.2	60.7	8.2	3.3	0.0
	HIG	50.0	36.4	13.6	0.0	0.0	72.7	18.2	9.1	0.0
Kanpur	LIG	79.7	11.9	5.1	3.4	71.4	20.4	2.0	2.0	4.1
	MIG	69.6	10.9	8.7	10.9	59.4	37.5	0.0	0.0	10.9
	HIG	40.0	30.0	10.0	20.0	16.7	50.0	0.0	0.0	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

3.4.5 Health and Hygiene

Housewives and family heads are key personals for taking care of health for their households' members. As for possibility to contact necessary information on health and hygiene, it is identified that a situation as HIG has more chance to get such information than the lower groups in the four cities. (See Table 3.17)

Table 3.17 Health Practice and Information

(%)		Who takes care of health						Your children receive information on health & hygiene at school				Have you ever received such information?		
		Housewife	Head of the family	Retired elderly	Others	Combination	N	Yes	No	don't know	N	Yes	No	N
Varanasi	LIG	50.0	46.8	0.0	0.8	0.8	1.6	33.9	41.9	13.7	10.5	29.8	68.5	1.6
	MIG	54.4	44.2	0.0	0.7	0.7	0.0	73.5	15.0	2.0	9.5	61.2	38.1	0.7
	HIG	52.1	43.8	1.4	1.4	1.4	0.0	84.9	9.6	1.4	4.1	80.8	19.2	0.0
Allahabad	LIG	39.7	55.6	0.0	0.0	3.2	1.6	25.4	50.8	13.5	10.3	11.9	84.9	3.2
	MIG	27.8	70.1	0.7	0.0	0.7	0.0	61.1	29.2	9.0	0.7	48.6	51.4	0.0
	HIG	35.4	64.6	0.0	0.0	0.0	0.0	67.1	24.4	6.1	2.4	57.3	42.7	0.0
Lucknow	LIG	40.5	43.2	1.4	4.1	5.4	5.4	35.1	25.7	24.3	14.9	29.7	63.5	6.8
	MIG	40.5	48.6	1.1	2.2	7.0	0.5	75.1	10.3	4.9	9.7	67.0	31.9	1.1
	HIG	48.8	40.7	0.0	1.2	1.2	0.0	80.2	4.7	14.0	1.2	70.6	29.4	0.0
Kanpur	LIG	38.3	59.1	0.9	0.0	0.0	1.7	56.5	18.3	5.2	20.0	49.6	47.0	3.5
	MIG	50.0	44.9	0.0	1.3	1.9	0.0	50.0	23.1	9.0	17.9	42.9	57.1	0.0
	HIG	30.0	70.0	0.0	0.0	0.0	0.0	18.6	28.6	44.3	8.6	38.6	60.0	1.4

Note: "N" stands for "No Answerer"   *The JICA Study Team*

3.4.6 River Pollution

More than 73% of each group of the respondents identify that river water is polluted. As well more than 67% of them are ready to contribute to river pollution reducing programs as shown in Table 3.18.

Table 3.18　River Pollution

(%)		Do you think the river's water is polluted?			Since how long have you identified that pollution						Would you like to contribute to river pollution reducing programs?		
		Yes	No	N	3(yrs)	5(yrs)	10(yrs)	Don't know	Others	N	Yes	No	N
Varanasi	LIG	73.4	25.0	1.6	11.0	22.0	47.3	7.7	12.1	0.0	66.9	24.2	8.9
	MIG	95.2	4.8	0	6.4	24.3	60.7	7.9	0.7	0.0	85.7	13.6	0.0
	HIG	100.0	0.0	0.0	1.4	17.8	65.8	15.1	0.0	0.0	91.8	6.8	1.4
Allahabad	LIG	89.7	8.7	1.6	11.5	37.2	39.8	6.2	5.3	0.0	86.5	11.1	2.4
	MIG	99.3	0.7	0	6.3	20.1	42.4	22.9	7.6	0.0	93.1	6.3	0.0
	HIG	100.0	0.0	0.0	13.4	20.7	35.4	9.8	19.5	0.0	98.8	1.2	0.0
Lucknow	LIG	87.8	6.8	5.4	15.4	21.5	29.2	24.6	9.2	0.0	73.0	16.2	10.8
	MIG	98.9	0.5	0.5	5.4	28.8	41.3	13.6	9.8	1.1	81.1	17.3	1.1
	HIG	100.0	0.0	0.0	0.0	14.0	60.5	12.8	11.6	1.2	87.2	12.8	0.0
Kanpur	LIG	93.9	3.5	2.6	5.6	10.2	40.7	4.6	32.4	6.5	77.4	19.1	3.5
	MIG	97.4	0.6	1.9	3.9	18.4	39.5	17.8	20.4	0.0	85.9	13.5	0.0
	HIG	95.7	4.3	0.0	4.5	22.4	31.3	25.4	16.4	0.0	82.9	17.1	0.0

Note: "N" stands for "No Answerer"　　　　　　　　　　　　　　　　　　*The JICA Study Team*

3.4.7　Participation

More than 75% of each income group has not participated in related campaigns so far. However, more than nearly 90% of them perceive that these campaigns are useful and are to be reinforced. As well, almost all respondents (85.3%-100% of each group) consider that they want to have awareness programs in their areas. In accordance with Table 3.19 and Table 3.20, it is evaluated that preferred themes for awareness programs envisaged by the respondents, who want to have awareness programmes, are "Sanitation" "Solid Waste & cleanliness" and "Health & Sanitation" rather than "Environment".

In addition, more than 71.6% of each income group shows their willingness to participate in such campaigns. (See Table 3.22)

Table 3.19　Participation in Campaigns

(%)		Have you participated in related campaigns?			Are these campaigns useful and be reinforced			
		Yes	No	N	Yes	No	Don't know	N
Varanasi	LIG	24.2	75.0	0.8	89.5	0.0	8.9	1.6
	MIG	23.1	76.9	0	99.3	0.0	0.7	0.0
	HIG	21.9	78.1	0	91.8	4.1	0.0	4.1
Allahabad	LIG	4.0	94.4	1.6	88.1	1.6	7.9	2.4
	MIG	12.5	87.5	0	95.8	2.1	2.1	0.0
	HIG	15.9	84.1	0	98.8	1.2	0.0	0.0
Lucknow	LIG	10.8	82.4	6.8	90.5	1.4	8.1	0.0
	MIG	13.0	85.9	1.1	96.8	1.6	1.1	0.5
	HIG	9.4	90.6	0.0	95.3	2.3	2.3	0.0
Kanpur	LIG	10.4	86.1	3.5	89.6	0.9	6.1	3.5
	MIG	16.7	83.3	0.0	97.4	1.9	0.6	0.0
	HIG	11.4	87.1	0.0	95.7	2.9	1.4	0.0

Note: "N" stands for "No Answerer"　　　　　　　　　　　　　　　　　　*The JICA Study Team*

Table 3.20   Necessity of Related Campaigns (1)

(%)		Do you want any awareness program?			If yes, which theme of awareness you prefer?						
		Yes	No	N	1. Health & hygiene	2.Sanitation	3. Solid Waste & cleanliness	4. Environment	5. Don't know	6. Others	N
Varanasi	LIG	94.4	4.0	1.6	23.1	22.2	33.3	2.6	4.3	1.7	0.0
	MIG	100.0	0.0	0.0	12.2	32.7	25.9	6.8	1.4	0.0	0.0
	HIG	97.3	0.0	2.7	12.7	39.4	16.9	2.8	0.0	1.4	1.4
Allahabad	LIG	94.4	3.2	2.4	10.9	24.4	31.9	8.4	0.8	2.5	3.4
	MIG	95.8	3.5	0.0	3.6	22.3	48.2	6.5	0.0	3.6	0.0
	HIG	97.6	2.4	0.0	3.8	20.0	50.0	5.0	0.0	0.0	0.0
Lucknow	LIG	97.3	0.0	2.7	7.0	23.9	35.2	2.8	7.0	4.2	0.0
	MIG	97.8	1.6	0.0	6.6	31.3	14.8	15.9	0.5	0.5	1.1
	HIG	98.8	1.2	0.0	5.9	25.9	5.9	15.3	0.0	2.4	0.0
Kanpur	LIG	93.9	1.7	4.3	46.3	20.4	13.9	7.4	1.9	0.0	0.0
	MIG	85.3	12.2	0.0	21.6	25.4	10.4	22.4	0.0	0.0	0.0
	HIG	95.7	2.9	1.4	22.4	28.4	6.0	28.4	0.0	1.5	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

Table 3.21   Necessity of Related Campaigns (2)

		If yes, which theme of awareness you prefer? (Continued)													
		1+2	1+3	1+4	2+3	2+4	2+6	3+4	4+6	1+2+3	1+2+4	1+3+4	2+3+4	3+4+6	All
Varanasi	LIG	1.7	1.7	0.0	0.9	0.0	0.0	0.9	0.0	2.6	0.0	0.0	0.0	0.0	5.1
	MIG	1.4	2.7	2.0	6.8	0.7	0.0	2.7	1.4	0.7	0.0	0.0	0.7	0.0	2.0
	HIG	4.2	1.4	2.8	0.0	0.0	0.0	4.2	0.0	1.4	0.0	0.0	0.0	1.4	9.9
Allahabad	LIG	7.6	0.8	0.0	1.7	0.8	0.0	0.0	0.0	2.5	1.7	0.8	0.0	0.0	1.7
	MIG	2.2	2.2	0.0	4.3	1.4	0.0	0.0	0.0	3.6	2.2	0.0	0.0	0.0	0.0
	HIG	3.8	0.0	0.0	3.8	1.3	0.0	0.0	0.0	8.8	2.5	0.0	0.0	0.0	1.3
Lucknow	LIG	2.8	2.8	0.0	1.4	1.4	1.4	0.0	0.0	5.6	2.8	0.0	0.0	0.0	1.4
	MIG	7.7	1.6	1.6	4.4	2.7	0.0	2.2	0.0	3.3	1.1	0.0	0.0	0.0	4.4
	HIG	10.6	1.2	5.9	9.4	4.7	0.0	1.2	0.0	2.4	8.2	0.0	0.0	0.0	1.2
Kanpur	LIG	1.9	1.9	0.0	0.9	0.0	0.0	0.9	0.0	0.0	1.9	0.9	0.0	0.0	1.9
	MIG	3.7	1.5	3.0	0.7	0.7	0.0	0.7	0.0	0.7	0.7	0.0	1.5	0.0	6.7
	HIG	0.0	0.0	3.0	4.5	1.5	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	1.5

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Table 3.22   WT Participation in Related Campaigns

(%)		Willing to participate in Related Campaigns?			
		Yes	No	Can't say	N
Varanasi	LIG	77.4	10.5	8.1	4.0
	MIG	87.1	8.2	1.4	3.4
	HIG	76.7	9.6	0.0	13.7
Allahabad	LIG	81.0	11.1	5.6	2.4
	MIG	80.6	17.4	1.4	0.7
	HIG	84.1	13.4	1.2	1.2
Lucknow	LIG	71.6	13.5	9.5	5.4
	MIG	79.5	12.4	4.9	3.2
	HIG	74.4	16.3	5.8	3.5
Kanpur	LIG	78.3	7.0	6.1	8.7
	MIG	85.3	10.3	0.6	3.8
	HIG	90.0	7.1	1.4	1.4

Note: "N" stands for "No Answerer"   *The JICA Study Team*

3.4.8   Complaints to Authorities

From half to approximately 80% of the respondents have not contacted to respective Municipalities about saying their surrounding sanitation problems, especially LIGs except Varanasi. The LIG of Varanasi shows relatively low percentage of 45.2% of the respondents (who have not contacted to the Municipality) compared to LIGs of other three Cities that show more than 73%. (See Table 3.23)

Table 3.23   Past Contacts to the Authorities about Sanitation Problems

(%)		Have you ever contacted to the municipality about your sanitation problems? *			
		Yes	No	Can't say	N
Varanasi	LIG	54.8	45.2	0.0	0.0
	MIG	42.9	55.8	0.0	1.4
	HIG	46.6	50.7	0.0	2.7
Allahabad	LIG	19.8	77.0	0.0	3.2
	MIG	37.5	59.0	0.0	3.5
	HIG	48.8	51.2	0.0	0.0
Lucknow	LIG	18.9	79.7	0.0	1.4
	MIG	38.9	59.5	0.0	1.6
	HIG	29.1	70.9	0.0	0.0
Kanpur	LIG	25.2	73.0	0.0	1.7
	MIG	37.8	61.5	0.0	0.6
	HIG	28.6	71.4	0.0	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

As to the complaints to the Municipalities, more than 68% of the respondents complained to the Municipalities about 'Lack of Solid Waste Collection' and 'State of unsanitary condition of Street' as shown in Table 3.24. The complaint regarding 'Lack of River Pollution Protection' has not been complained by most of the respondents (less than 10 % complained it), excluding the LIG of *Lucknow* that showed the highest ratio, but only 15.4% of the LIG.

Table 3.24   Complaints to Related Authorities

		*If yes, objects of the complaint?*									N
		1.Lack of waste collection	2. Lack of river pollution protection	3. State of insalubrity of streets	4. Others	Combination (1,2)	Combination (1,3)	Combination (2,3)	Combination (2,4)	Combination (all)	N
Varanasi	LIG	63.2	1.5	23.5	0.0	0.0	5.9	0.0	0.0	2.9	2.9
	MIG	52.4	6.3	12.7	14.3	0.0	6.3	1.6	1.6	0.0	4.8
	HIG	50.0	7.1	14.3	17.9	0.0	3.6	0.0	0.0	0.0	7.1
Allahabad	LIG	52.0	0.0	36.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0
	MIG	53.7	7.4	22.2	1.9	1.9	9.3	0.0	1.9	0.0	1.9
	HIG	70.0	0.0	20.0	0.0	0.0	2.5	7.5	0.0	0.0	0.0
Lucknow	LIG	30.8	15.4	38.5	0.0	0.0	15.4	0.0	0.0	0.0	0.0
	MIG	39.4	1.4	25.4	4.2	0.0	23.9	1.4	2.8	0.0	1.4
	HIG	24.0	0.0	28.0	4.0	4.0	28.0	0.0	0.0	0.0	12.0
Kanpur	LIG	30.3	0.0	60.6	6.1	0.0	0.0	0.0	0.0	0.0	3.0
	MIG	55.4	7.1	21.4	0.0	0.0	10.7	3.6	0.0	0.0	1.8
	HIG	50.0	5.0	35.0	0.0	0.0	5.0	0.0	5.0	0.0	38.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

For the question that "If you did suffer some problems but did not complain, why did you not complain?", the respondents showed the very interesting responses as shown in Table 3.25, which are summarized as follows;

- From 42% to 75.3% of the respondents who did not complain feel 'Useless to complain', excluding the HIG of Kanpur of which only 24% answered "Useless".
- However, 38% of the HIG of Kanpur did not answer for the question, which figure is relatively high compared to others groups that did not answer.
- It is supposed that those who refused to answer may include ones who hesitate to answer for such a question.
- Considering all the various factors together, almost half of the respondents feel "Useless to complain" which is followed by "Don't know where to complain"
- As other reasons specified by the respondents, "No time to complaints" and "Not necessary (to such a complaint)" were identified.

Table 3.25   The Reasons not complained

		Being any such problem, why not complain?				
		Useless to complain	Lack of motivation	Don't know where to complain	Others	N
Varanasi	LIG	55.2	5.2	24.1	1.7	13.8
	MIG	41.9	10.5	8.1	29.1	10.5
	HIG	60.0	6.7	0.0	6.7	26.7
Allahabad	LIG	63.7	5.9	18.6	2.0	9.8
	MIG	62.0	13.0	4.3	1.1	19.6
	HIG	41.9	39.5	2.3	14.0	2.3
Lucknow	LIG	42.1	12.3	36.8	8.8	0.0
	MIG	57.2	8.6	12.5	12.5	9.2
	HIG	62.5	10.9	6.3	18.8	1.6
Kanpur	LIG	75.3	2.2	14.6	3.4	4.5
	MIG	58.0	11.0	23.0	5.0	3.0
	HIG	24.0	18.0	6.0	14.0	38.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

3.5   RESULTS OF FACILITY SURVEY

3.5.1   LCS (Public Toilets)

Table 3.26 shows the number of LCSs available in each municipality, a ratio of the respondents using them, and fee and motivation for using LCS. Table 7.5.37 shows present situation of O&M for them in the four cities, which is perceived by the respondents. As for the fee, there are two payment systems, one is to pay per one time when they use, the other is to pay for monthly basis (excluding Varanasi), the upper row of fee shows the payment for one time, lower shows the monthly fee of Table 3.26. As for reasonableness on the fee, more than 55% of the respondents who uses LCSs in Varanasi and Lucknow perceive that the fee is affordable. Whereas, more than nearly 60% of the respondents who uses LCSs in Allahabad and Kanpur perceive that the fee is expensive.

Table 3.26   Information of LCS

	Number of LCS	User (% of respondents)	**Fee** (Rs.) Upper: time, lower: month			**Reasonableness on fee** (%)				**Motivation** (%)			
			Max.	Min.	Ave.	Expensive	Affordable	Cheap	Can't Say / N	Prevent disease	Improve surroundings	Privacy	Any other
Varanasi	80	58.4	4	0.5	1.48	38.5	55.6	5.2	0.7	56.0	39.4	4.6	0.0
			N/A	N/A	N/A								
Allahabad	111	29.7	2	0.5	0.90	58.6	32.8	6.9	1.7	56.5	41.3	0.0	2.1
			60	10	23.0								
Lucknow	141	43.2	2	1	1.22	19.0	73.8	2.4	4.8	48.3	41.4	9.2	1.1
			50	30	42								
Kanpur	240	38.1	2	0.5	1.22	60.5	29.6	7.4	2.5	54.4	40.0	4.4	1.1
			45	30	32.3								

Note: N/A; Varanasi does not have a payment system on monthly basis,   "N" stands for "No Answerer"   *The JICA Study Team*

Table 3.27   Operation and Maintenance of LCS

(%)	**O&M**					**Problems**					
	Excellent	Satisfactory	Poor	Very poor	Any other	Not clean	Water supply	No privacy	Electricity	Others	No problem
Varanasi	11.8	61.5	15.6	11.1	0.0	38.9	20.6	4.0	12.0	11.4	13.1
Allahabad	3.2	52.4	17.5	20.6	6.3	68.9	18.0	0.0	8.2	4.9	0.0
Lucknow	8.6	57.1	22.9	11.4	0.0	64.1	21.4	0.0	5.1	4.3	5.1
Kanpur	7.8	71.1	16.7	4.4	0.0	51.1	17.8	7.8	11.1	12.2	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

The reasons for not using the LCS are shown in Table 3.28. The uncleanliness of facility as well as a long distance from their residence is prominent reasons for not using LCS.

Table 3.28   The reasons for not using LCS

(%)	Not aware	Have to pay	Too far	Not clean	Having own	No facility / Closed	Others
Varanasi	3.5	16.3	19.8	17.4	18.6	7.0	17.4
Allahabad	0.0	12.2	35.1	33.1	0.0	8.1	11.5
Lucknow	8.7	11.9	25.4	20.6	16.7	4.8	11.9
Kanpur	2.6	20.2	29.8	41.2	1.8	0.0	4.4

Note: "N" stands for "No Answerer"   *The JICA Study Team*

3.5.2   Bathing Ghats

In Varanasi and Allahabad, "outstanding sacred cities for religious ablution places in India", more than 72 % of the respondents use bathing ghats. While less than 25% of the respondents in Lucknow and Kanpur use the ghats. The principal reason for using the bathing ghats is that "religious feeling (81.1 % in Varanasi, 59.9 % in Allahabad, 83.3 % in Kanpur)", and "No other bathing facilities (67.2 % in Lucknow)" (See Appendix 3. Facility Survey). People think that the bathing in rivers contaminates river water, caused by using soap, which is followed by practicing defecation and by arising body waste. (See Table 3.29)

Table 3.29   Condition of Bathing Ghats

	Users (%)	Proper O&M			Bathing contaminate the river water			Main causes of contamination			
		Yes	No	N	Yes	No	N	Using soap	Defecation	Body waste	Others
Varanasi	78.0	63.9	36.0	0.1	63.9	36.1	0.0	57.0	25.9	3.7	13.3
Allahabad	72.6	11.0	87.7	1.3	75.3	24.7	0.0	31.6	26.3	29.8	12.4
Lucknow	25.0	32.8	63.9	3.3	65.6	34.4	0.0	39.6	26.4	30.2	3.8
Kanpur	17.8	31.0	69.0	0.0	42.9	57.1	0.0	45.5	31.8	22.7	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

Table 3.30 shows the reasons for not using the bathing ghats. A reason of "far from house" is dominant in Varanasi, Allahabad and Lucknow, whereas another reason of "uncleanliness (dirtiness)" is dominant in Kanpur.

Table 3.30   The Reasons for not Using the Bathing Ghats

(%)	Uncleanliness	Far from house	Bathing pollutes river water	Have other bathing facility	Others	N
Varanasi	25.5	37.3	7.8	11.8	13.7	3.9
Allahabad	5.2	53.4	10.3	17.2	10.3	3.4
Lucknow	23.6	31.1	12.7	27.4	2.8	2.4
Kanpur	56.9	17.2	13.4	11.5	1.0	0.0

Note: "N" stands for "No Answerer"   *The JICA Study Team*

3.5.3   Crematoria

More than almost 90% of the respondents in the four cities identify cremation on pyre. More than 61 % of them think traditional wood cremation methods pollute river and environment. The knowledge of electric crematoria is relatively high, and over 74 % of the respondents excluding Lucknow think electric crematoria would reduce river and environmental pollution. However, only 43.6% of respondents in Lucknow expect so. Main media by which respondents has come to know information on electric crematoria is awareness campaigns, namely 40.6 % for Varanasi, 39.1% for Allahabad, 45% for Lucknow and 87.4% Kanpur. (See Table 3.31)

Table 3.31 Knowledge of Crematoria

(%)	Know the cremation on pyre			It pollutes river water			Know the electric crematoria			Is it better for reduce pollution		
	Yes	No	N	Yes	No	Others	Yes	No	N	Yes	No	Can't say / N
Varanasi	97.8	2.2	0.0	64.9	23.4	11.7	80.7	19.0	0.0	77.0	3.9	19.0
Allahabad	98.6	0.9	0.5	61.3	9.9	28.8	95.8	3.3	0.9	74.5	7.5	17.9
Lucknow	87.7	9.1	3.3	39.9	21.4	38.7	52.7	39.9	7.4	43.6	7.8	48.6
Kanpur	98.3	1.7	0.0	77.9	12.3	9.8	77.5	22.0	0.4	84.3	0.8	14.8

Note: "N" stands for "No Answerer"   *The JICA Study Team*

3.5.4   River Environment Issues

Over 80 % of the respondents in the four cities feel that river water quality is contaminated, and more than 95 % suppose that it is necessary to improve water quality. The major cause of contamination is different from each city. It can be evaluated that the respondents consider "Domestic waste" as the dominant reason for river contamination. In addition, many of respondents in Allahabad and Kanpur feel that cremated remains are one of the reasons for the contamination. (See Table 3.32)

Table 3.32   River Water Quality

(%)	Water quality			Necessary to improve			Major cause of contamination						
	Clean	Contaminated	Can't say / N	Yes	No	Can't say/ N	Domestic waste	Livestock waste	Laundry	Bathing	Cremated remain	Open defecation	Others
Varanasi	14.7	83.5	1.7	96.1	6.9	0.4	32.7	9.9	21.4	1.4	19.4	6.8	8.6
Allahabad	5.2	91.5	3.3	96.7	2.4	0.9	29.5	25.2	2.3	1.6	26.0	10.5	5.0
Lucknow	3.7	94.2	2.1	97.1	2.9	0.0	33.7	16.2	17.9	8.9	10.8	10.8	1.6
Kanpur	17.8	73.7	8.5	94.9	0.8	4.2	24.4	9.9	14.7	3.8	40.0	5.4	1.8

Note: "N" stands for "No Answerer"   *The JICA Study Team*

Average 90 % of the respondents know that the open defecation is hazardous for health and environment, around 95 % think more public toilets should be constructed near the residential area to prevent the river pollution. More than 73% of the respondents show willingness to pay (WTP) for using the LCS. The affordable prices are evaluated that less than Rs. 1 is for Varanasi and for Lucknow, and less than Rs. 0.5 is for Allahabad and Kanpur. (See 3.33)

Table 3.33   WTP for LCS

(%)	Willingness to pay			The price of willingness to pay			
	Yes	No	Can't say / N	50 Paise (Rs. 0.5)	Rs. 1	Any other	N
Varanasi	91.8	6.5	1.7	19.8	78.3	1.4	0.5
Allahabad	73.1	18.9	8.0	58.7	27.7	12.9	0.6
Lucknow	70.0	20.2	9.9	21.8	75.9	1.2	1.2
Kanpur	81.4	15.7	3.0	74.5	22.4	2.6	0.5

Note: "N" stands for "No Answerer"   *The JICA Study Team*

3.5.5   Participation

More than 80 % of the respondents show willingness to participate in community activities to improve river water pollution through cleansing/de-sludging, monetary contribution, which is followed by awareness programmes. The respondents also show willingness to improve LCSs, crematoria and bathing ghats by community initiative, which is followed by voluntary participation in O&M activities. (See Table 3.34)

Table 3.34   Participation

	Participation			Activities to improve river water quality				Contribution for improvement		
	Yes	No	N	Cleansing / sludging	Money contribution	Awareness campaigns	Others	Initiative awareness programme	Voluntary participation in O&M	Others
Varanasi	90.5	9.5	0.0	65.8	6.6	26.8	0.9	69.3	25.5	5.2
Allahabad	79.2	19.8	0.9	32.8	11.5	52.9	2.9	60.0	19.3	15.6
Lucknow	73.7	26.7	0.0	40.1	30.5	29.4	0.0	45.7	27.6	19.3
Kanpur	87.7	12.3	0.0	42.4	10.0	46.7	1.0	66.1	24.2	0.4

Note: "N" stands for "No Answerer"   *The JICA Study Team*

CHAPTER 4

COMMUNITY WORKSHOPS

CHAPTER 4   COMMUNITY WORKSHOPS

Whereas the qualitative survey mentioned in chapter 3, Participatory Focused Group Discussions (FGD) through Community Workshops were implemented as a qualitative method, as follows.

4.1   OBJECTIVES OF THE COMMUNITY WORKSHOPS

4.1.1   Objectives

The community workshops were designed to be carried out adopting participatory approach of discussion to extract information from various segments of population which further targeted low income groups, middle income groups and higher income groups population in order to have comprehensive and holistic views from the target groups. The main objectives of the community workshops are;

-   To discuss the sanitary condition with the participants and get feedback/ information on existing conditions including suggestions for improvements.
-   To discuss and understand the status of water and sewage (water usage and supply, sewer connection, water and sewage tariffs etc).
-   To analyse the status of solid waste disposal (existing systems, people's perception about solid waste management etc.)
-   To discuss and understand people perception about river pollution and their understanding / behaviour pattern about usage of electric crematoria, LCS, and bathing ghats etc.
-   To analyse / understand people's ability to pay for water, sewage and sanitation facilities etc.
-   To assess willingness to participate in any future programme related to sanitation, solid waste management, and cleanliness and river pollution reduction.

4.1.2   Main issues to be Discussed

With having the above objectives, main issues to be discussed were focused as follows.

-   Sanitation
-   Cleanliness and solid waste
-   Water and waste water issues (waste water discharge, drainage system, water logging problems, water supply and usage etc.)
-   River's pollution
-   Health issues / education and other relevant issues

4.2   METHODOLOGY OF THE WORKSHOPS

4.2.1   Participatory Approach

As mentioned above, workshops were carried out adopting participatory approach, which primarily was through Focused Group Discussion (FGD) and Participatory Rural Appraisal (PRA) techniques. Participatory approach, especially FGD is considered to be the most useful method for getting valid information on the knowledge, attitude and practice of the people, and helps to understand the behavioural aspects of the population and existing scenario with respect to the focused issues. PRA techniques is an effective method to understand the qualitative needs of residents in the project area within a relatively short period

Since, the main objectives of the workshops were to understand and analyse the problems of river pollution, sanitation and environment which are very much related to the behavioural patterns and awareness of people, it was decided to discuss the issues with people in a very informal setting and to identify their view points on the various relevant issues.

4.2.2   Facilitators

In order to ensure that discussion is held without any interference and does not deviate from the main issues for which the workshops were held, it was necessary to engage one experienced facilitator for each group. Also, it was important because for most of the participants, it was quite a new experience they needed help at frequent intervals for initiating and facilitating the discussion.

Keeping above in view, two facilitators having experience in social programmes especially about PRA and FGD were selected exclusively for this purpose. Facilitators were also oriented on the subject and methodology of the community workshops thoroughly under the supervision of the JICA study team.

4.3   EXECUTION OF COMMUNITY WORKSHOPS

With views mentioned above, community workshops were held for two days, namely Workshop A and B each of which was consisted of male group and female group respectively, in each city as follows. Therefore, total 16 workshops were held in the four municipalities.

4.3.1   Venues

Venues for the Community Workshops are summarised as shown in Table 4.1.

Table 4.1   Venue of the Community Workshops

City	Workshop A (1st day)		Workshop B (2nd day)	
	Venue Name	Address	Venue	Address
Varanasi	MadarshaHanifia Gausia	Bazardiha	Aghore Ashram, Krim Kund	Ravindra Puri Colony, Varanasi
Allahabad	B.B. S. Convent School	Shiv Kuti	Ishwar Sharan Degree College	Salori, Allahabad
Lucknow	Prathmik Vidyalay	Bhikham Purwa	Santoshi Mata Temple, Dharmshala	Chowk Chauraha, Lucknow
Kanpur	Basdeo Mishra Uchtar Madhyamik Vidyalay	Motijheel Chauhara, Ashok Nagar	C/o Smt. S. N. Nigam	117/Q/710 Sharda Nagar, 120 feet Road

The JICA Study Team

4.3.2   Grouping and Participants

As one of social circumstances in India, generally, low incomers hesitate to say their opinion and discuss problems in front of middle and high incomers. As well, females hesitate to say their opinion and discuss problems in front of males. Taking account of the circumstances as well as with a view to have hassle free discussion, low incomer groups (LIGs) were separated from other groups, and the participants were divided into two separate homogenous groups, as show in Table 4.2 and Table 4.3 respectively.

Table 4.2   Grouping by Incomes

	Workshop A (1st day)	Workshop B (2nd day)
Varanasi	LIG	MIG+HIG
Allahabad	MIG+HIG	LIG
Lucknow	LIG	MIG+HIG
Kanpur	LIG	MIG+HIG

Note: LIG; Low Incomer Group, MIG; Middle Incomer Group, HIG; High Incomer Group
Source; The JICA Study Team

Table 4.3   Number of Participants

	Workshop A (1st day)		Workshop B (2nd day)	
	Male	Female	Male	Female
Varansi	15	10	10	10
Allahabad	10	11	10	10
Lucknow	12	10	11	12
Kanpur	10	13	16	13
Total	47	44	47	45
	183			

Source; The JICA Study Team

As for the selection of the participants, the following points were the principal criteria to get representation in the workshops for the detailed and comprehensive understanding of the problems related to sanitation, environment, solid waste and overall environmental and river pollution.

- Participants should be selected with due considerations to all segments of population
- Participants should be selected with due considerations to every walk of life
- Participants should be identified preferably who can read and write Hindi

In accordance with the above, the selection was made in each city as shown in from Table 4.4 to Table 4.7.

Table 4.4   Participants' Occupation (Varanasi)

Workshop A (1st day)				Workshop B (2nd day)			
Male		Female		Male		Female	
Teacher	3	Teacher	3	Professor	1	Health Practitioner	1
Social workers	2	Social worker	1	Doctor	1	Councilor	1
Health Workers	2	Housewife	3	Social Workers (NGO)	2	Sr. Lecturer	1
Self employed (weaver)	4	Community leader	1	University Lecturer	2	Business	2
Vendors	2	Self employed (weaver)	2	Journalist	1	University Scholar	2
Principal	1	-		Business Man	2	Housewife	2
Community leader	1	-		Religious Leader /priest	1	Community leader	1
Total	15		10		10		10

Source; The JICA Study Team

Table 4.5   Participants Occupation (Allahabad)

Workshop A (1st day)				Workshop B (2nd day)			
Male		Female		Male		Female	
Teacher	2	Teacher	4	Professor	3	Health Worker	1
Local leader	1	College principal	1	Doctor	1	Councilor	1
Govt. Service	2	Housewife	4	Sr. Advocates	2	Self employed	1
Business Men	2	Community leader	1	Business Men	1	Teacher	2
Social Worker (NGO)	1	School Principal	1	Research Scholar	1	Housewife	3
Student	1	-		Social Worker	1	Others	2
Others	1	-		Religious Leader /priest	1	-	
Total	10		11		10		10

Source; The JICA Study Team

Table 4.6   Participants' Occupation (Lucknow)

Workshop A (1st day)				Workshop B (2nd day)			
Male		**Female**		**Male**		**Female**	
Primary Teacher	2	Teacher	1	Retired Judge	1	Lecturer	3
Daily wage workers	2	Journalist	2	Advocate	2	Medical representative	1
Journalist	1	Housewife	5	Social worker (NGO)	3	NGO (Social worker)	1
Self Employed (weaver)	3	Social Workers (NGO)	2	Doctor	2	Business/Self employed	2
Private Job	2	-		Business man	1	Advocate	1
Social Worker	1	-		Student	1	Housewife	4
Community leader	1	-		Religious leader/priest	1	-	
Total	12		10		11		12

Source; The JICA Study Team

Table 4.7   Participants' Occupation (Kanpur)

Workshop A (1st day)				Workshop B (2nd day)			
Male		**Female**		**Male**		**Female**	
Teacher	2	Tutors	2	Lecturer	2	Social Workers	1
Local leader	1	Social Workers	5	Doctor	3	House wife	8
Govt. Service	3	Housewife	4	Charted Accountant	1	Doctor	2
Business Men	1	Health Worker	1	Business Men	5	Sr. Teacher	1
Social worker (NGO)	1	Local leaders	1	Councilor	1	Self employed	1
Doctor	1	-		Govt. Service	2	-	
Private Job	1	-		Social Workers	2	-	
Total	10		13		16		13

Source; The JICA Study Team

4.3.3   Facilitation and Discussion Process

Each workshop was done with the following procedures and manners in accordance with participatory approach. The process is described in Figure 4.1.

1. Opening Address by the JICA Study Team
2. Initiation of discussion by the facilitators
3. Selection of one secretary by the participants
4. Selection of the agenda items to be discussed by the participants
5. Discussion, which was leaded by the chairperson and recorded by the secretary, with the facilitation by the facilitator.
6. Conclusion, which was concluded under the participants' consensus.
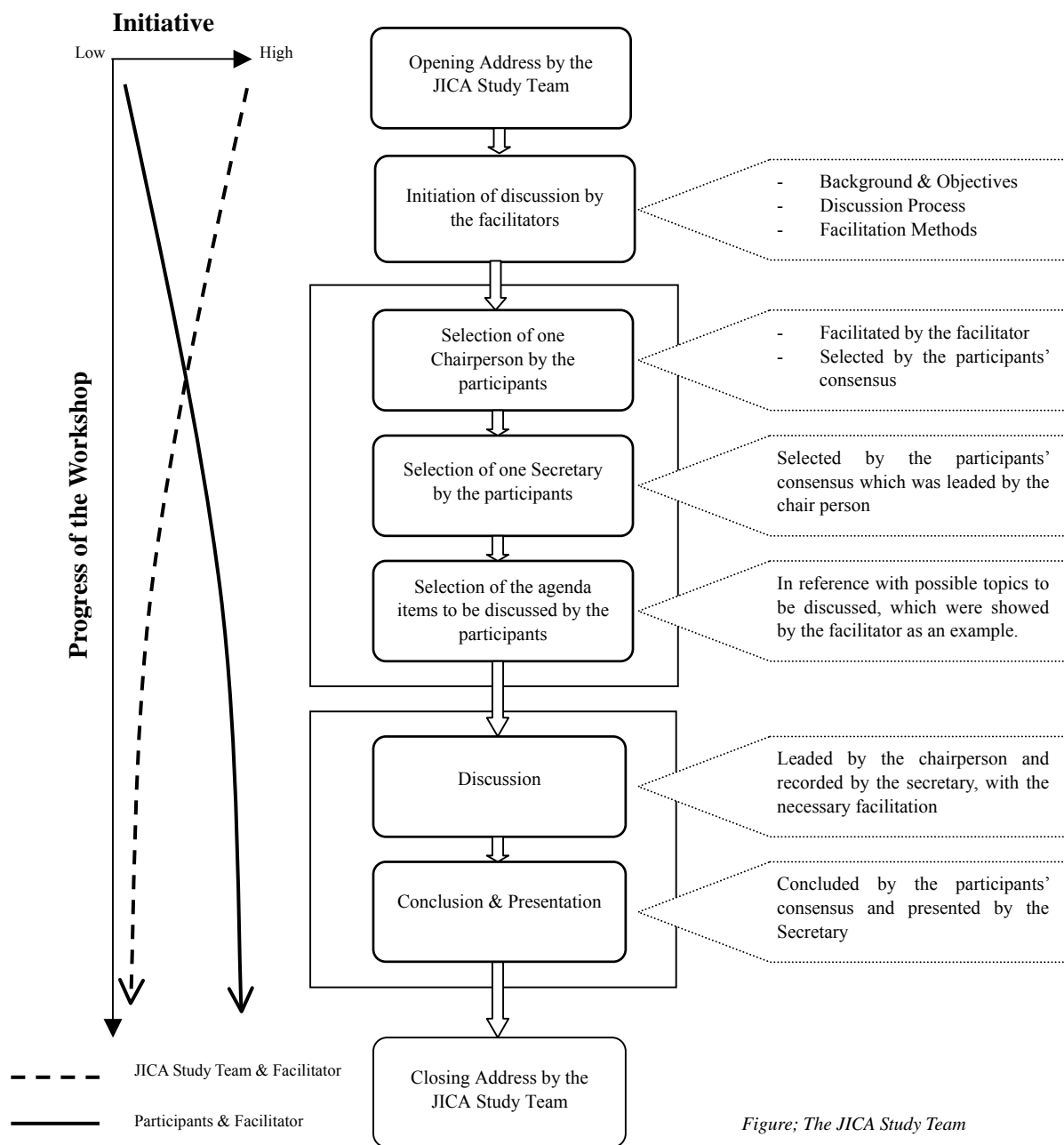7. Closing address by the JICA Study Team

Initiative

Low → High

Progress of the Workshop

Opening Address by the JICA Study Team

Initiation of discussion by the facilitators

- Background & Objectives
- Discussion Process
- Facilitation Methods

Selection of one Chairperson by the participants

- Facilitated by the facilitator
- Selected by the participants' consensus

Selection of one Secretary by the participants

Selected by the participants' consensus which was leaded by the chair person

Selection of the agenda items to be discussed by the participants

In reference with possible topics to be discussed, which were showed by the facilitator as an example.

Discussion

Leaded by the chairperson and recorded by the secretary, with the necessary facilitation

Conclusion & Presentation

Concluded by the participants' consensus and presented by the Secretary

- - - - JICA Study Team & Facilitator

——— Participants & Facilitator

Closing Address by the JICA Study Team

Figure; The JICA Study Team

Figure 4.1   Process and Initiative Level of the Community Workshops

4.3.4   Agenda and Topics Discussed

As shown in Figure 4.1, possible topics initiated by facilitators at the process in each community workshop were as shown in Table 4.8.

Table 4.8   Possible Topics initiated by Facilitators

1.	Sanitation	5.	River's pollution
2.	Cleanliness	6.	Health /hygiene issues
3.	Solid Waste	7.	Others (participants choice)
4.	Water and wastewater issues		-

The JICA Study Team

The participants in each community workshop selected the topics mostly from the possible topics initiated by facilitators and found them extremely useful and relevant. Then they discussed and prioritised it as per the needs/importance of their respective areas, and some of them also added some topics other than the given topics as shown in Table 4.8. Table 4.9 shows the agenda and topics discussed in each community workshop.

Table 4.9   Agenda and Topics Discussed by Each Group

City	Workshop A (1st day)		Workshop B (2nd day)	
	Male	Female Group	Male	Female
Varanasi	1. Solid waste management 2. Sanitation 3. Water and waste water issues 4. Public participation and awareness 5. Cleanliness and hygiene improvement	1. Solid waste management 2. Sanitation 3. Water and waste water issues 4. River pollution 5. Public participation and willingness to pay	1. Solid waste management 2. Waste water issues and sewerage 3. Public participation and awareness 4. Sanitation	1. Water supply and waste water 2. Garbage/Solid waste 3. River water pollution 4. Awareness and Willingness to participate
Allahabad	1. Solid waste and sanitation issues 2. Sewerage system 3. River pollution 4. Public participation and willingness to pay	1. Solid waste and sanitation issues 2. Sewerage system 3. River pollution 4. Public participation and willingness to pay	1. Solid waste and sanitation issues 2. Sewerage system 3. River pollution 4. Public participation and willingness to pay	1. Solid waste and sanitation issues 2. Sewerage system 3. River pollution 4. Public participation and willingness to pay
Lucknow	1. Solid waste management 2. Sanitation 3. Water and waste water issues 4. Public participation and awareness 5. Hygiene improvement and cleanliness	1. Solid waste management 2. Sanitation 3. Water and waste water issues 4. River pollution 5. Public participation and willingness to pay	1. Solid waste management 2. Waste water issues and sewerage 3. Public participation and awareness 4. Sanitation	1. Water and waste water 2. Solid waste 3. River water pollution 4. Public participation and awareness
Kanpur	1. River pollution 2. Solid waste and sanitation issues 3. Sewerage system 4. Public participation and willingness to pay	1. Solid waste and sanitation issues 2. Sewerage system 3. River pollution 4. Public participation and willingness to pay	1. Solid waste and sanitation issues 2. Sewerage system 3. River pollution 4. Public participation and willingness to pay	1. Solid waste and sanitation issues 2. Sewerage system 3. River pollution 4. Public participation and willingness to pay

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4.3.5   Conclusions

Each group of the community workshop discussed the agenda for approximately one or one and half hours. Table 4.10 to 4.13 shows the conclusions reached by each group.

Table 4.10 Conclusions (Varanasi)

Location	Workshop A (1st day)		Workshop B (2nd day)	
	Male	**Female**	**Male**	**Female**
Varansi	1. Solid Waste and Its Management was thoroughly discussed by the participant is and was regarded as the most important issue in the area as well as town that needs priority attention. Participants said, Government should streamline the system of garbage collection and establish the appropriate monitoring system to review the progress. Other point, which was highlighted by the participants regarding these issues, were that the staff/workers responsible for the waste collection needs orientation and should be made accountable for timely disposal of the waste materials. They were of the opinion that workers (cleaners) are the main people who if oriented may prove a strong change agents in improving the situation. 2. The suggestion which came in support of the ideas for the improvement of sanitary situation were related with improvement of public toilets and increasing its numbers, reducing the user charge, and also initiating the public awareness program. 3. There was strong consensus on public participation in all aforesaid activities such as sanitation improvement plan, solid waste management and River Pollution. However, Participants were strongly of the view that Public participation approach should be very localized and media of public awareness should take care of communication acceptability of the target population. In this regard, they specifically suggested that language; dialect of communication etc. should be local.	1. Issues of sanitation and Solid Waste should be taken up on priority basis, as these two are the major causes for the River pollution, environment and health problems. 2. Public participation should be largely encouraged in tackling aforesaid problems. The some of the important methods suggested for the public participation by the participants were group meetings, and print medium. 3. There should be restriction on throwing waste matters in to river directly and for this, they suggested that apart from the public awareness there should be some penalty system for the violators. 4. To improve the condition of sanitation, conditions in the public toilet should be improved. Also, more toilets should be constructed in order to reduce the pressure. The fees should be reduced; as for most of the people it is difficult to pay Rs. 1-2 per person. It leads to open defecation.	1. Regarding improvement of situation regarding Solid Waste participants expressed that The Community Dust Bins should be installed at every place and there should be sufficient publicity regarding its location. Also, to ensure that people put the garbage in the dustbins, door-to-door campaign should be launched. The disposal system should also be streamlined adequately and garbage should be lifted from the dustbins to land fill sites or any other area every day in a closed van. 2. There should be intensive and planned public awareness programmes and activities to check open defecation across the riverside, disposal of waste materials in to river etc. The awareness programme should be area specific and should be implemented with the help of and involvement of people. There is need for planned and gradual approach of public participation and awareness programme for the usage of electric crematoria. 3. Participants said with consensus that situation of River Pollution, environment and sanitation can be well be addressed through Private-Government partnership and by working together in close cooperation. Government should encourage private partnership such by associating with NGOs, Community Based Organization (CBOs) and even Private Companies. Public Awareness should be given the top priority and sustainable public awareness programme should be initiated and continued. 4. Thus, participants broadly concluded that the problem related with cleanliness and Solid Waste Management, sanitation and river pollution can only be tackled through planned and sustainable public participation and awareness building on all these aspects.	1. There should be intensive and planned public awareness programmes and activities to check open defecation across the riverside, disposal of waste materials in to river etc. The awareness programme should be area specific and should be implemented with the help of and involvement of people. There is a need for planned and gradual approach of public participation and awareness programmes for the usage of electric crematoria. 2. The Community Dust Bins should be installed at every place and there should be sufficient publicity regarding its location. Also, to ensure that people put the garbage in the dustbins, door-to-door campaign should be launched. The disposal system should also be streamlined adequately and garbage should be lifted from the dustbins to land fill sites or any other area every day in a closed van. 3. Situation of River Pollution, environment and sanitation can be well addressed through Private-Government partnership and by working together in close cooperation. Government should encourage private partnership such by associating with NGOs, Community Based Organization (CBOs) and even Private Companies. Public Awareness should be given the top priority and sustainable public awareness programme should be initiated and continued.

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Table 4.11   Conclusions (Allahabad)

Location	Workshop A (1st day) Male	Workshop A (1st day) Female	Workshop B (2nd day) Male	Workshop B (2nd day) Female
Allahabad	1. From School time the children should be educated about sanitation and cleaning and they should be provided training for the cleaning from the initial time. 2. The unemployed youths should be employed for solid waste management e.g. segregation of solid waste of non-biodegradable and biodegradable type. 3. There should laws and strict regulation and a penalty system for improvement of solid waste management. 4. The sewerage system should be improved and spread all the area of the city. 5. The wastewater from domestic and industries should be discharged in to the river after proper treatment. 6. To restrict the throwing of unknown dead bodies and animal's bodies into the river. 7. Public participation activities should be designed need based and area specific awareness package. 8. Public awareness programme should specifically focus on health aspects.	1. Children should be taught about sanitation, solid waste management in school from primary level. 2. To discourage open defecation a penalty system should be enforced. 3. Public awareness campaigns should be carried out thoroughly focusing on these aspects on regular basis. 4. Public toilets should be free for all. 5. Separation of solid waste, type-wise, can be managed through the unemployed youths and ladies. It will not only provide employment but also will be helpful for environment improvement etc. 6. The people should be aware that there is no difference between sanitary workers and them. 7. The sewerage system needs improvement. 8. Domestic and Industrial waste waster should not be discharged without treatment. 9. Traditional crematoria are not the source of river pollution. 10. For public awareness, local medium of communication, which is most popular in the area, should be used and it should be decided in consultation with local people. 11. People should be educated about health and disease problems due to unhygienic environment.	1. Public participation is very important matter for sanitation and it should be implemented with proper and planned manner. 2. O& M of the public toilets should be in hand of community instead of NGO, Govt. or any contractor. 3. Solid waste should be disposed on a proper place and for this purpose dustbins should be installed at various places at the required areas. 4. Solid waste can be used as fertilizer manure for improving farming capacity. 5. The use of electric crematoria should be improved through providing precise knowledge about it to people. 6. The sewer line should be managed by *Nagar Nigam* with an accurate planning and proper maintenance should be provided. 7. After proper treatment of domestic wastewater, it should be used for irrigation purpose. 8. Health & sanitary education should be started at primary level of school for students/ children, which will be effective and change the mindset of society in future.	1. Sanitation should be given the main thrust in order to improve the overall environmental issues along with the solid waste. 2. Public toilet facilities should be handed over to community rather than others agency or Govt. Institute. 3. To stop the use of polythene as these breaks the flow of small drains and also these are not biodegradable. 4. Solid waste can be converted in to electricity. 5. Public awareness can spread through media, cultural activities and education. 6. The drain wastewater should not be flows into the river without proper treatment.

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Table 4.12   Conclusions (Lucknow)

Location	Workshop A (1st day) Male	Workshop A (1st day) Female	Workshop B (2nd day) Male	Workshop B (2nd day) Female
Lucknow	1. **Solid waste:** *Nagar Nigam* should ensure that waste materials/ garbage collected every day is disposed on daily basis. There should be a committee comprising members from community and *Nagar Nigam* which should penalize the culprits, who do no follow the rules of the committee and spreads wastes every where. 2. **Polythene** should be banned completely. 3. Major cause of the river pollution is traditional cremation and flowing dead body and dead animals in the river. There should be planned intervention focusing on increasing the usage of electric crematoria. 4. Public toilets should be made more clean and facilities like water supply and electricity should be improved in order to improve the sanitation. 5. The number of public toilets should also be increased in order to reduce the pressure. The usage must be made free cost. Instead of charging fee, there should be rule that users voluntary clean the toilet once in a week. 6. Pubic participation should be made an important component at each stage in order to ensure the sustainability.	1. The waste materials should be put at a particular side after collecting from the households and disposal should be quick and every day. 2. Community should share the responsibility of waste management actively and Govt. should take initiatives to ensure public participation. 3. The drinking water supply needs immediate action and the quality of water should be improved. Some times the water supply lines breaks and mix with the sewage, resulting in to contaminated water supply in households, which creates many health problems. 4. River pollution is a great cause of concern for all of us, which largely is due to the lack of awareness and people's attitude of ignorance. People throw the offerings, domestic wastes and also defecate near the riverbank, apart from the cattle washing and laundry, which are the main causes of pollution. 5. Intensive public awareness programmes should be launched targeting each segments and groups. 6. Village/Ward committees should be constituted and sensitised towards sharing responsibility in terms of sanitation, solid waste and public awareness. 7. Sanitation needs special focus and the fee for the public toilets should be reduced.	1. Effective and planned public awareness and public participation programme should be initiated to address the problems of all issues related with river pollution and improvement of sanitation and environment. *Male groups concluded the discussion in a very summarized form and did not detailed out the conclusion like female groups. However, the discussion and out come of discussion was almost in line with the female groups and there was no much difference in the contents of discussion.*	1. SOLID WASTE/CLEANLINESS - Apart from the government, public participation is very necessary in tackling the problem of solid waste and cleanliness. - There should be time line for collection and disposal of waste materials. - Women should be specifically involved in cleanliness and solid waste management programmes. - The place where the waste/ garbage is dumped should be covered. - On holidays alternative arrangements should be done for collection and disposal of the waste materials. - The *Nagar Nigam* Van which carries the waste materials from area to dumping sites should be made covered. - Efforts should be made to produce energy out of the waste materials which will be largely instrumental in creating job opportunities. - Polythene should be completely banned. 2. RIVER POLLUTION - Flowers and others prayer materials should not be thrown in the river and the culprits should be penalized. Apart from penalty, awareness should also be created on these aspects. - Laundry activities should be completely banned near the riverside. - The drains should be checked from flowing in to river - The traditional cremation should be discouraged. 3. WASTE WATER ISSUES - The sewerage system should be improved. - Most of the water lodging is because of the broken main holes. It also get chocked due to deposition of solid waste materials and polythene in the main holes. 4. PUBLIC PARTICIPATION - Public participation and awareness programmes on all aforesaid issues should be initiated intensively. - There should be door-to door education programme for the women on sanitation and waste management.

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