

## **URBAN SEWERAGE PLANNING THROUGH COMMUNITY PARTICIPATION**

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**ABSTRACT:** Planning for sewerage system is a difficult task and conflicts oftenly occur between decision makers and the community. This situation provides opportunities for community participation and the results thus appear in form of community decision-making. Concrete justifications are needed while designing sewerage system for the community. Therefore, there is a need to consider the public opinions while developing and executing sewerage related projects. In most of the Third World Countries, centralized decision making in form of top down approach is prevailing. Involvement of people in the decision-making process is rare and people seldomly find an opportunity to raise their voices for their rights. In each society, the development trend varies and depends upon the type of communities and the governments. When a sewerage project is undertaken and communities are involved then rate of success for such projects increases. Because people think that their opinions are incorporated. Therefore, there is a need for participative development and then a forced top down or bottom up approach. Degree of people's participation varies with respect to type of development project. It ranges from minimal involvement of people to complete decision making. This paper focuses on issues in sewerage planning particularly in urban areas and afterwards these can be replicated to larger areas. At the end, conclusions are made for practical implementation of future programs.

**Key words:** Sewerage Problems, Community Participation, Developing Countries, Participatory Development.

### **INTRODUCTION**

Now-a-days, water has become a more dynamic area for research. In most countries of the World, water proved to be the most critical natural resource. UN-HABITAT (2003) clearly warned about the severe situation that is emerging in water sector. The worst in this regard is sewerage which is directly related with the health of human beings. Concerning this, environmental conditions are deteriorating day by day due to poor sanitation system. WHO and UNICEF (2006) in its report stated that less than half population residing in cities of Asia, Africa, Latin America & Caribbean are connected to a proper sewerage system. It means that more than 50 percent population doesn't have any sort of sewerage facility. Governments of various countries are using their available resources to combat the situation but contrarily the situation has become more severe. This is well portrayed by Cater and Peter (1999) those states that although projects are started by these governments to remove the sewerage problems but the desired results could not be achieved. Resultantly, the rate of affectees due to sewerage related problems are increasing. The urban areas where majority of masses are living draws more attention. The main reason which has increased the intensity of problem is the urbanization phenomenon. The population of major cities of developing countries is

increasing fastly. The rapid population growth has exerted huge pressure on the already available sewerage system. The situation is warned by Satterwaite (2002) who declares that the urbanization phenomenon is very severe throughout the world. This situation is also supported by UN (2002) report that shows that all cities of developing and developed countries are urbanizing rapidly.

Looking towards the prevailing trends, governments throughout the world are now accepting community/people's participation as a main tool to solve the sewerage related problems of people. Conyers (1982) have described three main reasons due to which community participation is important, i.e. Firstly, due to this the needs and local conditions of the people can well be judged. Secondly, every individual considered itself important in plan making process and thus own the project. Thirdly, everyone has the democratic right to be involved in the plan preparation and implementation process. This is also called as a **Bottom Up Planning** where people are placed at the center and then the decision making is made. By doing so, the people own a project and thus sustainability of projects increases. Carrel, Thomas F. (1992) as well emphasized that to achieve sustainability of any project, community participation is an important tool.

## **MATERIALS AND METHODS**

When primary and secondary data are combined then results appear in form of a useful research. Secondary data provides a base and primary verify those facts. For this paper, both primary as well as secondary sources are used. Strategic Sanitation Program (SSP) of Ghana gave a starting point where sewerage related problems are solved by promoting the idea of community participation. A government department involved a local NGO which helped to solve the community sewerage problems. In case of Orangi (Karachi) the government line departments failed to provide the basic infrastructure. Then a local NGO decided to motivate the people for solution of problems by themselves. Through literature survey, it was found out that SSP gained success through community participation. Based on this, community participation element is checked in Orangi case study area. The strategy adopted for the purpose is the fact finding through primary surveys. In this regard, a key informant survey is made in which actors those played a key role in boosting the idea of community participation among people in Orangi are identified. The main in this regard were the personnel working in Orangi Pilot Project office. Randomly, three persons irrespective of their designations are selected and interviewed. The facts explored from these key informants are verified from the residents of Orangi. In this regard, accidental sampling technique is adopted and seven persons are interviewed. These personnel are selected randomly from different pockets of Orangi area. The information is collected through a questionnaire where major emphasis is made on the community participation component.

## **RESULTS AND DISCUSSION**

Idea of sewerage planning through community participation is not a new but successfully applied in different countries of world. Few case studies in this regard are elaborated as follows:

a) **Orangi Pilot Project (OPP), Karachi-Pakistan:** Orangi is a "Katchi Abadi (squatter area)" located in Karachi. The estimated population of the squatter area was more than one million in 1980 when the project was started with the help of BCCI (Bank of Credit and Commerce International) and a local NGO (Non Governmental Organization). The key informant survey results unveiled the facts that OPP was basically initiated to gain success through community participation (CP). CP technique proved to be the main tool to achieve sustainable development in case of OPP. Firstly, the NGO team identified sewerage as the priority problem of the residents of Orangi and thus focused on it. According to OPP team officials, the residents of Orangi bear the major portion of cost of project as they contributed Rs. 35

compared to 02 millions from OPP team. The OPP staff mainly rendered their services in form of conducting the field surveys and preparation of maps of the area. The OPP team admitted that this massive contribution from the community is an indication of interest of people and proved to be the key to success of a project. OPP staff further told the people about the technical terms like internal and external components of sewerage. The internal sewerage mainly comprised of local or tertiary sewer pipes and in some cases secondary sewer is also included in it. The external includes trunk sewers and other treatment facilities. During execution of the sewerage projects, the Community Based Organizations was assigned the tasks to manage internal sewerage system whereas municipality along with OPP team takes care of the external component of the project. OPP team acted as a mediator between the residents and the municipality. By the efforts of OPP, **90% area** is covered with sewerage system that was laid out on self help basis. OPP officials told that in 1991, a household survey was made and the survey results show both the morbidity and infant mortality rates are decreased to only 1:1000.

The findings of the interviews with the residents of Orangi confirmed that the local NGO worked in line with people and major problems in the area were solved. The people participated in form of meetings those took place before and during the project execution stages. The advertisements were made and people are invited to be the part of project. The respondents also verified that the community contributed in form of **money, time and labor** so as to make the project successful. They also confirmed that the community was consulted and involved in all stages of project preparation to execution and then to completion. The people rated this community participation as a major tool for success of project.

OPP model is replicated in Punjab (Province of Pakistan). A similar type of project is started in Lodharan (name of district in Punjab Province) where community is involved through NGO. It was tried to replicate the same model of OPP with the name Lodharan Pilot Project (LPP). Although the rate of success of LPP was not equal to OPP but even then the methodology to carry out the tasks was similar and the community was involved to complete the infrastructure projects.

b) **Strategic Sanitation Programme (SSP), Kumasi, Ghana:** The basic idea of SSP was to provide efficient sanitation system in the area. In this regard, the requirements of people are calculated. Keeping in view of the people condition, a rationale approach in form of community participation is used to achieve the objectives of service provision. The Kumasi Municipal Authority involved the people of the area through a local NGO while providing varied nature of infrastructure services. The major sanitation services those are provided in the

area comprised of latrines, simple sewer networks, and public toilets.

The approach to complete the project was community centered through decentralization process. Private sector was involved and the government rendered its services in form of supervision of such projects. In this regard, government simplified the planning process. Afterwards, looking towards the complicated problems, services of related professionals were hired to support the government staff. After five years, the main results of the project in form of:

- i. Completion of SSP and provision of sanitation services to all the city area
- ii. A separate Municipal Waste Management Department is made with professional staff
- iii. Latrines are provided to 250 homes
- iv. Sewerage system is provided to 20,000 residents
- v. Public latrines those were not functional and damaged are brought into use

In both projects, i.e. OPP and SSP, the major factor of project success appeared to be community participation. In SSP, government intervened through local NGO for execution of sewerage related projects whereas in OPP, the local NGO took all the responsibility and penetrated into the community. Both got successes and proved that where the community is involved in all phases of project implementation, then rate of success of that project increases.

**CONCLUSIONS:** Following main conclusions are drawn:

1. In developing countries, the condition of sewerage system especially in cities is very poor and deteriorating day by day. OPP and SSP are examples of such kind. Although government agencies are playing their roles to solve the sewerage problems but in most of the cases could not.
2. By introducing the idea of community participation, the rate of success of one project can be increased. In case of OPP, a local NGO directly worked for community mobilization whereas in other case Local Municipal Authority (government) involved the people in decision making through an NGO. In both cases, although

the modus operandi was different but ended at community participation.

3. It is noted that the community is ready to contribute if some sort of guidance is provided as seen in both cases of OPP and SSP. The problems as well as the people were there but due to lack of guidance, the people were proved to use their resources. But as soon as the support in form of an NGO is provided, the people gathered and solved all the problems.

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