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Environment and Urbanization 1995 7: 207

DOI: 10.1177/095624789500700210

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Street hydrant project in Chittagong low-income settlement

Mahbuba Kaneez Hasna

SUMMARY: *This paper discusses the activities of a small group of professionals wishing to explore issues around community involvement in water and sanitation provision in Chittagong. The paper describes the use of participatory tools and methods to increase community participation in the action research project.*

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I. BACKGROUND

CHITTAGONG, WITH A population of 1.6 million, is the second largest city in Bangladesh. About 0.4 million people are served by 21,000 house connections and 0.2 million people collect water from 588 street hydrants installed and maintained by the Chittagong Water Supply and Sewerage Authority (CWASA) and the City Corporation. The rest of the population collects water from natural fountains, private supplies, natural reservoirs such as ponds, canals and rainwater catchments. In recent years, a large number of Bihari refugees have migrated into the area. The lack of enough potable water, inadequate waste disposal, the exhaustion of underground water reserves, the absence of micro-drainage facilities as well as the lack of space have put increasing pressure on the urban environment. Those with household connections are generally from well-off families while those who are dependent on street hydrants are from the lowest income group of society. In Chittagong, it was found that women make up a large number of the hydrant user groups.

The government and some other sectors have blamed the residents of low-income settlements for the deteriorating environment and have tried to prevent spontaneous population growth in the area. Most hydrants are not operative, some have been sealed off by the Authority, others do not work due either to leakage or constant dripping because they are broken. A lack of waste water management has resulted in breeding grounds for mosquitoes developing around the hydrant areas.

The Chittagong Water Supply and Sewerage Authority is primarily responsible for the maintenance of the hydrants. Communities have never been charged for the use of the hydrants and no concrete initiatives have been taken to encourage community participation in environmental improvements. The Authority has received support from the Asian Development Bank

for the installation and maintenance of the street hydrants. When this financing stopped, user participation was identified as the only option for improving water and sanitation conditions. The Authority argued that hydrant users should be charged for water use per household and it was considering the installation of water meters to control use. Community management was being considered as one option but low-income residents had had little opportunity to discuss how this might work in practice.

The UNDP/World Bank Water Supply and Sanitation Programme in Bangladesh carried out a quantitative attitudinal research survey to identify community attitude towards the hydrants and their willingness to pay for the maintenance of the hydrants and sanitation facilities. Both short-term and long-term recommendations were taking time to implement. During the quantitative research survey, it was established that respondents had not fully participated in previous studies because the benefits, aims and results of the research projects were not evident.

One of the researchers, along with other professionals familiar with participatory tools and methods, was interested in exploring further with a local group of residents their views and perceptions of the water and sanitation problems that they were facing. The all-women group included one environment development researcher, a sociologist and an artist specializing in line drawing. The activities described here were an independent initiative, not directly associated with the UNDP/World Bank Programme. The initiative was made in order to try to give a new direction to the programme which responded to the needs of local residents.

The main objectives of the exercises were to prepare an action plan for the management of street hydrants by the community and to develop strategies for problem-solving with respect to water and sanitation. The exercises aimed to raise awareness about the appropriate use of hydrants and how to mobilize local resources for managing the hydrants. The emphasis was on enabling the community to make decisions, to develop a sense of local ownership and cohesion, and to gain access to government resources. In addition, the exercises were aimed at challenging negative government policies, for example, sealing off the hydrants. The Participatory Urban Appraisal exercises aimed to:

- initiate a pilot project to demonstrate an alternative approach;
- enable the community to participate in the process of change;
- develop a sense of belonging among the users and to take pride in a sound system of management of the hydrants;
- raise awareness on issues of water re-use, recycling, conservation and waste prevention;
- create room for people to consider what they need, what choices are available and to discuss their aspirations with outsiders, i.e. the "professionals"; and
- ensure women's participation in hydrant management.

II. ORGANIZATION OF THE PARTICIPATORY URBAN APPRAISAL (PUA)

A LONG-TERM involvement in the project area helped the author/researcher to develop a strong rapport with the community leaders, local residents, shop and business owners, with the landowners of the settlements, members and representatives of youth and voluntary community based groups including the officials of Chittagong municipality authority and the field engineer of Chittagong Water Supply and Sewerage Authority. Both service users and providers were aware of the issues of water scarcity in the area, and government's threat of closing the hydrants. The PUA sessions lasted for three days. The approach was new to all the participants. The participants were earlier briefed on the purpose of the exercise. Their participation and cooperation during the training period was exciting, encouraging and motivating.

a. Size and Nature of the Community

The PUA exercises took place near the market area where approximately 200 households and shops have access to hydrant water. Most residents live in *kutchra* houses (mud/masonry wall, thatch or corrugated iron sheet roof) and a small proportion live in *pucca* houses (brick masonry). Female headed households are more numerous than male headed ones and a large proportion of households rely on one person for their livelihood. In most cases, people live close to the hydrant. Most people live in rented property with few permanent settlers. With respect to income generation, women are mainly involved in water-vending and garment manufacturing factories, some work from home and some are housewives. Men work in small-scale enterprises such as foodstalls, grocery outlets, take-away fast-food, hardware and mechanical repair yards. The scheduling of the participatory exercises was an issue because most of the hydrant users were involved in industrial and service sector jobs for long hours.

b. Selection

During informal interviewing at the time of the quantitative research mentioned earlier, it appeared that people were very willing to talk. Residents were not at all suspicious. In Chittagong, as mentioned earlier, female headed households are more numerous than male headed ones, therefore a significant number of PUA participants were women and they proved more willing to discuss issues than men. The PUA team of ten people included local residents (men and women), a landowner in the settlement, council members and field engineers from the Water Supply and Sewerage Authority who volunteered to attend the workshop.

1. The SARAR methodology for participatory exercises had been used by the programme in numerous projects and workshops. SARAR stands for: self esteem, associative strengths, resourcefulness, action planning and responsibility.

c. Materials Used and Methods

The UNDP programme had long focused on developing a vast array of materials and activities to enhance adult learning, to enable people to undertake self-directed inquiry, to solve problems, to take action and determine their own reality. The materials used in the exercise were based on the SARAR approach.⁽¹⁾ The methods were organized in five clusters and were sequenced to have a cumulative effect. First, participants were involved in using their creativity (unserialized posters) and looking at situations in new ways. Then, they gained tools for investigating (mapping realities) and analyzing (critical incident, hydrant committee responsibilities, three-pile sorting cards) their reality. Finally, they developed skills in planning (story with a gap, hydrant repair issues) and accessing information for water and sanitation and other community development initiatives. The visual materials included simple line drawings of figures and objects and were in black ink on white paper.

III. TOOLS USED DURING THE PUA

a. Mapping Women's and Men's Realities

IN THE SETTLEMENT, women and men separately drew maps to show their area. The purpose was to gather information on the settlement, its issues, the location of services, and the availability and number of hydrants and handpumps. Women's and men's maps of the same location differed consistently. Women's maps were more detailed and included houses with fences, hydrants and handpumps, ponds and rivers, roads, and more pictures of people. Men's drawings had more objects such as trees, animals, fish, fruit and boats. In presenting their pictures, participants talked about the lives of the people, the things they were proud of, for example, the educated young are involved in teaching at the local schools, and the identification of problems, such as road accidents costing lives in the community because of growing traffic congestion.

b. Unserialized Posters

The unserialized poster session aimed at drawing some issues related to water. Open-ended flexible visual aids encouraged creativity and provided tools to stimulate discussion of important real-life issues among participants such as the lack of potable water and polluted water related disease. Two copies of a set of five pictures were drawn, each depicting a dramatic human situation such as a dispute near a pond between two people, a heated group meeting, an illness, a community festivity and an individual deep in reflection. The scenes were represented in such a way that they were open to many different interpretations. Since these posters were unserialized, participants rearranged them in the sequence they chose. They were divided in two groups and each was given a full set of posters

and asked to develop them into a story giving names to the characters and to the community context in which the story took place. One group came up with the story of a family which was in debt and in dispute with the lender, whilst the lender needed the money back to buy a handpump. Also, due to the lack of drinking water, the child in the family was suffering from diarrhoea which worried the mother. The other group said that the two people near the pond were in a crisis over the issue of paying for a handpump, and their failure to reach an agreement caused unrest in village households, for example, a child's ill-health added to a mother's agony of having to travel to a distant source of water. The groups were asked to reflect on the issues they described in the context of the problems in their area. Community participation was identified as an alternative to solving local problems. People argued for cooperation and a say in decision-making in the implementation of community initiatives such as cleaning communal ponds, installing water sources close to households to encourage the use of clean water and in providing the opportunity for greater involvement in education, training, decision-making and water management.

Unserialized poster sessions also triggered discussions on various issues such as how irregular water supplies affect the users of the street hydrants including those who live from water-vending and the working women who collect water long before sunrise. Some raised the issue of forming a water supply cooperative group for the residents and shop-owners in the area.

c. Critical Incident

The purpose of this analytical method of PUA was to help the hydrant users to understand their ability to solve local problems. A picture was presented of a critical incident in the life of a household in a poorer area of a city which had no latrine. The story was developed with the help of three pictures. The first one showed an angry husband refusing to build a latrine; the second showed the son going to the side of an abandoned canal on a rainy night because of the lack of a household latrine; the third showed the son ill in bed, the house neglected and the husband and wife looking very worried. The group was asked to analyze what problem was being conveyed in the pictures, what factors might have contributed to the problem and how it could be resolved. The advantages and disadvantages of different options were discussed afterwards.

Some thought the child was under the spell of an evil spirit and should not go out at night. Some said the child must have been bitten by a mosquito and was suffering from malaria. Others thought the problem was related to worms in his stomach. Those who thought he had diarrhoea suggested a home-made latrine would be helpful. The lack of a latrine in the household, forcing the child to defecate in the open air on the side of a canal, causing him to suffer from diarrhoea was discussed, as was how the child's illness affected the peace of the family. As a solution, participants raised the issue of the cost involved in building a toilet plus the land and time factor. The landowner of

the area who participated in the exercise talked about low-cost home-made latrines developed by UNICEF with the Department of Public Health Engineering and gave an estimate of cost. He suggested that a four-compartment community latrine might be developed and agreed to negotiate on the issues of access to land. The group argued that even a minimal contribution by residents (through their house rent) should be sufficient to assure maintenance and the costs of a caretaker. A handpump or a hydrant at the source of the latrine was also deemed necessary.

d. Hydrant Committee Responsibilities

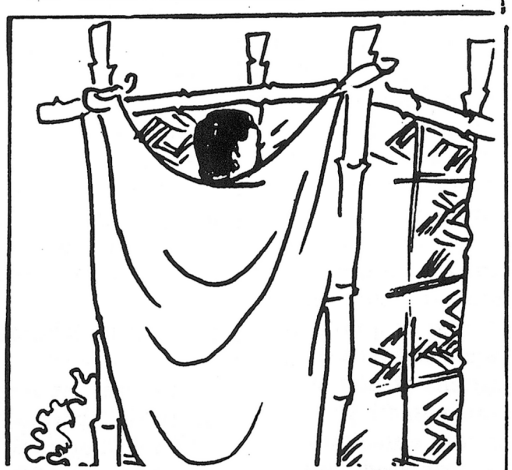
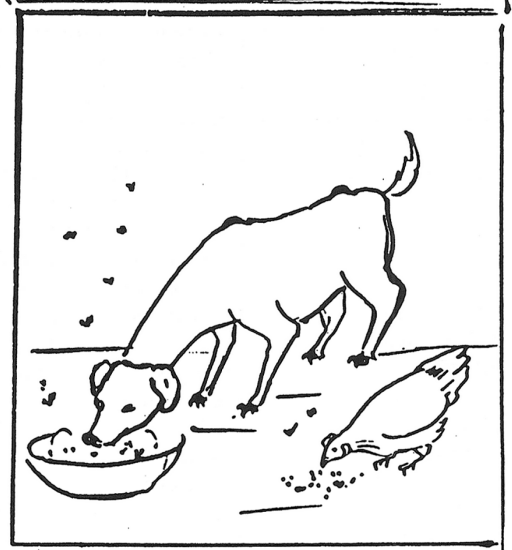
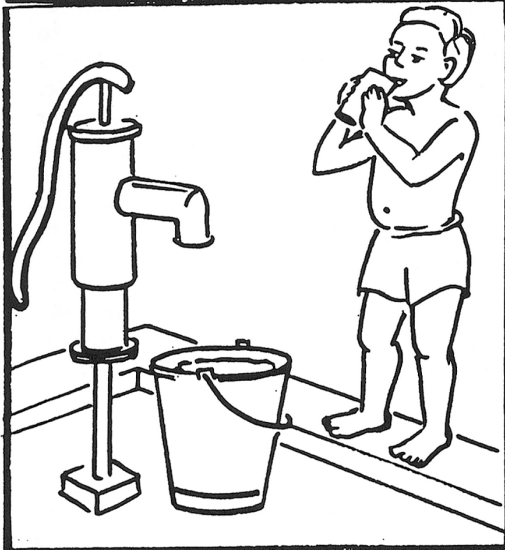
It was found useful to introduce participants to the concept of cost/benefit analysis in the context of hydrant water sources and to have them consider a decision-making process similar to that required by an "urban water committee".

The group worked as a whole and identified water committee members from among themselves. They identified couples from two households who were some of the longest-living residents in the settlement. It was agreed that the caretaker couples would share monitoring of the use of hydrants and would record the names and addresses of households and the frequency of use by each household, each day. A rent collector was identified for making house-to-house collections every month. The water committee planned a flat rate per household for water users which would be agreed at a public meeting. Each month a proportion of the collection would be spent on wages for the caretakers, another portion would go to the Authority for payment of the water bill, and the remainder would be kept in a "risk fund" for repairs and maintenance. The water committee would also monitor payment defaults, with sanctions if households paid irregularly or refused to pay. The committee would meet monthly and the Chair of the committee would feed back any issues arising from within the community regarding the performance of the hydrants to the Authority, for action. The water committee would be responsible for ensuring that the Authority provided extra facilities at the hydrant locations, for example, water meters, concreting the apron and area adjacent to the hydrants, stopping leakages, providing bathing, washing and laundry facilities, and drainage for waste water.

e. Three-Pile Sorting Cards

This analytical method helps to develop problem-solving skills and the ability to reflect on causes and effects. It also helps to assess the extent to which participants are fully aware of the positive or negative implications of a variety of situations shown to them through the cards.

A set of some six to ten cards was introduced, each with a picture of a scene which could be interpreted as good, bad or in-between from the viewpoint of health, sanitation or water supply. Pictures included a dripping hydrant, a man scraping garbage into a pit, the filthy surroundings of a hydrant location,



Three Pile Sorting Cards

women installing a rainwater catchment tank, children collecting water from a blocked drain, a woman depositing money in a bank and an immunization campaign described through a folk song. During this session, sporadic waste accumulation in the area was found to be one of the outstanding sanitation issues, and participants complained of the city municipality's irregular collection service. The lack of dustbins left residents with no other choice but to dump solid and organic waste openly: adjacent to the hydrant area was a common dumping place in the hope that the hydrant would wash away the filth but the lack of drainage facilities doubled the trouble, argued many.

f. Two Circles Exercise

The main objective was to analyze the needs and potential of women in relation to water supply, and the sanitation and health situation of the particular settlement. This exercise was designed to generate ideas about increasing women's access to services and their role in planning and management decisions among the groups. One large circle enclosed a smaller circle, the large circle representing the context of the locality, the smaller circle depicting the situation of women. On a piece of paper, a large circle was drawn where those who could write listed the water, sanitation, waste, drainage and health related problems that affected the community as a whole. These included broken tubewells, open dug wells, blocked canals, a lack of shaded places and benches to sit on, the high price of earthen water containers, the lack of agricultural land, the lack of jobs, the problem of housing, the lack of community roads and footpaths, the practice of canal-side defecation and the lack of latrines. In the inner circle, those who could write noted the problems affecting women in particular. Women recorded access to easily maintained, locally available and low-cost handpumps and the installation of more hydrants close to their households. Water sources which are closer to homes and provide an adequate supply will decrease collection times, leading to a gain both in time and energy. The time gained may be used for a variety of activities, including leisure and income generation. Women asked for income generation projects related to water, for example, afforestation and duckweed farming, employment in sanitation and water related micro-manufacturing industries. Participants discussed how the problems in the two circles differed, how they were complementary, what solutions could be found for both, the priority given to women's needs and what action the group could take to help address women's problems and enhance their role in community participation.

g. Hydrant Aftercare Issues

This exercise helped the participants analyze the factors influencing hydrant repair in their area and helped them plan initial strategies to manage a breakdown. The materials used were pictures of a water vendor in front of a broken street hydrant, a filthy hydrant environment and people arguing, a clean

working hydrant with people drawing water. Participants wove a story from the three pictures of water and sanitation related problems by stating that if hydrants were not functioning well due to a lack of maintenance, this may create problems for income generation from selling water, for community health, and may cause agony to women and disrupt community peace. A series of smaller pictures also showed possible steps in hydrant repair, for example, a group meeting, a caretaker's workshop, someone using tools to repair the hydrant, people talking to an "official", someone paying a caretaker, people talking around the hydrant and some cleaning the apron. It was found useful to draw an aftercare plan from this exercise and some insight was gained into what the users wanted. For example, women asked whether they would be trained in the actual construction; the time, duration and location of training were taken into account in terms of women's needs on long-term maintenance of the system; what would men's role in training be? would both women and men be informed of the supplies required and the names of suppliers of parts and equipment? and would women receive instruction on legal matters such as water use rights or land rights related to water? Participants also argued that such an initiative might sustain the project and would create a spin-off impact, for example, a well-maintained hydrant might contribute to a healthy community.

h. Story With the Gap

This tool was found useful in considering how a water-user group can be engaged in planning water, sanitation and health activities and in identifying how visuals can help to simplify the planning process. Two large posters, one of which shows a "before" scene (a problem situation) and the other an "after" scene (a greatly improved situation or solution to the problem), and a set of smaller pictures showing some of the steps which could be taken in moving from the problem to the solution, were given to the team. Participants were divided into two sub-groups. When they were shown the "before" picture, they were invited to make comments on what they saw or personalize the scene by telling the group about a family that lived in the settlement. They built the story up to a crisis point where something had to be done to improve conditions. The group was asked why the situation in the area had deteriorated. When the picture included a polluted reservoir and open dug well, participants suggested that there may be too many users and no caretakers, and/or people lacked maintenance knowledge and there was a lack of spare parts as well as misuse and vandalism. Having established the "before" baseline situation, the "after" picture was introduced and time was allowed for the group to reflect. In the concluding session, participants discussed what steps they thought the people in the settlement could take to change the conditions in their area from "before" to "after"? Blank cards were often used with the pictures to allow participants to add steps of their own, and the artist helped to draw these according to their instructions.

i. Closing Session: Developing a Mural on Community Participation

At the end of the session, and in order to stimulate individual and group ideas on the meaning and forms of community participation, the group members were helped to reconcile diverse viewpoints and to reach agreement. Since the group was very diverse, this exercise was especially helpful in illustrating different views of community participation, and the mural provided a vehicle for discussion leading to the development of a common approach. The participants were divided into small groups and were asked to draw a picture illustrating their concept of community participation. They drew stick figures showing women attending literacy classes and speaking in public meetings, men and women dumping garbage in a pit, planting banana trees by the roadside, collecting contributions for building toilets and installing handpumps, men, women and children drawing water from a clean hydrant and apron, and a community cleaning a pond. With the help of the artist, all their drawings were combined into a group mural of community participation. The mural is hanging on the wall of the school in the settlement.

IV. SOME DIFFICULTIES

SELECTION: THE SELECTION of participants was difficult, especially ensuring that a representative group of participants had been found. During the orientation phase of the research, the researcher relied on the key informants, however, the reasons behind the selection of key informants and others who facilitated contacts in the community were carefully examined.

Heterogeneity: A majority of the households in the settlement were nuclear families, supported by women as heads of household. This elicited full participation by women in PUA lessons. People from various religious, linguistic and cultural backgrounds live in the settlement and many are fairly new to the area. There are some Bihari refugees who moved from the capital city to Chittagong, which resulted in initial suspicion among the participants; however, this was eventually eased during the process of rapport and confidence-building which developed throughout various exercises. It was possible to include both men and women from the Bihari community within the team.

Lack of cohesion: Newly formed communities in the settlement lacked a sense of cohesion but were willing to talk.

Tenure: Not only was household composition varied but so was the form of tenure, with most of the households lacking legal tenure. Therefore, at the beginning of the PUA, participants were scared by the risk of eviction and loss of tenure.

Scheduling of PUA: It was difficult to schedule PUA timing and

planning beforehand because residents have long working hours in and outside the settlements.

Power politics: Power politics in the small community is very strong. There are supporters of five political parties in the area and each party has been trying to dominate the others which has created some tension among the residents. In addition, the so called *mastans*, i.e. muscle men, in the area were intimidating the community into resisting exposure to “externals” and were resistant to development professionals, and economic and environmental improvements for the settlers.

Visual illustrations: At the beginning of the PUA session, participants, especially women, sometimes refused to look at the drawings; some looked but said they could not see anything, just a blank piece of paper, and some felt too shy to make any comments in case they said the wrong thing which might make people laugh at them.

V. CONCLUSION

IN THE CASE of Chittagong, the PUA exercise helped to ease a variety of constraints to gender-sensitive programming. There is often a lack of knowledge about women’s and men’s roles in the sector. Projects may be designed in an inflexible manner, using a blueprint approach. Gender planning may be marginalized and separated from the main planning process. Hardware and software aspects of projects may be poorly integrated. There may also be an inadequate number of female staff, limiting the involvement of female residents. The time, duration and location of the training may not take women’s needs into account. Using a participatory approach from the beginning of a project may reduce these problems.

The exercises played an important role in creating a positive learning environment, and people felt free to express themselves, make mistakes and speak up without fear of being wrong. This is particularly important when working with poor and marginal groups, especially when working with women. A positive learning environment was created when “professionals” from different disciplines and different levels were brought together with community people to discuss sensitive issues. It gave an opportunity for mutual learning both to the community residents and the other participants.

The whole exercise was a community action planning approach. The participants from the urban low-income settlements were a major resource for development rather than an object of the development effort or a mere recipient of benefits. Conventional “professionals” learnt how the participants from the settlements can determine the agenda, lead the discussions and draw up the conditions. This encouraged the “professionals” to interact with the community as a partner, and acknowledge the value of residents’ opinions and decisions. The community residents learnt to decide and act together and to form

a partnership to carry out their objectives. Examples of how local groups or organizations offer funds, advice or other support to develop their own agenda showed the community how to act together and realize the benefits of participation.

Visual materials were used to enable local people to take action to change their own reality. The use of visual materials helped project officials to break away from their conventional methods of doing things, and served as a great stimulus to creativity. It helped lower the interpersonal and status barriers and created an openness in working together across disciplinary specializations. In addition, it allowed agency staff to start believing in the possibility that such materials could be used effectively to involve community people in decision-making.

The PUA exercises tried to break the artificial barrier of "them and us" and the artificial power hierarchy within the settlement. The issues of intimidation, suspicion and power politics were reduced by the end of exercise because the participants had built up a strong rapport with one another. This enabled the group to identify the needs of the communities with which they were working and to draw on community resources and knowledge, to develop an action plan for immediate implementation following the completion of the exercise. Through discussions and group interaction, the participants learnt to share their strengths and weaknesses, decided on the type of cooperation they would offer the professionals and decided what influences they would resist. The exercises also showed participants that not everything happens as people expect and the Authority is not always to blame.

Change at the grassroots level is critical to initiating and sustaining change on a larger scale. Unless community management with gender analysis is placed in the hands of local men and women, it will not touch their lives immediately and meaningfully. Large-scale change in city policies is difficult to sustain without institutional reform. And the use of PUA at the agency level is essential to supporting the achievement of equity and empowerment at the community level. The report from this research has been sent to the local authority to further the process of PUA implementation and to develop new city policy.

Additional Reading

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