

Reviewed Paper

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SUSTAINABLE DEVELOPMENT OF WATER RESOURCES, WATER SUPPLY AND ENVIRONMENTAL SANITATION

Participatory approach to promote hygiene and sanitary practice in peri-urban areas, Lusaka, Zambia*S. Sasaki, F. Nyirenda, P. Mulenga, Zambia, H. Suzuki, Japan*

This paper depicts how a participatory approach successfully changed people's hygiene practices in peri-urban settlements in Lusaka, Zambia. The Ministry of Health in collaboration with Japan International Cooperation Agency (JICA) undertook programmes for the improvement of hygiene and sanitary conditions in unplanned settlements in order to improve health status of under 5 years children in Lusaka in 1997. The Method used to mobilize community volunteers was a participatory approach, PHAST (Participatory Hygiene and Sanitation Transformation) and the formation of task force committees to carry out environmental health activities. The concept of sustainability was also taken into consideration from the beginning. The outcome of this project showed that hygiene practices of the project's targeted population were improved. The Ministry of Health intends to replicate the concept of PHAST which was introduced by the project to other Districts in the country.

Introduction

Diarrhoea is still considered a major contributor to both high morbidity and mortality among under 5 children in African countries. Lusaka, capital of the republic of Zambia, also faces the same problem. The incidence of diarrhoea in under 5 children in Lusaka in 2004 was 276 per 1,000. In addition, in the period of the rainy season from October to April of the following year, a cholera outbreak was reported. Cases of diarrhoea and cholera were unevenly distributed occurring mainly in peri-urban areas. It is simply because environmental health is much worse there than in the central part of the city.

The problems that peri-urban areas face that are pertinent to the high morbidity from diarrhoea disease are the lack of provision of safe water, hygiene and sanitation facilities. The areas have expanded, absorbing an influx of migrants from rural areas, without installation of proper facilities of hygiene and sanitation by the government of Zambia. It was also observed that the knowledge of residents in these areas about cause and prevention of diarrhoea is not adequate.

In order to prevent disease in under 5 children, the Ministry of Health in collaboration with Japan International Cooperation Agency (JICA) launched the Lusaka District Primary Health Care Project with the adoption of a participatory method that was called Participatory Hygiene and Sanitation Transformation (PHAST). In 2001 this method was introduced in George compound (population 42,000) as a trial. After monitoring and evaluating the impact of the trial activities, observing tangible achievements in the area, the method was expanded to five other peri-urban areas, Kanyama, Chawama, Ngombe, Mtendere and Chipata, covering

a population of approximately 450,000.

The aim of this paper is to depict the methodology of the PHAST approach and analyze impacts that were attributed to its implementation. In addition, sustainability of the approach was also our main concern. The paper explains innovative approaches to ensure sustainability.

Methodology**Introduction of participatory method**

PHAST was initiated by Water and Sanitation Program, World Bank and WHO in collaboration with sector partners in the Africa region. PHAST has been developed based on the concept of SARAR, that stands for Self esteem, Associative strengths, Resourcefulness, Action planning and Responsibility. These are considered as important factors to mobilize a community.

The advantage of PHAST is to make full use of visual tools that depict a wide range of behaviors of community members in terms of hygiene and sanitation. The utilization of visual tools makes community members understand with ease what are recommended practices to prevent diarrhoea.

The Lusaka District Primary Health Care Project modified the method and developed visual tools based on the original concept to make them more suitable to the social and cultural context in peri-urban settings. A comprehensive PHAST tool manual and tool kits were developed with 48 participatory tools and visual aids. The tools are categorized in four groups in accordance with the following objectives and outcomes: conceptual, investigative, planning and monitoring and evaluation tools.

The process of PHAST method is made up of three steps.

The first step is to hold a participatory workshop to mobilize community volunteer members. This step is part of the investigative, analytical and planning process. The second step is to form an implementing body and to take action. Community volunteers organize their own committees and implement activities that are prioritized at the workshop. The third step is monitoring and evaluation of the activities and planning of future intervention based on their evaluation.

The process of the workshop was also deliberately designed to make participants be fully involved and reach their targeted goal. The main objective of the workshop is that the participants identify and analyze problems that they face in hygiene and sanitation, design and prioritize solutions and make activity plans. The duration of the workshop is 11 days, starting with conceptual building and moving to an investigative, analytical and planning process. This process itself contributes to a deeper sense of ownership and responsibility for the activities. The tools play an important role in maximizing the outcomes of the workshop. It was considered that sequence of tools made participants be guided towards their objectives and deepened their understanding of the cause and solution of the problems.

PHAST workshop and Identification of health problems in the community

The first PHAST workshop was conducted in George compound in 2000. Following this first workshop, nine more workshops were held in six project sites by 2006. These sites are located in the outskirts of the city and residents in these areas suffer from similar problems in hygiene and sanitation. The following problems were identified as priorities by community people using the PHAST methodology.

- Lack of safe sanitary facilities (toilets) in the community. These were linked to the contamination of shallow well water.
- Poor drainage system in the area contributing to a high incidence of malaria and diarrhoea
- Inadequate information on health and hygiene issues resulting in continued increase in diarrhoea and cholera

The PHAST workshop encouraged participants to form and organize an environmental task force called Environmental Health Committees as implementing body. The task force committees operated in the project sites to alleviate the health problems reflected above. Under the committees, sub committees were formed according to the interventions that were planned by the members.

Intervention for Identified health problems

The intervention was designed to prevent diarrhoea disease in accordance with the priority of the committees. The objective of the intervention was also divided into two categories. One was to construct facilities as a demonstration for promotion of proper hygiene and sanitation. Construction of drainage and latrines were the highest priority. The other was to provide adequate and appropriate information on the cause and prevention of diarrhoea. It was observed

that lack of proper knowledge about preventive measures such as drinking safe water and washing hands with soap, as well as on the causes of diarrhoea is crucial factor in failing to reduce its occurrence.

Drainage Construction

The committee followed the steps described below to improve the drainage system in the area:

- Community sensitization, using door to door hygiene education and public address system
- Drainage clearing by the committee and community
- Training on drainage construction and stone pitching in collaboration with Lusaka City Council

The outcome of this intervention was that the community volunteers acquired knowledge and skills in drainage construction. A total of 1,500m of drainage was constructed in six areas.

Construction of Ventilated Improved Pit Latrine (VIP)

The solution for improved sanitary disposal of faecal matter was to construct VIPs for the purpose of demonstration. The following steps were adopted:



Photograph 1. Before drainage constructed



Photograph 2. Completed construction of drainage system

- Community meeting; to sensitize communities on the concept of VIPs and their importance
- Training in bricklaying for GEHC members
- Agreements signed by the beneficiaries and GEHC witnessed by police.
- Construction of VIPs; 3-5 households to share one VIP. The cost sharing concept was introduced, where beneficiaries provide labour and food for bricklayers.

In total 123 VIP latrines were constructed in six areas. This construction was aimed at having maximum impact as a demonstration of better facilities.

Health and Hygiene Education

Health education was conducted in public places and households with PHAST informative tools. The tools were redesigned based on PHAST original tools that were used at the participatory workshop. The type of education was based on a participatory method as a way of seeking for solutions together rather than guiding community members from the top down.

Topics of health education concerned the causes and prevention of diarrhoea. Identifying and Blocking Transmission Routes (IBTR) tool was used for health education. This tool is compiled with pictures of a river, vegetables, a fly, food, a mouth, a hand and defecation. Participants were requested to arrange pictures in accordance with transmission routes and to block each route. Through the exercise, participants come to understand the principle causes of diarrhoea and ways of prevention. In 2004, 55,000 households consisting of approximately 265,000 people were covered by the activities.

Challenge towards sustainability

Sustainability is an important factor that makes participatory operation effective and fruitful. Without careful consideration of sustainability, community activities would end when motivation of the members declines, supervision and leadership are weakened, and available funds run out. The project deliberately improved the approach based on the original PHAST concept to maximize the advantages of community participation with seven important aspects as follows:

1. Selection of volunteers;
Selecting workshop participants with high commitment and motivation through sensitization and interview with candidates
2. Facilitation skills;
Training technical personnel of public health administration in facilitation skills to organize the workshop and supervise activities
3. Formation of organization;
Forming an implementing body and selecting leaders in organizational management
4. Continuous education;
Providing refresher training to equip participants with necessary skills and knowledge
5. Visible achievements;

Producing tangible outcomes for participants to realize changes through their activities

6. Appreciation;
Providing a token of appreciation as incentives for their activities
7. Recognition
Recognizing dedication and work of participants by the community

Sustainable community activities are dependent on the extent to which these aspects are taken into consideration and acted on. The project has established systems that function to ensure the aforementioned points.

First, the involvement of technical personnel from public health facilities is indispensable for supervision and motivation of the community volunteers. There is a health facility in each project site to provide public health services including preventive and curative care. Technical personnel called Environmental Health Technologists who are stationed at the facility are assigned as community health coordinators to be responsible for supervision and technical guidance. As facilitators of PHAST workshops and refresher workshops they were trained in facilitation and supervision skills.

Second, income generation activities have been introduced to secure allowances for community volunteers. Although community volunteers are expected to work for the community without any payment, a token of appreciation as allowances plays an important role to motivate them and sustain their activities. The project constructed a fee-paying public toilet in George compound that is regularly producing a profit. The toilet has been fully managed and sustained by community members. The toilet contributes not only to making profit for community activities but also to improving sanitation of areas where it is located. Two more fee-paying toilets were recently constructed in Chawama and Chipata compounds.

Impact

In order to analyse impact of the PHAST method on behavioral change toward hygiene and sanitation and deduction of diarrhoea, we made a comparative analysis between 2003 and 2004. A sampling survey on knowledge and behaviour of caretakers of under 5 children about safe water and sanitation was conducted in March 2003 and October 2004 in six project sites. 500 samples per site were collected in each year using the same questionnaire and random sampling method.

According to the results, behaviour in hygiene and sanitation was obviously improved (Figure 1). Improvement in taking water from the community tap, chlorinating drinking water, keeping water in a proper container, and washing hands with soap and running water proved to be statistically significant. On the other hand, using proper latrines and disposing of garbage properly was only slightly improved, and, the improvement was not statistically significant (Table 1).

Conclusion

The PHAST method was proved to be an effective approach

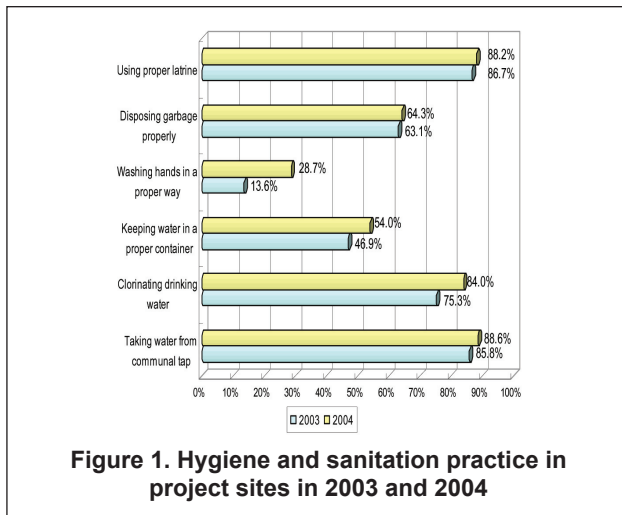


Table 1. Statistical analysis on improvement of behaviour

Item	Odds ratio	P-value
Taking water from communal tap	1.11-1.50	P<0.01
Chlorinating drinking water	1.52-2.00	P<0.01
Keeping water in a proper container	1.20-1.47	P<0.01
Washing hands in a proper way	1.82-2.17	P<0.01
Disposing garbage properly	1.00-1.25	P=0.05
Using proper latrine	1.01-1.37	P=0.04

for community members to identify and analyze problems in hygiene and sanitation and to take appropriate action for its solution. The method was able to be strengthened in sustainability through establishing a partnership with the public health sector as well as by combining it with income generation ventures.

The impact was clearly observed in the sense that the behaviour of caretaker towards hygiene and sanitation was improved and reduction of diarrhea was significantly recorded. However, it should also be taken into consideration that there is a limitation of behaviour change if proper hygiene and sanitation facilities are not available for community members. The result of the survey shows that improvement of behavioural change that requires facilities such as latrines, and garbage storage, was not statistically proved. Therefore, the impact of the PHAST can be intensified with adequate provision of hygiene and sanitation facilities.

References

LDHMT, Lusaka District Health Management Team (2002, 2004), Action Plan LDHMT

C Mukuka, Ministry of Health (2004), Zambia child health situational analysis
 Central Statistic Office, Zambia (2001), Demographic and health survey
 JICA-PHC (2001, 2002, 2003), Water and sanitation survey report.

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