

TEAM LEARNING PROJECTS AS A STRATEGY TO CONTRIBUTE TO THE SUSTAINABILITY OF WATER SUPPLY AND SANITATION SERVICES

The great poem is written by all people, those who fish and sweep, those who say that they have no maize to eat at home and those who never say anything and silently take off their shirts and their shoes, to sleep or to work surrounded by the heat and the summer.

"The people's song"

by Carlos Castro Saavedra (Colombian poet)

1. INTRODUCTION

Although many resources have been invested in water supply and sanitation (WSS) services in developing countries, conditions have hardly improved at all. There are still 76 million people in Latin America without access to safe water, and 112 million without access to adequate sanitation. The sanitation coverage in Latin America decreased by 6% during the 1990s, and diseases such as cholera are re-emerging and jeopardising the health of the poor in the region. Evaluations of WSS projects reveal that many do not provide the expected benefits such as safe water and adequate sanitation. Therefore, government, community, and external agency resources are wasted and people's health and living conditions continue to deteriorate.

Since 1980 Latin America has been undergoing a period of constant change, including a process of decentralisation. As a result, there is a growing trend towards political participation at the local level and new models of inter-governmental relations are emerging. The government is expected to act as a facilitator, but communities are expected to take the lead in their own development, and the private sector and NGOs are expected to participate in finding solutions to the problems of the poor. Much hope for improvement rests on the concept of sustainability, the idea that technological options will provide the expected benefits in both the short and long term, using minimum resources without environmental deterioration. However, achieving sustainability for all time is impossible as local conditions change continuously. Sustainability is a challenge for institutions and communities, and represents the light at the end of the tunnel. The research presented in this thesis was carried out under the

sustainability umbrella, in accordance with the conceptual framework developed by the Colombian research institute CINARA (Instituto de Investigación y Desarrollo en Agua Potable, Saneamiento Básico y Conservación del Recurso Hídrico; the Research and Development Institute of Water Supply, Sanitation, and Water Resources Conservation in University of Valle) through its projects in Colombia and other Latin American countries.

This research concentrated on the project cycle followed in WSS projects in Colombia in settlements with less than 12,000 inhabitants, the type of settlement where many WSS systems have failed. The objective was to understand the process and relationships amongst involved stakeholders in order to propose a new model of technology transfer which included specific activities and tools to solve the problems that occur in WSS projects. This thesis begins with a presentation of its scope. This is followed by a definition of the problem, and a discussion of the conceptual framework and the research design. The projects that formed the basis of the research presented herein, along with the concepts and models that resulted from this research. These proposals were then validated through the case studies described. The thesis ends with a discussion of the results, followed by conclusions and recommendations for further research.

1.1. PURPOSE OF THIS STUDY

This research aims to help to answer the question: Why do WSS projects fail? It is expected that the proposals made here will contribute to the development of better WSS projects under the sustainability framework in which the research was made. Nowadays, the environmental risk factors associated with technological efficacy and efficiency and their effect on human health are well known. However, the technology *software* which are the social factors associated with technology is less well understood, and the relationship established between the technology *hardware* and *software* and the communities and local institutions, and the process by which technology is transferred to those communities and institutions are scarcely understood at all. Evaluations of the WSS projects have concluded that many do not succeed because of failures in the technology transfer process carried out during development projects. Inappropriate technology transfer processes between different countries, or even within a country, to the local level result in improvements being difficult or impossible to sustain. The practical problems this creates are often evident to development and academic institutions because they result in projects that do not function efficiently or do not function at

all. The institutions usually develop tools and skills to improve their project cycle and the academic discussion is focused particularly on techniques for community participation (Cleaver, 2001). However, the underlying problem, inappropriate processes used to transfer technology to local institutions and community, is not commonly recognised.

This research focuses on both practical and research problems. The case studies used herein to test the proposals made in this thesis show the great potential of these proposals to be adapted and applied in different contexts and to strengthen the potential for delivering WSS services sustainably at the local level.

1.2. DELIMITATIONS AND LIMITATIONS

The analysis unit of this research is the local level as defined in Figure 1. The proposals are focused on the processes developed in the WSS projects at this level, in settlements with less than 12,500 inhabitants. In Colombia these are classified as small settlements, and may represent either concentrated rural settlements or urban centres. This research also included small informal settlements in large cities.

At the local level most of the stakeholders in, for example, a WSS project do not have complete governance over the factors which affect the project. For instance, the international policies imposed by financial agencies are difficult for national –let alone local- governments to change. In addition, as in any human system, conditions change through time, and the nature of many of these changes cannot be foreseen. As a result, given that sustainability can never be fully achieved for ever, a local information system is crucial to monitor the main indicators of sustainability at the local level. A sustainable stage in the WSS services can be lost easily without a monitoring scheme.

1.3. SIGNIFICANCE OF THE STUDY

At least one third of the Latin American population live in settlements with less than 12,000 inhabitants. For instance, in Colombia, municipalities with less than 12,000 inhabitants represent 34% of the population and 80% of the municipalities. These kinds of settlements have the worst WSS services, and the local institutions and communities are not well placed

to improve them. In addition, 30% of the people in the four major cities in Colombia (Bogotá, Cali, Medellín, and Barranquilla) live in informal settlements. These usually do not have adequate basic services. Many WSS problems are tackled at the local level through development projects. As a result of the decentralisation process the responsibility for guaranteeing WSS services rests with Municipality Mayor, so it is important to find ways to strengthen development projects at the local level. As Restrepo and Perez (1996) showed, the main problem is not the economic resources but failures of the municipalities and professionals at all levels to face the WSS problems. In Colombia, for instance, more than 500 drinking-water treatment plants do not function or function badly, and the resources and benefits lost as a result are incalculable. Thus, to improve the WSS project cycle at the local level is an urgent need. If this does not happen, people's hope to improve their families' health as an immediate benefit of WSS projects, will be lost.

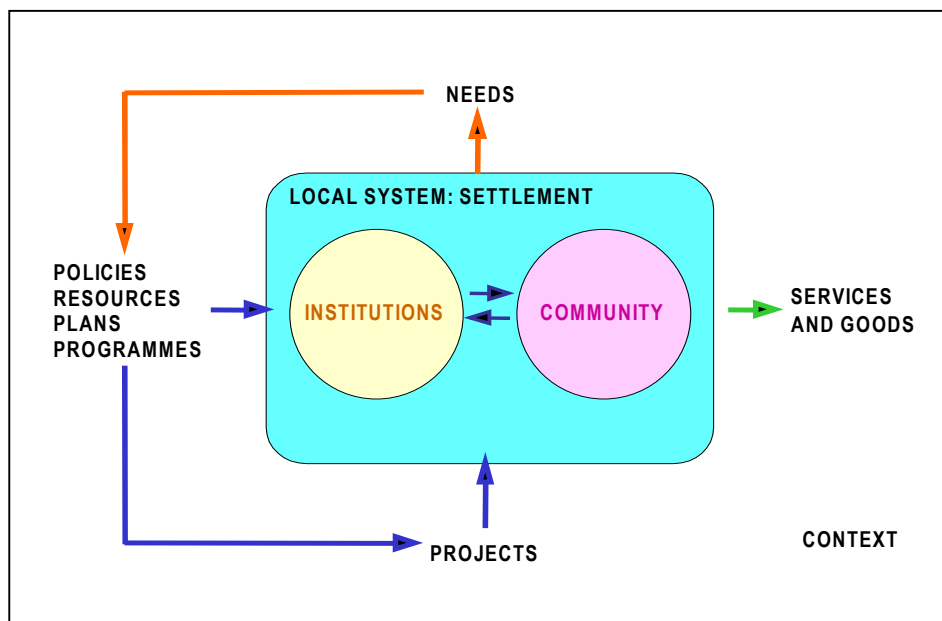


Figure 1 **The local level**

Source: Adapted from Restrepo (1995b)