CHAPTER IV

Women in Decision-making in Costa Rica

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INTRODUCTION

During the last fifty years, Costa Rica has made a major progress in terms of sustainable development of the country. After the civil war of 1948, it accomplished major progress in social and economic matters which in turn favoured political stability, that promoted a culture of tolerance. During the last five decades, the country has been transformed from an agrarian society of barely eight-hundred thousand inhabitants, to a country of slightly more than three million people struggling successfully to modernize. For example, in the field of education, in 1951 the illiteracy rate was 21 per cent, today it is only 7 per cent. The majority of the rural population enjoy the benefits of primary school education, and absenteeism in schools is double that in cities.

Together with education, health is a top priority in the country. Social security services have become universal during the last twenty years. As a result, the incidence of contagious diseases and the deaths caused by these are comparatively low and access to medical care and preventive measures is quite is widespread. These improvements are reflected in reduced death rates, infant mortality rates, and increased life expectancies.

The fundamental role played by the Costa Rican Institute for Water Supply and Sewage Systems (Instituto Costarricence de Acueductos y Alcantarillados—A & A) should not be underestimated.

Almost 96 per cent of the population has access to potable water, which has been possible primarily due to the civil society; in the rural areas it is mostly due to the involvement of women. For every one thousand homes, 941 have indoor plumbing. This has helped to maintain low rates of gastrointestinal diseases, hepatitis, and typhoid fever, in addition to preventing major outbreaks of cholera throughout the country, contrary to what has happened in neighbouring nations. Women and children are among the most vulnerable sectors of the population. Women are heads of households in 20 per cent of poor families. They also represent 90.4 per cent of one-parent families, which are 10.3 per cent of all homes.

HISTORICAL BACKGROUND

By the late 1950s, the problem of potable water supply in San José could no longer be solved by municipal management. The need arose for an organization that could work independently from the municipalities, which was autonomous, and responsible for the overall catchment and distribution of potable water.

The initial ideas were developed within the Department of Sanitary Engineering of the Health Ministry, and the Department of Public Works of the MOPT, as stipulated under Law 2726 of 14 April 1961. This resulted in the creation of the National Service of Water Supply and Sewage Systems, later becoming the Costa Rican Institute for Water Supply and Sewage Systems (A & A). Its mission was to properly manage the programme so that all Costa Ricans may have access to potable water and sewage services of good technical quality, and was affordable, and financially and environmentally feasible.'

In order to comply with this mission, a complete review of the organizational structure of A&A was performed during the 1994–8 period so as to make it more efficient and flexible in order that it could rise to the challenges of the time. A strategic plan was formulated with the help of fifty additional officials. In this manner, the decision-making process was democratized to include the participation of men and women alike.

This plan began by diagnosing water-related problems in each region of the country and the basis of the initiative was to serve the

need for savings and plan solutions for twenty to twenty-five years of service. It was then understood that restructuring should be done based upon processes and not functions, so as to overcome the obstacles presented with a rigid pyramid-type structure. The fragmentation of the processes was also detected, which in turn was responsible for delayed response times and deficiencies in the quality of service. All this was partially due to the lack of a joint vision, and ignorance regarding the process as a whole. Thus, many officials were solely concerned with the part of the process assigned to their particular department, without realizing that in fact they were dealing with a piece of the overall system, of which they were an integral part.

The excessive fragmentation of the structure produced difficulties in communication and co-ordination, thereby hindering the flow of information. In addition to having a large quantity of sections and units, there were far many controls which served to dilute responsibilities and create inequalities in workloads, with an uneven distribution of resources. The vertical structure was then changed to a flat one, where nine core processes were determined. It was necessary to understand them as being a set of interrelated and interacting activities which, when performed coherently with the necessary inputs, would create a value-added product for the customers. Each individual would be in charge of duties to be performed as a team under equal conditions, rights, and responsibilities, with the proper resources and instruments needed for the task.

A&A: SHOULDER TO SHOULDER WITH CIVIL SOCIETY

The previous administration suggested that A&A should cease to be a rigid institution which is far from the population needs. Instead, it should be located within the centre of its users and servers as an institution that would belong to the people, owned by them, close to their needs and problems. In order to change its image, a series of measures were undertaken. As a whole, they signified a profound difference in the image of the institution, and it also facilitated closer linkages to the civil society. It changed the perception of the society on the relevance of the institution.

During this four-year period, the programmes were strengthened

with women and children, young people and senior citizens alike. The following is a brief description of these programmes.

Programme on schools and communities

With the help of the Ministry of Education, work was done in several schools in remote rural and urban areas, including components regarding health education, water conservation and health services. The projects falling under this category included, in two stages, more than five thousand boys and girls during the 1996–7 period.

Children's club: water and ecology: This programme was created in 1995 by A&A, co-ordinated through a 'marketing process,' with the philosophy that to invest in education is to invest in the future. It generated a series of activities involving pupils, teachers, and parents. The objectives were to raise the awareness of the juvenile population regarding the importance of conserving watersheds, rivers, and the proper use of water. In addition, information was provided on water treatment and the importance of environmental conservation.

Forty-two children's clubs were created in remote rural and urban communities, with the involvement of 2,500 boys and girls, and the training of 250 teachers during a workshop on 'Community, Environment, and Sustainable Development.' The children received entertaining and creative training sessions in which the learning process included research, organization skills, and active participation. They then formed 'water surveillance teams', which awaked their interest in water conservation. They created a mural and cleaned up the community park, which were representative of their newly acquired attitudes. They are now actively involved in reforestation projects by planting trees around their schools and towns, as well as taking care of plants in their schools and homes.

Plumbing programme for children: The programme focuses on fifth and sixth gradestudents and communities struggling against poverty. The programme for young plumbers has been a great success throughout the country. During 1997, the impacts of work done by A&A and the schools became evident among the 3000 graduates—

everyone was committed to a common goal: these boys and girls become water and environmental conservationists.

The programme teaches the basic principles of plumbing. Children were taught the correct way of laying, maintaining and repairing pipes, in addition to receiving information on the supply and drainage of water in their homes, schools and communities. This project was part of the seminars offered by A&A instructors in several regions of Costa Rica, with the purpose of instilling in children respect and love for all natural resources. It hoped to raise their awareness on the importance of a job well done as part of personal self-fulfilment and self-worth, in addition to saving water and repairing defects in domestic water supply systems.

This programme has become a model for sustainable development and has spread to other communities, thus creating a new health culture and helping social groups to improve their basic living conditions.

Youth programme: young plumbers: In 1997, this programme incorporated the participation of five groups of young people, with 40 members in each group, thus totalling 200 teenagers, male and female, in different regions throughout Costa Rica. One of the stipulations was that these groups contain 50 per cent boys and 50 per cent girls.

All the teenagers involved acquired knowledge and practice in installing, repairing, and performing preventive and corrective maintenance to potable water systems supplied to the home and public facilities. They were able to measure, cut and install pipelines and sanitary facilities with zero leakage; design and interpret simple blueprints for installing potable water systems; and detect and correct leaks found in exposed pipelines, supply faucets, lavatories, toilets and sinks.

These young people have continued promoting the process of local youth organizations as represented in the Youthful Water Conservation Brigade, and they have achieved their own style of organization with the support of the Regional A&A. By late 1997 they were able to participate in a national encounter of young people

for the purpose of establishing a network of communication in the field of water and environmental conservation.

The Golden Plumbers programme was also conducted with the participation of fifteen adults over the age of sixty-five. They were trained in subjects as varied as water treatment, water and its properties, and basic principles of conservation. All these programmes are positive proofs of our society's integration where opportunities have been created for everyone to participate, regardless of sex, age, education, and other factors. The horizon was opened up in a technical field, allowing both sexes to become part of the labour market. In the case of young women, a door was opened to them to enable their involvement in a non-traditional field of endeavour. Thus their opportunites to be productive members of the economically active part of society, under conditions of equality, was nurtured.

ROLE OF WOMEN IN A&A

A&A has 390,000 units of potable water assigned to the property owners, with coverage for 2,160,000 inhabitants. It has 2,700 employees for this service, the majority of whom are men in the professional and technical areas. This is a reflection of the institution's historical development and the fact of the women were integrated later.

The bulk of the professionals who were initially hired by the institution were civil engineers and technicians in the field of water quality who were from the Ministry of Public Works and the Ministry of Health, professions which were largely dominated by men in rather patriarchal society of Costa Rica. It was not until the 1980s that the first female engineers and technicians were employed, coinciding with the International Water Supply and Sanitation Decade. The world summit held in 1980—the United Nations Decade for Women approved a resolution which requires that both member nations and UN organizations alike must foster full participation of women in the planning, enforcement, and implementation of new technologies designed for water supply projects. As of the 1970s, considerable efforts have been made to translate international agreements into national development policies that prioritize equality in the participation of women, promote and facilitating their involvement,

and thus further stimulate their position as complete individuals. The World Women's Conference (Nairobi, 1985) defined the strategies for the advancement of women, emphasising the fields of education, health, and employment. In 1986, during the XXII Pan-American Health Conference, the Ministers of Health of Latin America confirmed the commitment made during the decade for women, 1976–1985, to foster and set forth measures for the development of women. It was not until 1986 when women were incorporated into the National Development Plan of Costa Rica. It highlighted the following: 'Gender-related policies and programmes hope to overcome economic, legal and political inequalities as well as to develop measures in culture and education so as to favour change in discriminatory patterns under the premise of sexual equality and shared responsibility within the home.'

In 1987, the UN Commission on the legal and social status of women chose as its main concern the full participation of women in building their country and creating fair social and political systems. In April 1989, all governments were asked to encourage women to participate in politics, and that their presence be increased in their governments, parliaments and other decision-making bodies. As of this decade, government programmes acknowledged the inequality and discrimination that women are subject to in patriarchal societies which have historically been ruled by men, thus hindering true equality, in formal and legal spheres. After an exhaustive examination of the direct participation of women in decision-making and their involvement in creating policies which directly affect their lives, it was shown that their participation is negligible, in fact symbolic. In addition, it was noted that while women are subject to discrimination in society, there can be of true equality, and without equality there can be no serious and responsible commitment to democracy if one half of the population does not enjoy the fruits of development. Thus, the Costa Rican government decided to act in favour of measures approved by the United Nations in its 'Convention on the elimination of all forms of discrimination against women' (1984), which contains provisions regarding the civil rights of women and legal equality in all arenas, indicating that change and struggle are possible through education programmes and the necessary legal reforms.

Following the guidelines set forth by the UN, the PAHO developed the Women's Programme for Health and Development, creating the interinstitutional commission on 'Water, Women and Social Problems', with the involvement of the health sector (Ministry of Public Health, Social Security Fund of Costa Rica, and A&A), whose objectives are to further the development of women, the environment and conservation.

During the Fourth World Conference on Women held in Beijing, China, in 1995, the Action Plan was approved to accelerate and create the necessary conditions for strengthening the role of women in society through active participation in adopting decisions; and it was agreed that both men and women are responsible for sharing power and duties in the home, workplace, community and country. From this stems the need to adopt new organizations, regulations, and legislation to build a new world in harmony and equilibrium. The defining of national policies for women and their inclusion in national development plans is a large step forward towards the goal of conducting multisectoral, interprogramme and interdisciplinary measures that are meant to achieve an integrated approach to the differing situations faced by all women.

In Costa Rica several sectors have identified the problem and have gradually sought to create conditions favouring the enhancement of opportunities for women. In 1974, the Office for Programmes for Women and Families was created, and in 1986 it became the National Centre For the Development of Women and Families (CMF) of the Ministry for Youth Culture and Sports. Its purpose is to guide national policies in favour of women and to be responsible for of co-ordinating government-level bodies that develop programmes for the female population. By law and with the aforementioned duties in mind, the CMF has been an important step towards developing and strengthening national awareness so as to further the advancement of women.

In the early 1990s, the Law for Real Equality of Women was passed as part of the State's commitment so that Costa Rican women may become part of all fields of national endeavour, with equal opportunities and conditions, protected under the law, with rights and obligations. In 1990, the Citizens Defence Bureau was created as

a semi-autonomous body, which included a Women's Defence Bureau, as well as the Women's Delegation of the Justice Department. Both bodies have handled countless claims of domestic violence, thus bringing to light this situation as a national problem that must be analysed and solved by the entire State and civil population. During the 1994–8 administration, the CMF reclaimed what by law was its domain, and promoted a series of programmes on state policies. It initiated the following: Plan for Equal Opportunities for Men and Women (PIOMH); Plan Against Domestic Violence (PLANOVI); and Programme for Active Citizenship of Women (PROCAM) for participation in political decision-making positions.

Pursuant to the agreement among members of the Social Council in May 1994, it was mandatory to establish a Ministerial Office for Women (OMM) and a Sectorial Office for Women (OSM) within all ministries and autonomous institutions in the country. The aforementioned must put into operation the national policy on women designed by the CMF, as well as the specific ones created internally.

In early 1995 the law regarding the subject of sexual harassment at the workplace and in schools was enacted. This bill has the merit of bringing to the forefront a subject which had always been concealed and whose victims for the most part were women. The Law Against Domestic Violence was passed in 1996, representing a major landmark in Costa Rica's history. It is not only the enforcement which is important, but also the work of endless prevention campaigns and claims for justice by women which has led by women to a decided unwillingness to remain silent. During 1997, considerable work was done by women in the public sector and in the different NGOs (there are 40 in Costa Rica) to elevate the CMF to the level of an institute. After much hard work amongst the different parties, it was approved by law in early in 1998, and is currently being restructured. Its Director at present is the Minister for the Status of Women.

MEASURES FOR INSTITUTIONAL INTEGRATION

During the mid twentieth century the majority of women were from the rural sector, mostly young, with an average of seven children, and a life expectancy of fifty-eight years. By the early 1990s, half the women

in Costa Rica were from the rural sector and half from urban areas, mostly young adults, with an average of 3 children per family, and with a life expectancy of approximately 78 years. In 1961, the national institution for potable water was created. This was at a time when Costa Rican women were mostly devoted to household duties and held traditional jobs. During the last twenty years the participation of women in the A&A has increased considerably, starting from simple administrative support to that of technical and professional duties, including decision-making at different levels.

Historically, women have been closely tied to the water sector as they are the ones, from an early age, who have had to haul water for use in domestic chores, thus creating the impression that they, and not the family as a whole, are the primary consumers. Therefore the total responsibility for water has always been laid upon female shoulders. Quite possibly this may explain why they assumed the duties related to the water resources with such enthusiasm.

When committees were established the construction of rural water supply projects, there has always been the marked participation of women, both in collecting community funds as well as in the technical activities. Once the projects are completed, the situation changes drastically, with a notable reduction in the number of women belonging to the Water Supply Management Committee. With the creation of the Associations for the Management of Water Supply and Sewage Systems, which have their own legal identity and independence and are subject to their own management schemes, the corresponding rules and regulations are approved. Under this law, the new Board of Directors must have a minimum of 40 per cent female representation, who can and should be elected to any position on the Board, leaving aside the tradition of women only aspiring to be elected as secretary for board meetings.

In keeping with the Law Against Sexual Harassment, the Internal Administrative Regulation was written and enforced as a preventive tool against harassment and so as to create an atmosphere of mutual respect for male and female co-workers. In addition, there is now a professional clinical psychologist in the department of personnel management to render support throughout the entire legal and

administrative process, as well as to provide service to any employee as and when required.

With the modernisation of A&A during the 1994–8 period, there has been a visible increase in the number of women in managerial positions. Women are appointed from different professions to fill positions such as Process Co-ordinators, with ensuing leadership and managerial responsibilities. During the previous administration there were only five women in the top 30 management positions, with sporadic participation in decision-making processes because of the centralist, authoritarian and vertical management style which was practiced at that time. By 1998, at the highest levels of management, there were two women, one of whom was the Chief Executive Officer who is responsible for the overall guidance of an entire institution, charting its direction and operation. At mid-management level, where the daily management decisions for the different processes are taken, there are ten women. At a professional level, the backbone of the proposed objectives that are to be accomplished, which is 37 women from different professional fields.

In Alajuelita County, in the centre of San Jose, a group of women requested permission from A&A to conduct voluntary services in their communities via projects concerning water and environmental conservation. The institution served as facilitator for developing this type of health education, and assisted the Social Compensation Programme for the region, thus giving birth to the group known as the Water Supply Droplet, whose duty was to instil basic conservation in the home and the community.

The Women Plumbers, founded in 1997 in Quepos, Puntarenas, included the participation of fifteen women who became part of the Association for Women, Families and Community of Quepos (ASOMUFAQ). Its mission was to help women to improve their socio-economic levels through basic training in domestic plumbing, with the ability to install and repair water supply systems. In turn, it hopes to provide community services by organizing women by supplying plumbing services through a company which strengthens them internally. Women were encouraged to acquire non-traditional skills which opened up new paths and horizons.

Similarly, through the Rural and Urban Development Office, for the first time forty rural women were trained in domestic plumbing, which opened up new employment opportunities.

OUTLOOK FOR THE FUTURE: PENDING MATTERS

There has been a shift in paradigms the whole world over, from a sexist, patriarchal and discriminatory society to one that includes all, with solidarity, equal opportunities, and fundamental mutual respect for both genders. But for this to be accomplished, we must broaden and build development opportunities for women and change the power relationship between the sexes. One cannot speak of sustainability and total equality if there is no true incorporation of women in all of life's processes. It implies women must have equal opportunities so that they can develop their full potential.

In order to develop the rural sector, construction of water supply projects must proceed. This would lessen the burden of hauling water that so many women currently perform, in addition to preventing the spread of infectious and contagious diseases.

It is of utmost importance to continue creating Associations for the Management of Water Supply and Sewage Systems. While considerable progress has been made, there is still much to be done, including promoting women who could become members of the board of directors.

To prepare an appropriate policy, it is first necessary to analyse all personnel, central and regional, by sex, occupation, education, etc. Gender education for men and women, education on masculinity and femininity should be stressed so as to bring about gradual changes in collective attitudes.

There must be follow-up in the A&A regions on the policies meant to incorporate women in the job market and managerial positions. As of now, many offices are still staffed primarily by men. It is through a new outlook on the sexes, an all-encompassing and unbiased outlook, that the process of equality in treatment, pay, and responsibility can take place. It would require new public policies and their enforcement mechanisms. Appointing trained women to positions of authority will further enable other women in the future to be included in the overall

structure, and tear down the current structure of a society governed by biases and divided into two unequal sexes.

CONCLUSIONS

1. The incorporation of women into A&A, on the job and in managerial positions, is largely due to the individual efforts of women who have paved the way and opened up opportunities by deciding to study non-traditional professions and by assuming positions which pose new challenges.
2. Governments now feel the obligated to of support women in all fields in compliance with the international conventions they have signed. This is also due to a determined effort by women and the enforcement of state policies and the implementation of action measures.
3. Changes in attitude and the learning of new forms of relationships in the workplace, and mutual respect between the sexes are only possible through gender education courses for both men and women.
4. The questioning, analysis and understanding of new roles should be a collective effort undertaken by all.
5. The process of incorporating women into the different positions can be made possible through institutional democratization, taking into account their opinions and involving them in the decision-making process.
6. A flat and flexible institutional structure is necessary to accomplish the aforementioned goals, so that at different levels teamwork can take place through the modernization of the country's institutions, whereby each individual is an important part of the overall tasks to be performed under conditions of equality.
7. The gender consideration must be included in institutional duties, implementing actions through programmes and projects aimed at women inside and outside the institution.

It is precisely these mechanisms which must be built for both our private lives as well as for the institutional environment. The opportunities lie before us, but it must be an on-going commitment to

offer educational programmes and workshops on gender-related issues and to raise awareness regarding the new roles which could be played by both men and women alike.

We should hope to live in a world where sex discrimination is overcome, where each individual is allowed to live up to his and her potential as a human being, with all the characteristics and attributes inherent to lead a full life. The world is changing; the obsolete truths of yesteryears are no longer valid today. The time has come to change the worn-out cassette and play a new one of mutual respect for both sexes.

CHAPTER V

Women and Water Resources Research in Brazil

Monica Porto

INTRODUCTION

Capacity building and research on water resources in Brazil are critical issues to enable the new management system under the National Water Resources Policy to be fully implemented. There is a lack of specialists, professionals and managers to carry out the task of managing our watersheds under the law's new provisions by such public participation and watershed committees, bulk-water charging, withdrawal-permit system, and integrated quantity-quality management.

The capacity building and research and development efforts are currently devolving to join universities, government institutions and the private sector. The water sector needs to attract more professionals of different backgrounds—such as engineers, lawyers, economists, social scientists, geographers, biologists and people from several other disciplines—to be involved in water management. Such a multitude of backgrounds will promote a more balanced gender distribution among water resources specialists—and this is beginning to happen.

Graduate courses in water resources planning and management are usually organized and maintained by civil engineering programmes, but there can be a slow evolution towards a more comprehensive approach. The Brazilian Water Resources Association runs a permanent committee entitled 'Water Resources Graduate Courses Forum' through which professors discuss issues like research opportunities, curricula,

regional requirements, and the need for emphasis on a multidisciplinary approach. The real concern, common to all these courses, is the small number of applications the water resources graduate courses receive each year. Looking at the statistics, such as the number of applications per year, and the number of Ph.D.'s or M.Sc.'s each year, these show that progress is almost negligible when compared to what Brazil will need in the years ahead to fully implement its water resources management system. Since our efforts are directed towards enabling a growing number of specialists of different backgrounds, women are certainly included in this universe of professionals to be trained. Brazil needs to train a large number of specialists of different backgrounds to pursue the correct approach and to enrich the water profession.

This paper is divided into three parts. First will be shown the new water management policy currently being implemented in Brazil, second the necessity for capacity building and research development, with its pertinent gender distribution. Finally it will present a personal view of the Third Dublin Principle and its implications for women in water resources systems.

It has to be stressed that this paper will focus on Brazilian statistics in water resources graduate courses and professional participation in the activities of the Brazilian Water Resources Association, BWRA, as well as our needs for capacity building. The data will expressively show women's participation both in graduate courses and in seminars, workshops, and other BWRA activities. It will also compare women's participation in water resources with other careers—such as business and medicine. Currently our efforts have to be strongly directed towards bringing people into the water profession, focusing on different backgrounds and technical excellence. By keeping such a focus, as the data from the graduate courses will show, gender balance will be achieved.

THE NEW WATER MANAGEMENT SYSTEM OF BRAZIL

Water is a public good in Brazil, owned by the federal government or the state governments. The constitution of 1988 defined water as a federal or state property, depending on the river's path. Federal waters are those flowing in rivers that cross two or more states or that divide

two states, as well as rivers that serve as international boundaries. State waters are those flowing solely within the state's territory. The constitution also required that a National Water Resources Management System should be created (Porto, 1998).

As water resources managers were already concerned with severe water problems that related to excess use, scarcity due to droughts, pollution and the resulting conflicts, the 1988 federal constitution opened a natural path for the development of a more appropriate form of management. The states then began to develop their own management systems for state waters, while it took longer for the federal government to formulate a proposal to deal with federal waters.

Finally, the new Federal Water Law was signed by the President of Brazil on 8 January 1997. The importance of the federal law is that:

- It recognizes the watershed as the territorial unit for management purposes.
- It creates a decentralized management system in federal watersheds, where the states involved act together with the federal government, municipalities, stakeholders, professional organizations and NGO's which deal in water resources, through the implementation of watershed committees using the required participatory approach.
- It creates a Federal Water Council to promote integration between federal, regional and state levels, to arbitrate conflicts between states, among other provisions.
- There is a permit system for both withdrawals and discharges.
- It recognizes the economic value of water and it creates a charging system for bulk water.
- It promotes integrated management, requiring constantly that quality and quantity aspects be considered simultaneously.

A similar system exists in several states to manage state waters.

It is clear that three of the Dublin guiding principles are followed. The first recognizes the vulnerability of the resource, the second asks for participatory management, and the fourth stresses the economic value of water (ICWE, 1992). The third principle will be discussed later in this paper.

It will be widely recognized that Brazil now has a modern water resources management system. The reality, however, is that there are some essential actions that must be taken prior to the complete implementation of the system in order to ensure its success. Among such actions, the management system is supposed to:

- raise *awareness* among policy-makers and the general public of the importance of water.
- *educate* the population, both at the household level and at the community level, on the basic principles of water conservation and use, stressing both quantity and quality aspects.
- *prepare* the communities to fully participate in the watershed communities to establish negotiation processes involving stakeholders, the government, and society.
- build *technical capacity,* without which it is not possible to implement any of the proposed steps.

It will not be easy to implement this management system entirely, mainly for its many different facets—such as those listed above. Water resources management is slowly being understood as a complex problem of allocating a finite and vulnerable resource among competing users. Many important steps have already been taken, but there is almost a consensus that one of the main barriers towards achieving a fully working management system will be the lack of competent water professionals.

BUILDING TECHNICAL CAPACITY AND THE GENDER ISSUE

Technical capacity in water resources is a complex problem, for it has to be built while taking into account several different features:

1. *To incorporate the multidisciplinary characteristics of the water sector.* Each one of the several disciplines involved in the water sector needs specific training, with different programmes for engineers, social scientists, lawyers, economists, biologists, geographers, geologists, educators, and those in other pertinent subjects. It is also necessary to create 'common' knowledge, forming a basic body of language and theoretical concepts shared by all water professionals independently of their background.
   - This indicates that two different types of training must be developed:

a highly specialized programme focused on each of the disciplines and, at the same time, a comprehensive, less specialized programme aiming at the creation of such 'common' knowledge.

- To manage multidisciplinary fields like the water sector, one requirement that frequently arises is the need for both 'specialists' and 'generalists'. The first group would be responsible for performing highly specialized roles, while the latter would be in co-ordination activities, for which they should be trained in management techniques, have the potential for leadership, and practice political negotiation.

2. *To consider all education levels, from basic technical courses to graduate school.* The water sector needs professionals trained in different levels, with different skills, from the technician that goes to the field and perform tasks such as collecting water quality data (for example), to the highly trained and specialized scientist in research institutions.
3. *To include all pertinent levels of decision and all types of institutions involved in management.* Different types of institutions will have different roles in the Water Resources Management System and, therefore, special training programmes need to be developed.

The government sector will tend to be more involved in management activities, while the private sector will probably group water users, infrastructure developers, and consulting companies. It is clear that their different roles and perspectives regarding the management, conservation and protection of water resources will be completely distinct. Other sectors, like NGOs and professional associations, should also be involved to contribute with different views on training programmes.

Capacity building is in fact a continuous process that goes all the way through the professional life of individuals. It is a more comprehensive programme than just providing specific and specialized training for water professionals. Professional teams, either on the government side or in the private sector, are to be motivated and encouraged to search for the expansion of the individual's capacity, learning form the different multidisciplinary, multilevel and multi-institutional views of the water sector.

In Brazil there is a significant lack of water resources professionals in all of the above categories, regardless of gender or background. It is

widely recognized that this lack must be urgently filled, and the main obstacles to such capacity building programmes are both the absence of financial investment and absence of the perception of its extreme importance.

Gender is not the main issue among professionals in the water sector in Brazil. Lack of professionals is the real issue, and lack of technical excellence, along with lack of the multidisciplinary views that need to be involved. Since different professions have different gender distributions, if the field turns into a truly multidisciplinary area, then gender balance will follow. For example, in the engineering sector there is male dominance, while among social scientists there is female dominance.

What can be observed in Brazil is that even the gender distribution within each specific sector, such as engineering for instance, is rapidly changing. In the near future there may be a very close balance between male and female civil engineers, economists, and lawyers. As an example of this increasing participation in different professional sectors in Brazil, women now represent:

- 50 per cent of the registered lawyers
- 25 per cent of the court judges in the State of São Paulo
- 44 per cent of the students graduated in 1997 in Medical Schools
- 53 per cent of the students graduated in 1997 in Architecture
- 40 per cent of the students graduated in 1997 in Business School
- 48 per cent of the research scholarships, given to researchers with at least a Ph.D. (Revista Veja, 1998)

To emphasize that this gender distribution is rapidly changing also in Water Resources Engineering, it is perceptible that within one generation or less the difference in numbers is noticeable. For instance, when comparing the number of professional water resources female engineers—the older generation *vis-á-vis* the younger generation of female students in Masters and Ph.D. programmes in the same area—the difference is remarkable:

- Registered members of the Brazilian Water Resources Association:
  a) 90 per cent of the members are engineers
  b) only 21 per cent are women

- Faculty staff in Water Resources Engineering:
  a) University of São Paulo, 10 per cent female
  b) University of Ceará, 27 per cent female
  c) University of Pernambuco, 36 per cent female
  d) University of Minas Gerais, 18 per cent female

When it comes to graduate programmes, or the younger generation, the differences from the older generation are quite large.

Another remarkable example of the increasing participation of women as water professionals or researchers is the female participation evident in the last Water Symposium promoted by the Brazilian Water Resources Association last year. It showed an impressive increase in the participation (30 per cent of the participants) as well as in the number of female authors of papers (25 per cent).

Maybe it is this rapid change in the gender distribution within a traditionally male profession such as water resources engineering that is the main cause for a more relaxed and much less worried approach to gender issues in the water profession in Brazil. A positive consequence of this situation is that the number of women involved in the development of the water resources sector is growing fast, bringing into it the multitude of visions so desired when dealing with this complex resource. It is to be recognized that this is a fortunate situation, not duplicated in many countries.

THIRD DUBLIN PRINCIPLE AND WOMEN'S ROLE IN WATER RESOURCES MANAGEMENT

The Third Dublin guiding principle says: '*Women Play a Central part in the Provision, Management and Safeguarding of Water*'

And the rationale for this principle is stated as:

> This pivotal role of women as providers and users of water and guardians of the living environment has seldom been reflected in institutional arrangements for the development and management of water resources. Acceptance and implementation of this principle requires positive policies to address women's specific needs and to equip and empower women to participate at all levels in water resources programmes, including decision-making and implementation, in ways defined by them. (ICWE, 1992)

Several reflections on this principle and its correspondence with our reality in Brazil may appear and be examined.

It seems that what has been constantly disregarded when political decisions relating to water are to be taken is the country's poor who have no access to safe water, who have a high infant mortality rates, and a very weak and usually unheard voice in asking for change. Women are a part of this suffering population, together with men and children. Therefore, when the question of empowerment of people to participate in water resources decisions arises, the target group should be the poor, in order to give them stronger voices and influence such programmes. Ample participation in watershed committees needs to be vastly stimulated and the communities need to be trained to perform this role.

The social injustice of uneven income distribution in Brazil is reflected in the water supply for poor communities as well as in their low level of education and high illiteracy rates. These communities, and the women as part of them, must receive special attention. Their right to receive water in adequate quantity and quality should receive top priority on water programmes. As a part of these programmes, educational campaigns on how to conserve water at the household level should be included.

One last reflection is that this pivotal role assigned to women as users of water and guardians of the living environment is in fact an assignment to all society if we want all its segments to be treated as equals. The pressing issue is therefore to provide safe water to all communities in order to improve their living conditions, and to reduce waterborne diseases, with the additional requirement of empowering communities to participate in the decision-making process, thereby increasing the efficiency of all the proposed solutions.

CONCLUSIONS

This paper tries to show the changing water resources management scenario in Brazil and the growing contribution of women professionals in its water sector. It also analyses the particular situation of Brazil regarding the Third Dublin Principle. The conclusion can be summarized by the following points:

1. The new water resources management system is being viewed as very promising, although there are some barriers to overcome.
2. One of these barriers is a general lack of water professionals; the country will have to train and build a large technical capacity in the next few years to face the challenge of implementing the system in all its complexity.
3. There is a significant need for environmental and water education from kindergarten to college, and also for general water-education campaigns.
4. Participation in watershed communities is to be vastly stimulated, including participation of community leaders, water professionals, universities, and different segments of society.
5. The water sector does not have a truly multidisciplinary approach, and this situation must change.
6. Women's participation as professionals in the water sector is growing very fast and, as a consequence, gender distribution is not the main issue being discussed; the need for a sufficient number of trained and competent professionals is an issue that prevails over gender.
7. The Third Dublin principle should be translated in Brazil to embrace the poor, not just women. The poor segment of society has to be empowered and made better equipped to fight for their rights to safe water; women are among this suffering group, together with men and children.
8. Communities are to promote the sustainable development and conservation of water resources, both at the household level and at the community level, using all the available capabilities. Therefore the pivotal role to which the Third Dublin Principle refers is not to be left only to women. It has to encompass all community members, men and children inclusive, if all are to be treated equally.

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CHAPTER VI

Women and Water Management in Argentina

Lilian del Castillo de Laborde

INTRODUCTION

The depleted condition of continental waters is a demonstration that utilization of the resource has not been carried out with due concern. In many senses, it is obvious that trying to achieve short-term goals has resulted in bad management.[1] In power supply, mining, pulp and paper mills, irrigation, etc., the most profitable results are pursued, disregarding their impact on water resources. Since the needs for water are for very different purposes, the quality of water has a cost on society. This leads us to the conclusion that the concept of profit is manifold and should be enlarged, as one-sided considerations do not satisfy the expectations of a more conscious society. Profit in the long run, as updated documents of the World Bank admit,[2] includes a variety of inputs, far beyond immediate return.

There is a broad space for women's participation in water resources development. In their preference to undertake the function of teacher and healer, from the basic to the most skilled level, women are better prepared to take on confrontations for the preservation and restoration of water and other natural resources. Thus, we can stress women's significant influence in gender features within the social web of communication.

CLAIM FOR CHANGE

It has to be clear that our approach does not ignore disparities within gender. On the contrary, the different needs and perspectives of women

and men have to be considered and respected.[3] For example, usual workdays, the working-week, and other such working conditions do not address women's demands. More flexible regimes for women would not mean preferential treatment, but merely fairness to them. Women's working conditions are, at all levels, derived from existing structured patterns, with no regard for the disparities of gender. Occupational standards remain equal for everybody and have never been adequately adjusted to meet female requirements. Rigid conditions in the labour market oppose the flexibility that women require. In fact, women are required to adapt their working lives to their other essential activities, and to the evolving stages of their lives. Disregarding women's needs has had a heavy cost for women and their families. At present, conditions do not conform to women's needs, let alone larger social needs. In this sense, the complacent attitude of women, as newcomers, to adapt to the prevailing circumstances has resulted in an enormous disadvantage. However, was this effort worth it? Is it worth it? Certainly not for everybody. In many cases, it has had negative effects on society which have not been properly evaluated.

We can argue that with the emergence of new protagonists, it is no use insisting on including these different actors and their new roles into the old models. For women, working conditions are a meaningful matter. A more egalitarian attitude taking account of women's point of view could have beneficial effects and produce a positive change. To accept and understand the separate requests and expectations of women at work is a process towards benefiting society. Certainly, this workshop is an example of events which represent a useful path towards that aim.

WOMEN, WATER AND THE ENVIRONMENT

As useful precedents to detect other aspects of the relationship between women and water, we can look at the experience of other agencies[4] and documents. Reading the recommendations of the Dublin Conference on Water and Environment, it can be perceived that these statements are connected with certain activities where not only is gender meaningful, but also the relationship between water and environment. We are here highlighting the connection between women, water and the environment. If we examine, for example, the

contents of headlines such as 'enhanced access to water, sanitation and waste disposal', or 'health impact from urban water resource management', as well as 'water for sustainable food production and rural development and drinking water supply and sanitation in the rural context' and specifications about 'providing water supply and sanitation for the unserved rural poor', we realize that women are unavoidably involved in these matters. However, women's role in water resources development goes beyond their influence on water supply, sanitation, waste disposal and health prevention in rural and urban areas.

WOMEN AS WATER USERS

As we browse through the Dublin Conference proposals, it is clear that they are directed primarily towards users and that, among users, women are identified as among the most important. It is certainly for this reason that Guiding Principle No 3 of the Dublin Principles[5] states that 'Women play a central part in the provision, management and safeguarding of water' and refers to the 'pivotal role of women as providers and users of water and guardians of the living environment'. Partially incorporating this approach, the World Bank, in its 1993 Policy Paper on Water Resources Management,[6] highlights contributions by women to suitable water supply and sanitation projects. This is related to their household function, where women have a primary role in projects for safe water supply and sanitation. For example, in Kenya's southern coast, where the identified protagonists are on one side the governmental and private sectors, and on the other unprotected worldwide users, women are central in both cases.

The objective, however, is mainly to analyse the role of women not just at the household level, but at the managerial level, in both public and private sectors. To refer exclusively to household management would be a partial analysis and suggest a limited scope for women's participation in other fields. We are concerned with those areas involving the specialized working and professional sectors, mainly at the tertiary and university level, where there are women who have been working with various aspects of water-use and management. The question remains, however, on the usefulness of the distinction of gender within other contexts.

The reality of the massive insertion of women in so many sectors, with success in some cases, and difficulties or doubts about their competence in others, as well as their struggle and rejection in sensitive positions, all have had a considerable impact. The presence of women in professional levels is an outcome of this century, mainly over the last fifty years. The insertion of women in professional life has evolved gradually in different societies. In this sense, it is possible to visualize that, gradually, women's arrival in the graduate and postgraduate working field could influence water resources management.

COMPLEXITY

A stimulating proposal would be to include the formerly disregarded gender perspective into the economic, scientific and technical fields relating to water; in other words, to observe whether a change in gender perspectives results in differences in the management and uses of water. To attempt an answer entails analysing differences of gender in this context, which is beyond the task of this paper. In brief, women are the teachers, good managers, and naturally endowed to understand complexity[7] and thereby interrelate the multiple and simultaneous expectations of society. Since the correct environmental attitude in relation to water entails a 'renewable' approach in the utilization of natural resources and includes a broad and holistic vision, the almost biological and cultural ability of women to deal with the world matches the required complexity in dealing with water. Thus, improving the present models by incorporating gender perspectives will enrich and refresh our gloomy view of depleting natural resources and, in particular, water.

PROCESS

Would we foresee the social and environmental impact of water projects once women are included in the team? The answer is 'yes' as long as we talk of a process which has evolved in time and space, as opposed to evolving outside it. In this process, women's distinguishable interests can reach or influence decision-making levels and generate positive change. In general, standards of development have been

detrimental to sustaining natural resources, specially water. In order to reverse misuse, the new approach to sustainability requires interrelated considerations, which take into account economic aspects, the preservation of natural resources, social demands for quality of life, and women's input into all these.

At the present stage of society in the West, women do not share in decision-making. Fresh action in thus required. New proposals will lead to courses of action and achieve results. They could also be identified as long-run strategies. The result we can foresee, perhaps in the realm of fantasy (i.e. beyond time and space), is that the two existing genders are complementary. This being so, the means to ideal complementarity are education and communication.

Any future strategies would have to include the present shift in state activities from the public to the private field. In the near future, the management of water resources would have to consider both the viewpoint of the private sector as well as gender issues. There is an axis between strength and weakness because the identified protagonists are governmental and private sectors, and the unprotected are worldwide users. Thus, the goal for a course of action would be to link the interdependent interests of all parties co-operatively.

WOMEN AND WATER RESOURCES MANAGEMENT IN ARGENTINA

Argentina is a country with an approximate area of three million square kilometres, and approximately thirty-five million inhabitants. The climate varies from the humid tropics in the North to the high Andean mountains in the West, the fertile plain in the East and the dry and almost desert of Patagonia in the far South. Regarding education, in addition to private institutions, there are thirty-four state universities (as of May 1998) with free tuition, these provide access to graduate and postgraduate studies. In the last two decades at least, the enrolment of female and male students has been almost equal. Women are preponderant in some professions, e.g. like psychology, and a minority in technology and sciences, e.g. engineering, physics, astronomy. In economics, administration, law, medicine, and architecture, women are the the majority. There is an important and growing participation

of female professionals in all fields, including those relating to water resources.

In Argentina it is unfair to limit the relevance of women's participation in water resources to the household. Although the relevance of women in here is overwhelming, their involvement in the technical and scientific sectors is also remarkable. We can observe that among women, weakness appears more in the economic, financial and decision-making spheres, The public sector seems to be more suitable for them than the corporate and or private-practice fields.

It is very important to notice that, in many cases, it is difficult to deduce whether woman are excluded or self-excluded from massive engagement in the economic and political decision-making levels. Even though there are specific cases in which women share the responsibility of economic and political power, their participation is, so far, more the exception than the rule.

A local and unexpected conclusion drawn from this chapter is that there are in Argentina an important number of water-related professional women who have no link with each other. One possible solution to improve the situation could be to set up a data bank to encourage working opportunities in Argentina and abroad.

CONCLUSION

The gender perspective with respect to water management does not differ from the gender perspective in other fields. It will change only if there is an evolution in society. As evolution is not a material fact but a mental process, it needs education, effort, and time.

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2 Cummings, R. , Dinar, A. and Olson, D. 1996. *New evaluation procedures for a new generation of water-related projects,* World Bank Technical Paper No. 349. This describes the Mexico Water Resources Management Project where quality and quantity terms are considered.

3 The present demands of many women do not include 'equality' but 'differentiation'.

4 Department for Women and Forestry, Rome, Italy, chaired by Marilyn Hoskins, from Harvard University, quoted in the 1996 Buenos Aires Meeting of the *Interamerican Women's Commission,* OAS, Buenos Aires, 2–5 July, 1996, p. 33.

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CHAPTER VII

Women and Urban Protest in Monterrey, Mexico

Vivienne Bennett

INTRODUCTION

Monterrey, with a population of over three million, is Mexico's second most important industrial centre. Located a three-hours' drive south of the border with Texas, Monterrey's highly advanced and competitive industrial base has been one of the primary motors driving the transition to an export economy in Mexico. Yet Monterrey is the only major city in Mexico where water service for the entire city was rationed permanently all year round during the 1980s. The official history of the development of Monterrey's water system documents a long period, from the 1950s to 1980, of extremely minimal government investment in water infrastructure for the city. During those decades, the city's population grew at a very rapid rate and the deficiencies in water services reached crisis proportions. By the late 1970s the city's water supply was only 50 per cent of demand, and 300,000 people were not even connected to the municipal water system. Those who were connected received at most six hours of water per day.

In 1980, the pattern of government investment changed abruptly. From 1980 to 1985 the federal government channelled tens of billions of pesos into two major water infrastructure projects for Monterrey: the Hydraulic Plan, which included the largest dam ever built for urban water use in Mexico, and Water For All, which extended the city's water distribution system into all the homes in poor neighbourhoods that

had no direct water service. According to official history again, this was simply good top-down planning. In fact, two important variables explain the change in government investment patterns. One is the change in the relationship between the Monterrey industrial bourgeoisie and the federal government that took place in 1977. The second is the impact of popular protests over inadequate water service, protests carried out by women in Monterrey.

The protests over water in Monterrey are representative of social activism in contemporary Latin American cities. Research on urban problems in Latin America has documented the rise of protest activity and social movements responding to the dramatic deficiencies of urban infrastructure in the sphere of social reproduction (Watson 1992, Jacobi 1987, Zolezzi and Calderón 1985). Poor urban women are often the protagonists of these protests because infrastructure problems, especially inadequate water service, have an immediate impact on the difficulty of their housekeeping work. At the same time, women's needs are inadequately represented or addressed by formal political institutions such as political parties. As a result, protest has become the public voice of poor urban women.

Collective organizing by women in Latin America has surged in the past two decades, ranging from protests over public services (Jacobi 1987, Watson 1992), through social movements organized by mothers of the disappeared (Navarro 1989, Feijoó 1989), Church-linked women's groups (Alvarez 1990), and popular feminism among peasants and the urban poor (Blondet 1990, Andreas 1985, Cusicanqui 1990, Leon 1990, Barrig 1989), to women's movements that contribute to the transition away from authoritarian rule (Feijoó and Gogna 1990, Chuchryk 1989, Alvarez 1990). Organizing by women in Latin America displays a multiplicity of objectives, including improving neighbourhood living conditions, challenging the repressive actions of the state, taking independent action on social welfare issues such as health care and education with the support of Christian activists, establishing new identities based on strategic gender interests, and demanding rights which imply, and contribute to, the toppling of authoritarian regimes. One fundamental characteristic that all these actions have in common is that women are making themselves 'the active subjects of social

change' (Arizpe 1990)—seeking change in the areas that affect them.

In the past fifteen years, economic crisis and hardship have forced more and more Latin American women to seek waged labour. Yet women have retained primary responsibility for the household. The result is the double working day, one waged and one not.[2] The wage-labour part of the double day for poor urban women may take place away from the home (as domestic servants, market-vendors, prostitutes, factory workers, and so forth), or in the home (doing cottage industry or piecework). The unwaged labour part of the day is carried out in the place of residence (the tasks of a housewife and mother).

The woman's role as the manager of social reproduction is more difficult under conditions of poverty (one example of the intersection of class and gender).[3] For example, poor women in urban Latin America often live in homes with no running water, but water is an essential element in their daily work. They need water to cook, clean, wash clothes, and bathe children. Planning meals, keeping children clothed and in school, and caring for the sick are also tasks that are constrained by poverty. Because income flows within poor households are insufficient and often unreliable (Beneria and Roldán 1987), what should be normal purchases of food for a basic diet, minimum clothing, and medicine have to be minutely balanced against each other. For women who live in poor urban neighbourhoods, their experience of their class, which has made them managers of poverty, intersects with their experience of their gender, which makes them managers of the household.

The growth of the informal sector in Latin America has affected the nature of protest. In contrast to the experience of the advanced industrialized nations, in Latin America the informal sector has not diminished as countries have industrialized; rather it has grown as job creation in the formal sector has failed to keep pace with demand. In many Latin American countries the informal proletariat constitutes an absolute majority of the workforce. This means, among other things, that a majority of the economically active population is not collectively organized in the workplace. However, the fact that this large sector of the population rarely organizes around work-related issues does not mean that it does not organize (Portes 1985). It does mean that when

it organizes it confronts not the dominant class (as do workers in the formal sector of the economy) but a bureaucratic-technical class that manages the state agencies that oversee both the regulations governing informal sector work (to the extent that there are any) and those structuring public service provision (Portes 1985). The tendency for conflict to occur between government agencies and lower-income groups over issues of social reproduction is magnified in Latin America by the size of the informal sector and the absolute inadequacy of public services. At the same time, issues of social reproduction are territorially based. The need for a bus route affects one group of neighbourhoods and not another; the demand to extend a city's water system can be made by a group of neighbourhoods in one sector of the city and not another.

GENDER AND PROTESTS OVER WATER SERVICE IN MONTERREY

As Latin American cities grew without a concomitant growth in public services, the government increasingly became the terrain of conflict, and conflict itself increasingly was centred on issues of social reproduction in addition to the standard issues in the sphere of production. The division of labour within the sphere of reproduction meant that women increasingly became the protagonists of these territorially based conflicts. Women and men are affected differently by residential water problems. Men are expected to be the wage-earners. Most men leave their neighbourhoods at least five days a week to go to work or to look for work. Women may also be wage-earners; however, wage-earners or not, women are expected to fulfil their housewifely duties. Because water is a primary element of a housewife's daily work, the water services her neighbourhood receives are a crucial determinant of her working conditions. If she does not have water service within her home, the housewife has to keep track of the hours that water is available at the public faucet, she has to make several trips daily (sometimes at very inconvenient hours) to and from the faucet carrying heavy buckets to stock the house with water, wait in line at the faucet once there is water, and manage a limited water supply to meet the family's needs. If she does have home water service, when water is rationed the

housewife must work around the rationing schedule, filling buckets to be used when the water is cut off, and managing household water use. In contrast, the men of the household usually know little about the water service in their neighbourhood or about the extra work that an irregular or rationed water supply creates for the housewife.

Given that water is a primary tool of women's work as housewives, when residential water supply is consistently irregular or insufficient women are often the first to do something about it. In 1970 in Monterrey, 282,000 people—almost a quarter of the city's population—were not connected to the municipal water system (Elizondo 1977). In addition, the supply of water itself was far short of demand. Women in Monterrey began protesting inadequate water services in 1973, but the protests reached their peak from 1978 to 1980 and again from 1982 to 1984. In the newspaper reports of the protests that took place between 1970 and 1985, 156 neighbourhoods were mentioned by name (Monterrey had roughly 300 neighbourhoods in those years).[4] Upper and middle income neighbourhoods made up 19.2 per cent of the neighbourhoods involved in the protests, while lower middle, lower, and marginal income neighbourhoods accounted for more than three quarters. Almost half the neighbourhoods participated in more than one protest incident related to water service and all income groups were equally likely to have participated more than once.

The high proportion of lower-income neighbourhoods among those participating in the protests over water is related to the class structure of Monterrey and to the quality of water services. The breakdown of neighbourhood participation in the protests over water by income group reflected income distribution in Monterrey. Thus, lower-middle income, lower-income, and marginal-income neighbourhoods make up almost three quarters of Monterrey's population. The proportional representation of these neighbourhoods among those that protested is evidence of how widespread inadequate water service was. Of the neighbourhoods that protested, 87 per cent were connected to the municipal water system and 13 per cent got their water from collective faucets or water trucks. Therefore, the protests were in great measure a response to the water-rationing regime

imposed by the water authority because of the insufficient supply of water for the city.[5] Upper-income families could attenuate the impact of water rationing by installing costly roof or patio cisterns to store water for use during periods of rationing. Lower-income groups could not afford such installations and suffered from the rationing. Because of this, real water service was much worse for lower-income neighbourhoods than for upper-income neighbourhoods, and deteriorated further as water rationing increased after 1978. When faced with the collective problem of water service, housewives in Monterrey used strategies that would get authorities to resolve the problem, and their selection of strategies was both class-and gender-based.

When factory workers, teachers, or bus drivers, for example, have work-related complaints they choose strategies that will have an impact on the relevant authorities. They may ask for changes through their union. They may use sabotage or slow-downs. They may go on strike, shutting down the factory, the schools, or the transportation system. Even in different arenas, such as factory work or driving a bus, workers' strategies stem from the same overarching tactics: the disruption of the work process or the threat of it.

Housewives who live in the same neighbourhood usually have the same water service, so when service is deficient they have a common problem. While housewives have a common workplace, their neighbourhood, they are not organized into labour unions that could mediate their housework-related problems, and labour unions in Mexico have not expanded their struggles into the sphere of reproduction beyond the issues of low-income housing and transportation. In Monterrey, in particular, labour unions have been under the tight control of employers, and have focused on struggles within the factory. In addition, because co-workers do not live in the same neighbourhoods it becomes difficult to use the union at their common place of work to pressure for better living conditions.[6]

At the same time, during the period under study political parties in Mexico did not function as reliable and effective representatives of the population by linking local neighbourhood demands to state or national investment projects. While the dominant party, the Partido

Revolucionario Institucional (Institutional Revolutionary Party—PRI) actually controlled many low-income neighbourhoods through local leaders affiliated with one or another of its corporate sections (such as the then Confederación Nacional de Organizaciones Populares, or the Confederación Nacional de Trabajadores), in fact those neighbourhoods were no better off than any other low-income neighbourhood. In Monterrey, during the period under study there were only two political parties of significance, the PRI and the right-wing opposition party, the Partido de Acción Nacional (National Action Party—PAN). The PAN has long been identified as the party of the conservative wing of the Catholic Church and of the private sector in Mexico. In Monterrey, the PAN drew its support primarily from businessmen, although it also controlled a small number of middle- and low-income neighbourhoods, using local leaders much as the PRI did. However, the PAN has traditionally been the voice of those segments of the private sector seeking less government involvement in the economy and has not concerned itself with issues of distribution of wealth, poverty alleviation, or improvement of living conditions for the poor.[7]

While Monterrey had a few small leftist parties, they had virtually no presence in the lower-income neighbourhoods. On the one hand, they were exceedingly small; on the other hand, the most militant neighbourhoods in Monterrey were for the most part members of the non-party Frente Popular Tierra y Libertad (the Land and Liberty Popular Front—FPTYL). The neighbourhoods affiliated with the FPTYL usually had limited water service that they obtained free by illegally tapping into the nearest water mains. Although these neighbourhoods were highly organized internally, the Frente did not become involved in the protests over water, nor did protesters come from the FPTYL neighbourhoods. In fact, one of its leaders told me in an interview in 1990 that he felt that the Frente had made a tactical error by not recognizing the explosiveness of the water issue and taking advantage of the protests in other neighbourhoods to expand its presence in the city or try to mediate or lead the protests directly.

Without mediating organizations or representatives, housewives had to deal directly with the institutions and bureaucrats who could

resolve their problems. When inadequate water service became intolerable, women in Monterrey responded in their workplaces (i.e. their neighbourhoods) and at the offices of the relevant authorities (at the main offices of the water authority, at City Hall, and at the governor's office). When women used strategies that they could carry out within their neighbourhoods, they had to do something that would be visible outside their neighbourhoods to attract the attention of bureaucrats who could respond to their complaints. Analysis of the response to inadequate water service in Monterrey between 1973 and 1985 reveals a pattern that can be described as strategy escalation.

In general, this strategy escalation had four steps. The first was acknowledgement of the problem. Housewives would discuss the water service problem informally or formally at the collective faucet, in the street, or at a neighbourhood meeting. The second step was to begin negotiating with government authorities for improved water service. This step might start with telephone calls to the water authority and/or to local newspapers to report the problem—for example, if water was not turned on at the expected time, if the rationing schedule was drastically shortened, if the water delivery trucks failed to show up, or if water pressure at a collective faucet was too low to fill everyone's bucket fast enough. Sometimes the sheer volume of phone calls was sufficient to elicit a response from the water authority. Usually it was not, and the housewives were forced to negotiate with government officials directly, either in meetings at government offices or by holding protest rallies in front of government buildings.

In Monterrey, the public officials and agencies that were perceived as relevant included the state governor, the mayor, the water authority, and the City Hall water truck delivery office. The most frequently approached were the state governor and the water authority. For example, in one 1980 incident a neighbourhood delegation went to the governors office to complain about severe water rationing. The *Secretario General de Gobierno* sent them over to the water authority (in another part of town) to talk to its director. The day ended with the neighbourhood delegation's giving the water authority five days to improve service before it returned to the governors office (*El Norte*, 13 February, 1980). In another typical incident, in 1982, a delegation

representing five neighbourhoods went to the water authority to complain about serious service problems. They asked to speak specifically with the director of public relations, and were told that she was out. As they left the building they ran into a newspaper reporter and stopped to report their service problem to him. He told them that he had just come from meeting with the director of public relations, and at that moment, she herself came out of the building. The neighbourhood representatives realized they had been lied to, and the reporter captured the scene in his newspaper article (1 Norte, 25 January, 1982). In general, the women who organized protests, rallies, and meetings had a clear understanding of Monterrey's power structure with respect to water services, because in fact the water authority and the governor were the best equipped to make and carry out the decisions that could resolve neighbourhood water problems.

In the third step of strategy escalation, the neighbourhood group would move on to meeting with higher-level government officials, such as the state governor, and/or contact the press to report the lack of response. The objective was to increase the pressure on the water authority to resolve the problem.

Finally, if the water problem continued unresolved, the women would move to the fourth strategy, using disruption to force government officials to address the problem. Two forms of disruption that were repeated with great visibility over the years were the blocking of avenues and the kidnapping of water service-related vehicles and personnel. A third, milder form of disruption was the mass rally at the governor's palace.

By blocking streets and avenues women used public space within their workplace to disrupt the normal flow of life and call attention to their problem—similar to workers going on strike and picketing outside a factory, thereby disrupting the normal flow of factory work. The women used tubs, barrells, and their bodies to block streets. They selected the busiest street in or near their neighbourhood, paralyzing traffic not only for private citizens but for industry and commerce. They carried signs demanding water and voiced their demands to the police who came to try to unclog traffic and to the reporters who came to cover the incident. Usually the women ignored the entreaties

of the police to clear the streets. The police were faced with the dilemma of whether to use force to dislodge the women (who frequently had children with them). Although the police were always called in when there was a street blockade, they never actually employed force or violence to remove the women. Rather, they tried to intimidate the women or negotiate with them. It was not uncommon for a police line-up to string out along the street facing the women, tapping their batons, and using bullhorns to order them to move. Women ended the blockades—at least temporarily—when the water authority provided improved water service. Thus, the protests had an impact even when the decision-makers were located elsewhere.

The second form of disruption was for housewives to stop a water service-related-vehicle, and hold both the vehicle and its driver hostage while demanding water. Water-authority maintenance trucks, vehicles used by meter readers, water tank trucks used to deliver water circulated through residential neighbourhoods with regularity. By seizing these vehicles and drivers the housewives disrupted repair work, meter reading, and water delivery in other neighbourhoods, creating a ripple effect. The drivers were usually sympathetic to the women's plight, and smiled for newspaper photographers. Meanwhile, engineers at the water authority worked frantically to organize improved water service to the protesting neighbourhood in order to get the trucks and drivers released as soon as possible. In the summer of 1983, there were days when women in one section of Monterrey would block streets while women in other neighbourhoods seized water-authority vehicles. As these protests were reported, the distribution section of the water authority began to resemble a war room. A large city map with pins stuck in it showed the locations of the seized vehicles and blocked avenues.[8] The engineers convened to discuss water management strategies that would allow water to flow to the affected neighbourhoods. Usually, getting water to a dry neighbourhood meant taking it away from another neighbourhood.[9] This was accomplished by opening and shutting valves on water pipes near each neighbourhood. Instructions were radioed to water-authority crews throughout the city who carried out the manual valve operations. Then other crews went to the neighbourhoods to see if water really had arrived. If not,

the engineers met to design new configurations of valve openings and closings. In the worst case, or when a protesting neighbourhood was not connected to the city's water system, the water authority sent out water trucks to deliver water house by house in the protesting neighbourhood.

The third form of disruption, the mass rally, assembled hundreds of low-income Monterrey residents, primarily women, in the plaza in front of the governor's palace, where they would use the public fountain to bath their children and to wash mounds of dirty laundry.

The protests over water service came overwhelmingly from lower-income neighbourhoods. Spread out in all quadrants of Monterrey, these neighbourhoods had worse water service than upper-middle and upper-income neighbourhoods.

THE IMPACT OF THE PROTESTS

The protests over water service in Monterrey had three results in the short run. First, the neighbourhoods that carried out the most disruptive protests usually received immediate improvements in their water service, although the improvement was often temporary. Second, the protests helped inform the water authority about the status of water services in the city. Operating a city's water system with less than fifty per cent of the water needed (as was the case in Monterrey after 1978) is a complex technical feat, and the water authority in Monterrey often did not know exactly where there was water and where there was none in the city. The street blockades, personnel kidnappings, and protest rallies served an informative purpose. Third, the protests helped reinscribe existing forms of power. Paradoxically, while challenging both local and state government institutions and disrupting the stability of the city, the protests in Monterrey also taught the water authority how to manage the water system under crisis conditions, and this in turn allowed it to return Monterrey to more stable and peaceful daily life. A decision to channel water to a protesting neighbourhood was more a decision aimed at achieving social control than a decision to improve water service. This is evident because unless the overall supply of water increased the water authority could provide a protesting neighbourhood with water only by taking water

away from another neighbourhood (and hoping that the other neighbourhood would not then erupt in protest).

Given Monterrey's shortage of water and limited water infrastructure, a truly successful outcome for the protests depended on long-term solutions that would increase the water supply and extend the water system to the hundreds of thousands who were not yet hooked up. However it was precisely because of the federal government's history of negligible investment in Monterrey's water sector that there was a water crisis in the first place. During the 1950s, 1960s, and 1970s federal investment for water infrastructure in the Monterrey region was directed at small-scale projects that served as stopgap measures rather than as segments of a rational hydraulic infrastructure program for a booming industrial metropolis.

In Mexico, three factors of overarching importance explain federal government investment for regional and local infrastructure. The first is extreme fiscal centralization. State and municipal governments depend substantially on transfers, subsidies and direct investment from the federal government. This means that large public-sector expenditure within states or municipalities (such as major water infrastructure) must be authorized and budgeted by the federal government. The federal government is, therefore, the ultimate decision-maker for the local level. The second factor is the political and economic context within which the investment decision is made: the constraints on investment imposed by the condition of the federal budget and the way in which a local project fits into the development policies and goals of the current president. The third factor is the relationships among political actors, including the president, the state governor, the directors of local government agencies, leaders of the local bourgeoisie, and the citizenry. In Monterrey, the political and economic contexts in different periods along with the relationships between political actors shaped and limited the possibilities for federal financing of large-scale water infrastructure.

Water in Mexico is the property of the nation, and therefore water resources are managed by the government (Chávez-Padrón 1979). During the period under study, in Monterrey, water service provision involved agencies in the local, state, and federal governments. Locally

there were two institutions, the water authority that managed the distribution of water within the city and tariff collection, and the water commission, which planned new water and sewerage infrastructure. At the state level the governor played a key role in presenting Monterrey's urban development needs to the federal government and in serving as intermediary between local and federal government agencies. At the federal level, the Secretariat of Agriculture and Hydraulic Resources (SARH) helped develop and evaluate new water infrastructure projects for the city, while ultimate decisions on whether or not to finance a project were made by the SARH in conjunction with the Office of the Presidency, the Secretary of Planning and Budget, the Treasury, and the Banco Nacional de Obras y Servicios Públicos.[10]

From the mid-1950s until 1977, the boards of directors of the water authority and the water commission in Monterrey were controlled by representatives of the Grupo Monterrey, the local industrial bourgeoisie that is one of the most powerful family groupings in Mexico. During most of those years the Grupo Monterrey had a conflictive and hostile relationship with the federal government and particularly with the presidency because of its opposition to the state's development model. For over twenty years, from 1954 to 1977, the local water commission and the federal Secretariat of Agriculture and Hydraulic Resources had not agreed on a single large-scale infrastructure project for the Monterrey region. Improvements in Monterrey's water service required collaboration and co-ordination between these agencies, and as both the city's population and its industrial base continued to expand without the complementary expansion of urban infrastructure, water services deteriorated dramatically.[11] In 1978, the real supply of water for the city was only 58 per cent of demand (Bennett 1995). 45 per cent of the city's water supply was lost through leaks in the pipes, faulty meters, or clandestine taps—mainly the first two (Bennett 1995). Well over 300,000 city residents were not connected to the water system (Bennett 1995).

In 1980, however, President López Portillo announced a multibillion-peso water management programme for Monterrey called the Hydraulic Plan. The plan included the largest dam ever built solely for residential water consumption in Mexico and the longest aqueduct

of its kind in Latin America. Then, in 1984, the state governor announced a second federally funded project for Monterrey called Agua Para Todos (Water for All). While the new dam being built as part of the Hydraulic Plan would augment the city's total water supply, the water could not reach the neighbourhoods that were not connected to the municipal water system, and the plan did not include provisions for extending the water distribution network in the city. Water for All consisted of an urban aqueduct that would encircle the city linking all the sources of water, and most important, included the extension of the water distribution system into all the city's neighbourhoods with in-house water connections for every dwelling.

Given the history of thirty years of low government investment in Monterrey's water sector, the Hydraulic Plan and Water For All constituted a dramatic about-face. In addition, Water For All was unprecedented in three ways. First, the Mexican government had never extended water services in any city to all unserviced neighbourhoods at one time; service expansion was traditionally a gradual and incremental process. Second, Water For All contradicted conventional wisdom as practiced by the development banks that fund such projects. Typically, agencies such as the World Bank and the Inter-American Development Bank do not finance in-home water service for the urban poor in the Third World because they believe the costs of doing so unrecoverable. Instead, they favour installing collective services such as public standposts, for which installation and maintenance costs remain low.[12] Water For All was financed in part by the federal government of Mexico and in part by the Inter-American Development Bank, with the costs to be recuperated from the end users (i.e. each household in a neighbourhood receiving home water service for the first time through Water For All was charged proportionately for the cost of the infrastructure). Nearly 100 per cent of the costs of Water For All were in fact recuperated via one time or monthly payments made by the end users. Third, the federal government approved Water For All in 1984, the second year of Mexico's economic crisis, when the government had slashed social spending of all sorts. This demonstrates that improving water services for Monterrey had become a high priority for the Mexican government.

The change in federal investment priorities reflects changes in the political and economic contexts within which federal investment decisions were made as well as changes in the relationships among key political actors. A major shift in the alignment of power within Monterrey's water sector began in 1976 and was followed by a year-long battle for control of Monterrey's water authority and water commission, with the state and federal government allied against the Grupo Monterrey. The year-long power struggle was initiated by President Echeverria and continued by his elected successor, President López Portillo.

The two presidents had different reasons for pursuing government control of Monterrey's local water institutions. Initiating the government takeover of the Monterrey water authority and commission was one in a series of actions pursued by Echeverria during his last months in office that challenged the deeply embedded power of various northern dynastic bourgeoisies. López Portillo, in contrast, sought to establish or re-establish good working relationships with the leaders of Mexico's private sector through an alliance for production. Although continuing the challenge to the Grupo Monterrey's control over Monterrey's water sector may seem inimicable to this larger goal, in fact it was not. Supporting the government's takeover of Monterrey's water authority and commission was part of a larger effort to rationalize urban infrastructure planning nationally through the creation of a new ministry, the Secretariat of Human Settlement and Public Works, and a new National System of Planning (Palacios 1989). As importantly, the Grupo Monterrey saw that it had more to gain by joining the Alliance for Production than by holding on to the reins of local institutions that were not receiving proper funding in the first place. By the end of 1977 the government had ousted the Grupo Monterrey from the boards of directors of both agencies and installed new boards with representatives responsible only to the federal government agencies in charge of planning and financing urban water infrastructure.

Bringing the local water institutions into the fold of government-run agencies set the stage for federal investment in Monterrey. The very real crisis in Monterrey's water services made visible by the protests,

which in turn created a crisis of stability for Monterrey as a whole, called for new water infrastructure. The improved relationship between the government and the Grupo Monterrey, along with the availability of funds generated by Mexico's oil-debt boom of the late 1970s, made it possible. The first indication of this was the announcement of the Hydraulic Plan in 1980.

More surprising however was the Water For All project announced in 1984. Water For All was authorized in a completely different political and economic context than the Hydraulic Plan in 1980. By the end of Lopez Portillo's term in 1982, Mexico was in deep economic crisis. The wild overspending and corruption of his administration came to light in 1982 when the president declared that Mexico was unable to make the interest payments on its foreign debt. At the same time, the Grupo Monterrey, along with the other powerful private-sector groups in the country, was entering a period of extreme financial crisis because of overborrowing on international financial markets. In addition, the private sector was bitter about the scale of government mismanagement of the budget and opposed López Portillo's nationalization of the banks during his last months in office. Thus when President de la Madrid was inaugurated in 1982 he enjoyed neither the confidence of Mexico's private sector nor sufficient government revenue nor a growing economy nor the support of the international banking community. Despite these severe limitations (or perhaps because of them) de la Madrid sought an improved relationship with the private sector. Using mechanisms such as preferential exchange rates, he extended government help to financially weakened regional economic leaders including the Grupo Monterrey, sending a message that he supported Monterrey's economic recovery and its continued pre-eminence as the economic motor of northern Mexico. In turn, the Grupo Monterrey did not use the crisis to attack the federal government or the executive branch. Continued federal funding for the Hydraulic Plan and then in 1984 for Water For All contributed to the process of bringing Monterrey's urban infrastructure into accord with the industrial development spearheaded by the Grupo Monterrey.

It took four years to build the dam that was the centrepiece of the

Hydraulic Plan, and in the meantime water service in Monterrey deteriorated further. The shortage of water was such that the water authority had to implement complicated water rationing schedules across the city. As a result, from 1981 to 1984 the protests over water in Monterrey intensified. In 1982 and 1983 there were widespread street blockades and vehicle kidnappings, and several times housewives were able to blockade all access to the downtown area for several days in a row (El Norte 22 April 1983, El Porvenir 24 April1983).

This brought home to planners in the water sector the fact that the Hydraulic Plan would not bring relief to hundreds of thousands of city residents. First, residents who did not have in-home water infrastructure could not receive water from the new dam. Second, and perhaps even more important, was the fact that the city had three unconnected water districts, with each district receiving water from different sources. The water from the new dam could only improve water service in the southern part of the city because there was no way to get the water to the other two water districts. In response to this, in 1981 planners at the water commission and the water authority began designing a transferring (Anillo de Transferencia) which would encircle Monterrey and interconnect all the city's sources of water. However, a series of financial crises made the transfer ring impossible until it finally reappeared as part of the Water For All project in 1984. Thus Water For All addressed two enormous gaps in the Hydraulic Plan which made the Plan a vastly insufficient response to Monterrey's water crisis. Water For All was designed, approved and implemented to fill these gaps despite the fact that the federal government was slashing social spending and carrying out austerity programmes mandated by the International Monetary Fund.

Women from Monterrey's marginal, low-income, and lower-middle income neighbourhoods contributed to making Monterrey's water problems a national priority by keeping the problems visible. In their spread and volume, the protests over water were more than individual neighbourhoods' seeking immediate resolutions to immediate water service problems; water service became a citywide issue. In the long run, the protests helped shape investment by the federal government for large-scale water infrastructure. Protests can

influence the topic of debate, they can make debate more urgent, and they can influence the willingness of decision-makers to see alternatives. (Pinch 1985). The timing of the protests over water in Monterrey (1978–80, 1982–3) compared to the timing of the 2 big water infrastructure projects (1980, 1984), and the specific targeting of all of Monterrey's poor neighbourhoods by Water For All suggest that in the 1970s the protests made the debate over resolving Monterrey's water crisis more urgent, while in the 1980s the protests both influenced the topic of debate and obligated government planners to develop more creative and far-reaching solutions to the crisis.

NOTES

1 Segments of this paper appeared in Bennett, Vivienne, *Latin American Perspectives* (Issue 85, Vol. 22, No. 2) pp. 76–99, copyright (c) 1995 by Latin American Perspectives. Reprinted by Permission of Sage Publications, Inc. Parts of this paper are also drawn from *The Politics of Water: Urban Protest, Gender, and Power in Monterrey, Mexico,* by Vivienne Bennett, by permission of the University of Pittsburgh Press. Copyright 1995 by University of Pittsburgh Press. This paper was presented at the conference 'Taller Sobre Mujeres y Recursos Hídricos' in Mexico City, May 1998 (funded by UNDP).

2 In well-off homes (where the woman works out of professional ambition instead of or in addition to economic need) the mother or wife is still the manager of the household, even if she has paid help.

3 'Social reproduction' refers to the tasks and processes that are necessary for an individual to be able to participate in society: eating, bathing, washing clothes, keeping healthy, learning, and so forth.

4 All the data on Monterrey's water service and on the protests over it come from my research and are discussed at greater length in Bennett (1995).

5 Many other neighbourhoods that engaged in protest were lumped together in newspaper descriptions as the 'north-west neighbourhoods' or 'the downtown area'; thus, for the purposes of this study, their identity was indeterminable, and they could not be counted individually in the list of neighbourhoods that protested.

6 Experience in other countries has shown this to be possible, however. In Italy, in the early 1970s, the response to the government's attempt to raise electricity rates nationwide took place both in the sphere of

reproduction and in the sphere of production. Housewives organized in urban neighbourhoods, but industrial workers also organized in the factory, and the state electrical workers collaborated by refusing to disconnect residential electricity service even when ordered to do so. These simultaneous activities on many fronts resulted in the governments' withdrawing the rate increase and instead implementing a graduated system that was more equitable (Ramirez 1975). In Monterrey, mobilizing over water service not only remained within the sphere of social reproduction but was primarily the terrain of women.

7 The situation has changed slightly since 1988. First, President Salinas de Gortari established the Programa Nacional de Solidaridad (PRONASOL), which specifically targeted poverty through local solidarity committees that were to link local neighbourhood demands to state moneys (for a critique, see Dresser, 1991). Second, the left-wing Partido de la Revolución Democrática (Party of the Democratic Revolution), founded in 1988, has had some success in incorporating grassroots organizations and leaders into the party and linking local demands to a national platform. Third, some of the smaller opposition parties, such as the Partido de Trabajo (Labour Party), founded in 1990, have received government funds for public works projects in neighbourhoods under their control.

8 Personal observation at the water authority, Monterrey.

9 The engineers also had to avoid shutting off water service to a previously militant neighbourhood to service a currently militant neighbourhood, which might provoke new protests.

10 In different periods the functions of the Secretariat of Planning and Budget have been subsumed within the Treasury.

11 In general, during the 1950s, 1960s, and 1970s, the state of Nuevo León received a share of federal investment less than proportionate to its contribution to the federal treasury. Even during phases of government-promoted industrial expansion, the federal government did not finance the infrastructure needed for development in a consistent manner in all states with significant industrial zones. Nuevo León stands out in terms of its importance to industrial development, its deteriorating water services, and the low level of federal investment. For more on this see Palacios (1989) and Bennett (1995).

12 In fact, my research showed that the poorest of the poor in Monterrey,

who did not even have collective faucets in their neighbourhoods and got their water from water trucks, paid at least 10 times as much for their water as families who had in-home water service. The high price of water from water trucks has been documented across urban Latin America. Decent water service is such a priority that even the poor are willing to pay a substantial portion of their budget for it.

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CHAPTER VIII

Women and Social Management of Water in a Mid-size Mexican City

Patricia Avila-García

INTRODUCTION

Since the late 1970s, new urbanization trends began to appear in Latin America, especially in Mexico, in which mid-sized cities grew at rates beyond those of the large cities (Hardoy, 1992; Habitat, 1996; Aguilar, 1996). This implied not only increasing populations in these cities, but also accelerating demands for jobs, land, housing and urban services. The growth of mid-sized cities, however, coincided with the so-called lost decade of the 1980s (economic crises and external debt), which in turn led to issues like as increased unemployment and poverty, cuts in social spending by the government, and reduced monetary resources to manage the urbanization processes efficiently.

In the absence of proper management of urbanization in these cities, the number of unplanned human settlements and impoverished neighbourhoods lacking basic services and urban infrastructures, such as potable water and sanitation (Cornelius, 1976), continued to increase. One of the characteristics of this type of urbanization is the enormous effort (in time and money) and social involvement required (attending assembly meetings and mobilization) by the city's poor[1] so as to be able to obtain and legalize land use, build their own homes, and ensure availability of basic urban services.

The existence of traditional economic and political control mechanisms for the urban poor (neighbourhood dwellers)—client and

corporate structures—hindered the proliferation of social struggles and protests in these types of settlements. Urban leaders became the go-betweens for the dwellers and the state; their role was that of intermediaries because they channelled social unrest to fortify the ruling party (Institutional Revolutionary Party, PRI). On the other hand, the urban poor became submissive clients who established a management–client relationship with the state, and supplied their political support through their votes, for example, in exchange for social projects (Gilbert and Ward, 1987).

However, the control mechanisms used by the urban leaders began to lose effectiveness due to the increase in urban problems and the state's inability to penetrate all popular movements and neighbourhoods. In addition, the economic crisis of the 1980s forced the government to cut social spending and therefore the traditional leaders lost their effectiveness in urban management. Traditional leadership thus entered a crisis and other social factors gained ground in terms of urban management. These new players nurtured the incipient urban movement, as they offered new ways of relating to the state which were not based upon traditional schemes of political clientele, but rather on social participation and greater democracy in decision-making procedures (Nuñez, 1990). They also relied more on the participation of women, from their insertion into political strategies to their incorporation as active leaders in urban organizations.

The neighbourhood dwellers no longer posed only issues relating to land ownership, legalization of their neighbourhoods, and the introduction of services, but rather they argued for new forms of city management. These ranged from the social management of services such as water, to the democratic election of leaders and local authorities (Nuñez, 1990; Coing, 1991). The factors influencing increased demands for water included reduced state involvement in financing water projects as a result of the cuts in social spending; the social appropriation of water works due to contributions in labour and money by the dwellers themselves; and the socio-cultural perception that water is a limited resource that requires improved management schemes to guarantee its conservation and availability to all.

STRUGGLE FOR WATER SUPPLY, 1988–91: IN LOW-INCOME NEIGHBOURHOODS

Water as a unifier in the neighbourhoods

The technical conditions in Loma de Santa María (south of Morelia[2]) limited the availability of water since it constituted a recharge zone for the aquifers, there were no major springs, and the groundwater was at considerable depths. For these reasons the people who eventually settled in the area had serious water supply problems. The municipal body in charge of supplying the city with water, Potable Water System of Morelia (SAPA), refused to assume responsibility for supplying water due to the irregularities in the neighbourhoods—the settlers in some cases were squatters and in other cases they had purchased plots of land which had been illegally partitioned and offered for sale.

The dwellers made requests to different public bodies for potable water services, but no concrete solution was offered. Therefore, in early 1988, several urban leaders created, an organization independent of government control, known as the United Neighbourhoods of the South (CUS). The idea was to create a gathering place for neighbourhood dwellers to be able to solve the most pressing urban problems. Water was the unifying factor, as they jointly demanded an integral solution to the problem of scarcity. In other words, the only solution envisioned by the dwellers was to join forces and demand that the state and municipal governments supply water services. The idea was not to seek individual solutions for each neighbourhood, but rather to supply water to all of them as a whole.

It should be noted that Morelia had no history of independent urban organizations such as CUS; the majority of the city's poor performed their management and even their mobilizations under the protective umbrella of the PRI.

The strategy and methods employed by CUS ranged from meetings with public officials, the creation of working groups and follow-up committees, to mobilizations such as sit-ins, office take-overs, and protest marches meant to pressure the government for accelerated support. The different methods used were largely suggested by neighbourhood leaders who, for the most part, had at some point been involved in student and labour movements, opposition parties

and leftist political organizations. Decision-making within CUS was strictly horizontal and the assembly for the dwellers was the supreme body for decisions. This served to open up the opportunity for women to become actively involved, especially those who had displayed outstanding leadership abilities in their own neighbourhoods.

The presence of women was a decisive factor in the urban struggle as they were the most active and passionate supporters of public protests. They were also more flexible with their time as only a small number worked outside the home, and were thus able to attend the various events. In contrast, men had to go to work and only in extreme cases sought permission or were simply absent from their jobs in order to support the movement. Nevertheless, public officials preferred to deal with male members of the neighbourhood groups, thus strengthening the culture of male domination, which in turn weakened the position of women in the decisions of the neighbourhoods.

The actions of CUS took on greater weight when the urban struggle joined broader social movements, such as the political-electoral situation of 1988—leaders and dwellers alike participated in protest marches and sit-ins staged by the National Democratic Front and the Civic Front of Michoacan. They eventually joined forces with the new opposition party—the Democratic Revolutionary Party (PRD).

Introduction of potable water services

After several actions and mobilizations, a three-way agreement was signed in 1988 between the state, the municipality, and the dwellers for the introduction of water services. This emphasized the participation of neighbourhood dwellers along with their contributions in labour and monetary resources required for the projects. The introduction of potable water services was no longer the sole responsibility of the government, but rather the urban poor financed a considerable amount of the cost of the urbanization works. The agreement included the participation of seven neighbourhoods: Torrecillas, Lomas del Durazno, Unidos Santa Cruz, Sara Malfavón, Cayetano Andrade, Los Encinos and Ampliación Los Encinos. Trinchera and El Durazno later joined the agreement, thus adding up to a total of nine neighbourhoods.

The project to introduce potable water services took place in three distinct phases, from 1989 to 1993.

First Phase (1989). The catchment project for the La Mina spring was initiated, with a flow rate at low tide of 7.5 litres per second (l/s). In addition, a 13-kilometer long waterway line was laid, using steel piping with 12 3/4" diameter. The money was supplied by the state government and the dwellers provided the labour.

Second Phase (1990–1). This began with the catchment project for the Huertitas spring, with an approximate flow rate of 11.2 l/s. A pipeline was installed from Huertitas, which stretched 4.5 kilometres, linking up with La Mina at kilometre 8.5. A storage tank was also built, with a storage capacity of 1,000 cubic meters. There were also two water distribution lines to the neighbourhoods. One supplied water to Los Encinos, Ampliación Los Encinos, Torrecillas and Santa Cruz; the second line was for El Durazno, Trinchera, Lomas del Durazno, Sara Malfavón and Cayetano Andrade. The funds came from the state government for the tank and from the municipal government for the distribution lines. The dwellers supplied the labour.

Third Phase (1992–3). The internal networks for water and drainage were built in the neighbourhoods. The El Chilarcillo spring catchment project was also initiated during this time, with an average flow rate 39 l/s: Three kilometres of pipeline were laid. The Federal Government supplied the monetary resources through its National Solidarity Program and the dwellers contributed both with money and labour.

To carry out the works a committee for the introduction of water services was created, whose purpose was to co-ordinate the work of the dwellers. The board of administrators for each neighbourhood was in charge of calling the meetings and informing the dwellers of any and all progress made. The activities of the dwellers included the excavation of ditches and the laying of a pipeline in rocky terrain; and the construction of water catchment and storage facilities. In total, 40 shifts (320 hours of effective work) were completed for the construction of the potable water system and 12 shifts (96 hours) for the drainage systems.

It should be noted that during the first two stages, the work done

by the dwellers during the numerous shifts was considerable. Both men and women contributed to the work, regardless of whether this meant leaving children behind or neglecting household chores. Everyone had to work equally hard even if they were single parents and even if there were time constraints. The majority worked without pay. There was much interest and enthusiasm in making progress, as their work would eventually yield running water in their homes. This situation helped to establish a culture of community work, something many were already accustomed to because of their rural beginnings. It also served to influence the appropriation of the social water works—it was the result of their struggle and hard labour.

During the three phases of the water project, CUS had to perform several administrative procedures in government offices in order to speed up the release of the economic resources required for the projects. The social mobilizations led by CUS dropped in intensity in 1989 because the federal and state governments acceded to their demands.

SOCIAL WATER MANAGEMENT OF NEIGHBOURHOODS, 1991–4

Social control of water

After three years of intensive work, mobilizations and paperwork with different government offices, water finally arrived in the majority of the neighbourhoods in the autumn of 1991. The work, however, was not yet complete: the third stage of the water catchment for the El Chilarcillo spring had not begun and El Durazno still had no water because the internal distribution network and the pumping station projects were still pending construction.

According to Lucha Quiroz (September 1994), who was the leader for Cayetano Andrade:

> We reached the best part of the struggle, when they started to lay the water lines for our neighbourhoods. The arrival of that desired liquid in our homes was not far off. Then we had to fight for the internal networks. We held a protest at the governor's mansion to demand that we be included in the project.

The population considered the works their own and some even lost their lives there. One man was burnt to death when setting off

dynamite in a hillside where the pipeline was being laid; and another was paralysed due to a fall during one of the shifts, and died soon after. The notion of the common good grew with regard to water; it was perceived as a free but limited resource that could be enjoyed because of nature and the collective work of all. The importance of caring for and managing the water from its origins to its distribution in the neighbourhoods was therefore stressed, especially by the women. In fact, some of the dwellers who had rural beginnings held some mythical beliefs—'water is scared away if fought over, it does not like conflicts' (a woman from Ampliación Encinos, August 1995).

Nevertheless, the notion of solidarity also had its limits. They were willing to share the water only with those dwellers who had worked on the projects, and only in exceptional cases were they willing to share with the newcomers. The underlying argument was that there was only enough to distribute amongst the nine neighbourhoods. There was less than 20 litres per second for approximately 10,000 inhabitants, which in theory was equivalent to 160 litres per person per day (within the limits recommended by the Ministry of Health). These figures do not take into account any leaks in the lines or internal distribution networks, nor the future growth in several neighbourhoods which had many empty lots. Therefore, the only possibility of increasing the water supply and being able to share it with others was by finishing the third phase of the overall project—catchment and distribution of water from the Chilarcillo spring. Newcomers were invited to participate in the necessary work and earn the right to water services. This was the case of the Carlos Rivas and Ampliación Trinchera neighbourhoods.

Likewise, the dwellers did not want 'others' who had not been involved in the construction to manage the water services. They were opposed to any management by the SAPA, the paramunicipal body in charge of rendering this service to the city. This was because they felt that SAPA had removed itself from the problem in the beginning, and was unwilling to help the dwellers obtain water services. There was the fear that once SAPA got their hands on the water they would 'take it away' and distribute it to other parts of the city, as had happened to their southern neighbours, Colinas del Sur. They were also worried

that SAPA would charge higher rates for the service as they felt the water was for the common good and thus should be available free of charge. In other words, for them water had no economic value but rather a very high social value, due to the enormous efforts involved in obtaining it, and its use from the springs to the neighbourhoods.

They therefore felt that if the urban dwellers had been able to manage and obtain the monetary resources and had worked hard to get the water from the mountainous region to their homes, why should not they manage the water services for themselves? Above all, it was the women who defended this position as they had actively participated in the struggle from the very beginning. As was to be expected, the federal state and municipal governments were against the idea because the law on water rights did not allow for the creation of water boards which would managed by the users themselves. Despite being a common practice in the rural sector, in urban areas it was not possible because it was considered the exclusive domain of the municipalities.

Through consensus among the consumers, it was decided that the assembly of the board of administrators of the nine neighbourhoods would be designated the supreme authority in water control and management. This assembly was also the ultimate authority for CUS, with men and women who were leaders in their neighbourhoods (chairpersons for the board of administrators). The meetings with CUS dealt with matters concerning water services as well as the neighbourhoods in general. Many women attended the meetings to report irregularities in the use and supply of water, as well as to ensure compliance with general agreements concerning water management. This was because it was they who were directly involved with the problems, because of their responsibilities for meeting the needs of their families.

In addition to the nine neighbourhoods, there were others which belonged to CUS, such as Santa Cecilia, Ampliación Santa Cecilia, Carlos Rivas, Rector, and Ampliación Trinchera. The demands made by CUS primarily dealt with the water issues. However because of their work from the very beginning it was the nine neighbourhoods which constituted the major driving force within the organization.

Only the nine neighbourhoods participated in the discussions

and on voting regarding water-related issues: The format was rather informal, but the neighbourhoods came to basic agreements on water control and management. The following is a list of the main rules and regulations:

- Only those neighbourhoods which had participated in the introduction of water projects had the right to the services. The supreme authority in charge was the general assembly.
- Decisions regarding the operation and maintenance of the general water network would be the responsibility of the Assembly of Board of Administrators for the neighbourhoods, and whereas decisions on the internal networks were made by the relevant neighbourhood.
- The maintenance and operation of the water projects as well as payment of wages for employees would be done by the nine neighbourhoods. The dwellers were obliged to supply funds and free labour for the shifts when required.
- No neighbourhood could conduct internal projects that might affect the water supply of the rest (e.g. storage tanks). All proposals had to be submitted to the general assembly for discussion. It made the final decision as to whether the project in question would be constructed or not.
- No neighbourhood would individually operate the general water network, but only their internal distribution network.
- Each neighbourhood was allowed only a limited number of household intakes, depending upon the number of existing plots when the three-party agreement was signed, or upon integration into the construction projects.
- Each neighbourhood had the right to assign water rights to the owners of each plot located within it. The only constraint was that one intake was allowed per plot, regardless of its size.
- Water rights were granted according to contributions in labour and money supplied by the dwellers. Whoever did not participate in the construction projects and owned a plot within any of the nine neighbourhoods, would obtain water rights only when the corresponding contribution to the Board of Directors of the neighbourhood was paid in money and/or kind (shifts).
- If a plot with water rights was sub-divided, the ensuing sub-divisions would not have the right to install new water intakes, nor were the new owners or residents would be supplied with water, unless they were direct relatives of the original owners (parents, children).

- If any intake were improperly used or used for purposes of profit from those not having water, or if clandestine intakes were installed (hoses), the Neighbourhood Assembly reserved the right to cancel water rights.
- Should a new neighbourhood request water intakes, it was the sole domain of the General Assembly of the nine neighbourhoods to decide if temporary public intakes were to be granted (only on loan). If granted, the new dwellers would be obliged to participate in the shifts and contribute money towards the operation and maintenance of the water network.
- In case of water shortage (due to reduced flow rates from the springs), the Assembly of the Boards of Administration could enforce a water rationing system for the neighbourhoods.
- To cover any water deficits, a water truck would be used to supply the neighbourhoods. The dwellers would pay a fee meant to cover operation and maintenance expenses for the truck. Only when these services were no longer needed, would the truck supply other neighbourhoods.

During the first year of this programme, the boards of administration for the neighbourhoods were overloaded with work. They had to comply with different urban procedures (deeds, requests for public support, etc.) and they also performed other duties such as the building of roads, markets, athletic fields, pavements, etc.). Together with the committee for the introduction of water services, they had to solve the technical problems which concerned the projects, such as breaks in water lines, malfunctioning valves, etc. This was in addition to having to continue with the work of the third phase of the Chilarcillo project.

This situation led to the need for a body for water management which would report directly to the boards of administration for the nine neighbourhoods. One possibility was the creation of a not-for-profit civil association, but it was never put into effect. The General Assembly eventually appointed a Water Commission which included one chairperson, a vice-chair, a secretary, a treasurer, and three regular members. Once put into practice, the Council never really worked. The appointed individuals neither assumed their responsibilities nor initiated any news project. The responsibility, therefore, remained in the hands of the nine boards. However, the boards appointed technical personnel who were responsible for distribution and maintenance of

the general and internal water networks, as well as for the catchments of the springs. The majority were men who had proved outstanding in their work during the water introduction projects.

Despite the problems faced in making further progress, they were able to comply with the general agreements that governed access. Women played a crucial role in supervising this compliance; since they spent more time in their neighbourhoods, they could detect irregularities and clandestine intakes, leaks or breaks in the line, and water being wasted in the housing units.

The idea of water is a common good grew stronger and stronger. The dwellers became involved in reforestation projects and even cleaned up the springs so as to conserve water. There was a show of solidarity with new arrivals, as was seen in the temporary intake granted the Carlos Rivas neighbourhood, which helped to supply twenty families with water. The government donated a water truck which the dwellers used to sell water at a low cost to low-income neighbourhoods which had no water service.

The social programme for water services faced its greatest problems in the months after introduction. There were new obstacles to be overcome. One of this was accelerated urbanization in the area due to illegal settlements, which in turn created increased demand for water services in the new neighbourhoods which were being populated.

UNIQUE EXPERIENCE IN SOCIAL WATER PROGRAMMES

During most of 1994, the Water Council together with CUS, managed the water services in the neighbourhoods. This was done in a manner similar to that in the years before. Maintenance costs were covered by the nine boards, which in turn collected fees from the neighbourhood dwellers. Each board was in charge of the operation and maintenance of the internal water network; they performed their own repairs and paid the wages of those in charge of operating the general system (opening and shutting of valves, etc.). All matters pertaining to the maintenance of the system or general water network were discussed in CUS meetings, from repairs to the general lines to shifts for cleaning the springs and storage tanks. Maintenance costs for the general

network were evenly divided among the nine neighbourhood boards. In this way, the only bodies in charge of managing the money were the boards, and not CUS.

Fees for water services in the neighbourhoods were lower than those paid in SAPA. The minimum fees paid in low-income neighbourhoods were four times higher than what was paid within the CUS system. This explains why the fees paid by the dwellers could only cover basic operation and maintenance costs. There was no item for general network maintenance, thus sporadically the users had to pay an additional fee for this purpose. These payments varied from neighbourhood to neighbourhood because expenses were divided among the total number of inhabitants. The more densely populated neighbourhoods had to pay less than those with less residents.

The neighbourhood boards were the only ones allowed to assign water rights. They were granted only to those having a lot in the neighbourhood and after making payment for the jobs not performed during the construction stages. The money was set aside for maintenance of the neighbourhood network or for other expenses. Internal disputes concerning water were settled by the individual boards or during general assembly meetings. CUS was in charge of settling water conflicts amongst the neighbourhoods. It ensured that there were no clandestine intakes outside the neighbourhoods. It analysed requests for water rights from new neighbourhoods or dwellers. In addition, CUS was in charge of dealings with the three levels of government (federal, state and municipal) and with bodies in charge of water issues (the National Water Commission, the Committee for Potable Water and Sewage Systems of Michoacan, and the Potable Water System of Morelia). CUS made calls for mobilizations and took measures (take-overs, marches and sit-ins) to pressure the state regarding water issues.

As a result of political conflicts between CUS and a new urban organization with ties to the PRI, Independent Popular Union UPI, the fragile unity which existed in the neighbourhoods began to fade. *Vis-à-vis* this situation, the CUS tried to strengthen the newly created Water Council and gradually turned over new tasks such as clean-up and maintenance shifts to the general water network. Greater

responsibility was acquired for negotiations; The Council took on its own identity in dealings with the federal, state and municipal governments. Although the state rendered no support as it refused to speed up procedures for the creation of a local water board or grant the concession for the Chilarcillo spring, in reality the Council together with the boards which were part of CUS, became the supreme authority in charge of water management in the neighbourhoods. Therefore, after a few month, neighbourhoods such as Lomas del Durazno, Unidos Santa Cruz, and Sara Malfavón decided to open the doors previously closed to the Council and become involved in the meetings. Only Trinchera de Morelos refused to participate because the head leader of the UPI was the Board of Administration chairperson for that neighbourhood.

CONFLICTS IN SOCIAL WATER MANAGEMENT, 1994–5

The experience in social management within CUS was indicative of the socio-cultural changes in the neighbourhoods. Water became a patrimonial commodity, which had to be conserved to guarantee present and future supply, and a collective benefit which was subject to social regulations and community agreements. This perception clashed with the vision of the state that water was a national resource whose supply and distribution for the entire population was the sole domain of the municipal governments (articles 27 and 115 of the Mexican Constitution).

With the arrival of modernization projects initiated by the state, the need for privatizing urban services, including that for potable water, was suggested. This created a problem since the state considered itself as the central player in the privatization initiatives, and the social organizations had no role. Thus the state refused to consider the possibility of neighbourhood dwellers forming a self-managing board for water services, which could further strengthen the notion of common and collective benefits.

The core of the conflict was over who was to manage water services. The dwellers suggested self-management, and the municipality was in favour of state management and against the privatization trend. In addition to these differences was the struggle for control of water

sources. The dwellers wanted to ensure present and future supply through the creation of a self-managing board, and the municipality wanted control through SAPA so as to meet the demand for the entire city of Morelia. Thus, the conflict over social management in the neighbourhoods implied a confrontation between two projects: one which was self-managing based upon the principles of social participation, and the other was government-centred, with little or no social participation.

Differing positions

The local power groups the neighbourhoods took sides in this dispute. Those within UPI were in favour of handing water control over to SAPA, and those belonging to CUS wanted to create a self-managing local board. Handing control over to SAPA meant that CUS would lose social control of water because the assembly of the nine boards would no longer be the supreme authority. It also implied a loss of political control within the neighbourhoods. The state would then have control over a strategic resource within the neighbourhoods, and SAPA involvement would weaken CUS power. The creation of a self-managing board would give CUS the possibility of expanding its political authority within the region, and also to set a precedent for social water control with user participation. For UPI, it would mean its political burial because CUS would become stronger and the state would have reduced power and control. In addition to giving CUS more power, it would create fertile ground for more self-managing and democratic processes which could take root in the new neighbourhoods. UPI established close ties with the state. Together they became a united force attempting to weaken CUS and foster the government-centred water service within the neighbourhoods. This relationship was established because several members of UPI were government employees working for the Social Welfare Officer. In addition, they had ties to one of the personalities who was a main driving force for the strategy to fragment political power within the neighbourhoods.

UPI was very cautious with every step that was taken. In order to remove CUS, it suggested the creation of a water Council which

would be responsible for defining future water management in the neighbourhoods. In essence, it meant giving control to SAPA or creating a local board.

According to Estrella Cells (interview, 3 Nos. 1994), leader of UPI:

> We have considered giving water control to SAPA, but we have not publicly discussed it with the dwellers. It is a political situation. They want nothing to do with the government. SAPA is considered diabolical. They even initiated a campaign that said if SAPA was given control, everyone would be left without water. They assumed the position that if they had been the ones to obtain the water services, why share it with anyone else. That is why we were attacked. They called us governmentalists, turncoats. That is why we have proceeded with caution, until we achieve what we want.

Another problem was the difference of opinions on the future of the council would become. The CUS and the majority of the neighbourhoods' dwellers thought the Council would be their legal representative that would allow them to obtain the Chilarcillo concession, and from there create a local self-managing board. On the other hand, UPI and the municipal and state governments envisioned, as the best case scenario a board with joint management between users and the SAPA. The worst case, was to give legal control to SAPA, and these cancel local participation.

According to the CUS leader Pancho Granados (interview 23, Nov. 1994):

> I have told everyone that if we allow SAPA to take control, pretty soon all the developers outside our neighbourhoods will have water and we shall not. If all of you who worked very hard in the different construction projects do not defend your rights, then who will?

Eventually CUS gained ground within the Council, and the role of UPI was to stop participating and to make inroads jointly with the state government in creating a project for the local water board in joint management with the state. CUS pinned its hopes on work done within the council and avoided any mobilization and public actions which would only wear the people down.

Legal obstacles for the self-managing project

The state remained closed to any initiative of the Council geared towards creating a self-managing water board, or seeking the concession of the springs. Paperwork was not processed, meetings were frequently cancelled, and board members were made to wait several hours. The solution to demands made were prolonged by sending them to different government offices—National Water Commission, the State Government Potable Water Committee, State Government Social Welfare Office, Potable Water System of Morelia, City Hall.

Obstacles were likewise created for the formation of the local water board. First paperwork was delayed pending approval and publishing of the new State Law on Potable Water for Michoacan. Once published (June 1994), the law stipulated that under no circumstances could there be a self-managing board that would control and render services to the neighbourhoods, although it did permit the possibility of joint management (state and user participation).

> Local municipal boards can be created which shall work under the operating body of each of the municipalities, comprising the head of ownership or the person in charge of locality in question, who shall be president of the same; a secretary to be appointed by the City Hall, proposed by the municipal president; and at least three regular members to be elected from among the citizens who have lived the longest in the locality. There must be an agreement reached by City Hall for the creation of these Boards (Art. 36 of the Law on Potable Water, Sewage Systems and Conservation for the state of Michoacan; Official Gazette, vol. cxviii, no. 38, dated 13 June 1994).

The Law on National Waters (1992) stipulated that individuals may make use of water supply sources through a concession granted directly by the City Hall. The said concession, however, was dependent upon the City Hall first obtaining allocations of water sources from the National Water Commission (CNA).

In keeping with this law, when the Council requested during a meeting the concession to the Chilarcillo spring, the CNA stated that the City Hall must first initiate the request for spring allocation so as to then be able to grant the concession can be granted. Thus, the CNA passed the problem to the City Hall and withdrew from neighbourhood

dwellers. Nevertheless, the municipal government prolonged the procedure as long as it could with regards to the concession for the spring as well as for the creation of the local water board. The message was quite clear: CUS and the Water Council could expect nothing.

Despite the utopian project for water self-management, the new law would only allow for joint management between the dwellers and the state. The problem was not only that of specifications under the law, but rather a question of which political group was to head the initiative. If it was CUS, requests for the creation of a local board were consistently and systematically denied, regardless of whether or not it meant joint management with the state. As the months went by, enthusiasm within CUS, and in particular the Council, diminished; the ensuing disorganization and inability to settle micro-conflicts regarding the social management of water led to suggestions that the project for self-management be abandoned. The council needed a legal body that would be recognized by the state to act upon dispute settlements and which would seek the concession of the springs that would supply more water to the neighbourhoods.

The possibility of accomplishing these goals had been postponed by the state, to the point that it created a situation of discontent and disputes within the Council and CUS. Almost three years were lost in unsuccessful attempts to legalize a local water board which could be managed by the users themselves.

Despite this situation, the role of Emiliano Gil, a CUS leader and Council member, was critical in driving out the Council and in following up on negotiations with the state. Together with other Council members, long hours were devoted to internal debates on the local water board, and they went to countless meetings with government officials. This implied considerable time and money spent in travelling from places as far away as El Durazno (an hour's walk by foot to Santa María) so as to be able to catch a bus to Morelia; and then to have to wait up to five hours to be received by Primitivo Barriga, interim Municipal President; or to attend meetings two or three times a week in order to discuss water-related issues. For the women it meant neglecting their families and household duties for

several hours, which caused marital tensions, as was the case of Lucha Quiroz, whose husband left her because he could no longer understand her devotion to the struggle of the neighbourhoods.

The state hoped to push them to the point of exhaustion so they would opt for handing control over to SAPA. With this in mind the state suggested a temporary agreement in which SAPA would manage water services for one year, with the promise that this would help them to create capital and better organize themselves so that in the future they could create their own local board. However, if in a year's time the council were pleased with the SAPA administration, the system would be permanently transferred to the municipal body.

Although SAPA had practically accomplished the goal of convincing the main leaders in CUS, the socio-cultural imprint left by the construction projects in the minds and hearts of the neighbourhood dwellers was a factor which hindered the disappearance of the Council. When the CUS leaders presented the SAPA proposal to the Council Assembly, everything fell apart as the temporary agreement was voted down. The women were the first to defend the notion of social management for their water services: *'if we worked like mules to bring water to our homes, how can they possibly want us to transfer the works to SAPA, especially since SAPA never helped the neighbourhoods when we did not have any water.'* (Woman dweller from Trincheras, July 1994).

The Water Council agreed to submit the proposal for consideration in the neighbourhoods, and the residents voted 'no' to SAPA and 'yes' to the creation of a local water board. The neighbourhood dwellers and the Council thought it best to have a local water board whereby they would exercise social control over the water, thus ensuring water supply and access to the nine neighbourhoods, and to manage their own economic resources and perform the necessary maintenance work. This was ideal for the men and women in the neighbourhoods since they wanted a self-managing water board with social participation. However, as time went by, they had to settle for what was possible: joint management with SAPA.

Following was a typical reaction of a woman from Trincheras (interview, 17 Oct. 1994):

I feel we should not transfer water to SAPA. When we were at meetings and sit-ins requesting water, where was SAPA? Why did not SAPA come and work, to work the shifts? We did everything here ourselves, we worked the shifts, we contributed money to be able to enjoy a little bit of water. Now I ask myself, why is SAPA so interested in the water? Because they want to charge us more money than what we pay now. That is why I disagree with the transfer to SAPA, because they did nothing to help us to bring the water to our neighbourhoods.

This undoubtedly signified the last 'ritual of marginality' by the Council and the break with SAPA. The dwellers were able to 'checkmate' the state, if only for a moment. Such was the case of the meeting held with the Council members and neighbourhood boards with SAPA officials on the premises of the potabilization plant. Uriel Villa and his team of technicians awaited the Council members at a long table with soft drinks, coffee and cookies. When Uriel asked what their final decision was, he was told they had opted for joint management with SAPA and not the temporary contract proposed by SAPA. The celebration expected by SAPA after two long months of lobbying was not to be; the director was sure that the Council members were going to decide in favour of the temporary agreement and was completely taken by surprise upon hearing the negative response. Uriel immediately acted to delegitimize the Council members and withdrew recognition by asking: 'Who are you? Have you all undergone plastic surgery? I see complete strangers before me.' To which the Council members only answered, 'We are the same as before.' He then proposed a change in assemblies so they might appoint new Council members or ratify the old ones as a requisite to creating the local water council in joint management with SAPA. The idea was to make them prove they had been elected by the general assembly and that they were truly representatives from their neighbourhoods. The Council was unable to supply a counterproposal and defend their legitimacy and legality. From that point forth, the CUS and the Council gradually lost social control over their water and they slowly began to disintegrate.

Loss of social control

The meeting at the potabilization plant marked the end of the Council controlled by CUS. Both bodies disintegrated and control was lost in

just a few months. The general assemblies were gradually held in the neighbourhoods to elect new Council members. There were to be two members per neighbourhood, for a total of eighteen. They again underwent the process carried out 18 months earlier. Although several members were ratified, there were conflicts to obtain positions within the Council in neighbourhoods such as Trinchera de Morelos, Lomas del Durazno and Cayetano Andrade. For example, there were bitter arguments between the group headed by Lucha Quiroz and another with ties to the PRI, and it was necessary to resort to municipal and state authorities to act as mediators. After two months of tension, the solution was to elect one council member from each faction.

With the newly elected Water Council, the UPI was better represented in Cayetano Andrade, Trinchera de Morelos, and Unidos Santa Cruz. In this manner, steps were taken towards reaching legitimacy and power within the Council. The disintegrated CUS also had representation in Torrecillas, Los Encinos, and El Durazno. A similar number of positions were filled by Council members with no political experience, or without full identification with both groups, as was the case of Lomas del Durazno, Ampliación Los Encinos, and Sara Malfavón.

Despite the difficulties and disputes revolving around the creation of the new Water Council, water shortages once again served to unify the neighbourhoods. Spring of 1994 witnessed the worst reduction in the flow from the springs supplying the water. Storage tanks which used to take 12 hours to fill, took 24 hours. This affected the supply to the nine neighbourhoods, and thus control and regulation measures became necessary to ration and improve water distribution. The neighbourhoods were forced to set aside their political differences and they united under one common goal, water for all. Just like in the good times of CUS, all the boards had to meet to discuss water-related issues and decide upon the solutions. During the assembly meetings there were people from UPI as well as Estrella Célis, a CUS leader, and Lucha Qiroz. However, as the weeks went by, water control gradually fell into the hands of UPI because they were well organized and they had a project for water management, a government-centred system.

Once the new Council was created, tensions grew between its CUS and UPI members. More pressure was exerted by UPI, for they were not as worn out as those from CUS. One of the changes brought about was that Council assembly meetings were no longer open to the general public; only Council member from the nine neighbourhoods could attend. Jealousies were further heightened when meetings were held with municipal and state authorities. The boards of the nine neighbourhoods were not allowed to be present at these meetings. All this served to further restrict social participation in decisions and negotiations with the authorities.

As UPI gained more ground within the Council, state and municipal procedures moved at a smoother pace, with no more obstacles; appointments were kept, and there was an atmosphere of cordiality. For example, there was a direct line to the state government through the attorney's office. The UPI began to push for three management schemes. The first entailed an agreement with SAPA for joint management; the second was the creation of a local board for joint management with SAPA; and the third a temporary contract with SAPA. In reality, there were only two proposals, the agreement with SAPA and a local board.

Once again, the majority of the Council members and neighbourhood boards rejected the agreement with SAPA. In fact, a petition was signed by more than 400 dwellers in opposition to water transfer to SAPA. The decision was clear; the Council wanted to create a local board with the condition that it not be self-managing but rather in joint management with SAPA. In this manner, social participation in the neighbourhoods would be reflected within the Council as it would become part of the local water board, pursuant to the law.

So despite increased power within the Council, UPI was unable to have influence over a socio-cultural decision; the mark left by the water project had more weight. In light of the situation, the state and UPI had no other alternative but to acknowledge the need for creating a local board. The progress progressed without a hitch; the local board was approved within three months, as opposed to three years of run-around given CUS. The difference was that now the council was headed by UPI.

JOINT MANAGEMENT OF WATER IN THE NEIGHBOURHOODS, 1995

One of the main reasons why men and women alike in the neighbourhoods wanted to create a local water board was to obtain the concession for the springs, especially that of Chilarcillo. Although they were quite clear on the fact that self-management was not the path to achieving that goal, they thought it possible through a board in joint management with SAPA, as stipulated under the state law on potable water. The state, however, was opposed to its creation as long as it was headed by CUS.

Once the new Water Council was created and UPI rose to power, the relationship with the state changed. Although the latter sought a government-centred water system, the residents once again opted for the creation of a local water board in joint management with SAPA. The importance of this decision lies in the fact that they would have the possibility of representation within the Council through elected members, as well as the chance to be involved in decision-making processes. In addition, all resources coming from the collection of water fees would be managed by the Council itself and not be mixed in with SAPA.

To create the board, the state relied upon the project proposed by UPI through the Social Welfare Office and the observations made by SAPA. The proposal was sent to the Lobby for approval with no objections noted by the mayors and the municipal president. It was the first local water board in joint management created in the municipality of Morelia and in the state of Michoacan. A few weeks later the members of the local water board were sworn in; the chairperson being the head of for Santa María; the secretary a representative from SAPA; and the regular and alternate members were the 18 council members from the 9 neighbourhoods.

JOINT MANAGEMENT WITH SAPA, 1996

Once the Local Water Council was created with representatives from the municipal government, SAPA and neighbourhood residents made their first decisions regarding its operation. A manager was selected

through an open advertisement, and this position would be the system's technical-administrative head. A place was set aside within the property office for payment of fees and technical services for the users. The municipal government supplied the first three months of wages for the manager and a secretary as well as some stationery. The material resources controlled by CUS had to be handed over to the board, as was the case for a truck and a water truck collectively managed by the nine neighbourhoods. Water fees were collected in the board offices without any further involvement by the nine neighbourhood boards, which undoubtedly reduced their power.

Part of the funds collected were earmarked for the paying of wages for the 3 employees who were in charge of network maintenance and operating the water distribution valves. All 3 were from the neighbourhoods and had previously performed the same duties. Meetings for the water Council for the 9 neighbourhoods were held every two weeks, with the presence of the Board chairperson, secretary and the manager and regular members from the 9 neighbourhoods. During these meetings fundamental decisions were made concerning the fees to be paid by the users, distribution policies in the neighbourhoods and maintenance requirements for the system. Many of these decisions reflected the old feelings of the residents, namely that they should pay fees lower than those charged by SAPA in the city of Morelia, and guarantee water supply to the 9 neighbourhoods.

The first few months of board operations were difficult, especially because some residents refused to pay their fees. Lomas del Durazno declared its opposition to the board because a local PRI group spread the rumour that the water had been transferred to SAPA. Board members had to hold several informative assembly meetings to clarify the nature of the board. The strategy proved useful in gradually convincing neighbourhood residents to participate in board's activities. However, it was impossible to motivate those residents who were in arrears or who had committed irregularities. Some dwellers in Cayetano Andrade preferred to maintain their irregularities so as to avoid paying their water rights (shifts) and back payments owed for consumption (almost five years). At this point, it is worthwhile to note the crucial role played by Pascual Fierro in constituting the local board. However,

his presence was fleeting as he decided to launch a political career as a candidate for election to the office of Head of Property, using water issues as his platform. He was not elected, and a short while later he became uninterested in his duties as a council member. As in the past, the subject of water was used once again as a political trampoline for leaders from the neighbourhoods.

With regards to obtaining the concession for the springs, the situation continued to be ambiguous and the objective was difficult to accomplish. The state created new obstacles. The CNA stated that in order to obtain the concession, the board would have to pay rights for use and discharge for the 5 years that the springs had been used. Wastewater discharges would have to be treated, which meant building a treatment plant. This implied a major expense and indebtedness for the board, which the neighbourhood residents were unable to cover. It also meant new technical and administrative responsibilities regarding water treatment and conservation. Thus, the old dream of the Chilarcillo project became more and more remote for the neighbourhoods, although for SAPA Chilarcillo is still today a water reserve for future human settlements in the city of Morelia.

The technical operation and administrative duties of the board were quite efficient. The users could report any technical irregularities in the water service to the manager, who in turn would immediately seek a solution. For example, when a neighbourhood reported that it is not receiving water, the water truck was immediately dispatched to supply water free of charge to those users who were up-to-date in their payment of fees.

Requests for water from other neighbourhoods continued to increase. Almost every day there were requests for new water intakes. However, these requests were honoured only for those belonging to the project of the nine neighbourhoods. The rest were sent to SAPA so that the necessary procedures could be processed. In this sense, water continued to be socially controlled by the nine neighbourhoods.

There were some problems regarding the economic situation faced by the board. What was collected in fees sufficed to cover all employee wages and some repairs to the water network, but it was not enough to ensure adequate maintenance of the general system which was

deteriorating. Additional income was earned through the sale of water intakes, so this practice was fostered with the condition that the intakes be sold only within the nine neighbourhoods.

It should be noted that the board operated without any subsidies, despite its joint management with the state. The state's strategy was that the board should be economically self-managing but not politically, and this necessitated the government's presence within the organizational structure. Nevertheless, joint management allowed the residents the opportunity for social management. The result was the only feasible solution, which was neither government-centred nor self-managed. Therein lied the social-cultural imprint left by the movement that was by the nine neighbourhoods. In this sense it was truly a unique experience of state and social coparticipation in the water management of low-income neighbourhoods. Within this overall context, women played a very important role.

FINAL COMMENTS

The path of urban development from the supplying of services to social management, is a unique process in the Mexican cities of the nineties. This was largely explained by the rise of independent urban organizations which suggested new ways of dealing with the state through the increased local democratisation and social management of the habitat. The case indicated a analysed new form of social management of potable water service for nine low-income neighbourhoods belonging to the urban organization Colonias Unidas del Sur (CUS) in the city of Morelia, Michoacan.

What makes the example notable is that the urban organization was a central player in the introduction and rendering of the services. Men and women living in these neighbourhoods mobilised themselves active in the mobilizations conducted to demand water, and they gave their time and money freely and willingly for the introduction necessary of the services. In other words, they collectively appropriated the projects. The perception grew that water is a limited resource, which in time would become scarcer with increased growth in the region. They understood the importance of having social control by obtaining legal security of the supply sources, and the operation and maintenance of

the works from the catchment of the springs to the distribution in their neighbourhoods. Therefore, a new culture grew around the subject of water: a collective benefit that was limited and required conservation to ensure present and future supply. This explained the reforestation and clean-up of the springs, as well as the social control to avoid waste and more equitable access to water for the population.

With the economic crisis of the eighties and the recent trend of the state in reducing its involvement in strategic areas, including potable water, there has been an increased drive towards participation of the users through free labour and monetary contributions for the introduction and financing of the necessary water projects. However, within this new context, the state views social participation only as a means to reducing costs, and not because participation was considered desirable. Nor was participation, considered in later stages such as operation and management.

Therefore many contradictions could be noted within the state. On the one hand, it promoted social participation to reduce the economic cost of the works, but on the other hand it attempted to limit the initiatives of social organizations in terms of services to be provided. Notwithstanding the willingness of the state to open up certain opportunities for social organizations through the creation of intermediate bodies for water services that are neither strictly self-managing nor state-centred, its permission was discretionary. In other words, permission was granted only to those organizations or groups having ties to the official ruling party, the PRI. Those who did not, were actively discouraged so that they could be dissuaded them the original objective.

Politics took the centre stage, especially in Morelia, where the struggle for social control over water rights became a political struggle in which the vested interests of local power groups clashed with the will of the political parties, notably PRI and PRD. Hence the conflict over water management had both social and political undertones; both issues were intertwined. This led water to become a strategic resource, not just because of its limited availability and vital nature, but also because it was a means to controlling the inhabitants and was used as a political springboard for the local power groups. In this way, the struggle

for control represented fertile ground for the flourishing of the political battles. Just as water issues served to unite people for a common goal, it also divided them in their purpose to gain control of a territory.

The case study also proved useful in presenting women as a vital force in managing the Urban development process for the urbanization of the poor and in the struggle for getting drinking water. Their participation was not limited only to attending protests and sit-ins in order to pressure the government into supplying a service. They actively donated their work, energy and money in community projects (the building of structures for the pipelines, cleaning up the springs, etc.), and they were always present at the meetings in order to discuss water issues. The influential concept posed by the women regarding water as a collective wealth was decisive in creating a water board, which was then managed by the neighbourhood residents. Their opinions were always heard during the assembly meetings, and they pressured the men into not handing over the control to the state. In fact, the women's tenacity and devotion in the struggle made public official refuse to deal with them during the urban mobilizations, and they were labelled as 'trouble-makers and gossips', because they proved to be fiercer and could not be as easily manipulated as their male counterparts.

Because of their experience in community participation and the ensuing battles for water, many of these women became leaders in their neighbourhoods. Their role was crucial in improving the conditions of their habitat. For example, they managed to get a park for their children and a job training centre for the men and women of the neighbourhoods. However, they also paid a high price for their participation; misunderstandings in the home which pushed some women to withdraw from the movement, and in some cases their husbands left them with the excuse that they were never home. It served as proof of the dominating trend to push women to remain only in private domains (home) and not venture forth into public arenas (neighbourhood, community, or city).

Despite this, the socio-cultural mark of female participation was ever present during all the stages of urbanization and in the new forms of management which were achieved. Even though male participation

was important, it must be noted that the women had to struggle against even more adverse conditions, which included male chauvinism by husbands and officials, sexual harassment because of their sex, etc. There is still much to be done to ensure equal opportunities and conditions for women in low-income neighbourhoods so that they can to participate actively in all endeavours of their life in society.

NOTES

1 For the purpose of this paper, the words 'urban poor' and 'neighbourhood dwellers' have been used interchangeably as they refer to the inhabitants of impoverished human settlements. In addition, the term neighbourhood dwellers refers both to men and women. Urban leaders could belong to either sex.

2 Morelia is a mid-sized city, which in 1995 had approximately 520,000 inhabitants, and a population growth rate of 4 per cent. The urban sprawl covered about 5,000 hectares and had more than 300 neighbourhoods the majority of which were low-income. Two-thirds of the economically active population had a monthly average income between 100 to 120 dollars (USD).

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