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programme Solidarité Eau

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Water, gender and sustainable development

Lessons learnt from French co-operation
in sub-Saharan Africa





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contents

Preface	9
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CHAPTER ONE

A brief history of women in development

1. Introduction	11
2. Major international conferences	12
2.1. From good intentions to reality	13
2.2. Conferences on development. One sure fact: without women - no sustainable impact	14
2.3. Water conferences. Sharing cross-gender development	14
2.4. Activism and Action Research	15
3. How concepts have changed	16
3.1. Introduction	16
3.2. Changing approaches to the integration of women	17
4. Conclusions	22
5. Bibliography for Chapter 1	23
6. Annex. UN Conferences	24

CHAPTER 2

Power sharing and social change

1. Introduction	27
2. Women and social organisation	28
2.1. The family: a unit taking many forms	28
2.2. "Elders" or the formal guardians of conformity	28
2.3. From compulsory consensus to community seizure of power	29
2.4. Women and the public domain	30
3. Migrations and education: the new picture	32
3.1. Women's increasing responsibility as a result of migration	32
3.2. Household diversity and poverty	33
3.3. Literacy and training contribute gradually to emancipation	35

4. What role do non-profit associations play in changes in how society is organised ?	38
4.1. The example of non-profit associations in semi-urban areas in Benin	38
4.2. The example of women's associations in Senegal	39
4.3. Associations for improving the environment in Ouagadougou	40
5. Conclusions	41
6. Bibliography for Chapter 2	41

CHAPTER 3

Domestic water and sanitation management

1. Introduction: domestic economy and gender	43
2. Household water supply practices	48
2.1. The "water chore"	48
2.2. Criteria for choosing a drinking water supply source	51
2.3. Sharing the cost of water	54
2.4. Traditional perceptions of links between water and health	58
3. Sanitation: a neglected field	60
3.1. Cause for concern	60
3.2. The predominant role of women	62
3.3. Evacuating household wastewater: practices and behaviour	63
3.4. Attitudes and demands for improvement	65
4. Conclusions	71
5. Bibliography for Chapter 3	72

CHAPTER 4

Male and female users: their place and role

1. Introduction	75
2. Project objectives and stakeholder expectations	76
2.1. The State	76
2.2. Users	77
2.3. Funding agencies	77

3. Evaluating demand in preliminary studies	79
3.1. Needs assessment	80
3.2. An environment scarcely conducive to wide popular participation, and notably that of women	80
3.3. Poorly understood demand	81
4. Management and user participation	82
4.1. The Management Committee, modelled on "participatory" social engineering	82
4.2. User participation in managing DWS systems	83
5. Project results and evaluation	91
6. Conclusions	92
7. Bibliography for Chapter 4	93

CHAPTER 5
Methodological aspects

1. The similarities between the gender approach and a demand driven strategy	95
1.1. What is demand?	95
1.2. Why a demand driven approach?	96
2. Demand evaluation	99
2.1. The methods available	99
2.2. General household surveys and revealed preference surveys	100
2.3. Participatory evaluation methods	103
2.4. Contingent valuation methods	105
3. Expected impact of these methods	107
4. Bibliography for Chapter 5	108

CHAPITRE 6
Recommendations

Ministry of Foreign Affaires and French development agency (AFD) recommendations	109
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Preface

Water management remains one of the major challenges facing mankind and with good reason a large proportion of French international aid resources are devoted to addressing this, particularly in sub-Saharan Africa. Touching as it does on a great many issues, not only do conflicts in usage or vested interests arise, but water also imposes an order and a rhythm on the social life of the family, the village, the region and the country.

The power issues which water raises are also reflected in male-female relationships. Thus, in the domestic environment, there is universal recognition of the predominant role played by women in water management and sanitation. Women devote a good deal of their time and their physical effort to supplying the family with water, and express a genuine demand for improvements in the water supply and sanitation of their home. And yet they are not necessarily heard, or able to speak out, in proportion to the responsibilities they shoulder in this respect.

There is a strong case for arguing today that the lack of attention paid to demand from such women is partly responsible for the failures sometimes sustained in implementing water supply projects. An observation which could moreover be said to apply to all development initiatives. For too long, women have been insufficiently taken into consideration as development programme stakeholders, and this applies equally to

other marginalised population groups. It was only with the United Nations conference held in Mexico in 1975 that France, like most other funding agencies, manifested its genuine awareness of the role of women in development.

This growing awareness gathered pace, notably thanks to the succession of international conferences which have punctuated the last few decades. The Beijing conference on women's rights (1995) marked an important stage by endorsing the adoption of the concept of "gender and development". According to this approach, which allows the role of women as stakeholders in the development process - rather than solely as project beneficiaries - to be recognised, women's participation is a pre-requisite for the success and the sustainability of development actions.

In the field of water, the Dublin conference (1992) had laid the foundation stone for recognising the role of women in this sector, their role being confined, however, solely to satisfying their interests, and completely obscuring male-female relationships. In the final resort, it was at the Noordwijk Conference (1994) on drinking water and sanitation that a gender-based approach was to be adopted.

Mindful of these developments, some years ago France's Ministry of Foreign Affairs spearheaded a policy aimed at better integration of the gender dimension as a transversal and integrated development approach. This strategy, put

into place by the Social development office of the International department of international co-operation and development¹, aims to promote equality between men and women through programmes of institutional support, health and family planning education, increasing economic autonomy, etc.

For its part, the French development agency² adopted an operational approach for taking gender into account, defining this in a formal statement³ in January 2001. This confirmed, in the light of France's international commitments, the Agency's commitment to promoting gender integration in the operations it funded. This intention must be apparent notably when projects and programmes are at the planning and implementation stage thanks to a better understanding of both contexts and stakeholders, i.e. of participatory processes and of differentiated impacts on the beneficiaries. Similarly, this issue was to be integrated into the sector and macroeconomic approaches to which operational activities were linked.

In this document on water and the role of men and women from the perspective of a sustainable form of development, the intention of the Ministry of Foreign Affairs and the French development agency, in collaboration with the World Bank, is thus to revisit, in the light of the gender concept which they have embraced, the already very long, rich and varied history of French aid in the water supply sector.

This document makes no claim to be comprehensive. The intention is to use the analysis of some case studies from sub-Saharan Africa to draw lessons from past experience and to open up new avenues for debate on the issue of gender integration in development projects addressing water supply and sanitation.

In order better to understand the theoretical and practical framework of which this approach

forms an integral part, the conceptual evolution of the link between women and development is clearly set out in the first chapter, whilst also underlining its limitations.

The second chapter presents the way in which traditional African society is organised. It also analyses the way in which social roles and relationships of power between men and women are changing, bearing in mind recent social upheavals such as male migration or the emergence of non-profit organisations.

Male and female end-users then take centre stage and explain for themselves how they obtain, pay for and monitor water. This chapter is followed by an analysis of the way in which end-users are taken into account at the project definition stage, as well as during implementation and evaluation. The sixth and final chapter puts forward recommendations aimed at ensuring that male and female end-users are not only taken into account, but also participate in projects relating to water management and sanitation.

Although it is widely believed that gender analysis helps to remove obstacles to development, it remains nevertheless true that good intentions and international commitments founder when it comes to translating this approach into concrete action in development projects. Hence the object of this document: to pursue the dynamic process launched in the '90s for recognising the major role played by women in the development process and to suggest avenues for further exploration, so that men and women are equitably involved in operational activities.

Charles Josselin,
Deputy Minister for Cooperation and French-speaking countries

1 Bureau du Développement Social de la Direction Générale de la Coopération Internationale et du Développement.

2 Agence française de développement.

3 "Note d'orientation opérationnelle sur la prise en compte du genre".

1. A brief history of women in development

1. Introduction

The aim of this first chapter is to present the main political and theoretical changes to have been implemented over the past few decades in relation to women in development. It also seeks to highlight the main concepts relating to this issue.

In order to understand better the background to the practices and recommendations found further on in this document, it is important to restore them to their wider context, and to see how this has evolved over time. Both progress in research and major international meetings have in fact always played a crucial part in shaping decisions, and thus development practices.

The first part of this chapter tracks firstly the outcome of the major international meetings of the past few decades and the role of research in this respect.

Until the 1970s, no particular attention was

paid to the potential contribution of women in development. It was the impetus of feminist movements which prompted the UN to launch a process to increase awareness of the situation of women and of the need to involve them in development activities, through a cycle of conferences focusing on this issue, a process enriched by an unprecedented explosion of research programmes.

Gradually, this change was also reflected in conferences focusing on specific subject areas, such as shelter, population, water and sanitation. Various ways of ensuring greater involvement of women in development processes were then gradually elaborated and implemented. The second part of this chapter is devoted to presenting the major concepts and political approaches which emerged as a result.

2. Major international conferences

In 1948, the Universal Declaration of Human Rights stated that everyone was entitled to their rights and freedoms, without distinction of race, colour, language... and gender. In the aftermath of the war, the spirit of this seminal text presaged the launch of a long series of national and international commitments, all with the official objective of recognising the rights and the role of women in the world.

By the 1950s, the International Labour Organisation (ILO) had thus adopted the first conventions against any discrimination in the field of work. These conventions emerged from the work of the Commission on the Status of Women¹ which established four areas in which discrimination was the greatest: political rights, legal rights, access to education and training and access to work.

It was not until some twenty years later, however, under the impetus of the feminist movements of the 70s, that debates on female emancipation attracted any real attention. Between 1975 and 1995, forty or so conventions on behalf of women were adopted, notably the Convention on the Elimination of All Forms of Discrimination against Women. Signed in 1979, the latter came into effect two years later, when a committee was also set up to ensure that the principles it contained were applied.

On the bilateral front, the "Percy Amendment" which was signed beforehand by the US Congress (in 1973), provides one example. This was the first initiative to focus on development, by requiring USAID² to include a "women's" component in each of its projects. A year later, the UN Economic and Social Council declared that it too was pursuing a similar aim in its future approaches.

¹ The Commission on the Status of Women (CSW) was set up by the UN Economic and Social Council (ECOSOC) on 21 June 1946, to address the issue of women's rights and to prepare recommendations in this area.

² United States Agency for International Development.

International conferences: key dates

1975	MEXICO. United Nations First World Conference on Women, launch of International Women's Decade
1977	MAR DEL PLATA. First United Nations Water Conference
1980	COPENHAGEN. Second World Conference of the United Nations on Women
1985	NAIROBI. Third World Conference of the United Nations on Women
1990	NEW DELHI. Global Consultation on Safe Water and Sanitation for the 1990s
1990	JOMTIEN. World Conference on Education for All
1992	DUBLIN. International Conference on Water and the Environment
1992	RIO DE JANEIRO. United Nations Conference on Environment and Development (World Summit)
1994	CAIRO. United Nations International Conference on Population and Development
1994	NOORDWIJK. Ministerial Conference on Drinking Water and Environmental Sanitation
1994	SOPHIA-ANTIPOLIS. Roundtable on Water and Health in Underprivileged Urban Areas
1995	BEIJING. United Nations Fourth World Conference on Women
1995	COPENHAGEN. World Summit for Social Development
1996	ISTANBUL. United Nations Conference on Human Settlements (Habitat II)
1998	PARIS. International Conference on Water and Sustainable Development
2000	THE HAGUE. Second World Water Forum

These examples provide a good illustration of the major themes of the "women's" issue and the way in which it has been addressed, with varying degrees of success, over the past three decades: the struggle for equality on the one hand, and the recognition of the role that women have to play in economic and social development on the other.

2.1. From good intentions to reality

Following a proposal made in 1972 by a group of women's organisations to the Commission for the Status of Women, 1975 was designated International Women's Year. The United Nations First World Conference on Women was held in Mexico in the same year, which also marked the beginning of the United Nations International Women's Decade. The ultimate aim was now clear: equality between men and women with regard to work, training, domestic tasks, and the care and education of children. The Commission for the Status of Women was charged with preparing the three conferences which were to take place at intervals in the course of the Decade. For the first time in the history of development, women had become the subject and the main object of a cycle of international conferences.

The first meetings resulted firstly in greater awareness of the status of women worldwide, revealing, for example, a significant lack of statistics analysed by gender. As a result, major research programmes were launched. Many experts from the North and the South mobilised to quickly draw up an overview of the status of women in the third world. Delegates at the Second World Conference of the United Nations on Women held in Copenhagen in 1980 thus had access for the first time to studies and statistics differentiated by gender.

Initial findings, however, were grim: the development policies followed hitherto had not achieved the results expected. On the contrary, the results established that the status of women had clearly worsened over recent years. This led to numerous departments and units for "women's"

issues being set up within various research and development institutions.

Despite this, in 1985 at Nairobi, the third Conference marking the end of Women's Decade observed yet again the gulf which existed between reality and the efforts being made by States and international organisations. The World Conference held at Beijing in 1995 attempted to redefine the ways in which decisions taken in the field were applied, by drawing attention for the first time to the diversity of national situations worldwide, and to the fact that it is difficult to find ways of applying development policies, particularly those aimed at women, which are universally applicable.

Five years later in New York, the extraordinary session of the United Nations General Assembly on advances made since Beijing failed to identify any major progress. (See in annex the outcome of UN conferences.)

On the fringe of official meetings, the increasing success of forums

Throughout this period, "forums" were being held in parallel with UN conferences, bringing together mainly non-government organisations (NGOs). Over the years these forums came to be recognised as key opportunities for women worldwide to express themselves and to share experiences, and they led to the growth of numerous networks. Between the Mexico and the Beijing conferences, there were clear signs of the increasing mobilisation of women: only 4,000 women took part in the Mexico meetings, compared to 8,000 at the Copenhagen forum in 1980 and 15,000 (including several thousand Africans) five years later in Nairobi.³ In China, 36,000 delegates attended "Forum 95", held in Houairou not far from Beijing. Although the number of delegates gives no indication of results, it does, however, testify to the increasing interest these events attracted.

³ It is important to note that this forum was the first to form part of the activities run by the United Nations, thus enabling women's networks to start up study tours and exchange programmes between women from different backgrounds.

Interest in forums has been to a large extent linked to the opportunities they provide for existing networks (of researchers, professionals, NGOs and representatives of civil society) to meet and to consolidate. The large number of delegates (both male and female) in turn indicates the dynamic processes launched as a result of the debates, processes of information sharing and mutual awareness.

Regional "intermediate" meetings

"Regional" meetings were also taking place to prepare for these global conferences. Examples from Africa include the "platforms" of Abuja (1989), Bamako (1992) or again Dakar (1994).

The aim of these geographically more restricted meetings⁴ was to draw up a summary of the decisions made during global meetings, to consider the ways in which they could be applied at national or regional levels, to prepare for the forthcoming debates and for the projects to be set up. They also defined the roles national organisations (governmental or not) and regional and international bodies had respectively to play in order to achieve the objectives set. These conferences were intended to play an intermediary role, both preparatory to and following on from major UN decisions. The extent to which the UN gave national stakeholders and NGOs the opportunity to react, to express themselves and to critique, however, did not always seem to match its official objectives (A. Polini – 1995).

Events resulting from local or regional initiatives in the countries of the South also played this inter-

mediary role vis-à-vis global meetings. Thus a year after the Beijing conference, CESA⁵ ran a meeting entitled "*La parole aux femmes rurales*"⁶. Women from 150 rural organisations in some ten African countries attended this five-day meeting held in Burkina Faso in March 1996. This essentially provided the opportunity to inform the female delegates (notably those from rural areas, most of whom did not attend at Beijing) of the main points discussed and decided on that occasion (O. Albert – 1997). This kind of meeting, however, also gives women the opportunity to give their views on the decisions taken and the ways in which they are applied, to exchange information about their experiences, to reflect on their living conditions and on their status, etc. The less formal, more decentralised framework for such events allows the majority to express themselves better.

2.2. Conferences on development. One sure fact: without women - no sustainable impact

Apart from international conferences on women, meetings on other subject areas were also taking place, notably on education (Jomtien, 1990), the environment (Rio, 1992), shelter (Istanbul, 1996) and population (Cairo, 1994). In all these fields, the active participation of women, alongside men, was increasingly regarded as one of the conditions for the success and the sustainability of the activities undertaken. Thus the Rio de Janeiro Conference Declaration (1992) devotes a whole chapter to this issue. Similarly, the Cairo meeting (1994) addresses the "women/population" issue no longer solely from the angle of reproduction, but rather from the innovative one of women's three-fold responsibility: education, domestic tasks and income-generating activities.

The involvement of women as stakeholders in their own right has therefore now been recognised to be one of the pre-conditions for the efficacy of development efforts, and this applies to all the areas covered by international negotiations in relation to development.

⁴ The regional preparatory conferences for the Beijing World Conference on Women related to five geographical areas: Asia and the Pacific, Latin America and the Caribbean, Europe and North America, Western Asia, and Africa.

⁵ Centre for economic and social studies of West Africa, based in Burkina Faso.

⁶ Translator's note: "Rural women's opportunity to speak".

2.3. Water conferences. Sharing cross-gender development

International conferences on water and sanitation similarly recognised that women play a crucial role in this particular field. This change in development stakeholders' attitude to women occurred at the same time as another realisation, i.e. that all end-users – male and female – now had to be taken into account and involved in matters relating to water management and sanitation. End-users were no longer seen as a homogenous whole, and distinctions between various groups became increasingly clear from year to year. Thus, during the 1990 Conference on water and sanitation held in New Delhi, the unit of analysis went from that of the community to that of the "household" (C. Van Wijk-Sijbesma – 1998).

But this change led to another, more recent one on the sharing of responsibilities. At the Dublin Conference on water and the environment in 1992, attention focussed on the "key" role of women, but not yet on that of men, nor on the sharing of rights and responsibilities between genders. Similarly, the fact that was vital for "traditional" technologies and practices to be taken into account was discussed, but with no gender distinction. It was not until 1994 and the Noordwijk Conference that the involvement of women in water and sanitation projects was addressed for the first time on the basis of a gender analysis. The advantage of such an approach was reiterated the same year at the Roundtable of Sophia Antipolis⁷, notably with regard to health education, where the recommendation was that men should be addressed as much as women, so that both may assume their responsibilities in relation to water and sanitation.

In 1998, delegates at the Paris International Conference on Water and Sustainable Development⁸ followed in the same footsteps. The atten-

tion paid to end-users also resulted in increasingly refined analyses with the aim of highlighting the various social categories involved (including that relating to "gender"), with regard to water management and sanitation. They also recommended that the specific experiences of women be recognised and that their skills should be integrated into any sustainable water management programme. They nevertheless deplored the lack of socio-economic studies analysed by gender in this field. This continuing shortfall testified to the difficulty in translating change into reality.

More recently, the Second World Water Forum at The Hague further strengthened this intention through the World Water Vision. The same occasion was used to launch the "Gender and Water Alliance", the objective of which is to ensure transversal integration of gender, crossing thematic, geographic and institutional boundaries in the sense that it should involve all stakeholders working in the water and sanitation sector (civil society, engineers, funding agencies, etc.) During the Forum, "gender ambassadors", members of this new network, began to implement their objectives by taking part in all the meeting's thematic workshops.

The international conferences which have punctuated the last three decades, the activities undertaken by the many women's civil rights movements throughout the world, the change in the mentality and the behaviour of many development stakeholders, all these factors have genuinely allowed the role of women to be recognised. But the efforts achieved are still too few and concrete results still fall far short of stated targets, although a genuine process of debate and commitment has been established on the issue of women in development.

⁷ *Water and health in underprivileged urban areas*, pS-Eau, Gret publications, Paris, May 1994.

⁸ *Water and sustainable development. Experiences from civil society, International Paris Conference*, pS-Eau, Gret publications, Paris, March 1998.

⁹ Let us be clear that so-called "feminist" movements are by no means all the same, although they are frequently, and wrongly, not differentiated from their common core focus. As a result, they suffer from a negative image. What they have in common is that they consider the condition of women and attempt to improve it. However, the ways in which they seek to do so, and indeed the objectives targeted, vary greatly from one movement to another.

2.4. Activism and Action Research

As we have already seen, under the impetus of the feminist movements⁹ of the 1970s, in 1975 the Mexico conference marked the launch of a wide-reaching investigation of the status of women in the world. Within this investigation, activism and theoretical debate are so closely inter-linked that it is difficult to make a clear distinction between them. The "Women in Development" (WID)¹⁰ approach, adopted by international organisations following Mexico, led researchers, suddenly called upon to critique development policies and to suggest new solutions, to turn both to basic research and to "action research". The conferences held on the subject of women's integration also enabled the specific cultural and historical factors of development to be underlined (P. Stamp – 1989).

However, research, which undoubtedly has an important part to play, has little impact on policies and their practical application, and this is notably because insufficient attention is paid to co-ordination and collaboration, both between the many types of research bodies¹¹ and between the

various disciplines (technical sciences, human sciences). As a result, it is difficult to implement the transversality of gender issues in the various development sectors. It would therefore appear that the key challenge facing future research and policies on integrating women into development processes is to break down the barriers between disciplines. Finally, an ethnocentric vision of the female condition¹² amongst certain Western feminists has led female researchers of the South to distance themselves from them in order to carry out their own investigations¹³ (P. Stamp – 1989).

¹⁰ Cf. below § 3.1. Introduction.

¹¹ P. Stamp identifies five types of research bodies: "academic" research organisations, bilateral and multilateral research and development organisations, NGOs and African public organisations.

¹² To take one example, applying the Western concept of the household or the family to all cultural contexts, or again the incorrect use of the "male public sphere/female private sphere" dichotomy which is in no way universal (P. Stamp - 1989).

¹³ The empowerment approach, for example, was launched by the women of the South taking as their starting point the struggle for equality, as expressed by Western women (cf. below "The empowerment approach").

3. How concepts have changed

3.1. Introduction

Over the past few decades development aid has been characterised by a proliferation of policies, programmes and projects designed to increase women's participation in development. Alongside this diversification, both concepts and terminology have changed.

In the first instance, it is important to recall that new terms have for the most part emerged from research in English speaking countries. As a result, French-speaking researchers and decision-makers are often faced with a translation problem. In French, for example, the normal meaning of the word "*genre*" designates masculine and feminine, whereas the far broader term "gender" embraces

social relationships between men and women. Only those French speakers who are "in the know" have an "anglicised" understanding of the term. Longer, but not always more explicit paraphrasing therefore proves necessary. "Gender analysis", for example, should be rendered by "*analyse déterminée par/selon le genre*"¹⁴ (J. Bisilliat – 1997). New English language terms to have emerged more recently, such as "empowerment" and "mainstreaming"¹⁵ pose a similar problem.

¹⁴ Translator's note: literally "analysis carried out by/according to gender".

¹⁵ First used on the occasion of the Cairo conference, the notion of "empowerment" is comparable to that of "strengthening of

The first initiatives of International Women's Decade were brought together under the terms WAD (Women And Development), and then WID (Women In Development).

The policy of Integrating Women in Development (IWD) failed to produce the expected results in improving the condition of women, mainly because this policy addresses the issue of women independently from that of men, which tends to accentuate the marginalisation of women with respect to global development processes. Finally, it rests on a concept of development which assumes that it is above all women's failure to take part in the economy which is the cause of under-development, rather than the unequal sharing of resources between men and women (G. Mianda – 1990).

The need to address the issue of integrating women in development from a different angle then became apparent. Hence the notion of GAD (Gender And Development) came to replace that of WID. The concept of "gender", which appeared in an English language publication¹⁶ in the 1970s, became part of development initiatives from the 1980s onwards.

3.2. Changing approaches to the integration of women

Since the 1950s, various ways of involving women in development have been put forward. The way they are formulated reflects the changes which have occurred in the macro-economic and social approaches to third world development, as well as in the policies of States towards women. There is still a great deal of confusion surrounding both the definition and the use of these various approaches. What is clear is that many of these policies emerged more or less at the same time, and the organisations which implemented them

still frequently shift from one approach to another. Similarly, certain types of institution favour certain types of policies more than others. Finally, the people who draw up policies sometimes combine different approaches in order to meet the needs of various fields of intervention simultaneously.

The social assistance approach

The social assistance approach, which emerged in the 50s and 60s, was the first policy to focus on women in developing countries and it still remains today the most popular. It addresses first and foremost vulnerable groups¹⁷ (women and children). It concentrates on the family, within which women are regarded as agents of reproduction, and men as producers. Its objective is to allow women to take part in development by being better mothers.

Tracing their roots back to humanitarian work, programmes based on social assistance are concerned firstly with monitoring the family from a physical point of view. Food aid is provided directly to the family. Since the 60s, and against the background of the fight against malnutrition taking place on an international scale, nutritional advice is always given when food rations are distributed.

This approach is based on three assumptions: women are the passive beneficiaries of development, maternity is the most important role for which they can assume responsibility, and education the most effective task. If this approach is still in use today, it is because it is considered "neutral" in the sense that it avoids raising the issue of the subordination of women (J. Bisilliat – 1977). By denying the economic role of women, however, the so-called "social assistance" approach tends to make them more marginalised and to increase their dependence rather than improve their condition.

power, of capacities", vital if women are to fully enjoy their rights. The term "mainstreaming" for its part assumes that the gender perspective is integrated into all measures and policies.

¹⁶ Oakley A., *Gender and Society*, 1972.

¹⁷ The first programmes to have actually selected women as the main beneficiaries were the Western countries' social aid programmes introduced in Europe in the aftermath of the Second World War and aimed specifically at "vulnerable groups".

Gender Equity and Gender Equality

Gender equity is the process of being fair to women and men. To ensure fairness, measures must often be available to compensate for historical and social disadvantages that prevent women and men from otherwise operating on a level playing field. Equity leads to equality.

Gender equality means that women and men enjoy the same status. Gender equality means that women and men have equal conditions for realising their full human rights and potential to contribute to national, political, economic, social and cultural development, and to benefit from the results.

Excerpts from: Gender-Based Analysis: A guide for policy-making, Status of Women Canada, 1996, in "CIDA's Policies on Gender Equality".

The equality approach

This approach is the first of the Women in Development (WID) type. It emerged in 1975 during the United Nations Women's Decade and aims to obtain equality for women by helping them to achieve political and economic autonomy. It situates the origins of the subordination of women not only in the family context, but also in male/female relationships in the labour market. It is also based on the idea that women make a crucial, if rarely recognised, contribution to economic growth through their productive and reproducing role. As a result, it considers that women should be "involved" in the development process through income-generating activities.

The combating poverty approach

This is the second WID approach. Introduced from the 70s onwards, it rests on the principle that reducing poverty and promoting balanced economic growth means improving the productivity of women in low-income households. This approach also postulates that women's poverty and their inequality vis-à-vis men can be traced back to their inadequate access to private property of land and of capital as well as to the sexual discrimination which they encounter in the

labour market. As a result, it is important to provide them with better access to productive resources, notably through income-generating projects. This still remains the approach most favoured by NGOs.

The strategies for combating poverty which have now been launched within a number of institutions aim to take account of the specific nature of women's living conditions, although implementing this objective is not always an integral part of programmes.

The efficiency approach

The third WID type approach currently predominates. Its objective is to promote more efficient development thanks to women's economic contribution.

The shift to the efficiency approach coincided with a clear deterioration in the world economy from the 70s onwards, particularly in Latin America and in Africa, where problems arising from the recession were exacerbated by the fall in prices of exports, protectionism and the increasing burden of debt. Structural adjustment policies led to the costs of the market economy shifting towards the informal economy, and to an increasing proportion of non-remunerated tasks being carried out by women as a result of the decline in social services. But although women's greater participation in the economy does seem to be able to lead to an improvement in their condition and then towards equality, this idea presupposes that women can effectively extend their working time, which is already longer on average than that of men by four to five hours per day.¹⁸

The empowerment approach

Empowerment is the most recent approach. This concept implies both strengthening women's skills and acquiring power. Although it shares

¹⁸ This length of time reflects the multiple nature of the tasks undertaken daily by women, including production and reproduction, which are impossible to compress into a shorter time. See also Chapter 3 below "Domestic water and sanitation management", § 3.1. "Introduction: domestic economy and gender".

some features with the equality approach, it differs from it insofar as it was initiated by third world women rather than by Western feminists.

The empowerment approach recognises the inequalities between men and women, as well as the family and historic origins of female subordination, but it focuses on the fact that women experience their status in different ways, depending on their culture or their ethnic background, their social class, their colonial history and their current status in the world economic order. This approach calls into question some of the basic assumptions about the links between power and development on which the preceding approaches were based. Although it attaches importance to the fact that women should have greater power, this is not defined in terms of domination over others, such domination implying for example that any advantage gained by women would be a loss to men.

Gender and development: a definition

An approach based on a distinction between the sexes implies paying attention both to women and to men instead of focusing attention exclusively on women.

The roles of both sexes are linked to the roles which the socio-cultural context attributes to women and to men. Responsibilities, access to resources and their control, together with taking part in decision-making also differ according to gender. Consequently, women and men also have different needs.

Relations between genders are linked to social relations between women and men, which in turn relate not to differences which are biological in origin, but to socio-cultural factors and which are therefore proper to a given, variable context.

Planning which includes the variable man/woman requires taking account of all the above-mentioned factors so that both women and men are able to influence the development process, to take part in it and to benefit from it.

Source: *Les femmes et la gestion des ressources en eau*, OECD/CAD, 1995, in *La lettre commune pS-Eau – Réseau Femmes et Développement*, n°21, March 1996.

The key focus here is to defend the right of both women and men to make choices and to influence changes by controlling important material and immaterial resources.

This approach also confronts women with the challenge of seeking a new self-awareness, a new status to be enshrined in legal and civil codes, in the economy, as well as in the institutions and management systems of their country. The objective of the redistribution of power takes priority here over that of improving the “condition” of women compared to men (which is the objective of the equality approach), whilst both remain compatible.

Because of the fundamental issues it calls into question, particularly amongst men, this approach is still inadequately recognised, documented and sustained as such. However, it is beginning to spread widely within development institutions¹⁹.

The “gender and development” approach

Based on the empowerment approach, the “Gender And Development” (GAD) approach appeared in the 1980s. It provides an alternative to the theory of modernisation, which underlies all the “women and development” (WAD) approaches and differs from these by focusing on both sexes, and no longer only on women separately.

The Gender And Development approach attempts to identify the origin of the marginalisation of women in development in a global context - cultural, social, political and economic. In this framework, objectives are no longer solely focused on productivity (as was the case for the WAD approach), but on a more equitable form of development respecting the basic needs of each individual, male and female, by attempting to remove existing inequality links as a whole.

Unlike static and separate analysis by sex, “gender” analysis reflects a dynamic vision of social relationships. Relations between the sexes form a whole of complex and unstable social

¹⁹ Cf. for example Report on development in the world, Attacking Poverty 2000/01, World Bank, Chapter 7.

TABLE 1. Approaches to women's integration

	SOCIAL ASSISTANCE	COMBATING POVERTY	EFFICIENCY
Cause of the problem	Circumstances beyond one's control.	Poor living conditions originate from lack of resources.	The fact that development planners failed to recognise the key role of women in production and the need to involve them in it.
Aims or ultimate goal	Maintaining maternity as women's most important role in society. Relieving suffering.	Increasing production so that poor women increase their productivity. Integrating women in development.	Making sure that development is more efficient and effective.
Type of services	Theory of women as passive beneficiaries of development.	Development (integrating women in development). Poor women are identified as a distinct category. Recognition of the productive role of women.	Stabilisation and economic adjustment policies relying on women's participation.
Types of programme	Programme to combat hunger. Family planning. Nutrition (improving family health mainly through maternal child care).	To allow women to acquire technical skills. Small income-generating activities to meet essential needs.	Meeting practical needs against a background of declining social services. Support for the three roles of women (production, reproduction and community life) and on flexible working time.
Development period	50s-70s	From the 70s onwards	80s

adapted by Adelina Ndeto Mwau from C.O.N. Moser ,1989

EQUALITY	EMPOWERMENT	GENDER AND DEVELOPMENT
Patriarchal system, subordination and oppression of women by men.	The subordination of women is not due solely to men, but also to colonial and neo-colonial oppression.	Unequal gender relationships prevent equal development, as well as the full participation of women in this process.
Achieving equality for women in the development context by including the male/female issue in the development process.	Emancipating women by making them more self-reliant. Setting up new political, economic and social structures. Calling into question the structures responsible for exploitation.	Reorganising power structures in such a way as to: – introduce a greater balance of power between men and women, – involve both in participating and in the advantages of activities. Both genders share decision-making.
Reforming. Liberating. Women are regarded as active participants in development.	Emancipation, liberation of women. Option sometimes highly criticised by governments. Slow but constant growth of local organisations suffering from a lack of resources.	International development agencies. Women and men are perceived as equal partners in promoting sustainable egalitarian development.
Organising structural reforms. Meeting strategic needs by taking account of women's three roles.	Programmes meeting strategic needs by taking account of the three roles through mobilisation at all levels around practical needs to confront oppression.	Programmes linking services based on the practical and strategic needs of both sexes: – increasing the skills and capacity of men and of women to demand their rights (those of women or those of both sexes), – increasing the capacity and the means of women so that they can invest traditionally masculine professions, – increasing the capacity of women to master their bodies, their working time and their movements.
1975-1985 Developed during Women's Decade	From 1975 onwards, accelerating in the 80s	80s / 90s Approach now adopted by development institutions

processes which result from the interaction and the interdependence of the various components of society. These links are similar to relationships of power, which are not defined once for all, but rather evolve like a process within which partners are perpetually negotiating (G. Mianda – 1990). This analysis takes account of both the variable nature of existing links and the fact that groups are not homogenous. That of women, as is the case for other social groups, evolves in a hierarchical system of classes, races and ethnic backgrounds.

Although analysis of the sexual division of labour, of the capacities and skills of each of the sexes, and of the roles relating to these remains an important part of this approach, it takes closely into account the cleavages and mechanisms

of interdependence of all kinds which underlie this division.

The “gender and development” approach therefore takes account of men and of women against the background of the solidarity links which bind them, irrespective of whether these relate to the family or the community, whether they are local or otherwise, and it is against this background that men and women are actively engaged in defining and promoting their interests on the basis of their respective perception of reality. And it is because women start out often from an underprivileged situation that the “gender and development” approach recognises the need to take special measures on their behalf, as for other underprivileged groups.

4. Conclusions

The major conferences on women, although they have still had only a small impact on the main problems facing women, did have some merits:

- They made a major contribution to setting up and galvanising a very large number of women’s networks and movements throughout the world, which in parallel with the meetings met in parallel forums. By sharing their experiences, their knowledge, women were able to become aware of the significance of the role they could play in changing not only their condition, but also that of their family and their community. For the challenge facing these conferences was also to launch a sufficiently robust process for it to survive and continue at national and local level.

- They generated greater awareness amongst development stakeholders and the various

governmental representatives, of the major role women played in many sectors of social life. As a result, it then clearly became vital to involve them at all levels (identification of needs, planning, implementation, management, project evaluation) notably through access to freedom of expression and to decision-making. The participation of women, on a par with all other stakeholders, was increasingly perceived as one of the conditions necessary for really effective development initiatives.

It would therefore seem that the international women’s conferences and all the forums to result from them did genuinely influence policies and decisions relating to women’s involvement and to taking gender into account in development processes. This is particularly apparent in meetings on water and the environment: since United Nations’ Women’s Decade, these have regarded this area as inseparable from sustainable development.

Although the awareness-raising process has indeed begun, by contrast, the resources to be called upon and the practical means of implementing the decisions voted at the conferences are not yet clearly defined, despite being crucial to the application of these new policies, as the following extract of the 1997 New York conference recalls: "Young people and women around the world have played a prominent role in galvanizing communities into recognizing their responsibilities to future generations." This being the case, all stakeholders, male and female, must be given more ways of participating in political, social and economic development as partners in their own right in all sectors.

Research has also played a major role in this change, notably through gender analyses which made a major contribution to improving our knowledge and understanding of the problems and roles of both sexes. Researchers, by pushing back the boundaries of terminology on women, and above all of our understanding of the relationships between men and women, have allowed a redefinition of frameworks for debate and for action on the part of all development stakeholders.

The existing insularity of technical disciplines and the social sciences, which include research into gender relations, are, however, regrettable. Greater collaboration between the various stakeholders would probably make analysis and action more efficient, both on the part of researchers ("gender and development" experts between themselves and with other areas of expertise), and in links between research and other sectors.

Today, "Women/Gender and Development" offices, be they international, non-governmental or national governmental, remain marginalised. Apart from in a few countries, these units still do not have enough authority or sufficient financial resources to achieve their ambition to ensure the required transversality of this issue within other services and mainstreaming with a view to installing sustainable development.

Just as an integrated understanding of gender relationships can only occur if the barriers between the various scientific disciplines are broken down, mainstreaming can only be guaranteed when this requirement will have been systematically introduced into the policies of the various sectors.

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6. Annex. UN Conferences

The main international instrument to which States subscribe with regard to respecting the rights and individual freedoms of women is the Convention on the Elimination of All Forms of Discrimination against Women adopted by the United Nations General Assembly in 1979 and ratified by 168 states, including France. The Convention recalls that "discrimination against women violates the principles of equality of rights and respect for human dignity, is an obstacle to the participation of women, on equal terms with men, in the political, social, economic and cultural life of their countries, hampers the growth of the prosperity of society and the family and makes more difficult the full development of the potentialities of women in the service of their countries and of humanity". States commit themselves to "take in all fields, in particular in the political, social, economic and cultural fields, all appropriate measures, including legislation, to ensure the full development and advancement of women, for the purpose of guaranteeing them the exercise and enjoyment of human rights and fundamental freedoms on a basis of equality with men." The Convention condemns situations of

poverty in which women have the least access to essential needs, including food, health, education, training and opportunities for employment.

The culmination of the long process of elaboration of this Convention since the adoption in 1948 of the Universal Declaration of Human Rights led to the first of five World Conferences on Women to be organised by the United Nations between 1975 and 2000.

The Mexico conference in 1975 adopted a World Plan of Action to be implemented in the course of the following decade around three priority objectives: complete equality between men and women and the elimination of discrimination based on sex, the integration and full participation of women in development, the growing contribution of women to strengthening international peace.

The Copenhagen conference held in 1980 focused on adopting actions in favour of equality of access of women and men more specifically oriented in three fields: education, employment and medical care.

In 1985, the Nairobi conference, given the progress of the previous decade, adopted a new approach highlighting that the participation of

women in decision-making processes and in management in all fields relating to human activity was not only a right but also a necessity to resolve the problems of society, and not only those of women. Attention was then paid to the need to adopt constitutional and legal measures within member countries in order to encourage equality of access to political life and participation in the whole of life in society.

The Beijing conference (1995), in the Declaration and Platform for Action which emanated from it, stressed that promoting women depends on a profound restructuring of social and economic relations and should result from integrating gender issues, which implies changes for both men and women, into development policies.

These principles were restated in New York in June 2000 at the Special Session of the United

Nations General Assembly charged with measuring the progress made since the Beijing conference (Beijing + 5) in the Declaration on "Women 2000: Gender Equality, Development and Peace in the Twenty-first Century" which recalls the need to remove the obstacles which face women in twelve key sectors: poverty, education and training, health, violence, armed conflict, the economy, power and decision-making, institutional mechanisms, human rights, the media, the environment and problems specific to girls.

Meanwhile, the sector conferences which have punctuated the last two decades in the fields of water, sustainable development, social development, shelter, education and health, employment, and population have also stressed that the success of the recommendations they made depended on women playing a full part in their implementation.



2. Power sharing and social change

1. Introduction

Within a community involved in a development project, power sharing between social groups is of interest for two reasons. On the one hand because the local social context will determine user participation in the project and their involvement in managing installations; on the other because conversely, development projects affect the existing social organisation. Although its ultimate goal is improving living conditions within the community, unless precautions are taken, the project may indirectly help to reinforce inequalities by consolidating the power of dominant groups. Conversely, a good understanding of the context should allow such inequalities to be restricted by adopting a suitable approach.

Within traditional African societies, belonging to a social group, characterised by differences in ethnic background, sex, age, rank (casts, aristocracy, slaves), beliefs, or other variables depending on each case, to a large extent explains the various forms of balance of power. Thus precise rules set the role and the place of each individual in the community as well as the extent of his or her powers. To take one example, and as Reverdy explains with regard to the annual general meetings of co-operatives, an individual regarded as

a "junior" vis-à-vis the rest of the community has little room for manoeuvre: "A member of the cooperative can only speak if he is allowed to by his elders, his father or his older brother and he can in no circumstances imagine doing so to oppose the person who has invited him to express his opinion."¹ (Reverdy – 1979).

Although the situation of "juniors" has clearly changed to some extent, this does not apply to women in rural areas because the complementary nature of male and female roles "remains the very backbone of agricultural production": "The overriding reality is (...) the permanent nature of the sexual division of labour and the stability, despite the scale of ongoing changes, of the male/female relationship as a relationship of production (on which agricultural production is based)... The sexual division of labour thus emerges as the overriding "technical" requirement of all agricultural production, and the inequality and co-operation between men and women forms part of the production system." (Olivier de Sardan – 1984).

¹ Translator's note: except where specifically stated, all extracts quoted in this chapter have been translated from the original French.

Over the past few decades, however, under the combined effect of a certain number of factors such as the falling mortality rate, new methods of production, urbanisation, school attendance, new imported family models and finally migrations, social change is occurring very rapidly, leaving room for a great variety of contexts (Locoh – 1995).

These social, economic and cultural factors can affect the role of women assuming responsibility for water supply and sanitation installations and nota-

bly for the domestic or collective management of these. The aim of this section is therefore to briefly describe them and to consider how they can restrict or on the contrary encourage the position women occupy or could occupy in this responsibility.

We will thus need to present a broad picture of traditional power sharing between social groups and the factors affecting social change. The latter consist on the one hand in migration and access to education and on the other in the growth of non-profit associations.

2. Women and social organisation

1. The family: a unit taking many forms

The family may be the basic institution, but in Africa, the term "family" can be used in several different ways (Locoh – 1995):

- the biological family, providing the obvious base for reproduction and solidarity between generations, is seen as an alliance between two families. As a result of polygamy and migration, the members of a single biological family do not always share the same living unit. In addition, polygamy, which often places each of the wives in a position of mistrust vis-à-vis their husband, often means that goods and chattels are owned separately rather than jointly by the spouses;

- the household includes groups of individuals with common living arrangements. This is the concept which reflects the role families play in the way income generated is produced and shared. Even in cities, households contain a large number of people (of different generations) in the same home;

- family institutions refer to the norms and values governing the different forms of family life: they define the various family roles according to gender and age, and include norms for matrimonial exchanges, residency rules, etc.;

- lineage denotes a group of individuals who consider themselves to be descendants of a

known common ancestor. Lineage may be extremely wide-ranging and include a considerable number of secondary branches, the so-called extended family having included down the generations a large number of social allies whose descendants were part of the family, such as children handed over as a security, adoptions, slaves, dependants, etc. (Coquery-Vidrovitch – 1994.1).

2.2. "Elders" or the formal guardians of conformity

Within the "traditional" African society, relationships of solidarity and of emulation are structured within a class defined by age. A class defined by age relates to both the physical world and the spiritual one, with the "elders" acting as "go-betweens" from one to the other (Guengant – 1985). Social organisation is partly based on this role of intercession which allows the "elders" to control an area of major uncertainty: physical space.

There is thus a gerontocracy in which notables and traditional chiefs are responsible for "linking the community to the world of its ancestors and spirits or serving as a transmission cable to ensure that decisions of central power are applied in vil-

lages" (Henry – 1988), where collective order takes priority over individual identity. Decisions are made jointly by the restricted council of elders and notables, who choose the village chief.

Apart from his management roles and the authority these confer on him, the main way in which the oldest member of the community maintains its cohesion is ideological: morality, superstitious terror, sexual prohibitions, the sublimation of the father and of the ancestors (Meillasoux – 1992.) Reaching the rank of adulthood or head of the family requires of junior members that they "conform to the restrictive rules of the social order of which the elders are the vigilant and strict guardians" (Coquery-Vidrovitch – 1994).

Nevertheless, although elders form an exploitative class, each of its constituent members can only join it by having previously been a member of an exploited lower age class. Social classes are formed not on the basis of seniority links, but through the domination of entire communities, organically constituted, allowing all their members - regardless of age or sex - prerogatives or privileges with regard to all the members of the communities dominated (Meillassoux – 1992.)

This type of relationship survives in towns and cities, as the following observation by J.F. Bayard, who uses the term "tribalist", illustrates: "Tribalists believe more or less consciously that the men or the women of their clan are superior to others and that as a result others must serve and obey them".

2.3. From compulsory consensus to community seizure of power

The two underlying principles of the social organisation are thus those of masculinity and of seniority. In other words, those who have decision-making power are men, and the weight of their opinion will increase as they advance in age. In these circumstances, do the opinions expressed reflect those of all the members and of the various categories of the community – and nota-

bly during village meetings called for example on the occasion of projects?

Can we first of all be sure that the minority which has the right to express itself does so exclusively for its own benefit? As G. Belloncle puts it, "for a person to be able to speak at a meeting, he [must] possess all the following qualities: extensive knowledge of family links, truthfulness, respect for commitments made, care for the common good (...). The very length of discussions demonstrates the genuine spirit of democracy which reigns in such meetings. In an African cooperative meeting, a vote would not resolve anything. It is important for each person to be convinced and for everything to be brought out into the open. The same arguments are questioned, debated, and qualified time after time until unanimity is achieved (...). Not only are the decision-making processes of African society not an obstacle to co-operative democracy, but quite the contrary, they are its surest guarantee (...). There is no more efficient way of getting things back in order (when funds have been embezzled or loan repayments defaulted for example) than holding such a meeting". (Belloncle – 1993).

Along the same lines, P. Clastres explains that the traditional leader never makes a decision on his own with a view to then imposing it on the community. He suggests that if the community has recognised him as their spokesman, it is because it credits him with a minimum of trust ensured by the qualities which he displays precisely on behalf of society. This is what he refers to as a blend of prestige and power. Indeed, the particular attention paid to the opinion of the chief never extends to allowing this to become an order: the point of view of the leader will only be heard to the extent that it expresses the point of view of society (Clastres – 1980).

Other research and field reports, however, tend to show that in many cases, there is a blatant failure on the part of traditional leaders to take the needs of the population into account. Hence the example in Guinea Bissau of the *marabouts* who take over public water taps intended to supply a whole town for their personal use and that of their family, to the exclusion of the other

members of the community (Burgeap – 1996).

Turning to the power issues which revolve around water and sanitation services in small towns, J. Bouju et al. note with regard to the cases they studied (Mopti and Bandiagara, Mali) that “the local authorities (village heads, district commanders) have not been democratically elected and in no way provide a democratic representation of the population (...) [Their] requests serve firstly interests other than the common good of the inhabitants of the communes involved.” The author shows how negotiations and decisions on the management of water and sanitation systems are “swallowed up and absorbed by the networks of nepotism and favouritism, whether private or narrowly community-based, which still govern the vast majority of the population” (Bouju et al. – 1998).

The authors thus show how in Bandiagara, the main objective of a “*grin*”, i.e. a personal network of links of dependency and assistance, seems to be to harvest the resources provided by local development projects. In particular, testimonies are obtained from social juniors, women, “outsiders”, who all condemn the seizure of power on the part of a few individuals, groups, clans or ethnic groups.

As one women tells him: “We neighbourhood women organise the monthly clearing of the gutters (...). Nobody except the women of the neighbourhood is behind this initiative. You have to understand that women are never involved in men’s affairs. Apart from anything else, they are never included in the arrangements or the crafty schemes between certain notables and the administrative authorities of the town”; a young itinerant trader: “Me, I’m not part of the *suddu baba*? (...). Here, if you want a quiet life you have to be a hypocrite and a crook. The notables of the *suddu baba* are ready to interfere in anything in order to protect their interests. That’s why the initiative of sanitation for the town made by the young people was discouraged by the local native notables on the grounds that “work brings no honour”. These are the same people who try to divide the young people of the town.”³

Bouju et al. explains this latter remark by adding that the “neo-aristocratic” view of power is often accompanied by contempt for work “which is perceived as an activity unworthy⁴ of anyone who can help himself (he has the power

to do so) and to get served (he has many dependants): work is regarded as a burden to be attributed to the dominated social classes: peasants, serving classes, and more generally speaking, all social inferiors”.

With reference to the progress to be expected from the emergence of elected municipalities currently occurring in many countries of sub-Saharan Africa, J. Bouju notes that “their authority and their independence vis-à-vis the networks of local power are keenly awaited by certain local élite’s, but this will be very tricky to implement given how long and how widespread local politico-electoral nepotism has predominated.”

2.4. Women and the public domain

Although women in ancient societies enjoy areas of freedom thanks to a shared life separate from men, they remain from their earliest childhood subject to obedience to the masculine sex.

Marriage, from the age of eleven or twelve for girls, is decided by the families. As the often high dowries suggest, marriage is both a political alliance and an economic affair. Within their community, old women recreate the hierarchical links which govern in a more general way relations between the masters of the lineage (the male elders) and their various dependants: younger family members, women, slaves. Generally speaking, woman is associated with the bush, with “outside”; she is not linked to the ancestors and to the knowledge they transmit. She is connected to the uncontrollable powers of the non-humanised world (sorcery or magic of aggression) (Droy – 1990).

Some regions or areas are the exception to this rule. C. Coquery-Vidrovitch shows for example how the women of West Africa’s forest areas

² The local natives; literally the “father’s house”.

³ J. Bouju also records statements which suggest that notables sabotaged the enterprise set up by these young people in various ways because they had been unable to obtain any financial compensation for their support..

⁴ All the more so, we might add, in the case of this quotation, since the work in question consisted in clearing rubbish!

have been able to resist to some extent, because of the genuine economic autonomy they owe to their ancient commercial practices (Coquery-Vidrovitch – 1994.1).

C. Mandjou, author of a monograph on the political history of women in Africa from the 17th to the 19th century, states that “it is incorrect to say that the African women is submissive, or that she does not take part in decisions. Those who wrote about Africa from the 19th century onwards were family sons, bringing with them with their own class prejudices. Their interlocutors were the village chiefs, and as they couldn’t see the women, they concluded that they had no power. In traditional African societies, however, women are always asked for their opinion before any decision is taken, even if they never speak in public.” (Mandjou – 2000).

On the other hand, her observations of the current situation tallies with our analysis: “Today, (...) men have seized power, and women are obliged to fight on all fronts. All the more so since there are very few women’s movements and they are generally not linked to political parties.”

Other factors, reflecting practices of the modern world or aggravated by them, help to keep women outside the decision-making circuits which affect the community:

- minimum access to knowledge, to school education and to vocational training. Mothers keep their young daughters by their side, more than the boys, so that the former can help them

with household tasks, and because school, especially when it is not located in the village, is sometimes seen as a place “of perdition” where young girls escape parental control⁵;

- residency rules linked to the practice of exogamy, which oblige women to leave their lineage for that of their husband and restricts their taking part in decisions since they are always strangers in their husbands’ lineage⁶.

- their work load as a result of taking on both domestic tasks and economic activities.

This marginalisation of women is reflected in:

- restricted access to the labour market: low levels of school attendance which restricts their access to information and to management skills is indeed an obstacle to women being present in decision-making posts (Table 1) and also partly explains their extremely minority representation in jobs in the formal sector. In 1970, sub-Saharan Africa was already the part of the world with the lowest proportion of women employed in the formal sector. And this proportion has increased by only 1.6 percentage points between 1970 and 1990. By contrast, women are very active in the informal sector;

- unequal pay between men and women: an

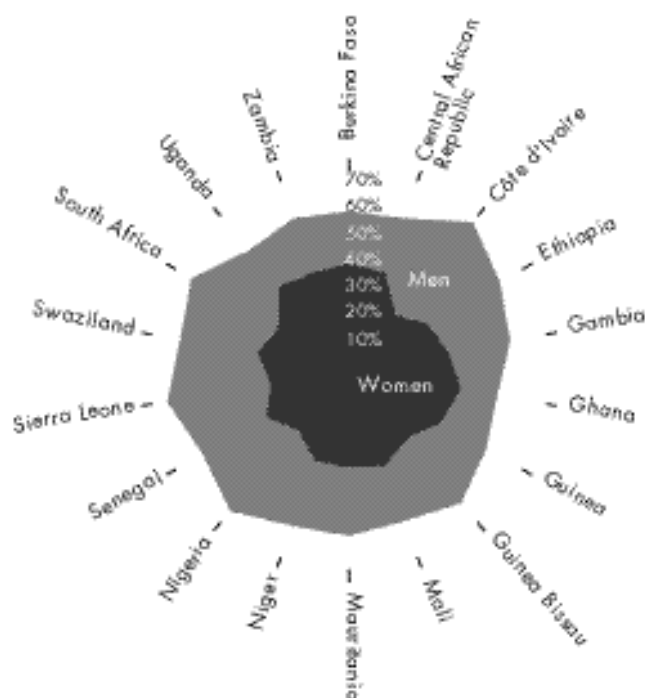
⁵ See § 3.3. below “Literacy and training contribute gradually to emancipation”.

⁶ Which is not to say, of course, that endogamy suffices to protect women indefinitely from insecurity, cf. for example Françoise Puget, *Femmes peules du Burkina Faso, Stratégies féminines et développement rural*, L’Harmattan, 1999, p. 65.

TABLE 1. Distribution (by %) of management staff in Niger by gender in 1997

	NIAMEY			NIGER		
	Male	Female	Overall	Male	Female	Overall
Seniors managers	81,6 %	18,4 %	100 %	86,1 %	13,9 %	100 %
Middle managers	80,1 %	19,9 %	100 %	72,4 %	27,6 %	100 %
Civil service managers	81,1 %	18,9 %	100 %	78,1 %	21,9 %	100 %

Source : Sékou et associés

FIGURE 1. Distribution of monetary income according to gender in sub-Saharan Africa (by %)

Source : UNDP, 1998

analysis of a sample from various countries of sub-Saharan Africa shows that the former earn

on average virtually twice as much as the latter (see Figure 1).

3. Migrations and education: the new picture

3.1. Women's increasing responsibility as a result of migration

The massive migrations which Africa has seen over the last thirty years, from villages to the large urban centres and to a lesser extent to small towns⁷, can justly be qualified as an exodus.

At Mokko, a semi-urban centre in Niger with

3,300 inhabitants, two thirds of the heads of households leave the village after the harvest to find work and be able to feed their families. Most return just before the winter season. Nowadays, young people (both boys and girls) are drawn to the cities, which represent economic success and freedom from social constraints (InterAction Design – 1991).

These migrations have clearly apparent consequences: an imbalance in the traditional relationships between men and women, between old and young, as well as splitting up the matrimonial unit. The domestic and shared responsibilities of the women left behind in the vil-

⁷ These migrations, which mainly concern men, are not without incidence on the economic and social organisation. "Few women have their husbands here. Some have been alone for ten years, with elderly fathers and elderly mothers." (Comment recorded in the 6th region of Timbuctu by Monimart – 1991.)

lage are increased, whether or not they are placed under the guidance of elders or parents.

The migration of rural women is, however, not unknown; they may accompany or join their husbands or leave on their own.

The migration of young women as a way of escaping the conditions of rural life and the constraints connected to it is not a recent phenomenon: at the end of the 19th century, young women were beginning to leave for the cities. These migrations, which neither traditional circles nor colonisers encouraged, were more or less equated to prostitution (Coquery-Vidrovitch – 1994.1). Today, female migration still has negative connotations and a great many city women are single, widowed or divorced.

In the course of a survey of a group of young women working as maids in Senegal and originating from rural towns in the interior of the country, the latter put forward the following reasons to explain why they had moved (Diaw – 1997) :

- village activities, being badly paid, didn't enable them to buy certain things such as clothes, education, a trousseau, etc.;
- their parents' income was too low to meet the family's needs;
- the city meant leisure, less arduous work...

Which brings us to highlight the high proportion of women heads of household, particularly

in towns and cities (Table 2). In Burkina Faso, in Niger and in Senegal, this proportion is twice as high in urban than in rural areas.

This phenomenon is aggravated by the extreme instability of marriages in popular areas underlined by C. Coquery-Vidrovitch. She attributes this to the context of economic crisis and demographic imbalance: as men can no longer afford to have several wives at once and women have to find the protection of a new husband as quickly as possible, a kind of "successive polygamy" has been introduced.

This female mobility thus not only results in profound changes in ways of life, but also leads to the growth of feminine mutual self-help – when a women acquires a house for example, she invites her divorced daughters to live with her (Coquery-Virdovitch – 1994.1).

3.2. Household diversity and poverty

The family regroupings caused notably by migration naturally have an impact on poverty or on models of consumption.

A gender analysis carried out on the data collected through household surveys in a group of 19 countries of sub-Saharan Africa not only

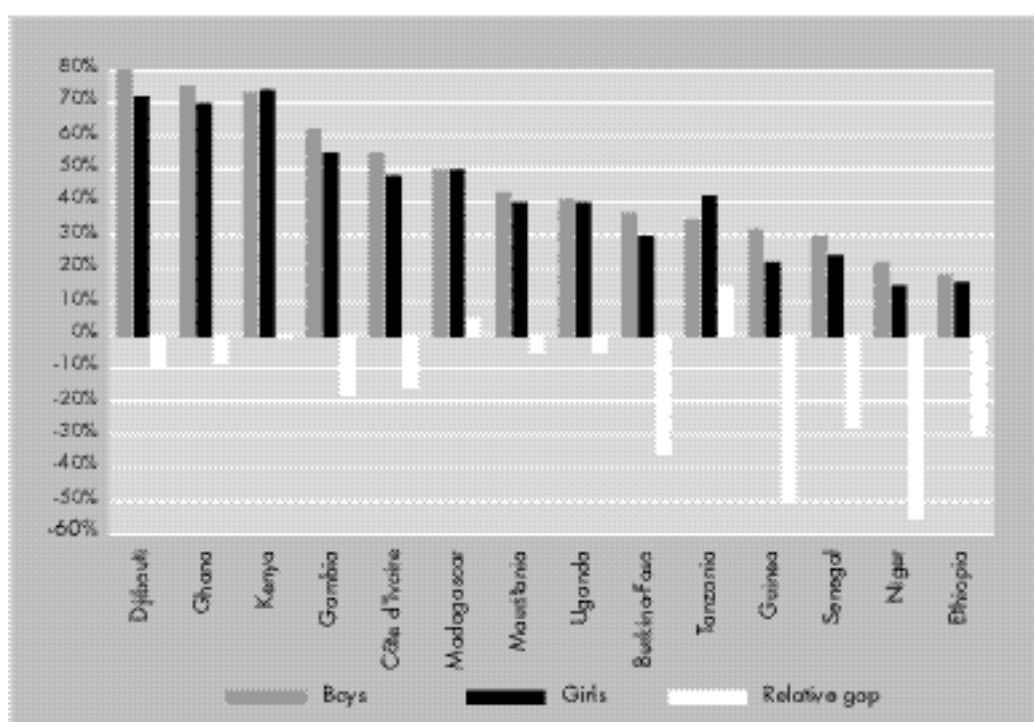
TABLE 2. Proportion of households led by women (by %)

COUNTRY	DATE	PROPORTION OF FEMALE HEADS OF HOUSEHOLDS (%)		
		COUNTRY AVERAGE	RURAL AREAS	URBAN AREAS
Burkina Faso	1993	6.5	5	12.8
Ghana	1988	32.2	30.7	34.9
Guinea	1983	12.7	12.6	13
Mali	1986	14.1	4.4	18.4
Niger	1987	9.2	7.9	15.5
Nigeria	1992	14.3	12.9	18
Senegal	1990	15.8	10.	5.23
Togo	1993	26.4	24.8	29.9
Overall		16.4	14.9	20.7

Source : Locoh 1995

TABLE 3. Proportion of households using door-to-door water vendors by type of urbanisation

Country	Survey date	LEVEL OF PRIMARY OR HIGHER EDUCATION OF 15 + AGE GROUP (%)			RATE OF ILLITERACY OF 15 + AGE GROUP (%)	
		Men	Women	Ratio male/female	Men	Women
Burkina-Faso	94	17,8	8,5	47,8	82,2	91,5
Djibouti	96	55,0	27,3	49,6	45,0	72,7
Ethiopia	96	16,1	9,7	60,2	83,9	90,3
Gambia	92	26,2	12,4	47,3	73,8	87,6
Ghana	91	18,2	10,4	57,1	81,8	89,6
Guinea	94	22,2	8,2	36,9	77,8	91,8
Côte d'Ivoire	95	50,0	28,1	56,2	50,0	71,9
Kenya	94	47,8	36,3	75,9	52,2	63,7
Madagascar	93	28,8	23,0	79,9	71,2	77,0
Nigeria	92	55,3	39,2	70,9	44,7	60,8
Niger	95	20,9	10,2	48,8	79,1	89,8
Mauritania	95	17,4	11,6	66,7	82,6	88,4
Senegal	91	18,7	10,9	58,3	81,3	89,1
Tanzania	93	17,7	9,2	52,0	82,3	90,8
Uganda	92	33,4	21,0	62,9	66,6	79,0
South Africa	93	47,2	46,3	98,1	52,8	53,7

FIGURE 2. Net rate of primary school attendance from 6 – 11 years

Source: UNDP, 1998

confirmed the very great diversity of family structures and compositions (World Bank – 1999) but also showed the link between poverty and family systems. The average size of households headed by a woman is significantly lower than that of households headed by a man. Whilst the majority of female heads of household are widowed, divorced or de facto separated, an overwhelming majority of male heads of household are for their part married. This suggests that women find themselves heads of household following major upheavals in their lives. Such break-ups suggest that family structures and compositions are unstable and increase households' vulnerability.

According to tradition, women have less decision-making power and control over assets than men. Women (and their children) are therefore more vulnerable than the latter, and at the same time the opportunities open to them to take part in paid activities which could help them acquire such assets are more restricted.

But there is no clear proof that poverty is more widespread amongst households headed by a woman. Regional data analyses (World Bank 1999) have also shown that poverty is more widespread:

- in West Africa; in households the head of which is polygamous;
- in East Africa and southern Africa: among families headed by a woman.

Thus, the head of the household's gender alone does not provide an indicator of its poverty.

On the other hand, it is noteworthy that it was possible to show that models of consumption vary significantly depending on the autonomy that women with the same budgets enjoy in managing family outgoings. In particular, when the woman has greater control over the household's overall monetary income, consumption tends to be channelled more towards satisfying the household's "basic" needs and children's education and health. Thus a comparative study carried out amongst households with similar incomes in the seven countries of sub-Saharan Africa showed that the children in households headed by a woman are not only more likely to attend school but also to complete their primary

school education. In Côte d'Ivoire, it was shown that doubling the share of monetary income passed on to women – given a constant total household budget – resulted in 2% more spending on food and 14 and 26% less spending on alcohol and cigarettes respectively (World Bank – 1999).

3.3. Literacy and training contribute gradually to emancipation

"Sending the children to school, poor harvests which mean constantly buying food, and buying medicine are insurmountable problems."
(Comment by a woman from Samnatenga, in Burkina Faso, Monimart – 1991).

Education levels overall are low in Africa and girls attend school even less than boys. The table below, which summarises school attendance rates for girls and boys in various countries of sub-Saharan Africa, highlights the high proportion of illiteracy, with significant gaps between boys and girls, as well as the fact that adult women are often twice as less likely than men to have attended at least one complete primary school cycle.

Little girls continue to attend primary school less often than their brothers and this relative gap in their disfavour is greater the lower the rates of attendance (Figure 2).

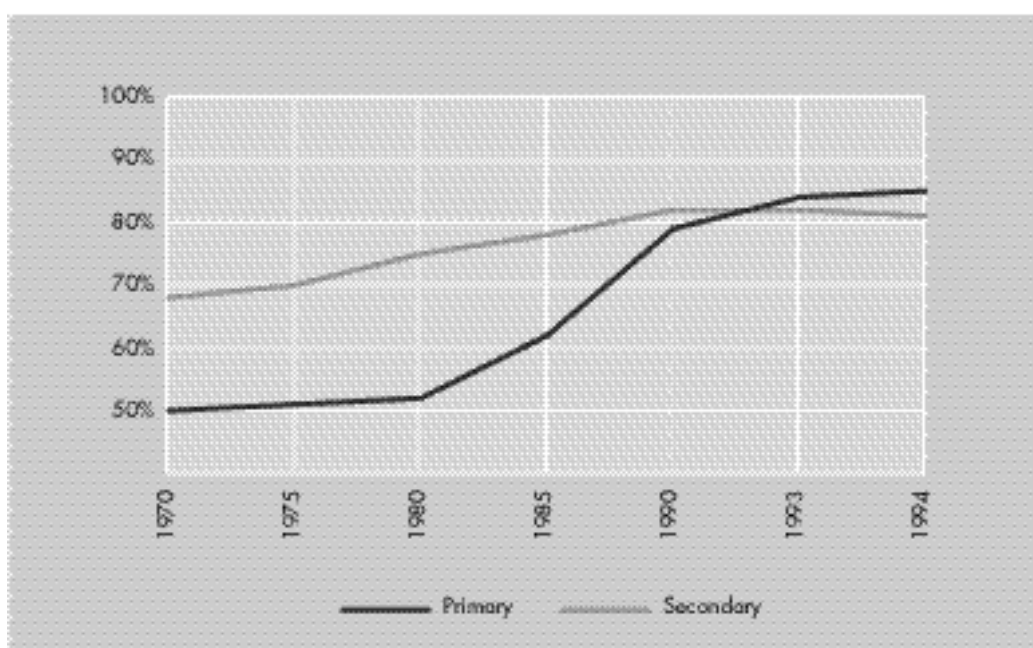
Inequality of access to school between boys and girls is naturally more marked in rural areas, as illustrated in the following table on the case in Niger.

What are the prospects for change in girls' unequal access to education? There has certainly been some progress, but it remains slow (Figure 3 below). Although the relative gap in secondary education between the sexes did indeed narrow markedly in the 80s in favour of girls, there has been only a very modest drop in inequality of access to primary education over the past twenty-five years. For every one hundred boys attending primary school, the number of girls grew from 68 to 82 between 1970 and

TABLE 4. Rate of school attendance and literacy in Niger and in its capital city in 1997

	NIAMEY			NIGER		
	Male	Female	Overall	Male	Female	Overall
School attendance	51,81	48,75	50,32	18,18	11,54	4,90
Literacy	67,00	53,00	60,00	22,00	12,00	17,00

Source : Cabinet Sékou et Associés - 2000

FIGURE 3. Changes in the relative proportion of male and female education in sub-Saharan Africa from 1970 to 1994

Source : World Bank, 1999

1997 (World Bank – 1999). It is therefore reasonable to suppose, according to a number of experts, that it will take at least a generation before this inequality is eliminated.

This state of discrimination could be made worse by the fact that population growth results in increasing demand at a rate which the financial resources available are unable to match, unless major efforts are made to support this sector. During the period 1995-2020 the school-age population of sub-Saharan Africa is expected to increase by 52%⁸, so that to achieve the objective of school attendance for all children by 2020, the total number of school places would need to rise from 71

million today to 91 million⁹ (World Bank – 1999).

These figures, however, mask an important fact: the advances made have not benefited the poor as much as the rest of the population. Poverty indeed reinforces existing inequalities, even if it is not the only determining factor. Those countries where income is particularly unequal are those in which the greatest inequality in female access to education is often found (World Bank – 2001).

⁸ While this proportion will probably fall in almost all the other regions of the world.

⁹ 63% of this increase being attributable to demographic growth alone.

But the gaps which remain at all income levels also highlight the influence of social and cultural factors on girls' access to education. According to a UNDP report on women's participation in development¹⁰, despite the progress referred to above, girls' education still faces, major obstacles as a result of their socio-cultural roots: "The rate of school attendance in primary education is rising but the fall-out rate of girls, which is higher than that of boys, remains a concern. (...) Traditions and social conventions often suggest that educating girls is of no use and that it is preferable to keep girls at home until they are married. (...) When schooling has to be paid for and uniforms are compulsory, parents prefer to make this financial effort to educate boys." Governments have a duty to improve "the education of girls and of women to optimise the contribution the latter can make to development. Education is in fact vital if progress is to be made in regard to health, sanitation and food."

Talking about female emancipation and promotion only makes sense if a certain number of concrete measures are taken, notably measures relating to access to education and training: "What female skills will countries be able to count on? It is vital to break the circle of submission, of dependency and of ignorance if things are to move forward." (Monimart – 1991).

Thus the key factor today is girls' education, which remains a pre-condition for their role in the economic activity of the country to be recognised, for "there is a clear distortion between their social and economic activity and the place they are accorded in the values of society." This might, however, be changing rapidly and "alongside a tiny but active number of young female intellectuals eminent in political and literary life, there are now signs of a grassroots movement which should lead to greater female individuality going hand in hand with their increasing economic autonomy." (Coquery-Vidrovitch – 94.2)

Women are aware of the obstacles which illiteracy represents and those who want to manage their own affairs are often the first to want to gain access to the teaching required. (Masson et al. – 1997).

In development projects and particularly during their animation phase, as well as in hygiene training and awareness-raising components, it is important to take account of these inequalities in education between men and women, rich and poor, adults and children, even if in certain cases a collective organisation can attempt to close these gaps, notably for the higher age groups which have to take on management tasks. In Guinea Bissau during the implementation of the Cacheu region water supply programme¹¹, illiterate women charged with some responsibility within a non-profit association or a water management committee are accompanied by their educated husbands in order to be able to carry out their tasks. This can also apply to village heads who have been given responsibilities in the context of similar projects and who are accompanied by one of their educated children when they are not literate themselves.¹²

The progress made in school attendance, migration movements and rapid urbanisation which have marked the last thirty years are eroding the powers of the elders in family entities. Migratory movements towards cities, essentially of young people seeking work and training, open up new prospects. Urban employment, often monetarised, is taking over from agricultural employment the income from which was controlled by the elders. But very often, "rather than emancipating young people, with all the positive implications which that term implies, what we find is that the young are left to their own devices and tomorrow's youngsters will bear the brunt of the failure of the State (less schooling, less health care), the collapse of the economy, etc." (Locoh – 1995) Moreover in the case of women, this most often means "that they have left their native milieu in an already critical situation and can no longer turn to their family circle." (Locoh – 2001).

¹⁰ *Etude d'évaluation n°13*, United Nations Development Programme.

¹¹ Cacheu region clean water supply project, 1996, French development agency.

¹² The methodological recommendations which this constraint entails are discussed in Chapter 5.

4. What role do non-profit associations play in changes in how society is organised?

Similarly to tontines, which have long been practised, or other traditional forms of group, the co-operative and non-profit association movement has seen unprecedented growth in Africa over the past few years. Peasant's groups, women's associations, production co-operatives, etc. have become genuine forums for sharing information and solidarity, ... as well as the way to gain access to external funding or aid.

But do they provide an opportunity for any real redistribution of power within the community or do they tend to consolidate the power of the social "elders"? Do the dynamics triggered by forming such groups change relations between women and the public arena, either in the way the group expresses itself vis-à-vis the outside world or because of changes occurring within the group? Examining groups and associations taken from widely differing contexts (countries, objectives, scale, etc.) suggests some answers notably by analysing their structures (the extent to which they are mixed and organised by social group) together with their ultimate aim (collective benefit, economic link, etc.).

4.1. The example of non-profit associations in semi-urban areas in Benin

Membership of a non-profit association, whatever its size or aim, was considered in the course of a survey relating to four small towns in Benin (BURGEAP – 1996). The results are significant: 37% of the people surveyed are part of an association in Toffo, 30% in So-Zounko, 26% in Bérubouay and 17% in Ouegbo (the most highly developed of the four towns).

A detailed analysis of existing organisations in Toffo enabled them to be classified according to the reason they were set up:

- *The revolutionary period.* Certain groups or co-operatives, encouraged to set themselves up by the then powers, continued on after the revolution. This is the case for the farmers' group (GAF¹³), set up with the aim of achieving economies of scale by grouping crops and livestock. At the time of the survey, 4 hectares of maize and 4 more of manioc had been sown in collective fields. The land farmed is located in public utility areas allocated free to the association with State approval.

- *Development projects.* The aim of the Toffo union of groups, set up at the initiative of a UN volunteer, is to co-ordinate the activities of development associations and includes 20 of the 36 associations of the commune.

- *Village initiatives.* The example of associations set up in neighbouring villages sometimes encourages others to set up groups in the hope of benefiting, like them, from external aid. These are generally the most recent associations. They include "Force paysanne", a women's association which processes the palm oil sold to female retailers. The latter use the oil to make the soap which they in turn sell on the markets of Toffo and Ouegbo. The female founder of "Force paysanne" got the idea of setting it up from the existence of a similar association in Ouegbo.

All these associations are organised in the same way and include at least a chairperson, a secretary and a treasurer (male or female in each case). Membership fees range from 25 to 2000 CFA francs. Authority is exercised by individuals selected by the members of the association.

Associations the object of which is to carry out a commercial activity generally do not levy a regular membership fee, the farmers' group being an exception to this. Individual membership fees, of 100 CFA francs per month, enable the latter's mem-

¹³ Translator's note : *Groupement des agriculteurs et fermiers.*

bers to acquire shares worth 10,000 CFA francs which they can sell on when they stop working.

The number of members varies greatly but generally everybody involved in the object of the association is a member of it: thus all the women who made palm oil before "*Force paysanne*" was set up, had joined as members.

Several of Toffo's associations also pay for collective work. This is how a covered market place, latrines and a kindergarten for children came about. But the immediate advantage of activities undertaken by the associations is generally individual, in the form of income and assistance to families when they are in need through loans or donations.

The success of these associations is manifest in the generally high rates of attendance at their frequent meetings. And the gradual shift in formal status from "externally driven project" to "local initiative" confirms the enthusiasm they generate.

4.2. The example of women's associations in Senegal

Senegal's village women generally choose women who already fulfill some political function to represent them in women's associations.

Women's associations can be divided into two types, depending on their terms of membership:

- Those the aim of which is to help families from time to time when they need to meet major expenses as a result of events such as marriage or bereavement. The amount members pay in varies with the nature of the event. For example, in the village of Keori Mama Laminae, where 70% of the women are members of at least one of the existing associations, the membership fee is 150 CFA francs or a contribution of rice. When the women grow crops on their collective land, the product of the harvest is stored and redistributed on feast days or sold. In the latter case profits from sales replaces membership fees.

- Those in which membership fees are regularly paid and invested in the purchase of jointly-

owned equipment or lent to women in need.

Similar to tontines, both these types of association are used as solidarity funds. Their role is to enable households with no savings to be able to cover unexpected expenses. The women who join such associations are motivated above all by the individual advantage they expect to gain from doing so.

Still in Senegal, the many female promotion groups (GPF¹⁴), introduced in the continuation of the UN Women's Decade by the Senegalese authorities, were set up for the most part based on pre-existing traditional village women's organisations (Badiane – 1995).

Unlike the latter "the ultimate aim of which did not seem to relate to carrying out joint economic development activities", GPFs differ insofar as it is through them that female villagers now aim to promote joint development. GPFs have been highly successful; in 1995, there were more than 3,600 of them, mobilising in all over 400,000 members throughout the country.

"Rather than considering the efficiency of this participation, which for the moment has no effect on major decisions, it is important to regard this principle (...) as a fantastic opportunity for training and for apprenticeship which are necessary stages towards achieving means of access to decision-making. (...) Only a few years ago, going to the neighbouring weekly market was for many rural women one of the rare opportunities to leave their village and to come into contact with other women, the advent of women's groups has overturned traditions and opened a window on the outside world for women.

"New attitudes and practices (...) are now commonplace: women leaving the village for a few days to take part in a seminar, women managing income-generating community activities, public speaking in mixed meetings, etc. all these are made possible by women's groups which have increasing legitimacy by acting as a negotiating force on behalf of women" (Badiane – 1995).

¹⁴ Translator's note : *Groupement de Promotion Féminine*.

Control of GPFs is a considerable political challenge and they are potential partners for project practitioners.

4.3. Associations for improving the environment in Ouagadougou

The city of Ouagadougou has enjoyed the support of many projects over the past few years, and several of these have served as models for other countries. Three pilot projects carried out in different parts of the capital, would appear to be successful experiments in making female inhabitants participate in improving their living conditions:

- **Rubbish collection in the Wogodogo neighbourhood**, sector 10 of Ouagadougou¹⁵. This is a low-income neighbourhood consisting of 3,000 households and a total population of 25,000 inhabitants. The women of the association *Lagem Yam* (Let us pool our skills) which has 12 members organise rubbish collection. After one year of operation, 850 households have joined the fee-paying service the association provides. Household waste is removed on donkey-drawn carts. The equipment used to collect solid household rubbish consists in rakes, forks, shovels, buckets, brooms, etc. The women are equipped with overalls, gloves, boots and masks. Neither the physical nor the psychological difficulty of what needs to be done seems to pose the women concerned a problem. At the end of the first year of operation, the scheme would seem to be viable, and the success of the association has encouraged other neighbourhoods of Ouagadougou to organise themselves in the same way.

- **Community participation in improving sanitation**¹⁶ in sector 7 of Ouagadougou. The clearing up of concessions and roads is carried out

by a group of women who sweep and pick up rubbish which is then emptied into skips which are removed by the economic division of the High Commission, or removed directly by Ecofa¹⁷. This rubbish removal service costs 500 CFA francs per month from the entrance to the concession, and 350 CFA francs when the rubbish is already in a transit bin.

- **Socogib women's club**: bringing together some hundred or so women from a modern neighbourhood of sector 13, the objectives of this association are to upgrade public places and to show solidarity on the occasion of ceremonies such as marriages, deaths etc.

These three associations have led to the creation of jobs reserved for women, their professional training and income giving them a certain financial autonomy. From the above examples, we can reach three main shared conclusions:

- Associations are not only groups of people coming together around an activity, they also provide an opportunity to form groups by gender. Thus, they often correspond to a social group: that of men, for agricultural co-operatives, for example, or that of women, confirming the differentiation between the sexes including introducing structures to support collective activities. It is noteworthy in this respect that groups with the aim of financial solidarity between members – an objective akin to that of tontines – are generally groups of women;

- These associations often unite all the members of a group involved in a productive or marketing task – e.g. all the women who process palm oil (cf. above the example of Benin). In this regard, these associations may have an important role to play and help to redistribute power within the community.

- Finally, notably at national and regional levels, they are often linked to local political powers, which are their principle limitation.

¹⁵ Regional centre for drinking water and sanitation (CREPA) and African urban management institute (IAGU) pilot project.

¹⁶ Project for improving urban living conditions. UNICEF/World Bank funding.

¹⁷ Translator's note: *Express Coopérative du Faso*.

5. Conclusions

Yesterday's excluded classes, women and social "juniors", are today evolving strategies for change within society (migrations, lucrative activities, involvement in associations, etc.) according to the following principles. Links between groups remain nevertheless highly complex and situations vary from one place to another with regard to changes in traditional social structures. The potential end-users of a development programme represent a unit of social groups with sometimes differing interests but above all with a very different decision-making power within the community.

They do not form a homogenous whole and from a methodological point of view cannot be treated as such:

- the social context is changing rapidly and it is difficult to predict what it may be without a detailed field analysis;

- existing associations and youth groups often reflect social groups (young people, women, people who share the same activity). They can provide an answer to the problems individuals have in making their voice heard, but they are restricted by frequently forming part of political parties.

For excluded groups, water supply programmes provide an opportunity to redistribute roles to their advantage within the community. In this regard, involving women in projects cannot be dissociated from involving all the groups making up the community.

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3. Domestic water and sanitation management

1. Introduction: domestic economy and gender

According to economic theories, analysing domestic production contrasts “reproductive” work which relates to maintaining and reproducing the family unit, and “productive” activities.

Domestic tasks, characterised as they are by a cultural and symbolic dimension, clearly reflect the separation between men as a group and women as a group. Women’s activities, which are regarded as part of “reproductive” household work and thus of lesser value, are the concrete manifestation of the dividing line between the productive and the domestic environment.

Most of their work is therefore not recorded in statistical exercises carried out by national accounting systems. It has for example been estimated that nearly 60% of women’s activities are not accounted for in Kenya’s system, compared with only 24% of men’s activities (World Bank – 1999).

And yet, many studies have shown that women work harder than men across all the countries of sub-Saharan Africa (see figure 1 below).

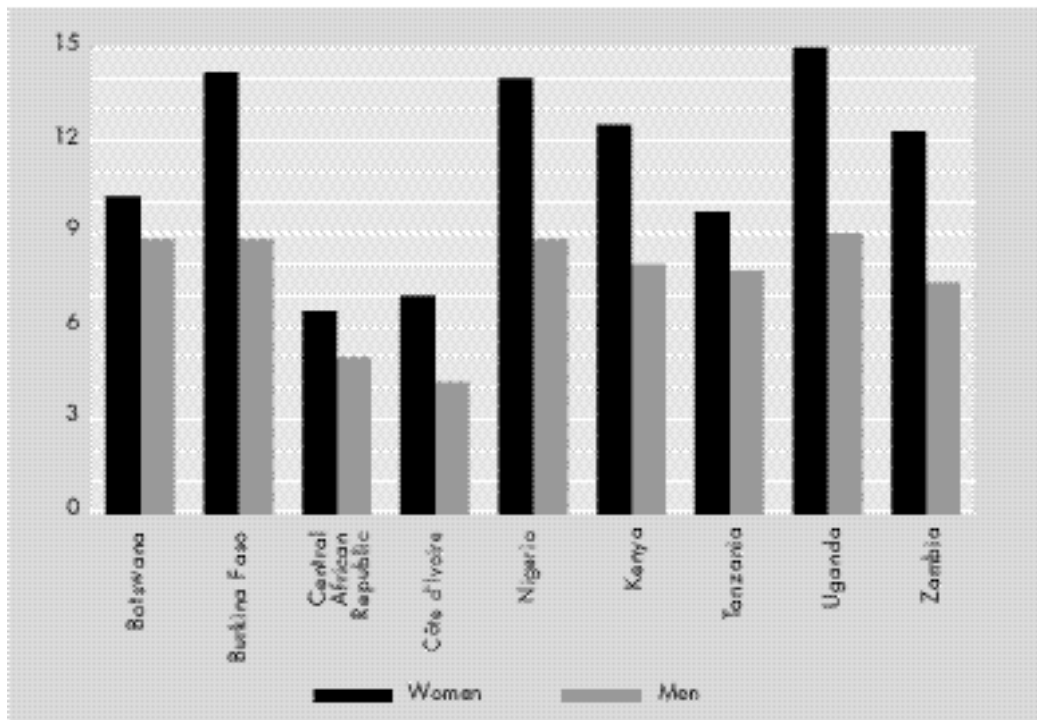
In addition, children form an integral part of domestic production systems and the models which put little girls at a disadvantage start very

early. Poor households mobilise the labour force of their children, and although boys are also expected to do their bit, it is still a fact that domestic chores, notably carrying water and fuel, are one of the factors restricting girls’ school attendance (World Bank – 1999).

And yet, domestic tasks take up a great deal of time and energy. In rural areas and in certain semi-urban centres, four activities take up the “time budget” devoted to them: fetching water, finding firewood, crushing cereals or root vegetables and preparing meals. Of these four activities, the first two, which involve carrying, are the most onerous. The unequal way in which they are shared is clear from figure 2 below (Barwell – 1996). Using case studies (Zambia, Uganda and Burkina Faso), this shows that every woman carries on average each year, depending on the country, the equivalent of 10 to 40 tons of water and firewood over the distance of one kilometre, i.e. 3 to 7 times the load carried by men.

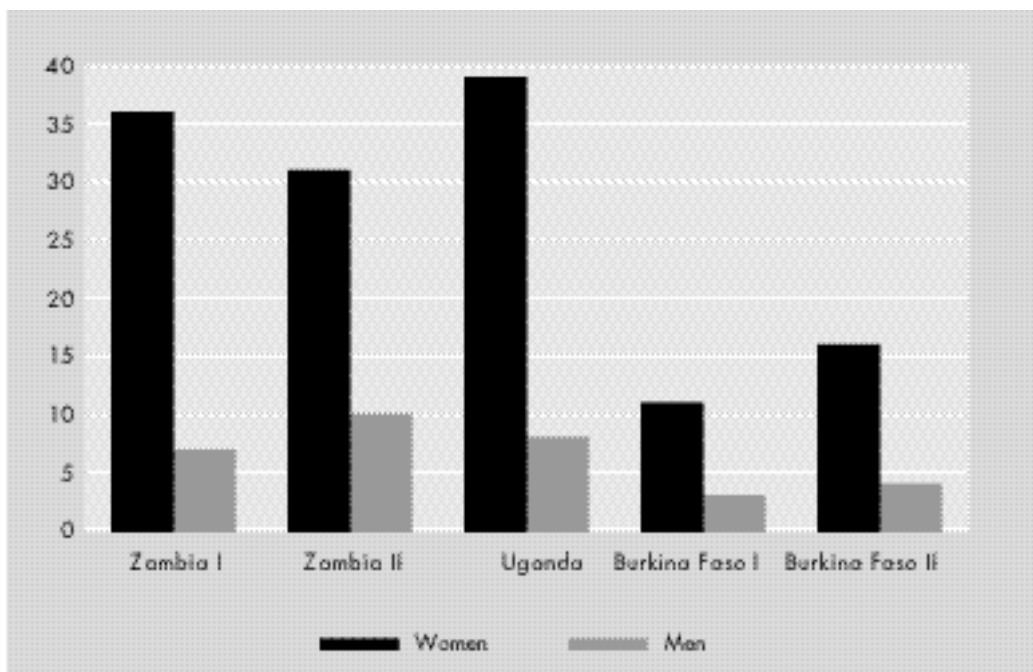
Other surveys carried out in rural areas in Ghana and Tanzania have shown that women spend almost three times as much time as men on activities involving transporting and that the loads they carry are on average four times heavier.

FIGURE 1. Number of productive hours per day by gender



Sources : Brown and Haddad, 1995 ; World Bank, 1993b ; Saito et al, 1994

FIGURE 2. Comparative Male-Female loads (in tons/kilometre per year)



Source : Barwell, 1996

Table 1 gives a more concrete idea of the way in which domestic tasks are shared on a daily basis. This records the way time is used in a polygamous household¹ in a semi-urban centre in Burkina Faso during the dry season and the rainy season (Zuidberg – 1996): the chore of fetching water, which only involves the wives of the head of the household, takes up a great deal of their time, even though they share out their domestic tasks in an organised way.

We should note in passing that during the rainy season, women rise very early to tend their own fields before tending their husband's. The income derived from this additional activity (their own fields) contributes to a number of expenses such as food, water, wood, etc.

Keeping the family supplied with water and keeping the home clean therefore make up a large part of women's activities in sub-Saharan Africa. So much so that any project addressing this sector must be aware of the demands for improvement which these women express, relating to both their domestic and collective activities:

- Domestic activities dependent on using water in various ways are drawing and carrying water, cooking, washing up, personal washing, clothes washing (which generally takes place outside the concession) and watering livestock.

In considering drinking water supplies, several research initiatives over the last few years have used case studies and quantitative surveys amongst households, men, and women, to consider practices, behaviour, attitudes, opinions, and demand from households and individuals.

Two programmes in particular did this. The first was carried out by a World Bank team between 1987 and 1990 on factors determining demand for water in the rural areas of Latin America, Africa and Southeast Asia (Water Demand Research Team – 1993). The second by CERGRENE and BURGEAP was conducted between 1994 and 1996 in various small towns and centres in five countries of West Africa: Niger, Guinea, Benin, Mali and Burkina Faso.² We will use the main results of these two research pro-

jects with regard to "gender" analysis to essentially illustrate section 2.

- Other tasks relating more to the collective environment (which do not appear in table 1) are also the responsibility of women. This include notably maintaining the areas immediately around the concession, and collecting and disposing of solid waste (household rubbish) or liquid waste (wastewater).

In contrast to drinking water supply, domestic sanitation of wastewater and excreta is rarely perceived as a priority. Most people are unaware that poor sanitation conditions are the source of many illnesses. As a result, recommended methods for treating excreta are badly received and applied, both on a national and a community level.

Nor has the mobilisation of national policies, funding partners and the international scientific community been as intense in this area as in that of drinking water supplies, and this is reflected in a lack of studies, reports and hard data on practices, behaviour and individual and domestic attitudes in this area.

Section 3 will explore what has been learnt, drawing essentially on the few monographs published, notably based on household interviews and surveys carried out in the course of projects to improve sanitation or the urban environment, and which present the advantage of providing qualitative data analysed notably by gender, but also by age, by social category, etc.

¹ For our definition of the term "household", see Chapter 2, § 2.1. "The family: a unit taking many forms".

² See BURGEAP - 1996, Morel à l'Huissier and Verdeil - 1996, Etienne and Morel à l'Huissier - 1997, Morel à l'Huissier - 1997 and Etienne - 1998. The towns and small centres studied in BURGEAP/CERGRENE's research were as follows. In Benin: Ouegbo, Toffo, So-Zounko and Bérubouay. In Niger: Foulan Koira, Guidiguir and Bagueye. In Guinea: Mali, Labé, Koundara and Beyla. In Mali: Kayes, Ségou and Mopti; and in Burkina Faso: Bobo Dioulasso.

TABLE 1. Use of time in a polygamous household in the semi-urban areas of Burkina Faso

In the course of one day in the dry season				
	4 - 5 am	6 - 7 am	8 - 9 am	10 - 11 am
Man	<ul style="list-style-type: none"> • Waking • Letting out livestock and animals 	<ul style="list-style-type: none"> • Gathering firewood for the forge 	<ul style="list-style-type: none"> • Gathering firewood for the forge 	<ul style="list-style-type: none"> • Gathering firewood for the forge
Woman 1	<ul style="list-style-type: none"> • Waking • Sweeping courtyard • Washing up 	<ul style="list-style-type: none"> • Drawing water • Washing pots, gourds, tumblers • Feeding the pigs 	<ul style="list-style-type: none"> • Cooking 	<ul style="list-style-type: none"> • Meal • Grinding millet • Gathering wood
Woman 2, 3	<ul style="list-style-type: none"> • Waking • Preparing <i>dolo</i> 	<ul style="list-style-type: none"> • Preparing <i>dolo</i> • Feeding the pigs 	<ul style="list-style-type: none"> • Market for shopping or Clothes washing 	<ul style="list-style-type: none"> • Market
Woman 4 (cooking turn)	<ul style="list-style-type: none"> • Waking • Gathering wood 	<ul style="list-style-type: none"> • Gathering wood 	<ul style="list-style-type: none"> • Return from wood gathering • Market for shopping 	<ul style="list-style-type: none"> • Return from market
In the course of one day in the rainy season				
Man	<ul style="list-style-type: none"> • Waking 	<ul style="list-style-type: none"> • Work in the fields 	<ul style="list-style-type: none"> • Work in the fields 	<ul style="list-style-type: none"> • Work in the fields
Woman 1	<ul style="list-style-type: none"> • Waking • Feeding the pigs • Tending own field 	<ul style="list-style-type: none"> • Work in husband's field 	<ul style="list-style-type: none"> • Work in husband's field 	<ul style="list-style-type: none"> • Work in husband's field
Woman 2, 3, 4	<ul style="list-style-type: none"> • Waking • Tending own field • Bathing children 	<ul style="list-style-type: none"> • Work in husband's field 	<ul style="list-style-type: none"> • Work in husband's field 	<ul style="list-style-type: none"> • Work in husband's field

(TABLE 1)

Sources : L. Zuidburg, 1996

in the dry season				
12 - 1 pm	2 - 3 pm	4 - 5 pm	6 - 7 pm	night
<ul style="list-style-type: none"> • Return from wood gathering • Meal 	<ul style="list-style-type: none"> • Lighting fire to produce charcoal for the forge 	<ul style="list-style-type: none"> • Return from charcoal work • Shower • Meal 	<ul style="list-style-type: none"> • Bringing in livestock and animals • Meal 	<ul style="list-style-type: none"> • Chatting
<ul style="list-style-type: none"> • Return from wood gathering • Grain milling 	<ul style="list-style-type: none"> • Grain milling 	<ul style="list-style-type: none"> • Collecting water • Preparing sauce and <i>tó</i> • Washing up • Soaking the tamarind 	<ul style="list-style-type: none"> • Children's bath • Meal • Sweeping the house • Chatting 	<ul style="list-style-type: none"> • Chatting • Putting children to bed
<ul style="list-style-type: none"> • Market 	<ul style="list-style-type: none"> • Market 	<ul style="list-style-type: none"> • Market 	<ul style="list-style-type: none"> • Children's bath • Bath • Meal 	<ul style="list-style-type: none"> • Chatting
<ul style="list-style-type: none"> • Collecting water and cooking 	<ul style="list-style-type: none"> • Collecting water 	<ul style="list-style-type: none"> • Cooking 	<ul style="list-style-type: none"> • Husband's and children's bath • Bath • Meal 	<ul style="list-style-type: none"> • Chatting
in the rainy season				
<ul style="list-style-type: none"> • Rest • Meal 	<ul style="list-style-type: none"> • Work in the fields 	<ul style="list-style-type: none"> • Work in the fields 	<ul style="list-style-type: none"> • Return from fields • Rest • Shower 	<ul style="list-style-type: none"> • Meal
<ul style="list-style-type: none"> • Rest • Meal • Work in husband's field 	<ul style="list-style-type: none"> • Work in husband's field 	<ul style="list-style-type: none"> • Return to cook and fetch water 	<ul style="list-style-type: none"> • Cooking • Fetching water • Child's bath • Shower • Meal 	<ul style="list-style-type: none"> • Cleaning the house • Putting children to bed • Chatting
<ul style="list-style-type: none"> • Meal • Rest 	<ul style="list-style-type: none"> • Work in husband's field 	<ul style="list-style-type: none"> • Work in husband's field • Return home 	<ul style="list-style-type: none"> • Fetching water • Children's bath • Shower 	<ul style="list-style-type: none"> • Meal • Chatting

2. Household water supply practices

The chore of fetching and carrying water is a fact of life for households not connected to a piped water supply. In this context the criteria for selecting a water supply source, whether modern or traditional, prove to be complex, but two key factors deserve careful analysis: paying for water and how users perceive the links between water and health.

2.1. The “water chore”

In West Africa, running water in the home is restricted to large and medium sized towns and cities, and even then these services generally reach only the minority of households sufficiently well-off to be able to afford to incur the cost of connecting their homes to the mains network, which is equivalent to between two and five months average income (Collingnon and Vézina – 2000).

The chore of fetching water in Mokko (Niger)

In Mokko, in Niger, fetching water for household consumption is the sole responsibility of women. Djerma males never draw water. Fulani males only do so to water their livestock or to exchange water for millet flour with the women of Mokko. The men are responsible for maintaining the well, particularly for freeing it of sand. The women themselves pay for the bucket, the rope, containers for carrying the water once it has been drawn and jars for storing it.

The daily task consists in drawing water from the 55 metre deep well and carrying it in a container holding about 25 litres. Drawing this amount, which meets the daily needs of a single person, takes between 15 and 25 minutes. Drawing enough water for a household consisting of on average 6 people can take 2.5 hours per day, and this provides enough only for domestic use!

Source : *InterAction Design - 1991*

In most cities and their surrounding areas, in semi-urban areas and even more so in rural areas, modern water supply systems generally provide only a limited level of collective services (concrete collective wells, boreholes with manual or foot-operated pumps, standposts connected to a piped system or mini-piped water supply systems etc.) Hence our use of the term “chore” to refer to the frequent and sometimes long trips which have to be made to fetch water.

In most cases, women themselves or young girls, rather than young boys, are responsible for collecting and carrying domestic water. They travel on foot balancing sometimes very heavy containers on their heads.

Unless they are water carriers or vendors, men generally only go to water installations for non-domestic purposes: for making bricks or to water their herds for example. In such cases, they generally use some means of transport, witness the following comment by one user:³

“My daughter-in-law is the one who carries buckets, my son takes the donkey to fetch water for bricks in oil drums.” (Guidiguir, Niger)

Essentially, the following are the factors which make the daily task of fetching water so onerous:

- *Weight*, the containers used to carry domestic water are most commonly 18 to 20 litre plastic buckets with no lids. Women also use basins which can contain up to 35 litres.

Household surveys carried out by J. Etienne and A. Morel in 1,106 households across 4 countries show that half of all families fetch more than 6 containers full of water daily. The average volume of a container is 30 litres, which

³ Most of the comments quoted in this chapter were recorded by J. Etienne. A few relating to Mali are taken from Bouju et al. – 1998.

means that women and young girls are carrying nearly 200 kg in weight back to their home every day.

- *The distances covered*⁴: these average 200 metres for all the small towns in Niger, Guinea and Benin and 115 metres for the households of the three Mali towns with no piped connection, but these figures also vary from place to place (e.g. from 65 m in Mopti to 400 m in Ouegbo) depending on the density of standposts.⁵ In half of all cases, however, the distance covered is still more than approximately 100 metres.

In rural areas, these distances are often longer, particularly at the end of the dry season when wells dry up. Distances covered can then exceed several kilometres per day. In addition, the slow output of some water installations causes long queues.

When the village has a pump, water supplies may be more regular and distances travelled are considerably reduced. The time freed up by less waiting and carrying allows women to undertake other activities, income-generating or otherwise.⁶

- *Waiting time*: in urban centres, this may also be long at standposts, since domestic habits (washing, preparing meals etc.) mean that housewives tend to all fetch water at the same time: in the morning generally between 7 and 9 a.m. and in the evening after 5 p.m.

Over half the households across all the small towns and centres surveyed waited for 10 minutes. But as was the case for distances covered, the average waiting time of 23 minutes across the board, was much longer in small

centres (42 minutes) than in towns (11 minutes) because of the lower density of standposts.

Contrary to the frequently advanced idea that women look forward to meeting at water supply points to escape their isolation and to have a chat out of their husbands' hearing, long waiting times often lead to arguments and sometimes scuffles in the queues. This tends to happen more often in towns in fact, since here women do not know each other so well and have less time to spare than in the semi-urban centres.

Table 2 below summarises housewives' comments about the disadvantages of their having to fetch water as recorded in the course of a survey carried out in semi-urban centres in Niger (Inter-Action Design – 1991). In this example, women draw water from a well but the disadvantages they list about carrying water also hold true for fetching water from standposts.

- *In urban areas*, and much less commonly in semi-urban and rural centres some households use a water "carrier" or "vendor"⁷ (see table 3 below).

"When I feel too lazy, the water vendors bring me water" (comment recorded in Guidiguir, Niger).

Better-off homes and women who are stallholders (busy selling food products on the markets) or who have no children to help them mainly turn to water vendors. Because they can't go out, women confined to their homes (a practice particularly widespread in Niger) also call upon their services.

On average, in the small towns and outlying neighbourhoods surveyed in Niger, in Benin and in Guinea, 80% of people using water installations never use water vendors, 13% do so occasionally and 7% regularly (J. Etienne – 1997). In

⁴ All the distances given in this section are from the home to the water installation. The distances actually covered are therefore twice as long (there and back).

⁵ Calculating the loads of water carried, given the data obtained from these case studies (200 kg/day over a distance of 230 to 400 metres there and back, i.e. 18 to 29 tons per year) tallies broadly with the quantities given in the study referred to in our introduction (Barwell – 1996; see figure 2).

⁶ IRC. Dédougou, 1992.

⁷ It is preferable to refer to a "door to door vendor" in order to avoid any confusion with neighbourhood vendors who are subscribers with a piped water connection and who sell water to neighbours who come to them for their supplies.

TABLE 2. Disadvantages and effects of having to fetch water stated by women in semi-urban areas of Niger

DISADVANTAGES	% OF WOMEN	CONSEQUENCES	% OF WOMEN
While drawing water			
The well's depth	64	Waste of time	30
The well drying up	38	Insufficient water	29
Missing bucket	30	Often ill because of the "chore"	21
Weight of water	27	Cut hands	20
Waiting time	2	Tiredness	14
While carrying water			
Weight on head	38	Headaches, back aches	13
(Un)loading the cart	2	Waste of time and energy	15
Water pollution	2		

Source : InterAction Design - 1991

TABLE 3. Proportion of households using door-to-door water vendors by type of urbanisation

Type of urbanisation	Never	Sometimes	Regularly
Small town	91 %	4 %	5 %
City/central neighbourhood	68 %	21 %	10 %
City/outskirts	57 %	26 %	18 %
Overall (numbers)	750	192	110
Overall (%)	71 %	18 %	11 %

BURGEAP - 1996 and A. Morel à l'Huissier - 1997⁸

the three Mali towns already mentioned, these average proportions rise respectively to 66%, 21% and 13%.

Depending on the distance they have to cover and the extent to which water is in short supply, water vendors can demand up to ten times the price of water at the standpost. This additional cost explains why water distribution through vendors is a service restricted to the better-off, unless of course the household has enough women available to take on the daily chore of fetching water.⁹

"Water vendors charge 50 F for two *touques* (2 x 18 litres) but when there's a power cut, they charge 75 F for them. Vendors charge 50 F or 75 F depending on how far you are from a water installation. The prices vendors charge are very high: they buy water for 5 F and sell it on for 25 F; on Wednesdays (market day) two jerricans costs 50 F" (various comments recorded at Foulan Koir and at Guidiguir in Niger).

⁸ See note 2 for list of areas included in the study.

⁹ See below § 2.3. "Sharing the cost of water".

2.2. Criteria for choosing a drinking water supply source

People still frequently use traditional sources of water supply such as wells, rivers, seasonal streams, or collected rainwater, including in cities. Sometimes known as alternative sources of supply, the extent to which these are available and used depends on local hydro-geological and climatic conditions which may affect how reliable they are and their year-round availability.

Many modern installations (modern wells, boreholes with manual or motorised pumps, etc.) have been introduced to replace or complement these traditional sources. Thus families can in theory choose between keeping on with their old water supply practices or using the new system, which generally has to be paid for if it is mechanised, unless of course it is too difficult or too unreliable to use their traditional sources, in which case they have no choice:

"The water from the standpost is the only one we can get easily because the wells dry up in the dry season and ponds flood them in the rainy season" (comment recorded in Baguaye, Niger).

In reality, many criteria affect whether or not individuals choose to use a modern installation for their water supply:

- these may relate to supply: how regular it is but also the quality of the water, and factors relating to the chore of fetching water such as distance and waiting time at the point of supply,
- or to demand: there are clearly various overlapping factors including people's level of education, their idea of their own social rank, the type of socio-professional activity they practise, their familiarity with notions of hygiene, taste, cultural ideas linked to cleanliness and the financial means actually available (Bouju et al. – 1998).

"If there were any collective wells or ponds, I would fetch all my water from them because I've got no money" (comment recorded in Foulan Koir, Niger).

A study carried out in Guinea Conakry¹⁰ in rural areas revealed that certain groups refused to use the water from a borehole because they felt excluded from managing it and considered themselves discriminated against. Aware of the consequences of refusing to do so on their health, they forcefully declared: "the way those who look after the water installation behave makes us and our families sooner drink water which makes us ill!" This discrimination takes several forms.

Some women, despite arriving first, have to wait for those who belong to the group in charge of the water installation to have finished drawing water before taking their own turn. For similar reasons of precedence, the children of certain families aren't allowed to go and draw water on their own. In addition, since they were not consulted on decisions about where to locate the new water installation, much of the population is in effect excluded from using it by distance.

At the beginning of the survey, the taste of the borehole water (considered to be salty, or less fresh than well water) was often given as the reason for the new water installation being underused or for reluctance to contribute to its cost. This assertion was subsequently refuted, once the real reasons had been identified.

- To take "supply" first, several studies have attempted to analyse and draw up a typology of the main criteria for choosing between various water supply sources.

In Bandiagara and Koro, Mali (Bouju et al. – 1998), waiting time is in most cases given as one of the most important criteria.

"With the standpost we're less tired, that's true, but with the tap¹¹ there's a line¹² and there's often a cut in supply¹³ and that's what's tiring. Especially when it's hot like this, it's not easy to get water from the tap: you have to queue in the dark before the sun comes up."

¹⁰ P. Revaud.

¹¹ i.e. the water standpost.

¹² Queue.

¹³ Cuts in supply apparently due to the inadequate scale of the solar water supply system.

The choice of a water supply source also often depends, however, on how the water is to be used, for drinking or not. The following observations, which also illustrate the attention paid to the quality of drinking water¹⁴, clearly show this:

"I never go to the standpost: I go to the well for cleaning clothes, for cooking and washing and the water vendor brings us four jerricans every morning for drinking. The water from the standpost is mainly for drinking but for the animals or for washing, we use well water."¹⁵

"They say that the tap water is better and treated. But if you look carefully there are bits in it, and the water has a reddish tinge and that shows it's got dirt in it!"¹⁶

Note in this last comment the use of "They say" with reference to the water from the standpost being good quality illustrating that despite households being well informed about the health advantages of drinking water from the standposts, they are not necessarily convinced of these.

Quality as a criteria, linked to the notion of use, applies not only to drinking water. For washing clothes for example, water from certain standposts is considered unsuitable, as it fails to "lather":

"To do our washing, we go elsewhere to a well where the water is very soft. - For clothes washing, the water from our well is a bit like the tap water: it won't lather and so it uses more soap than the water we go elsewhere for" (comment recorded at Koro).

In reality, it is common to alternate between different sources of water, particularly in the light of the seasons or financial considerations:

"Me, I get water either from the standpost (in the dry season), or from the well. But in the rainy season, when the first rains have washed away all the dirt and little illnesses from the stream, I go there and help myself and then after the rains when the water starts to "dry up" in the river bed, we dig holes (so-called "boy-boy"). The water in them is perfectly clear and clean" (recorded in Bandiagara).¹⁷

Apart from slightly different shades of meaning relating not so much to the criteria listed but rather to their order of priority, the study carried out in the four semi-urban centres of Benin (BUR-GEAP – 1996) corroborate the preceding analyses and the answers given by people asked why they chose the source of water they use are fairly consistent. Setting aside the issue of water quality referred to above, the problem of the distance of the standposts from people's homes is systematically mentioned:

"During the dry season, we take pump water but during the rainy season we use only water from the cistern because the standpost is a long way from us and very dirty" (recorded at Toffo).

By contrast, the price of water from standposts, which varies from 200 to 500 CFA francs/m³ depending on the location (and sometimes also on the recipients) does not appear to discourage people from using them. The price is regarded as normal or cheap by most households, although opinions differ between men and women in this respect.¹⁸

Waiting time at a water installation, and more precisely its availability, relate mainly to systems using a solar generator when demand is high: some women wish they still had the manual pumps which enabled them to choose the time at which they came to fetch their water.

¹⁴ Users' traditional perception of water quality is analysed below § 2.3.

¹⁵ Recorded by J. Etienne respectively at Guidiguir and Baguèye in Niger.

¹⁶ Recorded at Bandiagara by Bouju et al. – 1998.

¹⁷ J. Bouju notes that this attitude considerably reduces the sanitation impact of the modern standpoint.

¹⁸ See below § 2.3 "Sharing the cost of water"

As for seasonal variations, the example of Bérubouay confirms the practices of alternating between different water supply sources: the town centre has two mini piped water supply systems powered by solar energy consisting of seven standposts, a manual pump, three large diameter cemented wells and a few private wells. In the dry season, almost all households use the standposts (86%) for drinking water, and half also use water from the standposts for washing. In the rainy season, only 53% continue to take water from the standposts for drinking.

The others collect well water (31%) or rain-water in barrels or basins (10%), as very few people in this area have cisterns (2%). 4% continue to take water from the seasonal stream.

- *Turning to "demand"*, some research has attempted to list the factors influencing people's choice about how they obtain domestic water in order of importance.

An analysis of various ways of obtaining water in Ukunda (Kenya) illustrates how a family from this village decide to buy water from a standpost rather than from a door-to-door water vendor, or rather than drawing it from a well (Mu et al. – 1990).

Better-off families, who are better educated or who have more women in them, tend to use the standpost more.

Standposts are also used more when alternative sources (wells and door-to-door vendors) are more expensive, further away, or provide inferior quality water; they are used less when the distance covered to reach them or the price charged increases and when the water they give tastes worse.

In the course of the same research by the World Bank's Water Demand Research Team, a similar study was carried out at Onitsha in Nigeria (Whittington et al. – 1989).

This analysis of the behaviour of the inhabitants of this small town who had a choice between obtaining their water from a well, from a kiosk or from a vendor, reveals that:

- if the taste of water from the well is thought to be acceptable, this significantly reduces the

probability of buying water from vendors or from the standpost;

- income has no significant effect on the probability of choice;

- the better educated the household, the less likely it is to use the well;

- the longer the time taken to fetch water from a given source of supply, the less likely it is to be used;

- the more women there are in the household, the less likely it is to buy water from a door-to-door vendor.

In both these studies of Ukunda and Onitsha, only two common variables prove to be significant in the choice of a source of supply:

- one relates to the nature of the installation: the time taken to reach it, i.e. the relative distance of each source of supply compared with the others;

- the other relates to the nature of the household: how many women there are in it.

*The availability of female labour for fetching water as a criteria for demand segmentation*¹⁹

The BURGEAP/CERGRENE study, based on surveys relating to towns and small centres in four countries (cf. above), shows that the probability of using door-to-door vendors increases significantly with the income of the household²⁰; or when using other sources of supply (standposts or traditional sources) is more difficult (low rainfall, no alternative to standposts, standposts some distance away); or indeed when the head of the household is widowed or single. Like the Water Demand Research Team study, it also highlights the significant decrease in this probability as the number of women in the household increases. Finally, it shows that this probability is

¹⁹ The concept of a "segment", derived from marketing, designates a socio-economic group which is homogenous from the point of view of demand. Thus "market segmentation" consists of identifying categories of population with distinct demands for given goods or services.

²⁰ Measured by a wealth indicator based on various consumer goods and installations.

higher in the central areas of cities than in small centres, and is higher still in peri-urban neighbourhoods (source: A. Morel à l'Huissier – J. Etienne survey data).

Analysing the data obtained from a survey of Bobo Dioulasso (Burkina Faso) in 1997 (Morel à l'Huissier – 1998) establishes that the existence of two women or two additional children in the household lowers the probability of its using the services of a door-to-door vendor, regularly or otherwise, by 1.5 points. This survey also confirms that the households using such services more readily are not only worse off in terms of labour available for fetching water, but also better off financially: an increase of 10,000 CFA francs in the monthly income of a household in Bobo increases the probability that it will use the services of a door-to-door vendor, regularly or otherwise, by 2 points.

Female labour, in both cities and small centres, thus has a crucial effect on inhabitants who have no piped water connection choosing to have water delivered to their homes rather than fetching it from a standpost.

Households can therefore generally choose between several possible water supply sources and decide in the light of three series of criteria:

1. the way (or ways) in which the water from this source of supply is intended to be used;
2. the nature of the available sources of supply (distance, unit cost price, quality of the water obtained);
3. the nature of the household and of the members of the household involved in choosing, notably of those who have to bear the burden (the women responsible for fetching water and the head of the household if the latter helps pay for it).

2.3. Sharing the cost of water

The cost of water and the domestic budget

Within rural communities, economic exchanges between men and women are complex.

Women, for example, receive a share of millet in return for working in the fields, and they then process and sell this to buy "condiments".²¹ As a result of polygamy (amongst other factors), there is no joint domestic budget: husbands and wives assume separate responsibility for certain costs, and these are allocated in the light of their respective activities.

The husband generally contributes to the expenses incurred by his wife or wives by giving each a weekly amount for buying condiments, firewood and water.

"Every week my husband gives me 1,000 CFA francs for condiments because we've got our year's supply of millet. For firewood, he goes into the bush and loads up his donkey. – Every morning my husband gives me 200 CFA francs for food and paraffin. – I take money for water from the amount my husband gives me for condiments." (Comments recorded in Guidiguir).

In addition, in most cases, the husband is responsible for buying sacks of millet or of maize (one sack per month for an average family).

It should be noted that for several years migrations, mostly male, have caused major changes in the way in which family obligations are allocated. In Bagueye (Niger) for example, men fit for work who have gone to find jobs in the closest big cities send money to their family on a more or less regular basis:

"My husband went with the exodus; he sends me 10,000 CFA francs every three months and I use these for all my expenses". (Comments recorded in Guidiguir Foulan Koiran in Niger).

Male and female budgets are therefore most often clearly defined within a couple: it is up to the man to provide basic food, clothing, modern medicines. For her part, the woman, if she has her own means (gifts, a small business, market gardening, selling food she has gathered, etc.) uses these in the light of priorities she herself has set.

²¹ The term "condiments" includes everything which is used to make the sauce which accompanies the millet or the maize.

Installing modern water supply systems with mechanised pumps in villages requires introducing a way of recovering the costs they generate. In contrast to water in urban and semi-urban areas being sold generally by volume, villages also use an individual, household or family subscription system. If this is the case, in principle the men pay for this, but there are many exceptions to this (see the example of Niger below).

In answer to the question "Who pays for the water?", the few examples which follow, taken from various studies each carried out in a large number of small centres in a given country, clearly show that there is no general rule.

In Benin, in small centres with piped drinking water networks, the cost of buying water is covered in 40% of cases by the woman using her own budget, in 38% of those surveyed by the husband alone, and in the 22% remaining cases, water is paid for by either the man or the woman (BURGEAP – 1996).

In Niger, in the 19 villages in the department of Tillabéri involved in a programme²² to improve manually powered pumps in the early 90s, there were three ways of paying for water: subscriptions²³, payment by the bucket in cash, and payment by the bucket in kind.²⁴

The form of payment affects the way the expense is allocated: subscriptions are generally paid by the head of the household, cash payments by the bucket are mostly made by the woman out of her own budget. Finally, the millet used to pay in kind is taken out of the daily rations given by the husband to his wife (Olivier de Sardan and El Hadji Dagobi – 2000).²⁵

In fact, note the authors of this study, "the cost of water falls between two stools (this already applies to the "condiments" which improve the

basic sauce); thus habits differ from one village to another and even from one family to another and there is a real margin of negotiation. There is a similar inconsistency over the question of the "cost of flour" in villages where there are mills: sometimes the husband pays, sometimes the wife."

In Guinea, women who are more involved in agricultural and trading activities than in western Niger, are more likely to be expected to pay for subscriptions (Olivier de Sardan and Diallo – 2000).

"The man pays only when his wife has no money. Water is women's work. We started with 500 F, then 1,000 F and now 2,000 F" (K.D., borehole hygienist from Madina Badiar).

"My wife pays mostly, I only pay from time to time, I'm a farmer – crops and livestock, my wife sells condiments for sauce" (M.K.D. treasurer for Kamabi borehole 1.)

"We pay 100 or 200 F from time to time. The women pay. In my family, I'm the one who pays. I sell cakes. As it's only 100 or 200 F, I don't need to go asking my husband." (R.D., female treasurer of the Kamabi borehole 3).

Men do, however, contribute occasionally, either at the same time as the women or on their own:

"When the price of the spare part is high, men and women both have to pay, otherwise the male heads of household pay, which works out at less than 1,000 F each" (O.B. chairman of the Water Management Committee (WMC) of Dow Saré at Foulamori).

"For the repairs after the first breakdown, we women shared the costs by contributing 100 FG each. But when the second breakdown happened, the men looked after things." (xx, Sinthian Mody).

In Kamabi, "the school teacher and the civil servants contribute between 1,000 or 2,000 FG when there's a breakdown, whereas other villagers contribute on average 400 FG... Sometimes, we ask people for 500 FG per person. If you have two wives, you pay 500 FG and 1,000 FG for both wives, i.e. 1,500 F." (M.F., schoolteacher).

The usual subscription at Fandadji is 100 francs per week and per wife. If, when there's a breakdown, the money the women provide isn't enough to repair the pump, then the men make a contribution on an exceptional basis."

On other occasions, men who started out by

²² Pump improvement project for the department of Tillabéri (1993 – 1997).

²³ Either in advance (i.e. to provide a maintenance kitty), or retrospectively, "per breakdown", whenever one occurs.

²⁴ A head of millet corn or a measure (tin can) of millet grain per bucket of water.

²⁵ The quotes which follow are taken from this study (Olivier de Sardan and El Hadji Dagobi – 2000).

being contributors, have changed their minds and made the women take over from them:

In Madina Badiar, the men paid the subscription for pump repairs and then they decided that the women, because there were more of them and they were the main users of the borehole, should pay their own subscriptions and the men stopped doing so. Two groups of subscribers, made up of women, have been set up, one to the east of the boreholes and the other to the west. According to the president of the district, he was the one who thought this system up.

"It costs 2,000 F for each breakdown, and my wife pays. She grows onions. To start with the men paid 2,000 F per person when there was a breakdown. But it's the women who use most water, and as there are more of them than men, we said to ourselves, let them pay the subscriptions on their own." (A.K.B., chairman of the Madina Badiar WMC).

To conclude, because for women the main advantage of buying water is to save them time and to reduce fatigue, the trial of strength as to who should pay for water, the man or the woman, or if the costs should be shared between them, varies for each couple and depending on the respective incomes of husband and wife (Olivier de Sardan and Diallo – 2000).

Willingness to pay according to gender

In the research conducted by the World Bank's Water Demand Research Team, men and women were surveyed in four contingent²⁶ evaluations in order to test the effect of the gender of the respondent on the household's willingness to pay for improved water services. Because women are almost invariably responsible for fetching water, the sociologists considering domestic water management assume that women place greater importance on better provision of water than men, and that they would therefore be more willing to pay for such improvements. However, in many cultures, women do not exercise as much control over the household's financial

resources as men, or it is more difficult for them to access these.

When she is asked whether the household might be prepared to pay for an improved water supply, a woman may be reluctant to or incapable of committing the household in this way to a substantial financial obligation, even if she is of the opinion that the improvement would be worth the cost. As a result, the sense in which gender may affect individuals' willingness to pay for improved services did not emerge clearly from the World Bank's Water Demand Research Team surveys (Water Demand Research Team – 1993).

In the four contingency evaluations in which this effect was tested, the gender of the respondent did, however, prove to be a statistically significant factor. In Tanzania and in Haiti, female respondents stated that they were prepared to pay more to have access to standposts than male respondents, but the opposite was true of Nigeria and India.

In Nigeria, women's willingness to pay for standposts and private piped connections was half that of men's.

In other words, the gender of the respondent seems to have an important effect on the willingness to pay expressed by households, but in what direction depends on the specific cultural context.

The cost of water for households: men and women see things differently

Cross-checking women's income and their opinion on the cost of water gives no significant results, which can be explained in two ways:

- the fact that their husbands frequently contribute to paying for water (see above);
- the dubious reliability of women's stated income, since a lot of this is originally not monetary.

On the other hand, it is apparent that men's opinions depend heavily on their income: the men surveyed earning more than 50,000 CFA francs a month were almost unanimous in considering the price of water to be "normal" or "cheap", whereas below this level of earnings, 40% of

²⁶ By a "contingent" evaluation of demand, we mean an evaluation when the service is not yet available, i.e. "hypothetical".

TABLE 4. Average financial rate of outlay by country for water payment at private or public water installations

Country	Benin	Niger	Guinea	Mali	Overall
Rate of outlay	2,2 %	1,4 %	2,4 %	4,3 %	3,6 %

Source : Cergrene/Burgeap ; Morel à l'Huissier - 97

TABLE 5. Maximum acceptable ceiling for water payments from private or public water installations

	Small centres (Niger, Benin, Guinea)	Towns in Mali	Overall
Max acceptable ceiling	7,5 %	4,5 %	6,5 %

Source : Cergrene/Burgeap ; Morel à l'Huissier - 97

them found it "expensive" (Morel à l'Huissier – 1997).

It is also interesting to note that over an income in the order of 30,000 CFA francs, the amount spent on water and therefore water consumption, increases significantly. Below that figure, there is no connection between types of income and types of expenditure. We can therefore assume that for the poorer²⁷ half of the population, expenditure on water and water consumption are independent of income.²⁸

The percentage of income allocated to buying water, sometimes known as the "rate of outlay", was on average 3.6% across all four countries surveyed (Morel à l'Huissier - 1997). It was highest in Mali (4.3%) where the survey covered only urban areas and where average consumption (and therefore monthly expenditure on water) and the unit cost price of water were highest (table 4).

²⁷ Average income for all the small centres and peri-urban areas surveyed was 30,000 CFA francs per month.

²⁸ These results are consistent with that of the survey which is regularly cited as a reference on how demand for water works in developing countries (Katzman – 1977), conducted in the households of Penang Island (Malaysia). After examining the effect of income on a household's water consumption, in both urban and rural areas, all of them connected to a piped drinking water supply, Katzman established:

- nil elasticity in the income of "very poor" and "poor" classifications, i.e. for income below average income;
- elasticity of 0.24 to 0.30 moving from poor households to higher average income households;
- elasticity of 0.32 to 0.39 between higher average to higher income households.

Research has tried to pinpoint the percentage of income allocated to water above which, on average, households consider that the selling price of water is "expensive". It has been shown that when this rate of outlay exceeds 6.5%, the price is regarded as "expensive" (see table 5).

Across all the small centres, research showed that this maximum acceptable rate of outlay is significantly higher there i.e. 7.5%, but it remains in the order of 4.5% across all the towns in Mali.

It is worth commenting that this roughly provides a retrospective confirmation of the commonly accepted belief - generally regarded as a norm - according to which the maximum acceptable rate of outlay for water is in the order of 5% of income.

However, depending on whether the survey respondent is male or female, and regardless of whether it is the husband or the wife who pays for water, results differ widely. On average: significantly more men than women (51% instead of 31%) regard the cost of water from standposts as cheap. This can probably be explained by differences in income between men and women, but it is important to stress that this result is independent of who pays. P. Bussone, a sociologist specialising in DWSS projects in Africa puts forward two likely explanatory factors:

- even if her husband gives her a certain amount of money to buy "condiments" or water, the wife still remains in charge of the family's daily expenditure, with all its rival demands, and she has to exercise careful management given the stranglehold of low monetary resources and

the many needs to be met. This explanatory factor would suggest that one would find the same divergence of opinion between men and women vis-à-vis the cost of other goods and services commonly consumed;

– as women are most often responsible for the daily chore of fetching water, their views about the unit cost of water sold at the point of supply probably includes other factors making up the overall cost of obtaining water which the men do not have to bear, i.e. the time taken to fetch it and the effort required to carry containers over a certain distance.

2.4. Traditional perceptions of links between water and health

Despite the many water supply improvement programmes carried out in sub-Saharan Africa, neither traditional perceptions of the links between health and water, nor local language terms to describe water, have received much attention. Local terms are poorly understood and therefore rarely translated and surveys of behaviour, attitudes and practices relating to health most often content themselves with generalities. Similarly, the way in which new ideas introduced by development programmes are perceived has never so far been investigated. The very few studies of the links between water and health generally conclude only with the following two considerations:

1) population groups are poorly informed about the link between water and health;²⁹

2) hygiene education, particularly for women, is clearly needed.

The reality is of course far more complex. In the first place, there is no single attitude, but

rather multiple attitudes, which vary with each group of individuals. For example, there are differences in the way different generations behave and it is difficult to claim that these are attributable to greater awareness-raising amongst young people, particularly in remote areas which received no health education.

Next, the lack of analytical data makes researchers jump to conclusions. A survey conducted in Guinea in 1997³⁰ thus reveals that contrary to received ideas, women speak more readily and more comprehensively about ways of treating water than men. This does not mean that the men are not aware of these, but rather that they are not directly responsible for them. To take another example, in the event of epidemics linked to water, the men are as familiar with what to do as the women and even sometimes feel that they are more involved given the need to pay for bleach for example. The ways in which a water installation can be contaminated, notably by a stream of polluted water, are recognised and explained. Everywhere, people use precise vocabulary to describe water, both drinkable and otherwise,³¹ firstly in relation to its visual aspect, and also given where it comes from. In Guinea again, several terms refer to various aspects of water, ranging from milky water, unfit to drink, to clear water, regarded as drinkable.

Several factors suggest that there is a need to reconsider "health education" campaigns, which most often focus on transmitting information which is already familiar to people.

In semi-urban centres or peri-urban areas, visual and organo-leptic characteristics (cloudiness, taste, smell) are really important to the inhabitants. If the water tastes rusty or if its colour is likely to stain the washing, the water installation

²⁹ A socio-economic survey carried out as part of the third phase of the Village water supply programme of the Conseil de l'Entente funded by AFD in Niger, 1996-2001, quoted by Verdelhan-Cayre – 1998, posed only the question "what are water-related diseases due to?", in a canton of the arrondissement of Dosso: – in the sector of Mokko, most people answered "the wind", "dust", "Allah", "the spirits", only one single person (out of 49) giving water as their cause; – in the sector of Tiangalla, most people didn't know, but 8 (out of 43) cited water, 8 food, 3 the sun, 3 flies and mosquitoes.

³⁰ Village water supply programme in the Fouta Djallon, Tougué and Labé prefectures, FED/SNAPE.

³¹ Idem and Village water supply programme in northern Benin (Parakou, Atacora) Conseil de l'Entente/Regional water supply department, 1996.

³² It is generally brought back into use following an operation which consists in cleaning out the borehole (i.e. unclogging it), and disinfecting it if necessary. This clearly shows the importance attached to the quality of water obtained from a borehole.

may sometimes be abandoned; cloudy water from a borehole can be enough to discredit it.³²

As far as taste is concerned, scented herbs such as vetiver have been used in West Africa for a very long time. Apart from improving taste, these also lend water properties which strengthen "its healthiness, and even its fertility".

Some traditional practices reflect the desire to affect not only the taste of the water but also its quality. In East Africa, *Moringa Oleifera* seeds are crushed and then submerged in a twist of cloth to accelerate the settling of the water. The women, who are in charge of doing this, turn a spoon in the water chanting, "Water, be clean!"

Studies have highlighted the bacteriostatic activity of this plant, i.e. its ability to inhibit the spread of bacteria. Although it is widespread in the Sudan-Sahel region, it is a pity that *Moringa ol.* is so little used, and this applies also to alum, which also assists settling.

By contrast, filtering through a scarf, particularly for cloudy or muddy water, is familiar to both the men and women of the Sahel. Although this technique does prove adequate against dracunculiasis (but not against diarrhoeal diseases), it is a particularly cumbersome task and as a result it is not used on a regular basis.

In the event of cholera epidemics or outbreaks of serious diarrhoeal illnesses (such as shigellosis), adding bleach as recommended by ministries of health is generally accepted despite its effect on taste, which does not appear to be of major concern if it means avoiding contamination. Failure to follow instructions results rather from the product not always being available.

Profane lore and symbolic lore

Where health education activities are concerned, one of the main mistakes the designers of surveys make relates to the type of question posed. Should one ask about the cause of contamination (why?) or how it occurs (how does water become undrinkable?), or biological mechanisms (how do biological agents affect the human body and spread in the environment?) Answers differ according to whether one is refer-

ring to popular – or profane - lore or to specialised lore – that of healers for example. In both cases, aetiology (the answer to the question why?) will establish a link between so-called magical-religious causes and biomedical causes. This does not mean, however, that the ways in which water becomes polluted – water pollution from latrines for example – are not understood.

J. Bouju, in his study in the Dogon region (Bouju et al. – 1998) also records a differentiation between wells used in the light of a symbolic interpretation related to the social context (why is a sacrifice necessary, and why right now?). For similar reasons, water installations close to cemeteries are little used.

These factors are insufficiently taken into account and discussed with the groups involved during studies prior to the introduction of water installations, which is most often left to the judgement of hydro-geologists alone.

Open season on coliform bacteria

It is a fact that there are certain practices which contaminate water whilst it is being drawn from wells, transported and stored, and that these need to be identified to remedy this. A recent study on water quality³³ describes the – already known - gradual increase in contamination by heat-resistant coliform bacteria (which indicate faecal contamination) between the moment at which water is extracted until it is used for washing rice. These rates were established as follows: almost 0/100 ml at the point of extraction, then a few dozen in the transport container, a few hundred in the storage container, and finally approximately 1,000 if not more at the rice-washing stage.

Failure to use soap to wash one's hands before handling water and the lack of distribution of

³³ Cf. note 2.

³⁴ Although a familiar product, notably for clothes washing in urban centres and even in villages, its poor reliability because of storage problems (heat and light damage the active chlorine) and problems relating to counterfeit (diluted) products being sold should not be overlooked.

products which are both disinfectant and easy to use such as bleach³⁴ are probably the cause of most of this contamination. Cleaning the containers used to store water and cooking implements using organic fibres or gravel is also a major cause of contamination.

Other factors, often regarded until now as more important than those described above, play a part in contamination. These include using stabilisers during transportation (to avoid spillage), storing water in containers placed

directly on the ground (making the water easier to reach), the failure to protect storage and transport containers, the shared use of the same drinking container, storing cola nuts in the same containers. Seeking to change all these practices at a stroke is fairly unrealistic and not necessarily effective. And yet this is what most health education activities are determined to achieve, placing women in a situation in which they are inevitably held responsible for the contamination of the home, without involving the men.

3. Sanitation: a neglected field

3.1. Cause for concern

Over recent years there has been an enormous shift in the place occupied by sanitation in urban development issues. In order to understand the major behavioural changes of our time, it is useful to briefly review this way in which this shift has occurred. Sanitation was first regarded as the "bête noire" of urban planners, the "poor relation" in their debates and achievements where urban development was concerned.

There was renewed interest with the advent of the International Drinking Water Supply and Sanitation Decade, but this decade ultimately achieved 80% of its expected results in water supply and 20% in sanitation.

Sanitation had its moment of glory thanks to world interest in the environment during the 1990s.

Generally speaking, it is thought that despite the efforts made, the health situation today is much the same as that which prevailed at the outset of the IDWSSD (International Drinking Water Supply and Sanitation Decade) which was in 1980, despite increased awareness amongst public authorities. The situation is therefore gradually worsening,

because of strong and continuous demographic growth, particularly in urban areas, where there is increasing reference to "faecal peril".

The governments of developing countries and their local authorities are facing a sanitation crisis situation which is growing more and more critical by the year (Wright – 1997).

In 1990, at the end of the IDWSSD, 453 million citizens, i.e. 33% of the urban population of developing countries, had no access to sanitation. In the following four years, thanks to investment programmes, 70 million additional inhabitants were able to benefit from this service throughout the cities of the world, i.e. 48,000 people per day. But at the same time, the total urban population of developing countries rose from 1.4 to nearly 1.6 billion, so that the numbers without access to this service had increased by 1994 to 589 million (see table 6).

Although sanitation coverage in urban area (63%) may seem high and although much has been achieved over the last two decades, rates are much lower for the poor in towns and cities. Inappropriate sanitation is one of the key indicators of urban poverty, and the lack of any adequate system for removing human waste makes

TABLE 6. Global sanitation provision 1990-1994

Sanitation	1990 (POPULATION IN MILLIONS)				1994 (POPULATION IN MILLIONS)			
	Total	Provided	Not provided	Provision (%)	Total	Provided	Not provided	Provision (%)
Urban	1389	936	453	67	1594	1005	589	63
Rural	2682	536	2146	20	2789	505	2284	18
Overall	4071	1472	2599	36	4386	1510	2873	34

Source : WHO - 1996

The impact on health of inadequate sanitation

The impact of inappropriate sanitation on health is illustrated by the results of a study carried out by USAID's³⁵ Water and Sanitation for Health Project (now known as the Environmental Health project). Six illnesses were considered, selected either from those which are widespread in developing countries, or because they cause serious problems where there is an outbreak.

The results show that every year there are:

- 875 million cases of diarrhoeal illnesses, including 4.6 million resulting in death, principally amongst children;
- 900 million cases of ascariasis, causing 20,000 deaths;
- 500 million cases of trachoma, ultimately causing 8 million cases of blindness.

To these can be added 800 million cases per year of *ancylostomiasis*, 200 million cases of *schistosomiasis* (*bilharziasis*) and 4 million cases of Guinea tape worm.

Source : Esrey et al. - 1990

than most of the others - have managed to acquire a wastewater sanitation network.³⁶ Elsewhere such networks are at best the preserve of a few well-off areas (high quality housing estates, mostly reserved for civil servants or large enterprise staff), or are found only in the city centre or in industrial areas.

- The same model encourages the spread of autonomous sanitation systems (latrines, soak pits) consisting of installations built from recuperated materials, often badly proportioned, poorly maintained and inefficient, and these are almost impossible to monitor after the event. Generally built by householders themselves, often with the help of "odd jobbers" or well diggers, they fail to conform to any standard of safety, hygiene or durability. This self-help form of construction and the virtually exclusive involvement of the informal sector makes it very difficult to apply technical norms to such installations.³⁷

- The existence and growth across all urban areas of a large number of "undifferentiated spaces", waste land, future building sites or plots not yet ready for use, added to the enormous ascendancy of roadways and their adjoining areas,

living conditions even more precarious and more of a threat to health.

In the towns and small centres of sub-Saharan Africa, the particular way in which urbanism and housing provision occurs acts as a further brake on adequate sanitation:

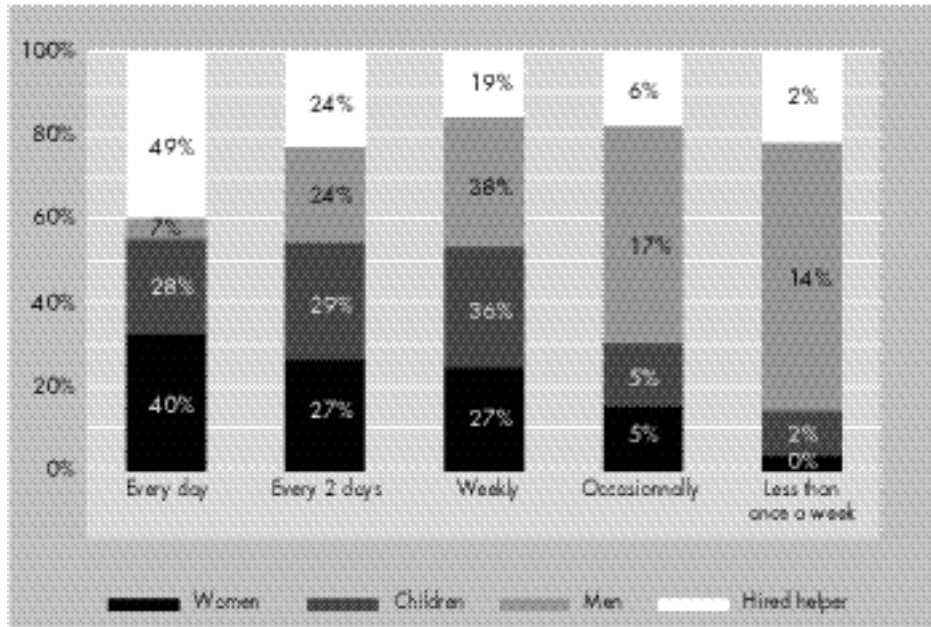
- The model of the wide "concession" around a courtyard helps to keep gross population densities so low that the cost of piped sanitation systems is prohibitive. Thus only a few of the capital cities – those a little less impoverished

³⁵ US Agency for International Development.

³⁶ Their operation remains, however, problematic: see the case of Abidjan for example.

³⁷ Only Burkina Faso, as part of the Strategic Sanitation Plan for Ouagadougou currently being replicated in other cities of the country has tackled this challenge. To do so, the national sanitation operator, the National office for water and sanitation, introduced a procedure for training and qualifying traditional skilled workers in this sector. The recent programme evaluation shows, however, that it is achieving only a partial success as far as its objective of improving built installations is concerned (Manou-Savina et al. - 2000).

FIGURE 3. Frequency of cleaning of latrines in Niamey compared with household member(s) responsible for this task



Analysis by A. Morel de l'Huissier using data from the household survey conducted by MAB Conseil, Infrastructure rehabilitation project (MAB – 2000).

greatly encourage practices condemned in a ritual chant by the authorities as the sign of the “lack of civic responsibility of the inhabitants”, i.e. using such spaces to throw away household wastewater and more generally all forms of domestic waste, both liquid and solid.

3.2. The predominant role of women

Throughout the world, women play a major and well-documented role in sanitation. They educate their children, transmitting to them what they know about water, health and hygiene. More often than men or children, they are also responsible for cleaning latrines (table 7), and for removing both solid waste (household rubbish) and liquid waste, since apart from personal washing, domestic activities producing wastewater are almost exclusively female tasks (clothes washing, washing up, cleaning). In addition, latrines are cleaned more frequently to the extent that women are responsible for doing this (figure 3).

Heavy work, such as digging wells or latrine pits, is generally done by men. But in West Africa, women also participate in building latrines. Some tasks, such as digging or roof-building, which are important to avoid collapse in the event of a long rainy season, are male jobs. But plastering for example is done only by women (van Wijk Sijbesma – 1998).

Another job women frequently do both in the Sahel and in most of the arid regions of the

TABLE 7. Those responsible for cleaning latrines in Niamey

Women	55 %
Children	14 %
Men	4 %
Male or female paid helpers	24 %
Other(s)	3 %
Total	100 %

source : MAB - 2000

Middle East and southern Asia, is collecting and sorting animal dung for heating or for selling.

In India, where women frequently take seasonal jobs as unqualified labourers in the building sector, peri-urban and urban programmes aim to train women in environmental sanitation and in improving unhealthy housing.

In India, in the Rajasthan, in Thailand and in Botswana, men and women from certain communities have been trained in latrine construction. On the Tonga islands, women builders are employed in the public sector in environmental sanitation. Still on the Tonga islands, as in Mozambique, women working within cooperatives make latrine slabs and sell them (Cairncross – 1982).

3.3. Evacuating household wastewater: practices and behaviour³⁸

Practices differ according to the nature of the effluent

The only domestic installation specifically reserved for wastewater sanitation is the soak pit. Located in a corner of the courtyard or outside it on the edge of the plot, the soak pit may or may not be covered, and may or may not be filled with filtrating materials. Because the technical feasibility of soak pits varies depending on the nature of the soil, certain towns or neighbourhoods have more than others: thus more than half the households of Bobo Dioulasso have them on their plot of land, compared with only 20% in Conakry, where the rocky substratum or the water table are generally much closer to the surface.

Note, however, that people living on a plot which is alongside a gutter often find it more convenient and cheaper to throw their wastewater into that rather than to build a soak pit. If we consider the two above cities, the proportion of plots

with a soak pit grows from 32 to 41% depending on whether they are next to a gutter or not.

Of the various ways in which households evacuate their domestic wastewater, it is therefore important to distinguish between those which get rid of it outside their concession (i.e. by flinging it out into the street, or pouring it into the gutter or into earth drains dug away from the concession), and those which throw it away within their own concession (i.e. pour it into the same pit as the WC waste, or into a soak pit, or spread it around the courtyard). When a gully is used, it runs from one of several areas where activities generating wastewater are located in the courtyard (showering for example) or simply where such activities usually take place (clothes washing or washing up). Usually, the gully crosses the boundary fence of the plot and gives onto the unsurfaced public street where the effluents spread out without any further kind of treatment, possibly into the gutter if there is one.

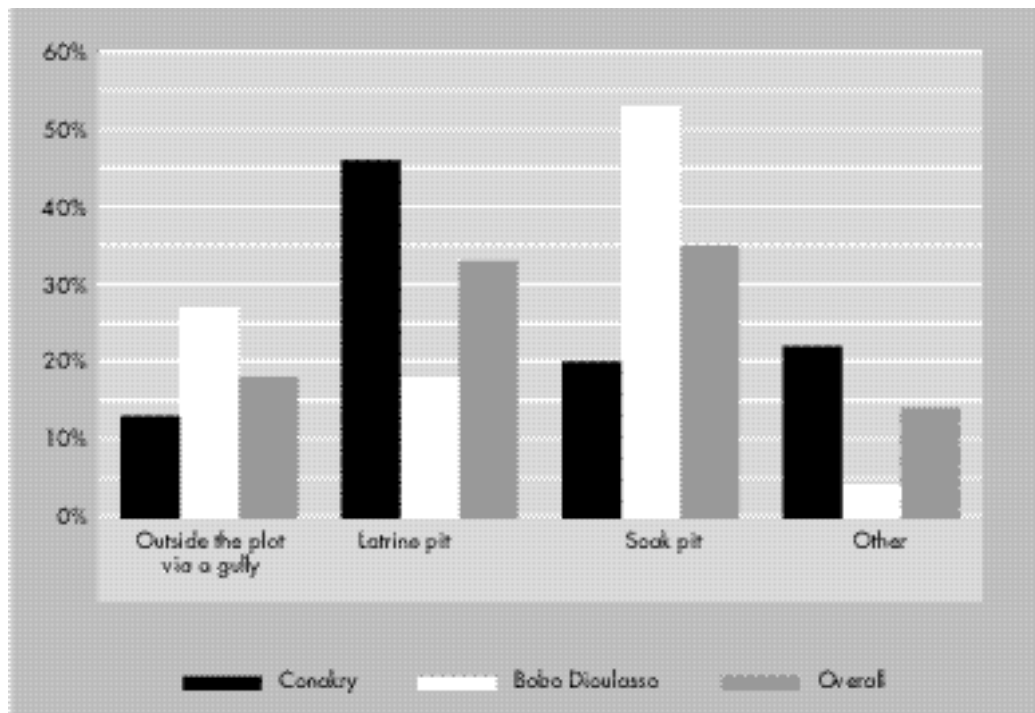
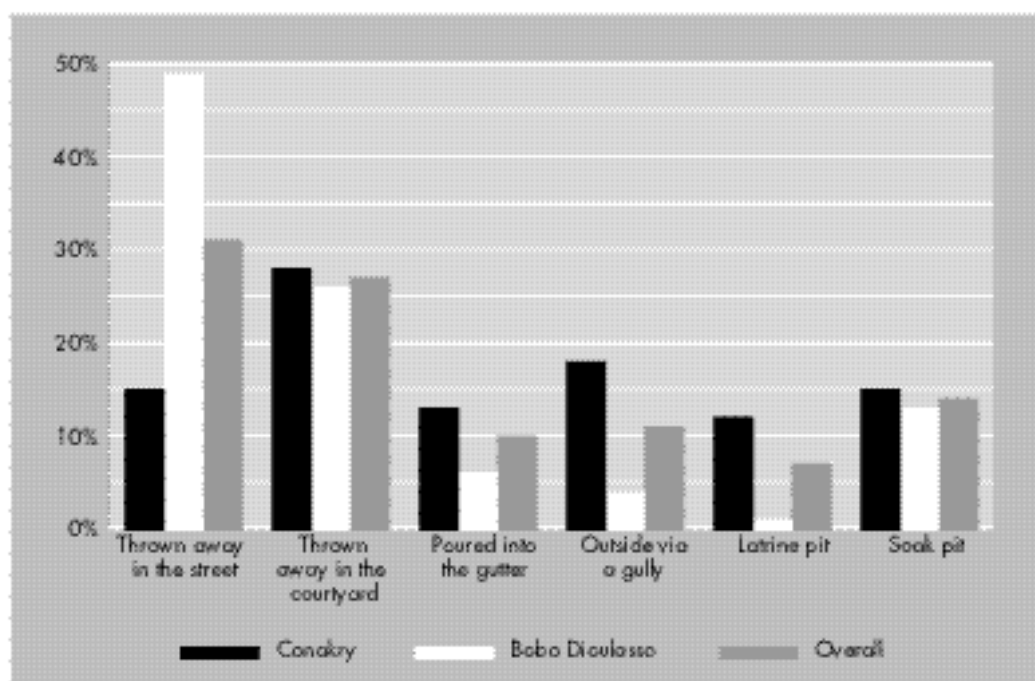
Finally, it is not unusual for a gully to run into an external soak pit, generally built by the household occupying the plot, but sometimes by neighbours, but always for private use.

Those using it are in any event expected to maintain it, and are indeed nearly always compelled to do so by national laws or municipal regulations. Although their owners often fix up some kind of cover over them for the sake of children's safety, outside soak pits are nevertheless not so well maintained as those inside courtyards. The surveys conducted in Bobo Dioulasso and in Conakry also showed that wastewater stagnation where there were soak pits, indicating that they had clogged up due to poor maintenance, occurred in 12% of those located inside the courtyard but in 23% of those located outside.

The final destination of wastewater is nearly always different depending on where it has come from, how much volume there is and the nature of these domestic effluents, how disagreeable they are and to what extent they can be recycled.

Water from personal washing in particular, channelled from the "shower basin" towards the latrine pit or the soak pit, tends to be thrown away here and there in the courtyard or in the street where

³⁸ The results of the two household surveys we conducted in Conakry (Guinea) and Bobo Dioulasso (Burkina Faso), respectively in 1992 (Durany-Jacob and Morel à l'Huissier - 1994) and in 1997 (Morel à l'Huissier - 1998) provide quantified examples to illustrate the contents of this section.

FIGURE 4. Destination of water from personal washing in Conakry and in Bobo Dioulasso**FIGURE 5. Destination of water from washing up in Conakry and in Bobo Dioulasso**

it soaks into the ground, much more frequently than other kinds of wastewater (see figures 4 and 5).

Neighbourhood inconvenience

According to the survey results, stagnation or throwing wastewater away are only marginally inconvenient inside the concession; only some 12% of households complained about this in Conakry and 8% in Bobo Dioulasso, irrespective of whether the wastewater was from personal washing, washing up, or clothes washing.

It is mainly in the multi-family plots of the old, densely populated neighbourhoods that the problem of how wastewater is disposed of arises. A problem which is sometimes so acute that the inhabitants have to cut back on how much they use or carry out a number of activities outside their courtyard, including clothes washing, washing up, personal washing of both children and sometimes adults. Clearly, the saturation of the built environment makes it difficult to pour wastewater from these sources away in the courtyard, and the soak pits of wastewater or the WC pit quickly overflow if women attempt to pour the wastewater from their clothes washing or washing up into them.

When the wastewater soak pit for the shower overflows, sometimes the person in charge of the concession forbids the use of the shower until the soak pit has been cleaned out. Because neighbourhood managers have forbidden throwing wastewater away onto surfaced roads and more recently washing clothes and linen at stand-posts, the women of Kaloum – the central and most densely populated commune of Conakry – who have no less onerous alternative, have been obliged to leave their concessions to pour their basins of wastewater away outside them.

By contrast, virtually half the households of Conakry and almost 40% of the households of Bobo Dioulasso regard stagnation or streams of domestic wastewater or water overflowing from WC pits in their neighbourhood as a major nuisance for both their environment and their comfort. In some areas, these problems lead to neighbourhood conflicts.

“We’re bothered in our courtyard because when we want to throw away our dirty water into the street or into the gutter, there are always problems with neighbours and with the authorities” (survey of Dixinn – Conakry).

“Our neighbours pay no attention when we tell them not to throw their washing up water into the street. Washing up water accumulating causes trouble between neighbours.” (survey of Matam – Conakry).

The extent of the inconvenience experienced varies with the population density of the neighbourhood. In outlying urban areas, unbuilt areas, less densely populated plots and laterite roads mean that wastewater can be simply thrown away. This is hardly a long-term solution, but it is not a source of major inconvenience. In more densely populated or more central areas, however, disposing of wastewater is regarded as a daily problem both by women who don’t know how to get rid of it and by inhabitants who resent the problems this causes:

“If the WCs overflow, we all suffer, the smell of excrement is awful, and there’s foul water everywhere” (Survey of Boulbinet – Conakry).

“You can’t walk about at night in the neighbourhood: you could drown in wastewater and overflow from WCs” (survey by Carrière Cente – Conakry).

3.4. Attitudes and demands for improvement

Sanitation and cleanliness: a question of image or health?

As far as latrines are concerned, the reasons people give for building them vary from one area to another. The key factor may be health in one area, compared with socio-cultural priorities in another.

Mostly, however, latrines are seen not so much as preventing illnesses, but rather from the point of view of personal convenience, status and appearance. Witness the following table, suggesting that nearly three quarters of the population of Ouagadougou regard sanitation as

TABLE 8. Advantages of sanitation installations as perceived by households in Ouagadougou

Advantages of sanitation installations for the family (other than health)	% replies
Better image in the neighbourhood More respect	47 %
Makes domestic tasks easier	21 %
Better relationships with neighbours (less arguments)	26 %
Other	6 %
Total	100 %

NWSO, RWSG/AO - 2000

playing an essentially social role, either to preserve or improve their image (47%) or to avoid disputes with their neighbours (26%).

In many cases, the rejection of improved sanitation installations is attributed to lack of interest, to cultural barriers, to lack of education and to the innate conservatism of the poor. In cultures which do not allow women to circulate alone, they are unable to use latrines in public places.

Latrines, a universal source of discomfort

When invited to state the three main things they found wrong with their sanitation installation for excreta, the respondents addressed in the Guinea and Burkina capital city surveys complained above all about smells and flies (figure 6). Note that significantly more women than men mention these sources of discomfort, whilst their husbands, who don't have to actually do the work, tend to complain more that they don't find enough water in the latrine to wash after defecating.³⁹

Other causes for complaint are less frequent and do not differ depending on gender, with the notable exception of emptying out latrines: because they generally pay for this, nearly twice as many men as women object that this happens too frequently.

³⁹ In these vastly predominantly Muslim cities, anal washing is much more common than wiping.

Other case studies have, however, shown (see below) that women complain more than men of the lack of privacy of latrines and that many of them even avoid using latrines which bother them in this respect.

Experiments conducted in Nigeria, Kenya and Zambia suggest that the success or failure of sharing collective sanitation blocks depends mainly on the extent to which there is agreement about who is to use them, under what conditions, what is to be done if neighbouring users have no installations and how to prevent unauthorised use.

Generally speaking, when there is such an installation, women from minority groups have no access to the latrines because they quite simply have no right to use shared installations. This phenomenon has been observed notably in India, in Sudan and in Egypt.

Nevertheless the lack of any adequate means of evacuating excrement is a major inconvenience,

The advantages and disadvantages of latrines

The inhabitants of Dosso listed the advantages of latrines as follows:

- they are hygienic (no risk of contamination);
- they avoid having to walk long distances;
- they save time;
- they give privacy.

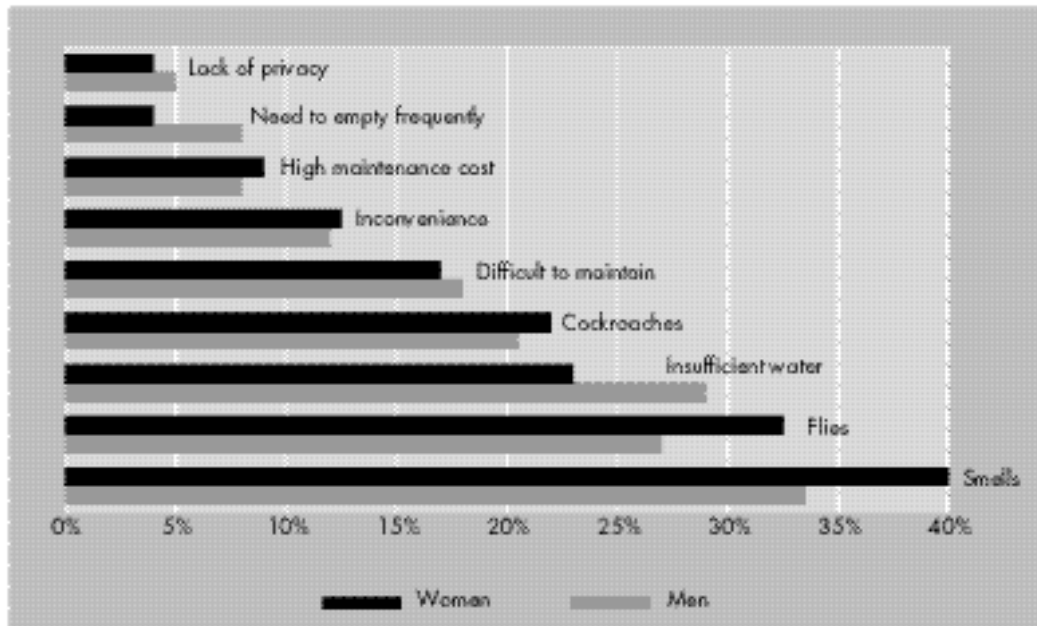
For families, reasons for building latrines are as follows:

- cleanliness within the concession;
- saving time;
- privacy;
- being safe from snakes, scorpions, etc.

As for those who don't use latrines, they say that "in the bush, there's plenty of space to go and relieve yourself". According to them, "it's townsfolk who don't have enough free space who need latrines."

However, all inhabitants accept the advantage of latrines within the household for their privacy, for urgent needs (diarrhoea), for women confined to the home and because honoured guests do not have to go off in search of a bush or a hole and run the risk of being seen.

FIGURE 6. Causes for complaint about latrines by gender in three cities of sub-Saharan Africa



source : Morel à l'Huissier - 2000

particularly for women and girls facing problems of distance, lack of privacy and safety.

When latrines are available, the lack of privacy for users, notably women, is an obstacle to their acceptance. This obstacle is all the greater when the ventilation gap at the bottom of the door fails to completely screen the user (and particularly women) or when personal hygiene and then washing the latrines means taking a bucket of water with one. "In an East African country, the public health inspector ordered every household in the area under his control to build latrines, under pain of a heavy fine. To make inspections easier, the latrines had to be built along the roadside. As a result all the latrines were built, but no-one uses them because they don't like to be seen going in or coming out of them by passers-by." (Barrow – 1981).

Specific installation needs

Much has been written about the cultural constraints relating to latrines within a single household being shared between men and women, and between fathers and daughters (Agarwal –

1982). Failure to take account of the particular needs of each member of the household (men, women, boys and girls) when designing installations has been the downfall of many a sanitation project. Mothers refuse to use latrines because they are not aware that children's excreta are dangerous, but also because of their distance from the home, because there is a risk of falling in (it is a fact that certain types are too big for smaller children to be able to squat safely), the possible presence of snakes and many children's fear of the blackness of the hole.

In Pakistan, a latrine construction programme was the cause of conflict as a result. The men wanted the latrines to be located some distance from the home or in the spare room. For their part, the women preferred the latrines to be alongside the house and above all not in the spare room, since they would then be unable to use them.

Ease of use and of maintenance is also an important factor. When the building material used (such as coarse concrete) or poor design make them difficult to maintain, latrines become sources of infection, and all the more so if they are heavily

used. Women and children, who generally clean latrines are at greater risk of contamination.

Above all, it is important to avoid increasing the burden of collecting water for flushing and cleaning. In some cases where water was not readily available nearby, latrine installations with siphons were rejected. The experience of the Strategic Sanitation Plan for Ouagadougou (SSPO) is a good illustration of this and the value of the lessons learnt from it, including on using a gender sensitive approach, justifies our describing it in more detail here.

The role of women in deciding to invest in better sanitation

In the course of preliminary studies for the SSPO in 1991/1992, a willingness to pay survey had established the preferred choice between two types of improved excreta sanitation installation: the siphon latrine (also known as the manual flush latrine) and the ventilated improved pit latrine (or VIP). The heads of households, who were the sole survey respondents, had by a large majority expressed their preference for the former⁴⁰, by 64% (compared to 30% for the latter). This ratio corresponded precisely to that of households using water for anal washing, which seemed consistent.

When both solutions were actually made available by NWSO to households, first during a pilot project in two sectors of Ouagadougou and then throughout the city from 1994 onwards, preferences proved on the contrary very largely in favour of ventilated dry pit latrines (VIPs). For every manual flush latrine installed, more than 10 VIP latrines were built during the demonstration project and 40 during the following six years.

Moreover, improved installations for evacuating household wastewater were a great deal more frequent than the results of the preliminary willingness to pay survey had suggested. Based on interviews with the beneficiaries and debates amongst those running the project, the reasons for this change in preferences were analysed as follows: "It is clear that women played a not insignificant part in the

decision-making process. They are the ones directly tackling the day-to-day problems caused by the evacuation of household wastewater. They are the ones who generally have to keep the toilets clean. Finally, it's often women who have to bear the brunt of their neighbours' complaints and offensive remarks about wastewater flowing in the street smelling bad. During the demonstration project, women were also more frequently addressed by those running the project, since they were more often at home. They therefore put significant pressure on their husbands to pay for one or more installations." (Couet et al. – 1995).

We might add that choosing a manual flush latrine implies certain factors which place a particular burden on the women of the household:

- greater quantities of water to buy, to carry or to draw, since the latrines work with a small amount of water thrown into the siphon after each use (1 to 2 litres);
- watching children carefully or giving them strict instructions since no solid waste which might block the flow in the siphon can be put down this kind of latrine.

The influence of women in the domestic decision-making process can also be observed in the survey conducted for the evaluation of the programme in 2000, during which 10% of the household heads admitted that their wives had influenced their decision to introduce an improved sanitation installation (NWSO – 2000).

Ability and willingness to pay for improved sanitation: gender analysis

Women seem keener than men to resolve the sanitation problems they face. Many of them with income of their own even pay for improvements in this field out of their own pockets (Evans and Appelton – 1993). Although the wide range of possible options give most people access to better sanitation measures, the necessary investment is not within the everyone's reach.⁴¹ Where building is concerned women, who don't in fact have the necessary skills for building real instal-

⁴⁰ Given an equal cost of investment for the household.

⁴¹ Meyer, 1993.

lations⁴², frequently recuperate materials locally available to keep costs down.

Thus, out of some 17,000 households in Ouagadougou which have invested since 1992 in one of NWSO's improved sanitation installations⁴³, the wife of the head of the household helped pay for it in 18% of cases, contributing 22,000 CFA francs.

This investment corresponds to only 15% of the average cost of an improved latrine (VIP type), but it is broadly of the same order as that of the household wastewater sanitation system offered by NWSO, which consists of a soak pit connected to a basin for clothes washing (NWSO – 2000).

Is this a coincidence or does it mean that the female members of Ouagadougou's households paid mainly for improvements to what was for them their main problem on a daily basis after obtaining water? The Ouagadougou surveys provide no answer to this question.⁴⁴

The surveys conducted at Bobo Dioulasso in 1997 for the replication of the improved sanitation programme in Burkina Faso's second largest city on the contrary⁴⁵ reveal that:

- women did not manifest preferences significantly different to those of men with regard to the kind of installation they wanted⁴⁶;
- women's willingness to pay for each preferred type of installation is not significantly different to that of men either (figure 7 below).

We do know, however, that women's income is very significantly lower than that of men and given that this is the case, it is fair to speculate

that this apparent equality in willingness to pay does not in fact mask different motivations according to gender. It is clear that our model of Bobo Dioulasso survey respondents' willingness to pay shows that, all other things being equal, women are more highly motivated than men to improve both excreta and household wastewater evacuation.

Table 9 relates to improving excreta sanitation and table 10 to improving household wastewater sanitation.⁴⁷

These tables also show, however, that the effect of gender on willingness to pay is less than that of most of the other variables selected for this analysis. The saving capacity⁴⁸ of the household has the greatest effect on willingness to pay to improve both excreta and household wastewater sanitation.

For each of these two types of sanitation, the following characteristics also increase willingness to pay more than the fact of being female:

- the lack of any installation on the plot;
- being aware of the improved installations being proposed by NWSO;⁴⁹
- being the only household to occupy the plot (the decision will be easier to make) or quite on

⁴² Green, 1982.

⁴³ Approximately 20,000 structures were built or improved (by conversion or rehabilitation) on some 11,000 plots occupied on average by 1.5 households. Thus approximately 15% of plots and 14% of the population of Ouagadougou benefited from the programme from its inception until 2000.

⁴⁴ As we have already seen, the survey for the preliminary study in fact only addressed the heads of household. The one conducted in 2000 for the ex-post evaluation of the programme did not include any question on this point.

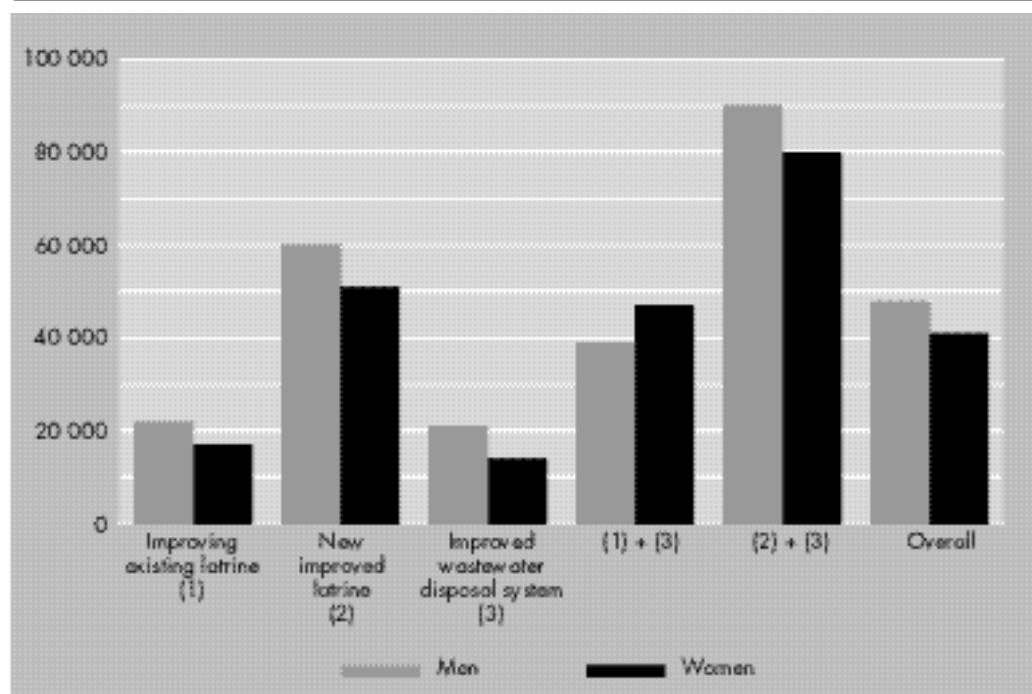
⁴⁵ Unlike the willingness to pay survey carried out at Ouagadougou, here it was decided not to interview solely the head of the household but rather either the latter or his wife.

⁴⁶ The survey respondents were questioned about their willingness to pay for six proposed types of sanitation installation or service: (1) converting their existing latrine into a VIP latrine (odour and fly free), (2) building a new VIP type latrine, (3) building a soak pit for household wastewater together with a sink for washing up or clothes washing, (4) a combination of (1) + (3), (5) a combination of (2) + (3), (5) connecting the household to a mains network.

⁴⁷ These tables show the coefficients of the Partial Least Squares (PLS) regression model on standardised variables. The sign of each coefficient indicates the direction of the specific effect of each variable or category on willingness to pay, while its absolute value provides a measure of the relative importance of this effect. It is important to appreciate that PLS regression has been used in preference to ordinary least squares because of the interdependence of several of the predictor variables (auto-correlation). In both models, the first three factors, which best summarise the predictor variables, have been selected. The first model thus "accounts for" 26% of the variance in willingness to pay, the second almost 70%.

⁴⁸ Measured by the number of months the household thinks it needs to pay for a sanitation installation costing 100,000 CFA francs, either by saving beforehand, or by repaying a loan.

⁴⁹ Press, radio and television broadcast publicity about the installations.

FIGURE 7. Willingness to pay for an improvement to sanitation systems by gender in Bobo Dioulasso

Source : Morel à l'Huissier - 1997

TABLE 9. Factors affecting willingness to pay for improved excreta sanitation in Bobo Dioulasso

Variables	Specific effect on willingness to pay
No latrine	0,10
Traditional latrine (simple, unlined pit)	- 0,007
WC with septic tank	0,11
Owner	0,10
Head of household	0,06
Koranic school	- 0,10
Woman	0,06
Latrines 15 + years	0,10
NWSO information	0,23
Wealth index	0,05
Saving capacity	0,24
Age	- 0,23
Number of households on plot = 1	0,08
Number of households on plot = 3 or more	0,10

TABLE 10. Factors affecting willingness to pay for improved wastewater sanitation in Bobo Dioulasso

Variables	Specific effect on willingness to pay
No soak pit	0,11
Water supply system: well	0,04
Water supply system: standpost	0,09
Water supply system: private supply (more than 1 tap)	- 0,13
Gutter next to the plot	- 0,07
Owner	- 0,07
Head of household	0,11
Koranic school	- 0,12
Woman	0,02
NWSO information	0,07
Wealth index	0,14
Saving capacity	0,60
Age	- 0,11
Number of households on plot = 1	0,03
Number of households on plot = 3 or more	0,1

Source tables 9 and 10 : Morel à l'Huissier - 2000

the contrary sharing with at least two other families (rented plots typically shared by unmarried young men are particularly ill-equipped);

- financial means, measured on a wealth index;⁵⁰

- finally, being the head of the household.

By contrast, age and illiteracy are two factors which inhibit innovation. The oldest individuals or those who had received no education other than what they were taught at koranic school were more reluctant to pay for improved sanitation. This reluctance is much higher than that of men.

For excreta sanitation, those possessing a latrine more than 15 years old and therefore expecting to have to spend money on it because

of its age agreed to pay significantly more for an improved installation, as did owners.⁵¹

Finally, in confirmation of an attitude already noted above⁵², the existence of a gutter next to the plot discourages the occupants' willingness to pay for a household wastewater sanitation installation specifically for their plot.

⁵⁰ It was decided not to ask any questions about the household's income. An index was therefore constructed based on whether the household possessed a certain number of installations, amenities or common consumer goods or not.

⁵¹ Tenants for their part generally considered that it was up to the owner to make the investment.

⁵² See above § 3.3. "Evacuating household wastewater: practices and behaviour".

4. Conclusions

In the domestic environment, women play a predominant role in water and sanitation management. They devote a major part of their time and energy to keeping the family supplied with water, to using this water for the various tasks regarded as theirs such as clothes washing, preparing meals, washing up or cleaning, to making it their business to get rid of the resulting dirty water and to keeping the latrines or the WC clean.

They also have ways of expressing their preferences and making their voice heard, much more than in the public domain. Because the burden of their social inferiority is tempered here by the relationships between each individual couple, and because they fairly often have their own income, they can influence their husband's decision.

The domestic management practices and forms of behaviour we have described in this chapter of course vary enormously from one household to another, from one neighbourhood or village to another. These variables cannot be reduced solely to the issue of gender. We have, however, shown that women generally have a specific attitude and demands with regard to improving their family's water supply and the sanitation of their house.

The figures and the trends which illustrate the content of this chapter, drawn from specific case studies, are only, however, indicators and can on no account be regarded as substitutes for conducting preliminary studies for a given project, or for a genuine specific analysis of demand according to gender.

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4. Male and female users: their place and role

1. Introduction

The aim of this chapter is to analyse how users in general and women in particular are effectively taken into account at the various stages of village or semi-urban hydraulics projects, from defining project objectives to the place they occupy in the management of the service, and in the intermediary stages of identification and selection of technical options, levels of service, and payment or cost recovery mechanisms.

More precisely, our analysis attempts to answer several questions:

1. At the project identification and planning stage, what are the expectations of the various stakeholders, partners and practitioners? Is there a genuine effort to mobilise all user categories? Are all expected to assume some measure of responsibility? (Section 2).

2. On what bases has demand from population groups been evaluated? Will future users be able to take part in the design phase and in identified technical options (e.g. the type of service – manually-operated pump or standpost, etc.; the level of service – the density of standposts, etc.; project implementation – where installations are located, etc.)? Will women be able to voice their expectations during this phase? Who are the project operators' interlocutors? (Section 3).

3. What approach is being used to encourage the participation of the population in general and of users in particular in the organisation and the management of the installations and the service? Are different social categories (young and old, men and women, etc.) taken into consideration and do animation methods take their particular characteristics into account? (Section 4).

4. What criteria and indicators have been selected to assess the participation of the various categories of users in the various project phases in intermediary and post-project evaluations? What lessons can be learnt from the use of these indicators?

For our analysis to yield operational results likely to improve project efficacy and service sustainability, it is important to be able to recognise the difference between intentions on the one hand - intentions readily displayed and abundantly described in the written and spoken word - and real facts on the other, facts which emerge from project implementation and operation in the field, from feedback and from evaluations.

Our analysis therefore draws on case studies¹ of completed projects – although we may refer to

¹ Since this is a bibliographical analysis, the documents analysed

later phases of the programmes mentioned – chosen to offer the greatest possible contrast vis-à-vis three criteria likely to affect what we are seeking to measure. They therefore differ from the point of view of the country concerned, the project implementing agency and the project objectives set:

- rehabilitation and introduction of a maintenance policy for manual pumps for the project which took place in the department of Tillabéri in Niger (1993 – 1997) and the FAC 94 project (CEH SIDI – 1994) which also took place in Niger, in Maradi;
- construction of wells, boreholes fitted with manually-operated pumps and simplified networks using thermal pumping in the region of the Koros in southern Chad for a second phase of the project (1994-1997);
- construction of boreholes fitted with manually-

operated pumps and solar pumps with a distribution network using standposts (in three cases) in the prefectures of Gaoual and Koundara in Guinea (1992-1996)². This project also includes an animation component relating to the field of health which was to be reinforced in the course of the following phase (IV).

(evaluation reports, project identification stages, feasibility studies, intermediate and final progress reports, intermediate and post-project evaluations, etc.) give us only part of the picture in relation to the experiences and difficulties encountered by the project stakeholders. See bibliography listed by case study, below, section 7.

² The French development agency (AFD) was active in Coyah, Dubreka, and Kindia during phase 1; in Gaoual and Koundara in phase 3; and once again in Coyah and Dubreka during phase 4 of the project. The boreholes of Coyah and Dubreka were put into place between 1990 and 1992, those of Gaoual between 1994 and 1996, and those of Koundara between 1995 and 1998.

2. Project objectives and stakeholder expectations

2.1. The State

In the case of water supply, the overall objective of national strategies is to achieve a rational and planned improvement in conditions of supply of drinking water, supply being a priority implemented with the help of funding agencies.

Achieving this objective may be subject to specific conditions according to each country, particularly with regard to requirements for the sustainability of installations and the sustainability of the services. It always includes, to a greater or lesser extent, involving the beneficiary communities, and sometimes involving specific categories within these.

In Guinea, for example, the objective of the guideline principles of the Agricultural development policy note (LPDA) are to "seek to match supply (a given service at a given cost) and demand, rather than to meet water needs set according to theoretical norms using resources difficult to eva-

luate (...). The responsibilities which are passed on to the communities correspondingly require that they are able to take part in the decision-making process, from design to implementation. This is particularly true of women to whom responsibility for the DWS falls."

The same document goes on to list overall objectives in each of the following sectors:

- social (sufficient drinking water of adequate quality);
- economic (as an indirect effect of reducing the chore of fetching water, giving women more time for other activities);
- political (notably community organisation and promoting joint initiatives).

The Koros II project rested on the main principles of Chad's national policy and set itself the priority, as set out in the feasibility study, of "ensuring that users assume greater responsibility and are more involved and correspondingly lessening the

burden of the technical and financial management of water services on the state." (BRGM – 1993).

In Niger, the National guide on animation of village water supply programmes (Niger – 1992), states that "today, more than ever before, it is clearly necessary to involve women more and to give them greater responsibility" in the management committees charged with managing installations. The project implementing agency integrated these national recommendations into the project and adopted "active participation of women" as a specific project objective, justifying this by the fact that the decision-makers or prominent local figures whom projects usually address are only indirectly concerned with the improvement of DWS conditions, and less aware, because of their age, of the health advantages of doing so (Vergnet – 1997).

Recommending, however, that the project "avoid overtly clashing with lifestyles in rural areas, which require women not to put themselves forward too much, particularly for collective activities", the principle of women's participation was reflected in an operational requirement for the project, requiring that "women (...) should be an integral part of the committee, filling not only the position of hygienist but also that treasurer".

2.2. Users

The experience recorded by the majority of DWS projects shows that the expectations of the inhabitants are above all for direct effects, i.e. they expect improvements in the level of water supply services. For traditional authorities, when they are involved in such programmes, they often present the opportunity to consolidate their powers.

By contrast, we have no reason to suppose, for example, that women hope to acquire more autonomy or power through such programmes. Many of them, however, are interested in managing the installations. A survey of 1,000 towns in Mali (Monimart M., Rochette R.M. and Walraevens P., 1991) showed that the attitude and interest of men and woman can differ sharply in this respect:

only 38% of men stated that they wished to help manage the installations, despite 77% of them asking to be involved in choosing the type of equipment. More women on the other hand wanted to take part in managing the installations (47%), but they were less interested than the men in choosing the type of equipment (64%).

2.3. Funding agencies

For funding agencies, these projects have a social (including health), economic and institutional dimension.

The objectives of the Koros II project in Chad for example are as follows:

- to assist in improving people's health state of;
 - to lower the cost of buying water in the Koros region;
 - to reduce women's burden of work;
 - to facilitate the exploitation of areas with few inhabitants because of lack of water;
 - to make the sale of water from solar and thermal installations widespread, with the objective of generating resources which could be used to extend the provision of water supplies to the inhabitants;
 - to help State withdrawal from management and maintenance of installations by promoting responsible village organisations managing a co-operative or similar scheme.
- In terms of expected impacts, improving the living conditions of women takes up a major part of those listed:
- impact on women; improvement in health conditions, lessening the time women spend looking after sick children, reducing distances to water installations;
 - impact on the environment: better use of hydraulic resources, improved ecological balance by enhancing its agricultural use;
 - other effects: assisting the withdrawal of the state from direct management and maintenance of water installations, including provision of spare parts (Felix – 1993).

In the case of the Niger project, expected results were as follows:

- meeting drinking water needs;
- health improvements;
- reducing the burden on women of fetching water and increasing the time available to them for productive activities;
- consolidating the system of maintenance;
- enabling local stakeholders to emerge and the State to withdraw (organising a reliable and self-reliant system for maintaining manually powered pumps based on private sector practices) (Pin Yathay – 1992-2).

For the third phase of the village hydraulic project in Guinea, the evaluation report predicted that the project would have a direct impact on the burden of women fetching water and this would be reflected in more time for the inhabitants to concentrate more on other productive activities. A sustained animation phase was planned in order to reinforce the impact of the project on the health conditions of the beneficiary populations. It was also expected to help to strengthen development structures by setting up at village level an organisation and allocating responsibility to it for managing the income from pumps and their maintenance (Pin Yathay - 1992-1).

The accumulated experience of French aid in this sector throughout the 80s and 90s, as well as a series of retrospective evaluations carried out by AFD on five of its programmes led this Agency to draw up a Note on operational approaches to "neighbourhood hydraulics" (January 2000)³. A brief overview of this Note highlights its concern with the sustainability of services.

The ultimate aim of this form of intervention is to help achieve sustainable improvements in people's living conditions, by focusing on two mutually dependent objectives:

- **the durability of the installations and their associated built structures: the installations funded must have as long a life as possible;**
- **the durability of the water service: the users must be convinced that they will have sustainable access to drinking water.**

³ Community based water supply includes rural water supply, multi-village schemes and piped distribution systems in small town and periurban areas.

These objectives should be achieved by implementing the following broad approaches and guidelines:

- Priority given to a "demand driven" approach: to increase their chances of being sustainable, installations should as far as possible match user demand, given a choice between several ways of extracting water identified in the light of their needs and possibilities. This "demand driven" approach also allows the capacity of communities to "appropriate" installations to be taken into account. The initial contribution of beneficiaries to the investment costs to a "bearable" extent also allows people's interest in the water installation to be tested.

- State adoption and application of a clear policy identifying the various levels of responsibility: regulation (State and local authorities), commissioning clients (State and local authorities), management (user associations, water management committees, private individuals), use and maintenance (under State or local authority control, or sub-contracted to non-profit associations or individuals).

- Setting up and ensuring the durability of structures for the management and collective use of decentralised water installations; the lack of such structures is the main inadequacy of programmes implemented to date. A formal status of water users' associations (WUAs) needs to be drawn up by public authorities and decentralised water management committees should be strongly encouraged to adopt this through an active policy of animation and incitement.

- Involving these associations, as soon as possible in the consultation process, from the very outset of programmes, and taking greater account of the interests and of the role of women in the management of water installations.

- Given the need for social promotion of the reform, adopting an innovative policy of animation based on classic participatory methods in development circles, but which are still little used in neighbourhood water supply, and gradually abandoning authoritarian and "top-down" teaching methods.

- Widespread application of the principle of paying for water services at rates necessary to cover at least the cost of long term maintenance. In the most underprivileged areas, the use of surpluses and savings generated by water payments as a factor of local development through decentralised financial structures.

- Greater involvement of the private sector and adoption of a policy strongly encouraging the sub-contracting of services supply between (as the case may be) the State, local authorities, and above all between user associations (WUAs) and the private sector through model commercial type contracts (preventive maintenance contracts, total maintenance contracts, sub-contracting or advisory support in financial management).

- In general terms, defining a strategy based on "process programmes" which seem more appropriate to the new kind of management envisaged for the neighbourhood water supply sector.

For both the State and funding agencies, one of the indirect objectives of drinking water supply projects is therefore giving users greater responsibility and promoting village organisations. Can

we then conclude, in the light of the developments and examples outlined above, that the mobilisation of all categories of users – including women – is genuinely central to projects at all stages?

3. Evaluating demand in preliminary studies

The planning principles adopted by the Koros II project in Chad (BRGM – 1993-2) were based on recommendations drawn up at the conclusion of a roundtable between State departments and the funding agencies organised by ONHPV in 1987:

- the decision to build an installation in a village or not in the light of the distance between the village and the first available installation. In addition, two levels of provision (10 and 20 litres per person per day) were defined, corresponding to two staggered phases of installation;
- the provision of equipment was conditional on the beneficiary communities making the following financial contributions to the investment: 100,000 CFA francs for manual pump and 500,000 CFA francs for a pumping station.

When there was no demand from the villages themselves, an initial selection was made based on needs estimated using the Hydraulics Department's database and validated by field surveys.

At the outset of the project, "planning is based on the use of a computer programme (...) which enables the most needy villages to be selected. After updating the programme with data on existing water installations (...) a preliminary survey by the water supply department verified the situation and the urgency of needs in 156 villages. In addition, over 65 villages not surveyed spontaneously submitted requests for installations. (...) More detailed surveys were to be carried out at the beginning of the second phase across all villages to check their motivation and their commitment to the approaches and the ways in which the proposed programme was to be implemented, in order to make a final selection of installation locations". (Felix – 1993).

Various phases of animation and awareness-raising amongst the inhabitants were then planned including:

- a socio-economic survey intended to set priorities and enable a "pre-information" exercise to be carried out;
- informing the villagers about the project and the conditions for being allocated a water installation.

The third phase of the village water supply project in Guinea (BURGEAP – 1996) was planned according to three levels of urgency, defined by SNAPE, in the light of the distance from the village to the first available water installation and seasonal variations in conditions of access to water (no water less than 1 km away at the end of the dry season).

The aim of the programme was to provide 100% of the rural population living in villages with more than 150 inhabitants with 10 litres of drinking water per person per day. The overall objectives of the socio-economic surveys and of the animation activities were:

- to specify the inhabitants' water needs,
- to ensure that the operation of the pump was sustainable,
- to ensure that quality was maintained in the water distribution chain, from the water spout of the pump to the drinking cup.

Villagers agreed to pay a financial contribution of 150 000 Guinea francs, to set up a water management committee (WMC) with seven members and to take part in training sessions. They "took the time they needed to consult each other over setting up the WMC and give their final reply.

In the case of the Tillabéri project in Niger for the rehabilitation of manually-operated pumps, the innovation related to the maintenance system, i.e. the reactivation or introduction of management committees, creating an after-sales service, assisting skilled repairers, and co-ordinating the various individuals and groups involved. Links between the latter were in fact organised by the project implementing agency and the village could accept these or not, but it was difficult for them to change the organisational structure: "villagers are free to take part in the programme or not; they decide after a full session of animation and training by the end of which they know exactly what conditions they have to meet to take part in the project and what commitments they will have to make" (Vergnet – 1997).

3.1. Needs assessment

If we compare the way in which these projects were planned, it is clear that the main identification and pre-selection criterion for beneficiary locations was an estimate of their needs on the basis of existing water resources. The extent of the availability (accessibility) of these dictated various levels of urgency and priority action.

Although this criterion is based not on expressed demand but rather on the norm-based notion of needs, it is however important to note that is consistent with what we already know about factors determining demand⁴.

Once the locations potentially capable of becoming project beneficiaries were identified, the motivation of their associated communities was then assessed using field surveys, generally during the feasibility study.

The indicators used beforehand to assess demand (as described in the reports, which does not exclude the possible effect of other factors) were often restricted to the commitment of the communities to the project, i.e. their accepting

the conditions governing the project in terms of financial and organisational contribution according to a pre-determined structure.

Demand evaluation often amounts to little more than validating an assumed "demand"; i.e. based on predicted needs (existing water installations), a technical and financial "supply" (a given service or piece of equipment, and help with investment costs respectively) is offered to communities virtually on a "take it or leave it" basis. Given this project approach driven by "supply" and the technical solutions to it, the question we should really be asking is not so much whether women are involved in the process or not, but rather whether the inhabitants as a whole are given the opportunity to express their preferences.

Animation activities and field surveys therefore tend to focus more on information and training than on a genuine exchange and the possibility of re-orienting activities in the light of the user demand.

With the exception of certain cases when communities submitted installation requests spontaneously (Koros II project in Chad), project identification and feasibility phases generally do not allow inhabitants to take part in choosing equipment.

3.2. An environment scarcely conducive to wide popular participation, and notably that of women

In the second phase of the Maradi (Niger) project, the process adopted did, however, include the possibility for communities to choose the kind of installation which suited them. The evaluation of the first phase of the project had shown that the choices made practically always reflected the preferences of the village heads or – at best – of a group of men, and not those of the villagers as a whole, much less those of women. Out of 100 locations surveyed in the preliminary study, none had involved women in choosing the type of installation.

To overcome this, the programme survey and animation teams carried out a fresh analysis of the hydraulic and socio-economic background of each candidate location, this time inviting

⁴ See Chapter 2, in which we showed that demand was largely dictated by existing water resources

women to become involved in reviewing the options and even fielding mixed gender animation teams (one man, one woman), in order to encourage women to make their preferences known. However, despite women being present and taking part in meetings (e.g. in Sarkin Yaki Oumarou where they clearly expressed their preference for a manually-powered pump, whereas the men wanted a cement well), they were almost never able to make their choices prevail.

In the context of this particular programme, the financial contribution of users was set at 250,000 CFA francs for the construction of a new well. In accordance with the objectives set, a financial contribution from women was required in each location, the amount contributed being up to them. In nine of the ten locations involved, the women's actual contribution ranged from 10,000 to 50,000 CFA francs, i.e. the equivalent depending on the location of between 5 and 30% of the overall financial participation.

Of the thirty village representatives charged with arguing the case, in the name of their community, for receiving an allocation, only four were women, i.e. 13%. Despite their small numbers and despite facing an audience of complete strangers, the latter overcame their reserve and answered questions which were sometimes put to them directly.

But their difficulty in expressing themselves in public was none the less genuine⁵ and male representatives, who defended their case with more verve, won the day.

The virtually total absence of women from decision-making bodies can be explained by:

- the selection criteria used: members of the jury were required to be educated or literate in French, Hausa, Tamachek or Arabic. The women of this region, however, still lagged far behind in terms of education (as they did throughout the country) and few of them were able to meet this criterion;
- husbands' refusal; the few educated or literate women who might have come forward were

relatively young and their husbands nearly always refused to allow them to leave the family home for the two or three days required.

Although this project had set itself the objective of female participation in these various stages, it shows clearly how difficult this is and the extent to which this requires time, skill, understanding the social context, etc.

3.3. Poorly understood demand

Despite the care with which the projects being analysed strove to involve their future beneficiaries – and women in particular – in choosing the way the service was to work, it must be acknowledged that user participation at this stage was often little more than agreeing or not to a predetermined "supply" package. At best, the "demand" taken into account was not that of the community as a whole, but rather of a particular social group or faction. De Sardan et al. thus reported that in Guinea, "the various forms of rivalry between lineages⁶ and between ethnic groups over water installations became apparent as soon as their locations were selected. Technicians negotiated with village authorities with mixed results. Often, the predominant family or the main ethnic group prevailed, sometimes a neutral location was chosen, but this didn't always prevent the borehole being boycotted by those who considered themselves wronged" (De Sardan et al. – 2000).

The same authors provide a further argument for questioning a project's ability to meet a genuine collective need for an improved service, noting that such projects "are fairly regularly active in many villages and are regarded by the inhabitants as a resource opportunity not to be passed up (...) When several projects are active or have been active in a village, the inhabitants sometimes mix them up or fail to remember which is which. Apart from the few people who were the direct interlocutors of the project's

⁵ Take the case of the female Fulani delegate from Dan Gagéré who had to be replaced after she proved incapable of expressing herself in the village meeting.

⁶ See Chapter 2 § 2.1. for the way in which this term is used here.

agents and are in general the pillars of the "committees" set up, no-one has any clear idea of the names, the objectives, or the particular methods of each project."

The approaches adopted by the projects we describe failed to enable any genuine assessment of demand – either economic or sociological - to be made at the project feasibility stage, i.e. they failed to give preference to the sum or the resultant (in mathematical terms) of individual demands. Constraints of time, manpower and

finance mean that projects content themselves with the expression of "community-based" demand, which are in fact those of a faction, a lineage, an ethnic group, or a particular social group, whereas demand evaluation and a participatory approach require an analysis of village socio-political structures and of the way "local arenas" function from the very outset of the feasibility stage to lay solid foundations for management systems which are representative of the community as a whole.

4. Management and user participation

4.1. The Management Committee, modelled on "participatory" social engineering

The management system introduced in most African francophone countries in relation to drinking water supplies in rural areas is collective and takes the form of a village committee, known as the Water Management Committee (WMC).

Most States, some of them encouraged to do so by funding agencies, have adopted the principle that the beneficiaries of installations should be autonomous as far as their maintenance and renewal are concerned⁷. In the absence of any elected local body, water management committees are supposed to represent the community and to act on its behalf and in its name.

Before the development of modern systems (particularly manually-powered pumps and piped drinking water), and given new policies introduced by States in this field, today WMCs have to:

1) ensure the technical management of the built structures, i.e. ensure that water is produced and distributed, and equipment maintained;

2) recover, at least in part, the recurrent costs associated with the operation and the renewal of the installations by selling water to the users.

These management committees take particular forms depending on the country:

– In Niger, the first hand pumps go back some time (to the early 80s) but to begin with there were no management committees. In the early 90s, with the pump rehabilitation project for the department of Tillabéri, a network of community development workers was dispatched to assist with introducing management committees and to monitor these for a while, and this was replaced by a second network of community development staff working for the monitoring and evaluation unit of the project.

– In Guinea, the mass installation of hand pumps is much more recent (early 90s) and went hand in hand with setting up management committees, who have to report to a specialised official department, SNAPE; in addition, management committees are currently undergoing re-organisation ("phase 4") in one of the areas of the country involved.

In both these countries, the practical introduction in the field of joint water management by management committees raised various doubts as to its efficiency and its viability:

In Niger, two evaluation reports note in this respect that:

– "the appropriation of water installations by

⁷ Renewing boreholes is generally still the responsibility of the State.

management committees and more generally speaking by the villagers is probably the trickiest aspect of setting up such projects and of their viability" (Coqueart and Verdelhan-Cayre – 1998);

– "rural areas and notably the villagers of the Tillabéri department would not appear to be capable taken as a whole of managing a series of pumps either adequately or in the longer term" (Gageonnet – 1999).

In Guinea (before phase 4), even more than in Niger, the way the management committees worked raised similar reservations: "The evaluation team remains unconvinced of the role and the responsibility of these water management committees" (Coquart and Vaillant – 1999).

These misgivings led the AFD to commission a study intended to analyse the concrete forms taken by management committees of modern water installations, both in Niger in the Tillabéri department, and in western Guinea (prefectures of Kindia, Coyah, Dubreka, Gaoual, and Koundara). Its aim was to highlight any failures in their operation, the causes of these and the perceptions of the stakeholders involved, and to formulate an overall assessment (De Sardan et al. – 2000).⁸ Some of the observations reported here have been taken from this study, and from an analysis carried out by J. Etienne between 1996 and 1998 also in Niger and Guinea (Etienne – 1998).⁹

4.2. User participation in managing DWS systems

The WMC - so-called "community" - system of management is based on the assumption that users want to participate in the management of the installation. The survey carried out by Monimart et al. showed that male and female attitudes and levels of interest could differ sharply in this respect. Despite this significant difference in

⁸ Of the 21 villages in Niger studied by Olivier de Sardan et al., 6 were involved in phase 4.

⁹ In particular, male and female users' comments and observations, or those of WMC members quoted in the following pages are taken from one of these two studies.

motivation according to gender, it is important to stress that overall it is high, and interesting to note that it reflects at collective level the traditional model for the allocation of domestic tasks.

How does this motivation work out in practice when the management structures are introduced and in the aftermath of the project?

Tasks and responsibilities of management committee members

Niger's National guide for animation of village water supply programmes (Niger – 1992), which closely resembles documents also adopted by neighbouring states, provides a good example of the measures taken by national authorities with regard to the role and responsibilities of water committee members:

"The WMC's main responsibilities are:

- to organise the financial and physical participation of the village in achieving the piped water supply system;
- to ensure that the "water fund" is kept topped up and to manage it;
- to ensure that the water installation is maintained;
- to ensure that the regulations for use of the water installation are applied;
- to hold periodic village meetings;
- to remunerate the artisan repairer;
- to develop water-related activities (tree planting, developing market garden and fruit crops)" (Niger – 1992).

The WMC has five members: chairperson, secretary, treasurer, hygienist, and village repairer. "Membership of the committee is not remunerated except at the initiative of the inhabitants".

To ensure that each of the groups making up the community are adequately represented, "it is recommended that the election of management committee members be carried out freely and democratically and on the basis of certain criteria such as living in the village, being active and well-respected, etc.". Water committee members are in principle elected by the village council at a meeting called for this purpose.

Responsibilities of committee members (according to Niger 92)

The Chairperson represents the committee to public authorities and other water installations partners. He or she prepares the agenda for meetings, calls and chairs meetings, resolves disputes, co-ordinates and monitors the tasks and activities for which the Water Management Committee (WMC) is responsible, and reports to the villagers quarterly.

- Required profile: "The Chairperson should be a person seeking consensus and dialogue, open-minded and with authority."

The Secretary must keep management records, update the pump log book (recording technical interventions), if possible prepare minutes of the meetings (dates, objectives, decisions).

- Required profile: "The post of Secretary can be held only by an educated or literate person be it in French, or in a national language. The Secretary must be well-organised and meticulous."

The Treasurer is responsible for keeping the "water fund". He or she must show the fund to anyone who asks to see it. "He or she must neither lend this money, nor convert it without the permission of the other members of the committee."

- Required profile: "The post of Treasurer can be held only by a responsible, stable person, worthy of trust and of high moral integrity. It is recommended that this post be filled by a woman."

The Hygienist ensures that the installation and the immediate area is clean, checks that the pump is being correctly used and advises users on how to conserve water.

- Required profile: "The Hygienist should be person who is respected by the villagers as a whole, and whom they listen to. As far as possible, he or she should be a model of cleanliness."

The village repairer must ensure that the pump is in good working order, grease it periodically and carry out routine maintenance, and open and close the pump.

- Required profile: "A reliable village man or woman."

It is also often recommended (more or less specifically depending on the country) that the committee bodies should include a certain number of women. In Niger, the Hydraulics department suggests that "as women are those most directly concerned, their representation in important posts, notably that of treasurer, would be advantageous for the management [of the installation], given also that they are more reliable in the villages."

Disputed legitimacy

"We are not happy with the managers, to begin with they did things jointly, now the people from just one village choose what to do" (an inhabitant of Bagueye, Niger).

In Niger, despite the fact that according to national directives committee members are elected by the inhabitants, in reality most of the time they are selected by a small committee of prominent local figures or of advisors to the traditional village heads.

De Sardan et al. showed that "first generation" committees were often "elected" hastily as part of the pump rehabilitation process and under heavy pressure from community development workers staff in the course of a more or less official village meeting. Where there were genuine elections, they were often a formality to satisfy the demands of the project team. Sometimes names had been agreed in advance (often at the suggestion of the village head), in which case it was simply a case of public ratification. In other instances the electoral procedure was more controversial. To enable the committee to play its full role, the principle adopted was to distance the village heads, who had become undesirable, from the management of the water installation and to restrict them to an advisory or arbitration role in the event of conflict within the committee. They therefore became a major stumbling block in the path of the committee's operations and a potential source of conflict, both within local arenas and with external stakeholders.

The ways in which "second generation committees" were designated were more obscure and

varied. This reflects the fact that in most cases no formal nomination procedure was followed, much less an election. At best, there may have been a meeting of prominent local figures who rubber-stamped the names put forward by the head of the neighbourhood or the village. There was a marked tendency to return to the authority of the village heads and to strip the initial elected committee members - more or less "discreetly" - of their responsibilities. Those assuming their new responsibilities always claimed to have been "designated by the village" (or the neighbourhood), but this can be regarded more as a quest for legitimacy than an objective reality.

In most of the cases studied by De Sardan et al., village heads were active or had been active in the management of the water installations either by appointing "their own" people to the committees, or by organising a challenge to the existing committees over which they had no control. Of 28 management committees, 19 were managed by individuals directly close to the village head and 15 experienced conflicts directly linked to the issue of who was in charge (e.g. long-standing family quarrels affecting the management of the water installation or direct confrontation between factions over the management of the water installation).

In Guinea, water management committees (WMCs) were introduced everywhere at the request of the National water installation service (SNAPE), even where water was not sold and where subscriptions were collected when repairs were needed. In these cases, which predominated, the actual role of the committee was fairly restricted. Its members were selected virtually everywhere by prominent village people, the elders of dominant lineages, imams, Rural development community (CRD) chairpersons, district or sector heads, the chairpersons of women's groups, and sometimes by deputy prefects. In this context "local decision-making prominence" is not restricted to "family elders", but also includes two elements of modern rural bureaucracy: elected representatives (for the locality and often prominent family people themselves) and state employees (CRD secretaries, deputy

prefects) who sometimes assumed responsibility for the boreholes.

Nomination by prominent local figures does not necessarily mean that this is regarded by local stakeholders as a major symbolic or economic issue. It might also be due to the fact that these tasks are seen as chores nobody really wants to take on...

After all it places one in a difficult position, in a society where everyone knows everyone else, to be in charge of applying rules and even more of imposing sanctions. In addition, although the shift from free water to paying for it reduces disputes between users (stolen containers, problems in the queue), it also gives rise to other conflicts between users and the management committee members.

"A woman called A. insulted the old man in charge of taking money at the pump. Until they reached their judgement, the councillors forbade her to use the pump. Another woman attacked the treasurer, N.S., tearing her clothes. I myself was aggressed by N.K. who insulted me right here at the pump. A girl called A. also attacked our chairwoman. All these disputes had to be sorted out by the councillors" (secretary of the Mangata committee, Guinea).

"The sector head wanted to give preference to one of his brothers. The election enabled us to elect another person" (A.D., baker at Kamabi, Guinea).

When problems arose in the way the system was being used, the legitimacy of the management committees was frequently called into questions by the users, but in practice, despite sometimes virulent exchanges, challenges were rarely in an organised form, aiming, for example, to replace committee members. The problem of recourse – who to turn to when traditional authorities are involved – and the social organisation easily explain this attitude.

The subordinate role of women in Water Management Committees

"Here, women are relegated to second place (...). I don't know anything about the management committee because it's the men who manage things" (comment recorded at Banguéye in Niger).

The study of eleven centres and semi-urban areas found only one single case in which women genuinely exercised decision-making power in managing the drinking water service. This was in the case of an installation on the outskirts of Niamey where two standposts were managed by the female representatives of the Niger women's association (AFN) (Etienne – 1996). According to its statutes, this association is apolitical but answerable to the State, and it is active throughout the country.

Women continue to play a minor, sometimes ambiguous, role within management committees:

- thus the hygienists, who are in charge of seeing that the installations are kept clean, are sometimes merely fictional (female) names;

- the women standpost or borehole attendants certainly play a role which is central, but subordinate (in effect the position of an employee), although they can in some cases turn their margin for manoeuvre to their own advantage (by keeping some of the income for themselves, for example);

- as for the job of treasurer, this seems to be linked to an idea widespread in the developing world according to which women are supposed to be better managers, less likely to yield to the temptations of embezzlement. (It is difficult to judge to what extent the fact that this idea is echoed by villagers themselves is due to this kind of project influence or not).

In the Tillabéri project, community development workers also strongly recommended that women be nominated as treasurers. Sometimes of course their advice was followed, but not without some untoward results: several female treasurers would thus appear to be virtually figureheads.

"We chose old ladies to take the money at the standpost. It is difficult to give a man a job where money changes hands because he'd have no qualms about spending it in a single day. That's also why we nominated a woman as treasurer. But she doesn't keep the money with her any more" (S.A., Logaizaydo, Niger).

"To start with F.B. was our treasurer. But in fact you can't really say she still is. There must have been some kind of mix-up, and she handed the fund over to the head of the village" (H.G. Gorou Koufeizydo, Niger).

We should also add that one of the common ways of discussing the village's main public affairs (including therefore any problems relating to pump repairs or managing funds) by its very nature excludes women from taking part, at least in this open way, since it is often after Friday prayers at the mosque that information and suggestions are communicated.

This doesn't prevent some women from refusing to comply with the instructions of the village head or the chairman of the committee. In one Niger village, the women taking payments for water at one of the two boreholes decided to stop handing over what she collected to the head of the village, who had tried to usurp the role of the management committee by making those previously responsible resign. She now manages the borehole on her own and intends to look after how its maintenance is paid for herself.

The Guinea project also showed that women were equally confined to subordinate, if vital tasks. They are often on duty as standpost or borehole attendants and collect subscriptions from women users if there is a system of subscribing either regularly or in the event of a breakdown. Sometimes in addition to this role, they almost always fulfil the role of "hygienist", i.e. they are responsible for sweeping around the installation, cleaning the slab and the pump, weeding in the rainy season, with the help of the users. Some are conscientious about this, others are discouraged or give up.

"I make sure the installation is clean and tidy. To begin with we said that the women would come to help clean, but no-one did. I had to take care of it all with F.B.; she's the only one who cleans every day, I rarely have to help her" (E.S., chairwoman of the Ley-Saré sector in Foulamori, Guinea).

"Most women refuse to clean. They come to draw water alright, but when it comes to cleaning – not them! They're too proud to come and clean because they're the boss's wife or married to an official. As for the stall-holders, they're busy with their produce from early in the morning, and then they're off to market" (S.D., hygienist of the Foulamoru camp borehole, Guinea).

Sometimes, women are mobilised to share in the task of looking after the installation, and this may be done either by the hygienist, by an

influential woman or by prominent village people.

"We've got four groups. Each group consists of three women. If there are three wives in a household, that's one group. If there are two of them and there's the wife of their husband's younger brother, they'll make up a cleaning group as well. If one group washes one day, then it has a day off and the following day another group comes in. And so it goes on until we've got round all four groups" (a female user, Fandadj, Guinea).

"The women's work is more important than the men's. They make sure the borehole is kept clean, they're there every day. They sweep the area and clean the pump. The two women (from the water management committee) get the other women to clean or weed around it" (M.T., chairwoman of the management committee of borehole 3 at Kamabi, Guinea).

Women do not actually manage the water fund when they are nominally in charge of it. Most often they hand over the money to a man – their husband or son, the treasurer or chairman of the water management committee. When they are members of the management committee, they often don't know how much money there is in the water fund. When they are treasurers, this either means that the water management committee has no fund as such or that there isn't much money to look after.

"Women pay for the water, but the money belongs only to the men; they're the ones who have to go and fetch the repairer" (T.C., sister-in-law of the sector head of Sabouya, and member of the water management committee, Guinea).

"The elders get together, the women aren't involved. Women are involved when it comes to preparing a big event, but not for managing water adequately" (M.B., chairwoman of the Sabouya women's group, Guinea).

Lack of effective participation in village meetings

Village meetings are often attended by only a small proportion of the inhabitants, who may be busy about their own affairs, insufficiently motivated, or not told when meetings are held.

For De Sardan et al., "the management structure introduced (social engineering based on popular participation) assumes a kind of 'militant voluntary work approach' which is not for every-

one, far from it, " (...) "what it means to belong to a management committee therefore varies a great deal. It may sometimes be a case of "devotion to the common good", but it might also be regarded as a chore, resented because unpaid, or a free ticket to resources (if the money collected is an issue), sometimes a meaningless formality". (De Sardan et al. – 2000).

"When there's talk of a meeting for the well, they don't come. As soon as we talk about the well, they mess things up. But when it's a question of meetings about money, there they all are, and bang on time too" (a female user from Kakoni, Guinea).

"Women are always jealous of each other. They'll say: 'Ha! the well is close to her place, let her look after it if she wants', forgetting that the well benefits all the inhabitants" (M.M., farmer, Bensaé Pont, Guinea).

Women also take less part in village meetings than men. In Niger, in Guidigir for example, only 5% of women claim to know how the committee was chosen, compared with 80% of the men (Etienne – 1998).

Apart from lack of information, several factors explain this low rate of female participation:

- in some cases, the need for a modern water installation is not clearly perceived because there are alternatives to the new network;

- elsewhere users, whether satisfied or not, turn to the relevant traditional authorities which are supposed to act on their behalf. It is a fact that very often female users consider the demand for transparent management to be unrealistic and content themselves with the borehole being in working order.

"When the pump's working, I fetch my water and leave. The rest is none of my business" (woman from Sansanné Hausa, Niger).

The first factor is clearly connected to lack of interest; when demand for the service managed by the Committee is low, potential users' lack of interest extends from the service to the body set up to manage it.

The second reflects mainly the limited effect of "participatory" social engineering on the social and political life of the village (see below).

Female representation through the use of quotas

In order to ensure that women are represented in decision-making and management bodies, an affirmative action policy attempted to make the introduction of programmes conditional on the presence of a certain percentage of women in community structures. However, as we showed in Chapter 4, involving women in managing water installations sometimes appears to be more of an obligation with consequent constraints than genuine participation in the management process.

The way in which the village hydraulics project in Guinea (phase IV) evolved shows the limitations of such a precept. It was intended that 50% of the water committees should be exclusively female. Thus, the management structure of the installations, at two levels, was subject to certain criteria of gender representation:

- a village monitoring commission, made up of four to eight village elders with an equal number of male and female representatives, responsible for monitoring the management process;
- a pump operation committee, made up of five members, including at least three women, to fill the posts of manager, treasurer, secretary, hygienist and village repairer.

These objectives were revised after the first village animation activities (described below). Firstly, the women who had taken on a post within the committees demanded the presence of one or two men to enable them to handle any disputes between users at the water installation more efficiently. Secondly, the very poor levels of education of the women made it very difficult for the committees to be exclusively female, since trans-

parency in the management of the installation required written documents (which explains the high proportion of male secretaries).

The overall objective (50% exclusively female water committees) was not achieved, but the approach adopted enabled women to be more broadly involved, as can be seen in figures for their participation in water installation management bodies (as at 30/04/99) :

- 50% of the members of the village monitoring commissions and 64% of the pump operation committees are women;
- 81% of the latter include 3 women, 17% include 4 women, and 2% are all female;
- of the 75 operation committees set up at this point, 100% of the posts of manager, 92% of treasurers, 95% of hygienists and 23% of village repairers were occupied by women.

The use of quotas remains largely unrealistic unless it is accompanied by genuinely assisting women to take part in community life, either through the management of public infrastructure or as a whole. Thus on the subject of quotas and the involvement of women in municipal bodies: "They first of all need help, particularly during campaigns, to make men accept their right to take part in decision-making. It is not enough to make them join community bodies, they still need to make their voice heard on these, and this is not solely down to them. (...) It requires an awful lot of determination to take such a public stand against the established customs of social and political pressure" (Coquery-Vidrovitch – 1994.2).

Other factors have been discussed above (chapters 2 and 3). These are as follows:

- the burden of domestic work on women, which sometimes prevents them from taking part in collective tasks, such as attending meetings;
- the way the society is organised and religious interdicts, which often place women in the background with regard to anything to do with the "public domain" or which is regarded as in the men's domain.

"We can't do anything without our husband's agreement; we aren't in a position to talk to them about that; so we have got our husbands to listen to us chatting" (comment recorded at Samnatenga, Burkina Faso).

Note however that situations vary significantly from one place to another. Women's dyna-

mism and cultural and religious obstacles differ from one village to another and from one town to another. In urban areas particularly, women increasingly take part in collective activities thanks to associations¹⁰, assume responsibilities at all levels and make their views known to groups of men and of women.

The animation phase

Phase II of the animation of the Tillabéri project in Niger corresponded to the installation of the pumps: "female staff worked in the field while the pump were being installed. Their job was to

¹⁰ See Chapter 2 "Power distribution and social change", § 4. "What role do non-profit associations play in changes in how society is organised?"

communicate with the women of the village. During the first meetings, women are sometimes reluctant to speak in front of a largely male audience. While the pump is being installed, however, the men are busy with the work so the women then find themselves with the elders and the female project team member. They can easily express their point of view". (Vergnet – 1997).

Phase III involved a media campaign with information messages and broadcasts on particular subjects (health development). It was observed that more women attended meetings after messages insisting on the importance of female participation had been broadcast. The female community development workers were replaced by males for the two final stages (monitoring) because of the means of transport adopted (motorbikes). Note that in this regard the *Conseil de l'Entente* project (3rd phase of the village water supply programme of the *Conseil de l'Entente* in Niger – 1995) wisely introduced female community development workers throughout the process.

In the case of the Maradi project, also in Niger, one of the tasks for the animation unit was

to encourage women to take part in the meetings it organised. In a small number of cases, this objective was achieved. In some places there was also a significant level of female participation, sometimes equal to that of men. This was the case for Garin Malam and Garin Labo, where women represented more than 50% of the audience of the second and third sessions. Greater female participation was also observed at meetings to choose members for water installation management meetings, confirming the fact that women were more interested in management than in selecting the equipment : from an average of 26%, the percentage of female attendance at these meetings rose to 57% at Garin Ali.

This latter figure is however exceptional. Generally speaking, few women attended meetings. Apart from the reasons outlined above (in Chapter 2), this can be explained by the fact that the meetings were held at a time of excessive work loads, both domestic and cultural. Apart from working in the family's fields, women also sometimes tend their own small plots of land and these activities take up more time at certain times

Taking women's workload into account

Men may have periods of rest during the day, but this is far from the case for women, whose time is virtually all taken up with working in the fields and in the home, on top of which they undertake a number of additional subsistence activities. In Chapter 2, we showed that their workload largely explains women's lack of availability for attending village meetings (both mixed gender or single sex).

How then can women's timetables, and those of users in general, be taken into account when they are required to take part in choosing and maintaining equipment?

Project cycles require strict programming of their various phases (notably animation phases). As the implementing agency of the FAC 94 project in Niger observed, "Because of resource constraints (material and human) and above all time constraints, it is unlikely to be possible to organise separate male/female animation sessions in each location" (CEH-SIDI – 1994). There is often not enough time and insufficient resources to adapt the schedule of meetings to suit women's availability.

The following points are nevertheless important:

– sufficient time set aside for animation activities must be planned well beforehand (before beginning any practical work) so that these are not restricted by operational progress. Boreholes, water supply installations, etc. naturally require strict planning for entirely understandable economic reasons. Siri believes that residual costs are kept down if the participation of the community and of women, and the outcomes of this participation, are included right from the start in the project's planned activities (Siri – 1989);

– before launching any training programme, women's availability should be well understood, in order to avoid setting timetables which they find impossible to respect;

– activities which are too time-consuming, such as certain tasks within management committees, should be remunerated. Some authors have noted that a technical improvement may be thrown out if it gives women extra work with no appreciable improvement in income (Droy – 1990). We should also note that remunerating those involved in the management structure has the indirect effect of attracting more men.

Village assessment

During the first meeting with the village, the animation process begins by holding separate interviews with the women of the village and with the men. The observations of both groups are then pooled in a subsequent meeting and synthesised for the village as a whole.

Each interview follows a common framework, which is in two parts: the first invites the villagers to confirm their internal social structure, their traditional way of organising water supplies and how they see their health situation, and the second addresses their suggestions on the management system and on making a financial contribution to the various types of equipment the project can offer them. The first part of the interview should enable the villagers to appropriate the project using their own practices as a starting point...

Running two different sessions for women and men provides a cogent response to criticisms levelled at village meetings which are generally

the focus of village hydraulics project animation activities and which remain dominated by village elders. Despite objections from various quarters, the fact that women can express themselves as such publicly acknowledges their role, and provides a source of information which may conflict with what the men say and vice versa. Naturally enough, for example, men have a less accurate idea than women of how long it takes to fetch water and what a hard chore this is...

For both men and women within the community, it is clear right from this early phase that women manage the traditional water installations, including sometimes undertaking tasks normally regarded as men's work, such as deepening open wells. Bringing this into the open should make it easier for the men to subsequently accept that women should be in a majority in the WMCs. (Verdelhan-Cayre – 1999).

of the year. Given these difficulties, separate meetings were subsequently organised for the women, at times more convenient for them (e.g. towards midday or in the late afternoon).

Village meetings¹¹, all too often the only tool used by animation methods, are by their nature repetitive, transient and stereotyped. This in part explains their limited efficiency, the many instances of committees not working correctly, and the big gap between what is planned in principle and what actually happens. In the course of his or her regular visits or rounds, a project community development worker in charge of a number of water installations spends a few hours in a village at intervals of up to several months, either summarily checking the cash box and the installation or discussing things with prominent local figures and the management committee, or taking part in a general meeting they have organised. This system, however, seems to have no real "grasp" of the social and political life of the village, what is at stake in relation to the pump, and the "real" way in which it is managed on a daily basis.

¹¹ Project community development workers use "village meetings", called by the head of the village (or when a committee has been set up, by its chairperson).

Finally it is also noteworthy that although health agents may have sometimes played an important part in raising inhabitants' awareness during cholera epidemics or in the course of the routine health service activities, just as teachers probably have in their lessons, projects tend not to mobilise the state employees living in the villages (nurses, teachers, agriculture or animal husbandry agents) or in the main local town, nor the agents working on other projects in the same area.

Given the experience of previous projects, the French development agency (AFD) decided, in phase IV of the village water supply programme it funded in Guinea, that animation for management committees should be more frequent and more active (for a while) and that the WMCs should be made up mostly, if not totally, of women. The main advantage of this was the establishment of a "Village assessment of water problems" which analysed water-related practices by gender and community acknowledgement of this assessment (see box below).

"The aim of this ambitious objective is to give them a real role with social responsibility, a role they are already entirely fulfilling in maintaining the installation but which is not recognised in the way in which responsibilities are allocated when the WMC is set up. The inclusion [in the WMC]

of one literate person – who may be a man – makes up for their poor levels of education" (Coquart and Vaillant – 1999). For De Sardan et al., this reorientation "should of course have posi-

tive effects at least in the short term. But the future of the management system once the animation stages and the project come to an end remain somewhat uncertain."

5. Project results and evaluation

The evaluation of the results of the third phase of the Guinea village water supply programme¹² reveals that:

- in over 80% of cases, women's organisations maintain the water installation;
- the rate of use of closed containers varies from 39 to 45% (higher for users walking greater distances);
- there is widespread understanding of faecal risk amongst young women (results of a survey of 36 women at 18 water installations);
- most women spontaneously mention washing their hands with soap after any contaminating activity.

Health education and monitoring activities were undertaken by two female community development workers trained in this. They reached approximately 10% of the population of the locations involved. In addition, over half the schools benefited from awareness-raising activities (slide projections) on water and health reaching nearly 9,200 schoolchildren.

A critical examination of the relevance of the indicators used by the evaluation shows that those based on an estimation of practices and knowledge as stated by women when questioned for this occasion, make it reasonable to conclude that the project achieved a certain number of set objectives with regard to changes in behaviour and attitudes. This notably applies, in this case,

to the rate of use of closed containers to store water, the rate of knowledge of faecal risk and the proportion of women who said they washed their hands after a contaminating activity. To enable one to conclude that these are direct effects of the projects, these indicators would, however, need to be compared to those which had been calculated from pre-project surveys.

By contrast, the indicator based on the proportion of women's organisations responsible for maintaining water installations, similarly in fact to the proportion of women selected to take up a particular position on the management committees, tells us nothing about the actual power attributed to women as a result of these positions. The risk of misinterpreting this indicator increases if the project had previously set quotas as a pre-condition of participation. As the role of hygienist is virtually always occupied by women (Verdelhan-Cayre – 1998), the question arises mainly for the posts of treasurer or chairperson. Do these correspond to actual responsibilities or are they merely figureheads? Simply counting the attribution of these posts by gender may have the advantage of being fast and simple, but it is in no way sufficient to assess the success of the project in terms of empowerment and only careful interviews carried out during evaluation surveys would enable any conclusions to be made on this point.

Similarly, evaluating the numbers reached by educational and awareness-raising activities in terms of the proportion of the population having attended sessions or schoolchildren involved, fails to tell us if the messages were transmitted

¹² This evaluation was carried out by the implementing agency in its final report, using health assessment indicators applied to 51 villages (Burgeap – 1996).

effectively or not. As we have already seen, animation methods very often take place too quickly, and are too superficial and stereotyped, to make a durable impression on people. Any serious evaluation of their impact requires in-depth interviews or surveys intended to assess changes in attitude amongst project beneficiaries.

Finally, although it seems indisputable that the

burden of fetching water and the time taken to do so has been reduced and that this can be credited to the projects, we should, however, add that no evaluation or monitoring study to date has systematically examined the impact of water supply projects on the economic activities of villages in general, nor, in particular, on the income of the women involved in the project (Verdelhan-Cayre – 1998).

6. Conclusions

At the objective definition stage of DWS projects, if we analyse the funding partner's national strategies and approaches we find that objectives are based on the active participation of users, the major involvement of women in the various stages of the projects being conspicuously included.

By contrast, the resources generally allocated (time, human resources, etc.) and the techniques employed at the feasibility stage and notably that of demand evaluation, are insufficient to meet these objectives. "Community" demands – made during meetings supposedly attended by "the inhabitants" – then tend to be evaluated more favourably than individual demands.

During the project implementation, as far as animation is concerned, specific activities are carried out with the aim of involving women more specifically (positions reserved within committees, presence of female community development workers, arranging appropriate meeting times, radio messages, etc.). Despite fairly encouraging participation indicators in some cases, the difficulties encountered in the examples given show just how complex this exercise actually is.

As a result of the limitations of management by water committees, highlighted by many observers, project implementing agencies have suggested alternative ways of managing the water

service which apply firstly to small piped water supply systems. There are currently two clear tendencies broadening the scope of the "supply" response to demand in terms of organisation and providing an answer to the malfunctions observed: management by user non-profit associations and management by private operators.

- **Water user associations** (WUAs): these differ from water management committees insofar as here the users' general meeting is a constitutional and decision-making organ of the non-profit association, which has a legal status. The association is sub-contracted by the commissioning client to manage the operation of the installations in accordance with certain specifications and clauses.

This kind of organisation should ensure that users are better represented, provided, however, that the general meeting manages to mobilise all the various categories. In Mali, appointed representatives of the users of a given standpost are responsible for representing them at general meetings. In some cases, geographical representation has been recommended, in order to avoid prominent local figures from "fixing things amongst themselves".

For small solar piped water supplies introduced during the Guinea village water supply project, a users' association, with the legal status of local development association, was set up. Each

association has an internal set of regulations and a board to which are elected a chairperson, a technical director and an accountant. To have access to the water or electricity service, villagers have to become members of the association. Members are represented on the board by one man or woman for each installation, designated by the its users. Female representation is obligatory. Users are in the majority on the board, and state administrative departments (sub-prefect, Rural development council (CRD), SNAPE) are also represented.

- **Private operators:** when household surveys clearly show that the users do not want to be involved in managing DWS equipment, the ope-

ration of the installations can be handed over to private operators under contract. When some of the prerogatives of the commissioning client (State or municipality) have been delegated to them, the users are then responsible only for monitoring how the installation is operated. The private operators interested in such contracts are mostly male, traders, entrepreneurs, skilled craftsmen or qualified young people.

Although these forms of management seem to match user demand more closely, great importance must still be attached to how the animation and demand evaluation stages unfold. The following chapter will attempt to review these techniques and to draw some methodological recommendations from them.

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5. Methodological aspects

1. The similarities between the gender approach and a demand driven strategy

In the preceding chapters, we have seen how changes in development stakeholder attitudes to women have led to the need to take users as a whole into account and to involve them, no longer as a vaguely homogenous ensemble designated by “the community”, but distinguishing between different groups each with their own distinct, and even contradictory preferences and interests.

In a parallel trend, the need to develop water supply and sanitation projects meeting demand – or rather demands – from users has become increasingly apparent. As we will show in this chapter, a gender-based approach is similar to a demand-based approach from the point of view of the methods which need to be used for the analysis. To fully understand the methodological lessons to be learnt from the demand based approach and applied to gender analysis we must first be clear about what we mean by “demand”.

1.1. What is demand?

“Demand” for improved water supply and sanitation services is a far from simple concept and the factors affecting it are relatively complex (Water Demand Research Team – 1993).

Correlating demand to household income alone, as econometric studies and research have commonly done in the past, is not enough. The three main categories of factors affecting individual demand are as follows (Garn – 1998):

- household income, gender, educational levels, and other socio-demographic characteristics;
- the cost, availability, accessibility and convenience of the various services proposed, or, as far as water supply is concerned, of the available sources of supply;
- finally, the attitude of households to the sector policy of institutions responsible for this sector and vis-à-vis the service operators.

TABLE 1. Characteristics of "demand" for water and sanitation

Demand may be	Demand is always	Demand is not always
<ul style="list-style-type: none"> • expressed • revealed (actual) • latent • ill-informed • unrealistic • biased • invented or provoked 	<ul style="list-style-type: none"> • proper to each project location • dependent on existing alternative options • dynamic (i.e. changing over time) • different for water and for sanitation • dependent on individuals' willingness to pay for each specific option of the service 	<ul style="list-style-type: none"> • taken into account • the same as the choice actually made • identical to what individuals express • met by solutions regarded as optimal by professionals

Source : Parry Jones - 1999.

Table 1 outlines the main qualitative characteristics of demand and illustrates just how complex the nature of demand can be.

The debate about the nature of what "demand" should in fact mean is singularly complicated by the fact that professionals working in this sector interpret it differently according to their own discipline.

Thus, economists equate it to willingness to pay and stress economic and financial factors, such as income, expenditure or subsidies. For engineers, demand is the quantity of water that has to be distributed to the inhabitants, for it is they who will dictate the size and scale of the system. They assess initial demand and how it is likely to change in the future, in order to be able to prepare the technical project and to anticipate operational tasks and possible work to extend or to improve capacity. To do this, they need to collect data on existing consumption methods, the number and type of installation corresponding to each level of individual or collective service.

For sociologists, this is a basic need or a right which should therefore be addressed using data on the needs and priorities of individuals and groups, potential conflicts between users, cultural practices, opinions and beliefs.

These different approaches are naturally reflected in the way in which analytical methods which differ in themselves are used to measure or evaluate "demand". The relative advantages and disadvantages of these will be briefly examined below. For reasons we give in more detail

later in this chapter, it is clearly necessary to step outside the strict "mono-disciplinary" context of analysis and to adopt an "integrated", multi-disciplinary approach, in which the contribution of each speciality helps to resolve the problems raised more efficiently.

1.2. Why a demand driven approach?

There exists today a raft of sufficiently robust assumptions to assert that the lack of attention paid to demand, taken in the widest sense of the term, is largely responsible for the failures of water supply and sanitation projects in developing countries, and more generally for mediocre performances in this sector. These assumptions can usefully be complemented by reviewing the Methodology for Participatory Assessment (MPA) approach used by the Drinking water and sanitation program.

There are countless examples of projects which have ended in failure because they were planned and implemented without adequately taking into account the preferences of those referred to by common consent as the "beneficiaries".

Hence the results of recent research carried out by the UNDP/World Bank Drinking Water and Sanitation Program (Sara and Katz – 1998) in 125 communities reached by ten projects in six countries (Benin, Bolivia, Honduras, Indonesia, Pakistan and Uganda). This showed that systems

MPA methodology developed by the Drinking water and sanitation program

The Drinking water and sanitation program, amongst others, came to realise during the 90s that focusing exclusively on women was not enough in itself and opted for an approach which considered the roles and responsibilities of both men and women. There was an attempt to achieve a better balance in understanding the perceptions, desires, obligations and advantages brought about by installations amongst men and women in the context of DWSS. Analysis of the results obtained show that investments in DWSS which take local demand into account are more likely to be sustainable. This approach requires new methods and new tools enabling project planners and service providers to take decisions in which all consumers are included by ensuring that the most frequently excluded groups – notably women and more particularly poor women – are not left out of the process.

Methodology for Participatory Assessments (MPA)¹ is a new tool which can be used to achieve this. MPA was developed by the Participatory Learning Action (PLA) unit of the Water and Sanitation Program. 18 major projects in 15 countries were evaluated in order to study the interactions between demand-based approaches, i.e. approaches sensitive to the roles and responsibilities of men and of women, and those centred on the sustainability of DWSS infrastructures. The evaluations strengthened the argument that projects which take account of the roles and responsibilities of men and women and of poverty achieve better results.

The contribution of MPA was to introduce three new factors:

- It showed that indicators relating to the roles and responsibilities of men and of women and to poverty can be widely and usefully used in sustainability analyses.
- Next it provides interested parties at various levels – communities, project staff and decision-makers – with a way of clearly visualising the way in which their actions can contribute to the sustainability of the actions taken.
- Finally it shows that quantitative statistical methods can be used to analyse the qualitative data obtained from communities using participatory methods.

Carefully used, MPA gives consumers greater scope for expressing their views on the processes involved in service provision. It helps projects and project implementers to take all the members of the community

into account rather than just its leaders or those members who make themselves heard the most. Communities gain a better understanding of how their services work, and are in a position to appreciate problems and to agree on solutions. This methodology and the indicators it uses can be applied not only to monitoring but also to project preparation. In fact, its potential use goes well beyond the water and sanitation sector, and it can be applied to any service requiring the active participation of poor population groups. The methodology for participatory research, by combining key social indicators and sustainability indicators, is a first important step towards a unique and user friendly evaluation tool.

Main conclusions of the evaluations

Generally speaking, statistical analysis confirmed the conclusions of the 18 evaluations covering 88 communities and showed the importance of demand driven approaches, where demand is based on indicators which take into account aspects of gender and poverty for the sustainability and the quality of services. The PLA team defined a "sustainable water supply service" as a service which provides on a regular and reliable basis water in sufficient quantity and of acceptable quality for domestic use. Breakdowns are rare and repairs quick (less than 48 hours), local funds cover at least the regular cost of operation and maintenance (O&M) and repairs. The following conclusions² were reached from the analysis:

- A high level of participation in the implementation and operation of a drinking water supply (DWS) service in rural areas managed by the community is closely linked to its sustainability. In this context, the participation of the community shows that it assumes responsibility for maintenance and management, and that this skilled work is remunerated and carried out by both men and women.
- Contrary to expectations, strong demand for a water supply, reflected by initial payments in cash or in kind, does not lead to the sustainability of DWS services. Factors affecting the sustainability of systems are rather community participation in maintenance and management, careful management of this participation and of the service, and satisfying all user categories - men, women, rich, poor – vis-à-vis the DWS service and its direct and indirect advantages.
- Good governance at community level during the project cycle correlates positively to a more sustainable water supply. In this case, "good

¹ *Methodology for Participatory Assessments with communities, institutions and policy Makers*, Dayal, van Wijk & Mukherjee, March 2000.

² *Linking Sustainability with Demand, Gender and Poverty. A study in community managed water supply projects in 15 countries*, Gross, van Wijk & Mukherjee, January 2001.

governance" has the following characteristics: a local organisation which monitors contributions to the building work and the input of those who do not take part in this; women's participation in monitoring and checking; and training male and female members of the community in technical aspects, management, finance, hygiene and sharing accounts between the community as a whole, men and women.

- DWS services funded by bilateral partners are significantly more sustainable than services funded in other ways.
- The more executive agencies have taken participation, gender and poverty issues into account, the more the DWS system sustainability indicators within the beneficiary communities are positive.

An "efficiently used service" was defined as being the percentage of households with easy access to an improved water supply, combined with the percentage actually using the improved service consistently, at least for drinking water, and the cleanliness of the environment (existence of drainage and absence of stagnant waters). Recently obtained results showed that:

- Projects which pay most attention to issues relating to gender and poverty are also those which achieve the best results in terms of efficiency. On the other hand, there is no proven link with the sustainabili-

ty of the services. This seems to suggest that projects which fail to take gender or poverty issues into account, whilst they may achieve good technical and financial results, leave a significant segment of the population outside the service and have less impact on extending the use of drinking water. Ensuring universal access to drinking water and its use remain, however, two important factors – although not the only ones – contributing to improvements in public health.

- The more the project is demand-driven, the easier it will be to ensure that there is access to the service and that it is used. Projects using this approach offer the male and female users of all economic levels information and options relating to the technologies, the levels of service, the location of the installations, the type of local structure for their management and maintenance, and the systems of funding. The more people express their opinions and preferences, the better access to the service will be, and the more it will be used.

- Communities with higher levels of service and resulting improvements in their water supply, sanitation and hygiene (even if not necessarily within a single project) make more use of these services than communities which have only water projects or a lower level of services.

Suzanne REIFF, Water and Sanitation Program

are more sustainable³ in communities where a demand-driven approach was used.

These principles are not, however, systematically applied in communities where projects have been implemented. The study suggests that:

- sustainability is appreciably higher in communities where households have given their views with a clear understanding of the opportunity to build a system, as well as of the type of installation and the level of service they would like. This relationship proved statistically significant, even when taking account of independent variables, such as the level of poverty and distance from an urban centres, and variables proper to each project, such as training, the type of technology and the cost of the system per inhabitant;

– although sustainability is higher in communities where the project team used a demand driven approach, such an approach is not used consistently. Surveys of communities and households reveal that projects are sometimes "supply driven" (in which case members of the community cannot choose between several options or are not informed about the expected costs or responsibilities) and sometimes "demand driven" (in which case time is taken to inform the communities about the various possible combinations and they are given a predominant role in the decision-making process);

– sustainability is higher when demand is expressed directly by households, rather than through the intermediary of traditional village heads or community representatives. This is one of the key results of the previously mentioned study.

According to the study, it is when households – rather than community representatives (water committees, traditional village heads or local

³ Assessed using five indicators measuring the performance of the system, i.e. the condition of the physical equipment, consumer satisfaction, operation and maintenance, financial management and the will to ensure the sustainability of the system.

authorities) – take part in launching the project and in taking decisions about the system, that there is the clearest link between a demand driven approach and the sustainability of the project. The study shows that household perceptions often differ sharply from those of prominent figures within the community or the intermediaries with whom the project works.

There are plenty of examples of projects hijacked by community representatives and turned to their advantage, either by locating the installation on their property, thus depriving certain segments of the population from access to it, or by opting for a formula rejected by others in the community. In yet other cases, where community representatives failed to take account of demand from certain groups within the population, such as women or the poor, the project ended up with installations which did

not match what the community as a whole wanted.

Often, the members of the community then voice their dissatisfaction with the service, do not really feel that they are in charge of the project and are disinclined to pay for its maintenance. The study showed that quality improves when projects, NGOs or other intermediaries use staff well-trained in popularisation techniques, so that all the members of the community have the opportunity to take part in the decision-making process.

From this point of view, each of the three categories of methods described below has the advantage of being able to assess not only demand from households, but also – provided the methods are used with care – demand from women in particular and their specific preferences.

2. Demand evaluation

2.1. The methods available

Table 2 presents a summary of the demand evaluation tools regularly favoured by the various professions active in the field of water and sanitation, but in fact most frequently used in combination.

Table 3 shows the stereotypes generally attributed to the three main categories of demand evaluation methods. Although this tends to oversimplification by exaggerating the differences between these three categories of methods, our objet here is to move beyond simply comparing these and to consider to what extent, in the light of their specific advantages and also the inherent limitations and constraints of each, they can be used in the context of an analysis of demand in general and of a gender based approach in particular.

In fact, if we consider the literature available, it is clear that the various demand evaluation techniques do not share the same potential area of application.

In rural areas, demand for water and demand for sanitation are often assessed together and simultaneously, and the evaluation uses a fairly wide range of methods, with a quite marked preference, however, for participatory methods.

In urban areas on the other hand, each is generally evaluated separately, in the context of specific sector projects.

Two fields of application, however, remain rarely and poorly documented: these are on the one hand demand evaluation for improved sanitation in rural areas, and on the other the application of participatory methods in urban or peri-urban areas.

TABLE 2. Demand evaluation tools		
Engineers	Sociologists	Economists
<ul style="list-style-type: none"> • Household revealed preference surveys (RPS⁴) • Assumptions related to the most feasible alternative • Aggregated estimations based on provision norms ("needs") 	<ul style="list-style-type: none"> • Participatory evaluation (PRA⁵) • Community meetings or focus groups 	<ul style="list-style-type: none"> • Contingent Valuation Method (CVM⁶) • Household revealed preference surveys (RPS)

After Parry Jones - 1999

⁴ RPS : Revealed Preference Surveys. "Revealed preference" refers to the actual choices of individuals or households, i.e. actual practices for water supply and sanitation given the locally available options.

⁵ PRA : Participatory Rapid Appraisal.

⁶ Unlike revealed preference, here the valuation assesses the choices of individuals or households if DWSS services were available in given conditions. These are put to the survey respondents, but hypothetically.

TABLE 3. Comparative stereotypes of three demand evaluation tools			
	General household survey	Participatory approach	Willingness to pay survey
Date of development	1920-1950	Since 1980	Since 1960
Predominant discipline	Statistics	Multidisciplinary	Economics
Criterion of excellence	Empirical precision	"Political correctness"	Conceptual rigour
Practitioner type	Research consultants	NGOs	Universities
Field of application	National programmes	Grass roots initiatives	Market improvements
Predominant paradigm	Modernist	Post-modern	Neo-liberal

Source : MacGranahan G. et al. - 1997

2.2. General household surveys and revealed preference surveys

Fields of application

When the object of a project is improved water supply or sanitation in a city or a group of towns, preliminary studies ordinarily include an analysis of current practices and behaviour. This includes notably a revealed preference survey (see note 4 above), and questions intended to assess what households think of the services available and what they would like to see improved.

Because it is fairly inflexible and requires great precision in the way it is used, this tech-

niques is not very suitable for small scale projects in rural areas, where it is moreover important to ensure the active participation of the community and to engage it in a process of iterative dialogue.

It is of greater use as an aid to planning at city or regional level, to establish priorities for investment, or to make "marginal" adjustments to the service supply so that it matches the demand better. By contrast, when seeking to assess demand for a new service which doesn't yet exist, or for an improved service which will differ very substantially from existing services, another method has to be used: contingent evaluation⁷.

Provided care is taken to survey not only men (or only male heads of household) but also women (or the wives of the heads of household), this method enables differences in demand according to gender to be assessed, i.e. differences between the preferences, practices, opinions or attitudes of men and of women. Thanks to certain modelling techniques, such surveys also enable one to measure the impact that a change in the nature of the services currently available – such as the price of water or the distances between standposts – might have on overall demand or on demand specifically from women.⁸ The method can therefore also be used as a decision-making tool when setting prices.

In the monitoring and evaluation phases of the project, the surveys used to assess the extent to which the project matched the expectations of male and female users are not as “heavy” as pre-project surveys. Assessing user satisfaction is the primary objective of these surveys. As for the objective of measuring the advantages provided by the project (in terms of the cost and the effort required for fetching water for example), gender distinction enables results to be more accurately interpreted and the service management strategy to be oriented towards optimal equity.

Gender and statistical data processing

Most of the surveys carried out in the DWSS sector are analysed using simple, tried and tested techniques.⁹ The socio-economic and demographic variables likely to explain demand, however, are often inter-dependent. This makes it very dangerous to draw conclusions from a

⁷ See below Chapter 5, § 2.4. “Contingent valuation methods”.

⁸ See box “Modelling demand: the techniques available”. The models described there have to be applied to a random sub-sample of the survey, then validated and tested on another sub-sample. Evaluating the impact of a modification in the predictor variables on demand uses the notion of elasticity (calculation of the model derivatives).

⁹ These techniques include: frequency tables, cross-tabulation, calculating averages of numeric (or quantitative) variables, multi-variable linear regression, variance calculations.

Limitations and constraints of general household surveys and revealed preference surveys

1. It may be difficult to define a “household”, the survey unit, in some “extended family” contexts or when several families share the same installations (“semi-collective” piped supplies, latrines, etc.).
2. Such surveys cannot provide data on the willingness to pay or the preferences of households vis-à-vis future innovations (when an improved service or installation is not yet available, i.e. in the case of so-called “contingent” situations).
3. The study is an expensive one (training interviewers, pre-survey testing, entering data from questionnaires, processing and interpreting it).
4. The survey is a process for consulting individuals. The local collectivity or community as such is not involved in the decision process using this method alone. It cannot replace dialogue with a level of collective representation.
5. Preferences and demand for improved sanitation are more difficult to assess using this method.
6. Seasonal variations are difficult to identify accurately using this kind of single opportunity survey, which can provide only a “snapshot” of practices and behaviour.
7. Survey questionnaires and their results are specific to the location surveyed, and it is difficult to transfer them to another location, even within a single zone or region.

series of cross tabulations of such variables. To return to an example given above (Chapter 3), measured in terms of willingness to pay for improved sanitation, demand from women is lower than that from men. However, the cause and effect relationship which seems to emerge from this simple cross-tabulation is misleading: as we have seen, women are willing, given equal incomes, to pay more than men.

To be able to assess the effect of gender all other things being equal, it is necessary to take into account not only income, but also - and

Modelling demand: the techniques available

In factorial analysis, distinguishing between active and passive variables is sufficient to enable one to construct a model, not unlike multiple linear regression. Explaining one or a series of variables by others can therefore be explored using data analysis techniques. Hypotheses can be formulated. Generally, however, the intention is to go further and to measure the effect of one variable on demand or on user satisfaction.

In the case of a numerical variable to be explained (e.g. willingness to pay or water consumption), instead of multiple linear regression¹¹, it is preferable to use principal components regression, or better still, neuronal regression and PLS regression¹².

In the case of a text variable to be explained (e.g. preferences, user satisfaction, the water supply or sanitation systems chosen), the recommended tool is MNL¹³ modelling or discriminatory analysis. The latter is the preferred tool for demand segmentation¹⁴. It enables socio-economic groups ("segments") which are homogeneous from the point of view of demand to be identified, i.e. categories of population with distinct demands for particular goods or services.

¹⁰ In this methodology, now available as software, factorial analysis combined with classification (cluster analysis) techniques is the basic analytical tool. It enables groups of individuals which are as homogenous as possible vis-à-vis their basic characteristics (known as "*noyaux factuels*" or factual cores) to be identified. Cross-tabulating one of the nominal variables of the survey with the spread of "*noyaux factuels*" summarises nearly all the tables obtained by cross-tabulating this same variable with each of the basic characteristics. In addition, certain interactions which these binary tables fail to reveal may be detected.

¹¹ This requires the predictor variables to be independent, i.e. mutually un-correlated, which is rarely checked, as we have noted previously. Factorial analysis can, however, help to select independent variables as regressors.

¹² Or Partial Least Squares regression. See Tenenhaus and Morineau – 1999. An example of PLS regression and the conclusions

simultaneously - a number of other basic individual or household characteristics: age, status in the family (head of household or not), occupational status, size, seniority, socio-professional category, level of education, etc.

As these characteristics are partially inter-related, cross-tabulation is not really sufficient for the survey data and the way in which it is structured to be fully explored. The classic uses of cross-tabulations are no longer viable and the use of data analysis techniques (also known as descriptive multidimensional analyses) is recommended.¹⁰

2.3. Participatory evaluation methods

Fields of application

Participatory evaluation methods are most commonly used for small-scale projects, particularly in rural areas or underprivileged urban areas when it is vitally important to build a relationship and launch a dialogue with the community.

it suggests can be found in Chapter 3, § 3.4. "Ability and willingness to pay for improved sanitation: gender analysis".

¹³ There are four types of MNL (Multinomial Logit) models. The first, known as "cumulative MNL" is used to model an ordinal or ordered variable, such as individual user satisfaction, measured on a scale of several degrees (e.g. Very satisfied/Fairly satisfied/Not at all satisfied). In surveys of user or consumer behaviour, a set of alternatives (actually chosen in the case of a revealed preference survey, or contingent when some of these variables are future projections and therefore not yet available) is presented to an individual who chooses the one he or she prefers or indicates the one he or she uses. In the so-called "conditional MNL" model, the choice is treated as a function of the characteristics of the different alternatives. In the "generalised MNL" model, it is a function of the characteristics of the individual which makes the choice. Finally, a "mixed MNL" model includes both the characteristics of the alternatives and of the individuals. The latter model therefore enables the effect of gender on the probability of choosing one or another water supply or sanitation system in the light of its attributes (price, distance, etc.) to be evaluated.

¹⁴ See Chapter 3.

¹⁵ We should specify that neuronal discriminant analysis (using neuronal networks and available on some data analysis software) overcomes the limitations of the statistical approach and should from now on be used as standard.

This is because participatory approaches enable information to circulate both ways and can enhance the ability of both members of the community and of the community as a whole to be organised, to take initiatives, to direct and take charge of their own destiny.

We should stress that the methods this approach uses are probably not taken as seriously as specific demand evaluation tools as they deserve to be by economists and engineers. Because project managers often have this professional background and are unaware of their potential, there is clearly an opportunity to include such techniques more frequently and earlier in the project life cycle, using them in conjunction with other complementary techniques in the planning and preliminary survey phases.

Implementation

Unlike traditional teaching methods which depend on transferring knowledge and on messages or programmes pre-established by external specialists, participatory methods stress the importance of developing the skills of the people concerned in evaluating, selecting, planning, setting up new systems, organising and taking initiatives.

The primary objective of participatory approaches with regard to water supply and sanitation is therefore not merely to ensure that the system is sustainable by setting up management committees or by teaching users how to repair a pump. It is rather to help population groups to acquire the attitudes, skills, self-confidence and spirit of commitment which will enable them to take their own development in hand.

An approach based on reciprocal benefits

Whatever tools it uses, the participatory approach requires a radical change in relations between those who traditionally played the role of teachers or experts with all the answers and those who were relegated to the passive role of beneficiaries, for the most part illiterate, of instruction.

This approach forces external agents to recognise and to respect the fact that communities

also have their own skills and talents, and that these must be allowed to express themselves. Only then can the "participants" really fulfil their role as development partners.

The participatory approach is a process based on reciprocal benefits, a partnership between the external agent and the community. While the methods used in this context help members of the community to master new skills, the external agent (the trainer) learns, through using them, to understand the human environment in which he works better.

All too many project managers are still fearful that using participatory methods will mean that they lose control of the situation, forcing them to set aside their own ideas which are the only ones capable of moving things forward. Not everyone finds the shift from the status of expert in a position of authority to that of partner an easy one. This can take time as described in the following extract: "The first lesson we learnt was the importance of taking one's time. This means having the patience to exchange ideas with people and to consult them at great length. Unfortunately, efficiency is often measured in terms of the time taken to complete a task, so that there is a tendency to believe that the faster a task is completed, the better. This kind of efficiency, however, very often means sacrificing the personal involvement of the very people who are supposed to be the target of development work." (J.M. Flavier, Director of the International Institute of Rural Construction (IIRR) in the Philippines, from Srinivasan – 1993).

Provided it is used appropriately, within a participatory approach, any tool can become in itself participatory. The key question always to bear in mind is as follows: does this process help development practitioners to obtain the information they need to resolve the problems the communities have identified, by using methods which improve the capacity of these communities to overcome similar problems in the future?

Acknowledging that every situation is different

The fundamental issue is still as follows: "Do we really want community participation and

what do we mean by this?" (Melchior – 1989).

In the past, development work took a very narrow view of the community, regarding it as a homogenous whole: "Talk to the head of the village and you'll find out what the community wants, what it needs and what it can do." In reality, within each community there are several groups – young and old, rich and poor, Hindu and Muslim, men, women, children – who have their priorities, their strengths and their weaknesses. Participation was seen in terms of contributing labour, ideas (sometimes) and materials. It was not seen as the right of the participants to express their intention – or not – of taking part in the project, of choosing the equipment and setting the timing and the location of meetings, of designating representatives for

their community. "There are plenty of people who can see that fetching water is women's work, but a great deal more has to be done to prove to everyone that taking decisions outside the home can also be women's work".

Ten years later, "participation" still all too often amounts to little more than deciding whether or not to commit to a given service (a borehole, standposts every 200 metres, individual piped water supplies, etc.) and to a supposedly optimal management system. At the same time many projects now seem to accept the notion of user heterogeneity. A new generation of development programmes is emerging, centred more on demand and on a broader range of technical solutions. There are countless publications on this subject. The main "ways of doing things" or recommendations are grouped and listed below, as are the tools used. The latter are drawn from several methods, particularly SARAR¹⁶ and PLA¹⁷ methods.

At each stage of the implementation of a programme, from preparation to completion, the participatory approach requires that the communities concerned be consulted and involved in orientations and decision-making. Two points stand out: organising meetings and shifting the balance in decision-making:

– organising meetings is indeed unavoidable.

Meetings provide a forum for encounters and debate, their aim being to raise awareness and to encourage "participants" to take charge of their own future. They may also reveal stumbling blocks or conflicts which need to be brought into the open. Particular care must be taken when preparing such meetings;

– in addition, meeting the objectives set often

Pre-conditions for introducing a participatory approach

Once it has been decided that a participatory approach will be used as a working base, a certain number of conditions need to be met before it can be introduced:

- In the first place, it is vital for the external agents to master new skills in the use of participatory tools and for project managers to adapt their rhythm of work to that of the communities in which they are active.
- It is also essential that there should be mutual trust and respect between all the people involved, and establishing such a relationship requires time and imagination. A spirit of openness and transparency must prevail if communities are to be encouraged to appropriate the process and to make it a mutual opportunity to learn (on the part of external agents on the one hand, and the population on the other).
- Participatory approaches often lead to changes in teams of leaders and in existing institutions. Such transitions must be handled smoothly and in a spirit of mutual respect. Preference should be given to "charismatic" leaders capable of assuming their new responsibilities without becoming either too bureaucratic or too technical, or losing the respect they enjoy.
- The various sections of the population will have differing degrees of instruction and different value systems from one place to another. The tools used must be adapted to each situation, and this requires appropriate analysis and design.

¹⁶ A participatory methodology based on strengthening the following five characteristics within the community: Self-esteem, Associative strengths, Resourcefulness, Activity planning and Responsibility.

¹⁷ PLA : Participatory Learning and Action. A participatory methodology drawing on SARAR and PRA methods to improve the abilities of sector agencies to meet user demand for water supply and sanitation services, using participatory approaches which address both the male/female issue and that of combating poverty.

Limitations and constraints of participatory evaluation methods

1. The data obtained from participatory evaluation methods cannot be regarded as statistically representative, as they have not come from a random sample.
2. Generally considered not very likely to yield data on households' willingness to pay and on their behaviour given a future improvement in services (although the latter point remains controversial).
3. There are few examples of such methods being used to assess demand in large scale projects or projects in urban areas.
4. These methods are often applied by experts who are not entirely familiar with them or who do not fully understand all their technical implications, and this can lead to distorted results.
5. The flexibility of the approach can be mistaken for lack of rigour.
6. The qualitative nature of the data obtained can make them difficult to use to justify the actual selection of a project option or a given level of a particular service.

means setting up new bodies which in turn represent a shift in existing powers (notably in favour of women). Only consensus achieved through dialogue will make the infant organisation viable.

Many obstacles have to be removed to enable women and underprivileged sections of the community to participate on equal terms. The community's way of operating also has to be respected, and this applies notably to timing and participants' availability, as well as female participation in managing installations.

2.4. Contingent valuation methods

Fields of application

The contingent valuation method (or CVM) is a technique developed by environmental econo-

mists to assess the value attributed to public assets and environmental amenities (air quality, landscape quality, etc.).¹⁸ Since taking its first tentative steps in the 60s, the contingent valuation method has acquired a scientific credibility well documented in a literature of over 1,500 studies. Nearly 40 years of debate have allowed the method to progress to the point where today its theoretical foundations are virtually universally acknowledged in scientific circles.

Until the end of the 80s, however, researchers' field of investigation was essentially made up of surveys relating to industrialised countries. The shift towards studies in developing countries, notably described by D. Whittington who launched this new wave of research, would according to him be easier to achieve and give better results (Whittington – 1998). However, although the subjects vary in the countries of the South, the objectives of studies there often differ from those carried out in the North and it is therefore difficult to compare the results of each.

Most contingent valuations carried out in developing countries are commissioned by funding partners in order to analyse demand for infrastructure or to assess the advantages of investment projects.

The objective of contingent valuation surveys is to analyse demand for improved services which do not yet exist. Strictly speaking, population groups have to be asked how much they would be prepared to pay to be able to benefit from such a service or services (these are known as "willingness to pay" surveys). They can also be asked to consider alternative services by explaining the conditions in which they would be made available to them (levels of service and price) and to say which they would choose or their order of preference (a method known as "conjoint analysis").

Pre-project surveys sometimes mean that this

¹⁸ One of the first applications of this method was in connection with a thermal power plant in an exceptional tourist location of Arizona (USA). Visitors to the region were asked how much they would be prepared to pay for the plant not to be built and this enabled the value that could be attributed to the landscape to be deduced.

Limitations and constraints of contingent valuation methods

1. The technique has been broadly developed in industrialised countries. Since its application is still very recent, it is not yet sufficiently familiar to local partners, and remains inadequately documented and mastered by them.
2. The hypothetical ("contingent") nature of the proposed installation or service means that unless care is taken (with the survey or using a pre-survey pilot operation phase) there is a great danger of asking the respondents about their demand for services the advantages and drawbacks of which they do not know enough about to give reliable answers.
3. The study is an expensive one, even more so than general household surveys (training interviewers, pre-survey testing, entering data from questionnaires, processing and interpreting it).
4. As for general household surveys, the process involves consulting individuals. The local collectivity or the community as such is not involved in the decision process through this method alone. It cannot be a substitute for dialogue at collective representation level.
5. Survey questionnaires and their results are specific to the location surveyed, and it is difficult to transfer them to another location, even within a single zone or region.
6. The willingness to pay resulting from these surveys does not reflect the fact that normally women are the ones responsible for carrying out tasks relating to water and sanitation, while men often control financial resources. When willingness to pay differs – as it frequently does – between men and women, the method does not enable one to predict the actual decision the household will take, unless perhaps the respondent is given enough time to consult his or her spouse before replying.

objective has to be tacked on to that of the general household or revealed preference survey (studying present practices). Pursuing both these objectives simultaneously using a one single survey is not easy. Firstly, there may be a mismatch between the improvements the inhabitants want and those which engineers consider "desirable". Moreover, the "improved" installations or services which engineers regard as feasible

beforehand, and demand for which they would like to measure, most often involve some degree of innovation. The demand is then insufficiently "informed" to be measured reliably.

It is consequently recommended that the two types of surveys should be kept separate, and that the contingent valuation should be carried out only once one is sure that the advantages and drawbacks of the innovative goods or services being proposed are sufficiently familiar, and that these proposals are based on an in-depth assessment of current practices and desired improvements. This sometimes requires a preliminary information and awareness-raising phase, or even a pilot project serving as both a test and a demonstration, particularly in sanitation projects.

In contingent valuation surveys, a strictly econometric approach takes account only of decision-makers and therefore focuses on the heads of household within the survey population. Only the actual choices made by households are relevant, even if women's preferences differ from those of their husband. In a gender-based approach, both men and women have to be interviewed, in order to reveal any differences in demand according to gender.

The statistical tools which are suitable for using data from such surveys and to uncover differences in demand according to gender are the same as those previously described in relation to general (or revealed preference) household surveys.¹⁹

¹⁹ See above Chapter 5, § 2.2. "General household surveys and revealed preference surveys".

3. Expected impact of these methods

Intended to evaluate demand, these methods tend to enable women's preferences to emerge, to bring these to the attention of decision-makers and ultimately to help women "to make their voice heard". As such, these methods are not specific to the gender-based approach, and any

recommendations which may have been made on applying them in the context of this approach are mainly common sense. If we want women to express themselves, it seems only natural to ensure that everything is done to enable them to participate and express themselves (choosing the

TABLE 4. Summary of ways of removing obstacles to female participation

ACTIVITIES	MECHANISM USED
Project launch	Programme managers make sure that male leaders understand that it is necessary for women to participate in collective responsibilities or get permission from the authorities to carry out a survey on a random sample of the population.
Information and dialogue	The programmes use local channels of information likely to reach women. Women as well as men are asked questions in the course of household surveys. Selecting female interviewers encourages the former to express their views.
Meetings	Programme managers encourage women to speak up at project meetings in the following ways: <ul style="list-style-type: none"> - choosing the best locations, dates and times for the meetings; - informing women that the meeting is going to take place and inviting them to attend; - using female community development workers; - making sure the participants are correctly installed in the meeting space (to avoid for example women staying at the back); - using local languages or dialects; - ensuring that there are pauses during discussions and if necessary "women only" meetings.
Decision-making	Programmes enable women to participate in making decisions in the following areas: <ul style="list-style-type: none"> - choosing agents (notably maintenance) and mechanics; - choosing committee members; - design and location of the installations; - the system of local management.
Representation	The women designate their representatives themselves, based on criteria of trust, ease of contact with a third party, ability to direct and availability. Female representatives have the support of their families.
Management	Programmes take traditional tasks and skills as a basis for attributing new roles to women in the field of water supply: water and waste management and how land is used; water installation maintenance and repair; raising awareness on hygiene issues; looking after latrines; managing funds, etc.
Training	Women are also trained in technical and management tasks. It is preferable to use female trainers for the training of women. Programme staff and managers are trained to encourage equal participation by men and women in practice.

timing of meetings or interviews, including them in the survey sample, etc.) and to avoid situations which could prevent them from doing so (choosing interviewers, "women only" meetings, etc.). The more technical recommendations relate rather to the current state of the art of the disciplines of the various experts – engineers, economists, sociologists, statisticians – who have to work together on the pre-project, community development or follow-up and evaluation surveys, in a determined effort to achieve a multi-disciplinary approach.

The use of demand analysis tools is relatively new in the development field and they provide

programme managers with a vast new area of innovation. This is particularly true when seeking to identify the particular features of approaches which enable male/female balances to be respected and each to be accorded respectively the roles and places necessary for DWS services to work well and to be sustainable.

The recommendations in Chapter 6 below do not in themselves constitute a method (indeed a method still needs to be developed and made effective). Rather they represent a starting point in seeking both efficiency and respect for the communities involved in drinking water installation programmes and projects.

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6. Recommendations

These recommendations were formulated by the french Ministry of Foreign Affairs and French development agency (AFD).

For water supply sector operations to secure sustainable development, the participation of all interested parties in their implementation must be encouraged.

One of the strategic orientations of the Zeller report²⁰ on the environment, sustainable development and intentional aid makes the following specific recommendation on strengthening the capacity of states and involving population groups in the design of programmes aimed at sustainable development: "ensure [as a corollary] that projects are appropriated by population groups, notably by using the vector of collectivities, by making these population groups participate in the strategy, the planning and the evaluation of projects."

Women have for too long been insufficiently involved in development operations, as have other marginalised population categories, whether male or female. The following recommendations will benefit women and they should enable gender to be taken into greater account in policies and operations in the field of water supply.

French co-operation is committed to:

1. Including the gender issue:

- in institutional assistance to water supply sector policies in partner countries;
- in its own strategic approaches, whilst also taking part in co-ordination between funding partners.

2. Encouraging the participation of women in the design and implementation of related policies which enhance the sustainability of operations in the field of water supply, notably in the following contexts:

- local development and decentralisation, so that women can play a genuine role in local democracy. To this end, the solidarity of population groups – both women and underprivileged social categories - and their structuring at community level must be strengthened;
- education and literacy to help remove the obstacles - social, cultural, political and economic – which bar access to knowledge. Unequal access to education is a major brake on development and on the strengthening of their capacities and power;
- health with the aim of combating water-related illnesses, of helping to take account of requirements for sanitation, and generally speaking to reinforce people's awareness of health issues.

²⁰ Interim report of the interministerial working party, "*Environnement, développement durable et aide internationale*", CICID, May/June 2001.

3. Basing gender analysis on a methodology founded on demand, which in turn implies:

- using, of the methods available (household surveys, participatory evaluation methods, contingent valuation methods), those which prove most relevant to analysing male-female relationships and their potential impact on the projects envisaged in the light of given contexts;

- giving more weight to preliminary studies (time and resources – human, financial and technical) in order to take into account the social, political and cultural context and individual demands (household surveys) in the scaling of projects, either at the feasibility phase, or in the programme or process context;

- encouraging the creation of multidisciplinary teams (engineers, economists and sociologists) capable of developing a capacity for in-depth

analysis of the contexts in which operations take place and to carry out studies differentiated by gender;

- encouraging the emergence of local demands by providing collectivities with the necessary means (developing survey skills; making socio-demographic, economic, technical and topographical data available; helping regional technical departments to formulate requests);

- supporting female representation at all levels of decision-making and management;

- ensuring that information about the proposed operations is also disseminated amongst the categories of interested populations;

- introducing follow-up and evaluation processes which verify that the benefits of operations are equitable, thus ensuring their success and their sustainability.
