

MEN AND WOMEN, WATER AND WASTE: GENDER ASPECTS IN THE DUTCH WATER SECTOR

C.A. van Wijk-Sijbesma
 IRC International Water and Sanitation Centre
 P.O. Box 93190
 2509 AD THE HAGUE
 The Netherlands

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Abstract

This paper gives an overview of the historical conditions and labour divisions in water supply and sanitation in The Netherlands. Water supply, and especially sanitation and hygiene, were initially not seen as public responsibilities and the links between water, sanitation and health were not understood. When services and hygiene improved, water and sanitation-related diseases disappeared. Besides general access and use of well-working systems also enhanced education, communication, the establishment of voluntary organizations and changes in the position, organization and income-generation for women contributed to this impact. Locally-established and managed water systems still exist in the less densely populated areas of Europe. Here, gender aspects remain most visible. A gender approach means that both men and women get information on and take part in decisions and management of water systems and sanitation and hygiene programmes. The approach is important to get the support from men and women and divide work, decisions and trainings more equally and effectively. In the Netherlands, conditions resemble those of the middle and higher classes in an urban society. Hence, water supply and sewerage are centralized services, managed by specialized agencies. Dutch rural water resources are still managed by decentralized and elected local bodies. The gender aspects of the election and representation system are part of the management strategy. The paper ends by comparing the roles of community managed water supply in Europe and India and by advocating a gender strategy in Indian implementation projects.

1 INTRODUCTION

Over time, social concepts in the water and sanitation sector have moved from community participation in general to the involvement of also women, and now to the use of a gender approach. Other than often thought, gender is *not* synonymous with women's involvement. Gender refers to the society-defined divisions in tasks, rights and responsibilities of men and women and to the changes therein over time. Gender is not only a culturally defined concept, but it is also dynamic, because ideas about what is appropriate for men and women are subject to change. Thus, modern fathers have their sons and daughters educated and India was one of the first nations to have a female prime minister.

A gender approach in water supply, sanitation and hygiene education is important, because of the differences between men and women in needs, tasks and means of

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communication. For example, management of domestic water and waste is done by women, so when they are convinced that a particular development, such as a low water use toilet or latrine, is beneficial, they will often initiate its installation. The financial decisions, especially when substantial costs are involved, are however often taken by husband and wife together, or are the final responsibility of the husband. This means that men need to be informed on costs and benefits of various designs. And where public management of water and waste is carried out by an elected body, such as a water control board, women's representation and voting by men and women are important issues, on which both men and women are informed (Box 1).

When the importance of a gender approach is not understood, women are often excluded from water supply and sanitation programmes and men from hygiene programmes, even though women make important decisions on water and sanitation, and men's support and behavioural change are needed to make hygiene improvement a success (Fig. 1).

A gender approach does not come naturally. It requires understanding and conscious efforts from those in charge to see where to involve men and women in their programmes, so as to get maximum efficiency and effectiveness and ensure that the programmes do not increase women's work or exclude her from information and decisions.

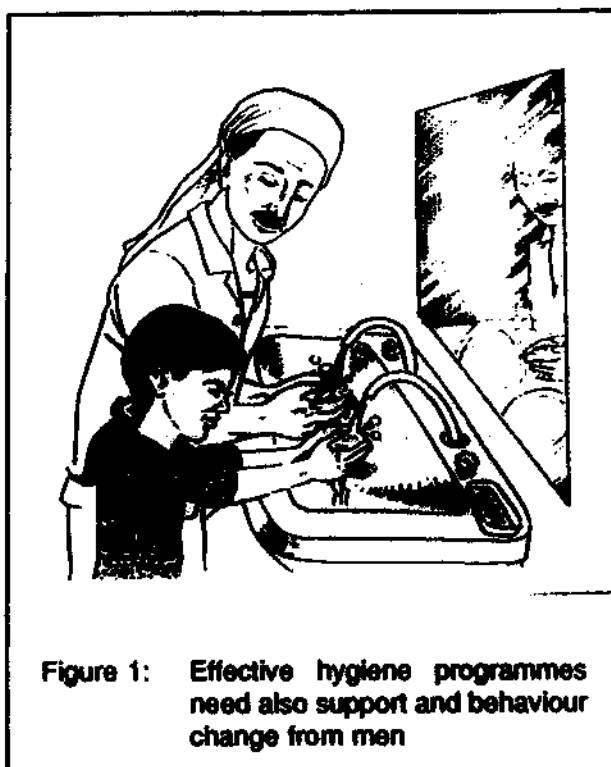


Figure 1: Effective hygiene programmes need also support and behaviour change from men

2 WATER SUPPLY AND WASTE DISPOSAL IN THE NETHERLANDS

Until the middle of the last century, water and waste related diseases such as cholera, typhoid and malaria ('swamp fever') were endemic in The Netherlands. Originally, these diseases were thought to be caused by bad air or soil rather than poor water supply, sanitation and hygiene. Risky water supply and sanitation practices were common. Surface water - rivers, streams and lakes, and in the towns the canals, were used to collect drinking water and dispose of human excreta and other types of human wastes. Public and private latrines in Amsterdam for example were built over or drained into the canals which were also used for drawing drinking water.

Where no surface water was available, people used rainwater or water from dug wells. The oldest dug well found in the Netherlands, in Kolhorn, North Holland, dates from 2000 BC. Six types of lined wells were used: tree-lined wells (two hollowed treehalves connected by wooden pegs); wells lined with grass-sods; square

Box 1 Gender and rural water resources management in the Province of Zeeland

The Provincial Government creates and abolishes the rural water management boards and determines the size of the basin they manage. Zeeland now has seven water resources management boards. In the past, they could have up to 40 committee members. This has now been reduced by law to 25. The Boards are responsible for maintaining water resources, preserving and controlling water quality and quantity, treating waste water, allocating water for different uses, ensuring safety from flooding, protecting the environment, nature management, afforestation, providing and maintaining recreational provisions, etc. Each Board represents five main categories of landusers: landowners with buildings, landowners without buildings, producers of domestic and industrial waste water, non-farming inhabitants and tenants.

Every four years the people in these categories elect their own representatives. Each Board has male and female representatives. The number of female members has increased over time. Before the elections, the candidates' names, pictures, background and interests in/commitment to certain aspects of water resources management are published in a paper which is sent to every voting household. Voters within the households are the persons in whose name the property is registered. However, if husband and wife are joint owners, as is often the case, they have to decide among themselves whom they want to vote for and who will be the one to bring out their joint vote. These aspects are also explained as part of the consumer information.

The costs of water resources management are financed through two type of taxes: the water pollution control tax, which depends on the amount of water used and the level of pollution (the larger and more polluting, the more has to be paid), and the land tax, related to the size of the landholding. Every year the Boards can adjust the level of the tax. The Boards are accountable to the consumers and the Province. Meetings are public and covered by the press. The seven Water Boards are united in a Provincial Water Association. Since a few years the Association prepares annual policy plans. It also owns and manages a water quality control lab. Provincial and municipal governments also make use of this laboratory.

or, more rarely, round wells lined with wood; casket-lined wells; and wells lined with stones or burnt bricks. The latter were built after 1200 A.D. For excreta disposal people used the above-mentioned canal latrines, bucket latrines or fields and the streets.

2.1 Management and gender roles

Just as elsewhere, the collection and management of domestic water in the Netherlands was the responsibility of the women. Children, both girls and boys, would help with the work, as described in a Dutch folk song (Fig. 2). This states that the girls must scour the pots and go to the village pump, wearing wooden shoes, as the chickens need to drink. Boys must also collect water.

Gemoedelijk

Schuit-je varen, thee-tje drin-ken, va-ren we naar de O-ver-toom, drin-ken we zoe-te mel-lek met room,
 zoe-te mel-lek met brok-ken, tien uur slaan de klok-ken. Als de klok tien u-re staat, dan
 komt de klep-per-man op straat Tien u-re, tien u-re, de meis-jes moe-ten schu-ren. De
 jongens moe-ten wa-ter halen, de meis-jes moe-ten pom-pen, op hun hou-ten
Zeer Snel!
 klom-pen. De kip-petjes moe-ten drin-ken.

Figure 2: Dutch folksong on gender division in water collection

In the Netherlands, with its many water sources, water hauling did not require the covering of long distances. In other parts of Europe, with a scattered population and much less water, water collection involved much more work. In rural Finland, for example, where geographic conditions resemble those in developing countries, the total distance which farmers' wives were estimated to have walked in 1954 equalled the distance from the earth to the moon (Katko, 1989).

Public water sources were either open water or private wells. In towns and larger concentrated villages, there would be one public well in the centre of the village or neighbourhood, often equipped with a beautifully decorated handpump (Fig. 3). Only wealthy townsfolk and farmers had private wells. Rural families in Zeeland had one dug well in their meadows for cattle and another in their yard. The latter was used for drinking, washing and firecontrol, as traditional farms in this area have thatched roofs and wooden barns blacked with tar.

Figure 3: Public Handpump, Zwolle



Unfortunately not much is known how the public wells and handpumps were managed. From research in various developing countries, including Sri Lanka and Nepal, we know that the official management of traditional drinking water supplies is often ascribed to the men, also by the women, but that the actual management work is often done by the women and that they will contact the men when they need a particular decision or support (van Wijk, 1985). There is a Medieval account of Dutch handpump management (Box 2), but how arrangements were informally and what the roles of the women were are not known.

Box 2 Statutes for the Pumpmaster and Pumpbrethren (Translation from the original text in Dutch)

"On the 23rd of July 1758, the joint Neighbourhood belonging to this Pump has voted unanimously, after proper information, to adopt the pump statutes registered below and have pledged to fulfil the understanding articles:

1. All Pumpbrethren, none exempt, will meet every year on the 23rd of July in a place to be arranged for by the Pumpmaster, in order to make up the account and elect the Pumpmaster.
2. The oldest Pumpmaster has the duty to inform all Pumpbrethren the day before. If he forgets to do so he will pay a fine of one 'oort' (half a litre) of genever (Dutch gin) to all present. For those whom he forgets to inform he will pay the same fine.
3. Any of the Pumpbrethren who do not come or come later than the announced hour will pay the same fine, unless he is ill, travelling or has asked absence of leave.
4. The pumpmasters who are newly installed will pay an oort of genever or three pennies (15 Dutch cents). Those quitting will each contribute to a value of two pennies.
5. The pumpmasters will see if anything in the pump needs repair. They will not delay, or leave the job for the next Pumpmaster, but before quitting will repair anything that needs repair. If they are found lacking they will pay an oort of genever. When it is feared that the pump will freeze, the pumpmasters are obliged to wrap it in straw or manure, for which four pennies will have to be reserved.
6. The pumpmasters will pay attention that the pump will not be polluted. Nobody will be allowed to wash anything dirty at the pump, such as animal guts or anything similar which can pollute the water, at the risk of having to pay a fine of 6 pennies, to be collected and used by the neighbours of the pump.
7. The community will charge the costs of the repair of the pump to its users, according to their ability to pay, irrespective of whether they are houseowners or tenants."

We know more about gender and water management for areas in Europe with less concentrated settlement than the Netherlands, such as agricultural areas in Switzerland and Finland. Here, as in many developing countries, centrally managed

water systems under a Water Board or Public Health Department are economically less feasible, because of the scattered settlement. The communities therefore manage their own small piped water supply systems, with a local operator/mechanic and an elected water board. In Finland alone, there are still 2000 water cooperatives functioning (Katko, op. cit). Often, women have taken the initiative for the establishment of such water supplies. Once the service is established they sometimes, but not always, also take part in its management. From accounts of community management experiences elsewhere we know that when the management is poor, it is also often the women who take corrective action (van Wijk, op. cit). Group facilities for clothes washing, where women could combine work with contacts, are also common in many places in Europe, but whether women had a role in determining the social and functional appropriateness of design and location and took part in management has not been documented.

2.2 Emergence of public services

The growing nuisance of inadequate excreta disposal and the increased health awareness caused that public management of waste disposal gradually took shape in the urban areas of The Netherlands. Laws on proper environmental behaviour had been introduced already much earlier. In 1481, Amsterdam introduced the first laws which forbade citizens to throw domestic waste into the canals. A law of 1497 stated that 'every young woman, or who else is in charge, will clean the street in front of the house each Saturday and on the evenings before holy days' (Verdoorn, 1965).

However, these laws were not adhered to, mostly because people lacked proper facilities. In Amsterdam, the responsibility to collect the waste from the households and in the streets rested with the governors of the city's orphanage, but they had too few labourers to do the work properly. Whatever these labourers managed to collect was transported by cart to boats. These dumped their load in the Southernsea (now the lake in the centre of The Netherlands, Fig. 4).

Human excreta from the bucket latrines and latrines pits in towns were collected by either a municipal or private service. Collection was done at night because of the bad smell. The city of Groningen had a door-to-door collection system for nightsoil, ashes and other domestic waste. "The men of the collection service came a few times a week, collected the bucket, with or without cover, from the latrine, stamped down the stairs with the splashing excreta, threw the excreta into a waiting horsecart and drove round the city with as full a cart as possible, for that reduced the number of trips" (van Zon, 1986). In the city of Delft it lasted till 1975 before everyone had replaced its bucket latrine by a watercloset.



Figure 4: The Netherlands

The environmental pollution in the cities brought the Central Government to institute, in 1865, regional inspectors for public health. Most of these had a medical or hygiene background. Together with the pressure from the people, but unfortunately not specified for gender, these inspectors pressed the municipalities to improve hygiene conditions in the urban areas. Initially, the municipalities were not interested. They thought the cost too high and saw hygiene as the responsibility of the citizens. The main motivating factor of the municipalities to collect excreta was the economic benefit. The municipal excreta and waste collection service in Groningen, for example, composted the waste and then sold it as fertilizer to farmers in areas with a low soil fertility. Other cities did the same with uncomposted waste.

In Amsterdam, the municipality gave a concession for the collection of night soil and solid waste to a private waste collection firm. This firm had been established in 1848 by a local doctor for three reasons: to improve public hygiene and so health, to provide jobs to the poor and to produce manure for the farming estates he had bought in a rural area and which he exploited through a private company.

An alternative excreta collection system, the "Liemur system" was established in 1872. It had been invented by a Dutch engineer, van Liemur and was in use in Amsterdam, Dordrecht and Leiden. Latrines in houses were connected to a system of a soakpit and primary and secondary pipes connected to a street-level reservoir. By means of a pump and airpipes the system was pumped vacuum, thus transporting the excreta to a central station. A private firm was given a concession to use the excreta for ammonia production. At its peak days, the system had 200,000 house connections in Amsterdam alone. However, it was abandoned after 1902 because the system could not be used to dispose waste water and stormwater.

2.3 An integrated approach for better health

Gradually, the improvement of water supply and sanitation brought a reduction in water-related diseases. Just as in England and Germany, cholera and typhoid decreased. In 1866, when a large cholera epidemic scoured Europe, Amsterdam had a deathrate of 4 promille, much lower than the other Dutch cities without an improved water supply. At the same time, and enhanced through contacts with the health sector in other European countries, the insight grew that these diseases were not transmitted by the swampy soil and damp air, but through contaminated water and lack of hygiene.

The decline of water and waste related diseases in the Netherlands can however not be separated from the wider socio-economic and cultural development of that time. Verdoorn (op.cit.) gives four major factors for the improved public health: 1/ the improved levels of education, 2/ the emergence of voluntary organization for public improvement, 3/ the enhanced communication and 4/ the changed position of women and the rise of the women's movement.

Public education

At the beginning of the last century public education in the Netherlands was in a stage of decline. School buildings, including their sanitary facilities, were in a poor

state and quality of the teaching staff was low. A non-governmental society, the Society for the Public Benefit, established in 1784, brought the first improvements.

Nevertheless, by 1850 illiteracy for men and women in towns ranged from 8% to 25% for men and 25% to 45% for women. The only education for girls in the lower classes was sewing. Secondary education for girls started in 1870 in Amsterdam, when 9 girls went to a HBS (a type of secondary school). In 1900, this number had grown to 2561, of whom 1706 went to a girls school and 855 to a mixed school.

Voluntary organizations

Voluntary organization for public improvements started with the above mentioned Society for the Public Benefit. The Society had an important role in the distribution of new forms of thinking and new knowledge among the middle classes. Other than was usual, the Society involved the whole family in its cultural and educational evenings. This brought it great popularity, as in the rural areas women and children had very few opportunities for interesting outings that husbands would agree to. "The number of members which the Society gained, because the wife and children convinced their husband and father, was incredibly high" (Knappert, in Vervoorn, op. cit.). Developments in health and hygiene were one of the topics of evenings and publications of the Society, for which several well-known public health specialists provided support.

After 1850 the establishment of voluntary organizations and societies took a great flight. These mostly aimed at public development; organizations for political and social reform and labour unions appeared later. Many organized cultural and educational evenings similar to those organized by the Society for the Public Benefit. In the same time several professions also began to organize, with schoolteachers taking the initiative in 1844. In 1848 the Royal Institute of Engineers was established.

An important contribution of the people's NGOs was the establishment of savings and credit banks. The Society for the Public Benefit established its first bank in Haarlem in 1817. Loan societies helped members to cope with financial problems and lending by private moneylenders was fought. Later on, attention went to the establishment of burial funds, housing societies and health insurance.

Communication

An important channel for the spread of new knowledge formed the 'people's libraries'. The earlier mentioned Society for the Public Benefit was the first to establish libraries where its members could loan books free of charge. In 1810 they had ten libraries, fifty years later 275. In 1868, the Society published a standard library on key development topics, consisting of 60 booklets on chemistry, agriculture, health and hygiene, trade and art. They also established special youth libraries in 40 towns. Abandonment, by law, of the public tax on newspapers and magazines in 1843 led to a great increase in printed media: in 1871 222 newspapers, weekly and monthly journals, many of them low-cost and local, were published.

Women and women's movement

The fourth factor which explains why the improved technology could improve health is the changing position and organization of women. In the 19th century women faced serious economic and socio-cultural constraints in changing health and hygiene in the family. Many were poor and they could not move outside their own class and environment. Involvement with social and political development was taboo and women were expected to follow their husband's views. Working was not allowed, unless economically unavoidable. Poor women's first concern was to contribute to the family's income.

The women's movement came into being in the 1850s. Its pioneers were women from the wealthier classes who through contacts abroad had widened their knowledge. In 1865, for example, Ms. Anna Storm-van der Chijs established the first vocational training schools for girls from the lower income groups. In 1866 she convinced the Inspection of Public Health to also allow girls to study public health. In these attempts she and other pioneering women were supported by many male specialists. The most influential was the then Minister for Education, Mr. Thorbecke. He appointed the first female inspectors and announced in the Dutch equivalent to the House of Commons that he did not fear that more development for girls would have negative social impacts. From 1870 onwards, the number of women's organizations started to grow. Special women's journals and a women's congress gave them fora for making the new developments wider known.

Public health was one of the first areas where women started to organize themselves. In the 1880s the Dutch League for Health Care and the Women's Society for Health Interests were established. The latter pleaded amongst other things for the introduction of hygiene education in schools. These and other women's societies not only advanced women's interests and position, but also increased the visibility of women's many roles in the economy, education and health.

3. PARALLELS WITH INDIA

The above sections show that until the last century conditions in water supply, waste disposal, hygiene, health and gender relations have not been as different from those in India as may have been thought. Also in the economic use of waste, the labour division in water collection and the difference in the position of lower and higher class women certain parallels can be noted. A further area of similarity is the initial reluctance of municipal authorities to address especially excreta disposal and waste collection and to undertake water supply and sanitation improvements for health reasons.

Because the Netherlands are a tiny and densely populated country, it is economically feasible that people are served almost everywhere by piped water and sanitation systems, and that these systems are operated and managed by central agencies. The one exception is a number of remote settlements, where connection to central sewers is no longer considered, because it is more economical to use on-site sanitation.

Water resources management in the rural areas is not centralized. It is executed by elected local bodies united in provincial water boards. Representation by gender and information on gender aspects are elements in the boards' formation and composition. For water supply and sanitation it is more realistic to compare India with Europe, both with regard to size and geographic and socio-cultural variation. It can then be noted that even today in the more outlying and rural areas of Europe on-site sanitation is common and water systems are established and managed by local communities. Gender aspects play a role in the establishment and management of these services.

3.1 A gender approach in projects

Why are gender aspects important in the water sector in India? An important reason is that water and sanitation are community improvements, which in order to be used and sustainable, need to be accepted and supported by men and women. Since men and women have different needs, interests, contacts and benefits, both categories need to be informed, consulted and given a say in their own right. This requires a gender-specific project strategy for information, consultation, representation and training. For example, men and women use different sources and channels of information, and other than thought information does not automatically reach women through their husbands. Thus a project must inform women and men each through their own channels if they want to reach both. In the same way, a gender strategy defines on what design aspects men and women will be consulted, e.g. concerning the location and management of public water points.

A gender strategy also looks at who finances the water connection and tariffs within the household and what financing system makes private facilities accessible for female-headed households. Other typical gender issues are the membership and division of functions in water committees. When women cannot elect their own committee members after reviewing the importance and kind of work involved, but are male-appointed, female membership often is just tokenism and the women do not play any real roles in effective water management and financing.

From other programmes we know that where women are enabled to make well-reasoned choices of their own representatives and trained to fulfil certain functions, they seldom hold the chair, but often become very reliable and efficient treasurers. Experiences in the SIDA-supported programme in Rajasthan and in the programme in Uttar Pradesh have further shown that women make very effective handpump mechanics, whose initially higher training costs are counteracted by a better performance in preventive maintenance and upkeep of hygiene and timely repairs. (Jonsson and Rudengran, 1991, Sharma, 1989). When a gender approach is *not* followed, women are either excluded completely or given mainly voluntary physical work such as cleaning around taps and reporting problems. Thus, they cannot effectuate their high commitment to a well-functioning water system and improved sanitation, while the projects increase their (cleaning) work, but do not give them a share in decision making.

3.2 Gender and decentralized management

A difference in historical developments in the water and sanitation sector in The Netherlands and India is the range of technologies and variation in the management of the services. As mentioned above, in The Netherlands it is economically feasible to have centrally operated and managed piped services with private house connections. This is also the case in the rural areas, many of which have developed characteristics of middle income semi-urban areas.

In India, the variation in socio-economic development and settlement patterns is much greater. In many rural areas it is more economic to have lower-cost technologies, such as handpumps or single village schemes. It is more cost-efficient when these systems are managed and their operation and maintenance costs financed on a decentralized basis by a local water organization. In the larger, more complex piped systems, such decentralized system management is not feasible. However, it is still possible that a local committee becomes responsible for the maintenance and maintenance costs of the inner-village distribution net, collects and accounts for the local water tariff and pays an agreed amount to the central water agency to maintain and manage the main works. It is even possible, as happens for piped water supplies outside India that the scheme is designed in such a way that each village has its own water reservoir and manages its own distribution from that point onwards. Each village in that case buys its own water in bulk from the central water agency at a sum which finances (part of) the operation and maintenance costs of the central works.

In the 1960s, decentralized management of water systems by the local Panchayats was quite common. In some states, such as Kerala and Uttar Pradesh, the State Government has since shifted the management of these systems to the central agencies, such as KWA and Jal Nigam. These agencies now operate and manage the small systems at a net loss. In other states, such as Gujarat and Andhra Pradesh, management is still by the Panchayats, but is ineffective, so that pressures exist to take these systems into full Government management.

It is not surprising that local management by the Panchayats has been ineffective, for neither councils nor users have been involved in the selection, installation and price setting of their local water system. They did not know why a certain technology was chosen and if other technologies could have been a more realistic, sustainable choice in their circumstances. They were also not trained for managing a small water supply and were not assisted to set up a good and local suitable financing and accounting system for it. And as for a gender approach, this was not yet heard of at the time and neither male nor female users and representatives have been informed, trained and given an informed say in planning, maintenance and management.

4 CONCLUSIONS

Dutch and Indian authorities have quite identical objectives for their water supply and sanitation provisions: a sustainable basic need service and a condition for good public health. This review of historical developments in the Netherlands shows that

besides access for all to well-performing water supply and sanitation, also other factors have been influential in achieving these health benefits: public communication, organization, a greater influence for women and changes in economic development, including income generating opportunities for poorer women. It can thus be concluded that in both countries public health benefits are only possible with an integrated approach, which ensures that all families can and do use improved water supply and sanitation facilities and hygiene behaviours are changed through a combination of user-adapted services and educational change.

The difference between The Netherlands and India is that in the Netherlands the type of technology and service level is more characteristic for the middle and higher class urban areas. Public relations play a role in the management of these services and may even be gender-specific, such as timely informing women on reasons for and interruptions in service hours and education on economical use of water, but there is no direct involvement of the users in maintenance and management.

In India, point sources and small village systems still have an important role to play. In this respect, Indian conditions resemble more the variation in conditions and approaches in Europe as a whole. It is especially in the more rural and less densely populated areas of Europe that the users still play an important role in local initiation, planning, construction, maintenance and management of water supplies and have their own, and flexible, local management and financing systems. It is also in the locally managed systems that gender factors are most visible.

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