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DOMESTIC WATER USE
IN A
SUBDISTRICT OF MAHWEIT PROVINCE

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P.O. Box 93100, 2503 AD The Hague

Tel. (070) 814911 ext. 141/142

RN: ~~04450~~ wh 3265

LC: 823 YEMA80

by

Christine Ansell

Social Development Coordinator

ASTC/Yemen

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1. Purpose and Scope of Study

Richard Tutwiler in Applied Research Report No. 1* raised and left unanswered a number of questions regarding the storage and use of water for domestic purposes in the Arqub subdistrict of Mahweit Province. The report which follows was written to answer these questions and to deal with a number of other related matters. It is based on data gathered by the author during field visits to the Arqub subdistrict between November 1979 and March 1980.

2. Transport and Storage of Water for Domestic Use

As indicated by Tutwiler, the transport and storage of water for domestic use is an exclusively family affair and responsibility. (p.17) Within the household, moreover, this responsibility is born almost exclusively by the woman of the household.

2.1 Transport

Women usually have complete responsibility for the transport of domestic water from the spring or other distribution point to the household. Almost all of this water is carried on the heads of women and girls in a variety of containers. Boys occasionally perform this task but they usually do so at the direction of the women of the house and with the use of a donkey.

* Richard Tutwiler, "Social Aspects of Water Distribution and Consumption in a Subdistrict of Mahweit Province" (Applied Research Report No. 1, American Save the Children/Yemen, February 1980)

Another rare exception to the rule that the women and girls carry the water used in their own household involves the employment of a woman or even a man to transport household water for a small fee. Only one such "professional" water carrier was discovered in subdistrict Arqub, and she is an orphan from a distant place who in effect had been "adopted" and taken in by one of the families for whom she was fetching water. The only other time that women without able-bodied daughters were observed not to be carrying their own water was during the forty-day laying-in period after birth when friends and neighbors would perform this task for them. This phenomenon is an aspect of the extensive system of reciprocal obligations that operates in most villages among the women of different households.

The typical container used for transport is one of the few matters concerning water for domestic use that varies from area to area. In subdistrict Arqub the container invariably is a twenty-litre jerry can (dubba). By contrast, a plastic bucket (haradi) is used in and around Mahweit town, and a ghee can (tannaka) is used in Mirwah in district Khabt. The last two-mentioned containers also hold twenty litres each.

A twenty-litre container weighs approximately forty pounds or somewhat less than twenty kilos. The average Yemeni woman can bear little more weight than this on her spine as a daily routine. Fewer trips with larger containers is no solution to the problem

of how to shorten this time-consuming task of the Yemeni woman.

• 2.2 Storage

The women are ultimately responsible for how water is stored and subsequently used in the household. What the women do in terms of storage is largely a function of the equipment at their disposal. The well-equipped traditional kitchen has scooped-out bowls (howth al-mayy) of varying depths for storing water; these bowls are lined with cement or a more traditional cement-like substance called nura. In other instances, water is stored in a large welded sheet-metal barrel (birmil). If neither of these options is available, the woman of the house tends to store most of her water in the container in which she carried it - that is, in a jerry can, ghee tin or bucket. Other vessels used less frequently or for supplementary storage include large aluminum cooking pans, earthenware jugs used to cool drinking water and small powdered milk cans which hold enough water for one person to wash before one set of prayers. In addition to the earthenware jugs which keep water at the coolness desired by the men while chewing gat, water for drinking may be stored in the form of coffee or tea in the now ubiquitous vacuum flask or in the traditional coffee pot (jamana) which is placed on charcoal braziers. Finally, women with small babies often store in a vacuum flask water that has been brought to the boil.

The water needed for the morning's activities is usually carried in the early morning and placed in one or a combination of these storage

containers. Except for the powdered milk cans used to store prayer water, each of these containers is carefully covered to keep the water "clean".* Ghee cans, buckets and large cooking pans are covered with pieces of wood or sheets of plastic held down by stones. The scooped-out bowl in the traditional kitchen has a flat or slightly-curved handmade basket (qita) placed over its open top. The sheet-metal barrels are manufactured with their own sheet-metal lids.

If "clean" water is to be placed in a container, then that container must first be rinsed out with a little of the "clean" water in order to prevent "contamination." Any visible sediment on the bottom of the container is always meticulously removed before new water is poured into it.

Except in the case of the plastic jerry cans, water is rarely poured from the storage container for actual use. Instead, a cup or scoop (magrif) designated solely for that purpose is usually used to remove water from the container. The careful scooping of water for nearly all purposes almost seems designed to remind the woman of how much water she is using. People who are thirsty may drink directly from the container of "clean" water by using the designated scoop.

* The cognitive categorizations of water by women - "clean," "clear," "fresh" and so on - are discussed in Section 3.2.

3. Women's Conceptions of the Kinds of Water and Their Uses

3.1 The Kinds of Water

Tutwiler asserts that "the cognitive categorization of household water by women appears to be much more extensive than that used by men and relates much more specifically to health and child care."

(p. 8) He notes that, by contrast, for men "the main difference is between water for human drinking and water for other purposes."

(p. 8) If this is true, and there is evidence to suggest that it is, the probable explanation is to be found in the fact that drinking is the main use of water by men once it enters the household.* The men take no responsibility for the domestic tasks that consume significant amounts of water - cooking, house cleaning, clothes washing or the watering of animals.

The women of subdistrict Arqub share with the men the belief that "clean" water must be "clear" water - that is, water that is free of visible particles of dirt or other matter. Hence the meticulous rinsing out and covering of containers intended for the storage of "clean" water.

In addition, the women regard as "clean" water only that water which is "fresh." "Fresh" water is water that is no more than a day old.

* As a general rule, the men do not even use water for much personal washing in the house. Instead, they usually do this at the mosque.

Day-old water, no matter how "clear", is not regarded as "clean" water.* As will be shown, this distinction plays a decisive role in the use of water by women in different tasks. It also explains in part why the collection of water for early morning activities - activities that for the most part require "clean" water - is habitually done very early in the morning.

Only spring water that is less than a day old is regarded as "clean" water by the women of subdistrict Argub. Water contained in an uncovered cistern (birika), the second major source of water for domestic use in the subdistrict, is universally perceived as "dirty" because it is either or both not "clear" and not "fresh."**

Once used, "clean" spring water becomes "dirty" water. However, as will be seen in the next section, the women distinguish on the basis of prior use among different degrees or kinds of "dirtiness." These distinctions allow for the controlled and systematic reuse of water in the household.

3.2 The Uses of Different Kinds of Water

The women of subdistrict Argub are acutely conscious of these distinctions among different kinds of water and of the requirement that different kinds of water should be used for different purposes.

* One exception to this rule is water stored in a container fitted with a spigot. Women have pointed out to the author that this water is "fresh" water even if more than a day old.

** As in the case of the storage tank with a spigot, the traditional covered cistern found in neighboring district Khabt seems to allow for the perception of water stored for more than a day as "clean."

Moreover, they meticulously apply these standards in their daily use of water in a wide array of household tasks. When they have to relax or violate these standards, as is sometimes necessary, they do so with reluctance. For example, when they are forced in times of drought to use dirty cistern water for purposes which normally require clean water, they do so with a sense of resignation and with the knowledge that there is no alternative.

Only clean water - water that is both clear and fresh - is considered suitable for drinking, personal washing and cooking. This is also the only kind of water which is regarded as suitable for most rinsing operations - for example, the rinsing of drinking glasses, of food and of both clean utensils and the traditional grinding stones before their use. Because they gather dust, the stones traditionally used for grinding moist sorghum flour into a batter suitable for making the bread known as luhuh are rinsed copiously with clean water before each usage.

Personal washing and prayer ablutions consume a small share of the daily supply of clean water.* There is a definite rationing of water

* Women's washing water requirements are generally modest - hands, face and feet in the morning and then again before praying or socializing in the afternoon. They can be considerably greater, however, if her husband is present and she has sex with him often or if she has come to the end of her monthly period. Upon completion of the acts of sex and menstration, a woman is supposed to wash liberally from head to feet.

per person for "bathing;" for a healthy child it is approximately one-half of a medium-sized powdered milk can, and for an adult it is approximately three-fourths of a can of this size. Small children are generally washed while standing up unclothed in a large metal tray (lajan). The mother pours the water over the child's body from the shoulders down, rubbing it in as she goes; she saves some of the water to wash the child's face. The water for washing young babies in this manner is often heated before use.

Actual cooking operations also require only a small portion of the day's supply of clean water. Clean water is used in the cooking of meat and poultry, and the water in which the meat or poultry has been boiled is then consumed as broth (marig); it is used as well in the cooking of rice, potatoes and beans. Clean water is also used to soak fenugreek grains that are the basis of a frothy fenugreek broth (hulba), and to prepare batter for luhuh and nishra, a bread of wheat flour and water which is made in a similar way as luhuh.

If the woman is fortunate enough to have some water left over at the end of the day, this water will be transferred to a different container possibly outside the kitchen. Since this water is no longer "fresh," it is no longer considered suitable for human consumption. Instead, it will usually be used in the washing and rinsing of clothes and in the watering of plants.

The initial use of clean water determines its suitability for reuse. Some uses are terminal. For example, clean water used to rinse blood and particles from meat is considered unsuitable for any other use and is always discarded. Other uses of clean water which preclude reuse include the charging of the bowl of the waterpipe (mada'a) and the moistening of tobacco for the mada'a.

In the women's scheme of things, water that has been previously used for rinsing vegetables, utensils and grinding stones is suitable for reuse since it does not contain soap and has not been used for personal washing. However, this water is not considered suitable for human use. Although some of it may be used to water plants, the most common use of this water is the watering of animals. Some will be put in a scooped-out space in the courtyard for the chickens; most of it will be placed in a bucket for the cow, bull or goats cared for by the woman of the house. Some women may first strain the water through a thin cloth mesh in order to remove harmful worms ('alaga) that are presumed to be present. If the household does not have animals, the woman may send one of her children to exchange the water for milk with a family that does have a cow. Given the high daily water requirements of a cow or bull - a cow will consume twenty to forty litres a day, depending on how much she has eaten and whether she has been standing in the sun - this customary reuse of rinse water for the watering of animals is of considerable importance.

Water which has been used for personal washing or which contains soap is never supposed to be reused on any living thing, animal or plant. The use of soap probably adds a refinement to conceptions of whether and how water may be reused in subdistrict Argub. However, it seems that contact with the "dirty" human body is a more relevant and critical variable than the presence of soap residues in determining the unsuitability of water used in personal washing for reuse on living things. The use of soap in personal washing is not common in the villages of Argub, and the water used without soap for washing hands before eating is not considered suitable thereafter for living things. In any case, water that has been used for personal washing is believed by the women to contain tiny worms ('alaga) which are harmful to animals and plants; they are presumed to eat at the roots of the latter, causing them to dry up. However, water that has been used for personal washing can be used for tasks that merely involve the removal of dirt from inanimate objects. Among these tasks are the soaking and cleaning of spittoons and dishes, the washing of linoleum floors and the rinsing down of cement bathroom (hammam) floors.

As already indicated, water in open cisterns is regarded as dirty. When available, cistern water is usually used for washing clothes with soap powder; it is most often used beside the cistern although it may be carried to the house for the same purpose. The rinsing of clothes washed with soap powder requires water that is "clear" but not necessarily "fresh" - that is, spring water greater than a day old.

Cistern water is also used to water animals, although many women in subdistrict Argub regard most cistern water as too dirty for animals.

4. The Scarcity of Water and its Conservation

There seems to have been a shortage of water relative to population in subdistrict Argub as far back as the living can remember. Largely because of the shortage and inaccessibility of available water, the women have developed an efficient system for the use and conservation of water. The scoop reminds the woman of how much water she is doling out; the powdered milk can measures out water for prayer ablutions and personal washing.

The careful "recycling" of water is an habitual part of the women's daily kitchen routine. Since the kitchens in most of rural Yemen, including subdistrict Argub, do not have sink areas as such, there is no convenient place to collect or dispose of used water. Accordingly, used water is collected in a large bucket after the rinsing of vegetables, utensils and grinding stones. As already indicated, this water is most often reused in the watering of animals.

The typical manner of washing dishes in the kitchens of subdistrict Argub and the rest of rural Yemen perhaps presents most dramatically the many uses and reuses of water in the household. Soap is not used on dirty dishes; instead, twigs and other naturally abrasive objects are used to remove bits of food. The cleanest water is usually used to rinse drinking glasses. This water is then poured from pan to pan

until the dirtiest pan, usually the pan that has held an oil and bread dish called fatut, is filled with dirty water and left to soak. At any time in the morning, several containers may be found each filled with water at a different stage of use and dirtiness. Before cooking the noon meal, the woman will rinse her hands in the container with the cleanest-looking water and will use the water in the others to clean her cooking dishes.

5. Unequal Access to Scarce Water in the Household

Those with first claims on clean water in the household are the men and their male guests. While these claimants may not consume much of the day's supply of water, the mere fact of the priority of their claim points to the existence of a pecking order in terms of use of scarce water in the household. There are a number of traditional beliefs and practices which lead to the withholding of water from the lesser-valued members of society - that is, women, children and the sick.

Women and children seem to drink in relation to how much water is available. In subdistrict Argub, they drink remarkably little, presumably because the springs are so distant; by contrast, the women of Mirwah in district Khabt have the option of getting their water from a truck in the middle of town and drink significantly more than the women of Argub.

Village women drink significantly less water than those in towns. They do not have this traditional means of hospitality readily at their

disposal, and their social gatherings are much less diversified in terms of "life crises" than their more fortunate town sisters. Childbirth and death ceremonies as well as those welcoming guests to the society require that "qishr," a hot beverage made by boiling coffee husks, be available for all who attend, and village women simply cannot provide this. Observations from villages in which water projects have been constructed indicate greater use of women's time in social activities.

It should also be pointed out that it is often difficult for women to find a convenient, private place to urinate during the day, and that the small amount of water drunk may be a self prohibition in this respect. A new water project may not increase the consumption of water by women unless this need is also met.

Pregnant women do not drink very much since it is thought to harm the baby. By contrast, recently-delivered women are supposed to consume quantities of spiced coffee as a cleansing drink at a time of ritual pollution.

Drinking too much water is generally thought to be harmful. Comments by small children about being thirsty are often met with: "You've drunk enough already - drink any more and your stomach will burst!" Cold water is often thought to be especially harmful. Drinking it is believed to cause stomach complaints and maybe diarrhea, and washing with it is believed to cause pains in the area washed.

When a child has diarrhea, giving him extra water is thought to be

harmful and to increase the diarrhea. There is a general fear of an illness known as "hasba". The village cognition of this does not relate specifically to the strict medical condition of "measles" but includes rashes, fevers, coughs, and upset stomachs of various origins. Children certainly suffer from "measles" as such but the means of caring for this condition is often resorted to simply through fear of the rash, fever or diarrhea developing into the misunderstood "hasba". The specific rules for care include complete withdrawal of water for washing and drinking and leaving the child covered with blankets in a dark, stuffy room. Water is thought to make the illness go inside the body and cause death. "Hasba ad-dakhalia" is the term for this condition. Boils and sores usually in the form of imbetigo are not washed for the same reason. Washing is thought to cause the visible and understood "sore" to turn into something inside the body over which the mother has no control.

6. Women, Water Projects and Health Education

The women of subdistrict Argub determine and control almost completely the household use of water from the moment that it is collected at the source. Accordingly, efforts to improve rural health through improved community water systems should include water-related hygiene/sanitation instruction which is explicitly targeted to the women of the affected communities. Indeed, the event of providing an improved water system provides an opportunity for gaining the attention of the women who are responsible for the care and use of water inside the household.

The evidence suggests that the women of subdistrict Argub discriminate among the kinds and uses of water, and that they act in terms of these discriminations whenever circumstances permit. These are very important and positive facts upon which the health instructor can build. The problem is not to get women to make and apply discriminations. Instead, the problem is to reenforce the making and application of those current discriminations that are sound, and to teach the women to make and apply more appropriate distinctions. For example, "clear" water is not necessarily "clean" water, and "fresh" water is often not cleaner than week-old water.

Many current practices, among them the covering of water, the removal of sediment, the cleaning of vessels and certain reuses of water, can be reemphasized as good practices. At the same time, an effort should be made to persuade women to leave water standing for a few days to allow bacteria and cercarie of bilharzia to die. Obviously, this will be extremely difficult since one of their strongest beliefs is that water that has been left standing for more than a day is not suitable for human consumption. The belief that contact with human bodies renders water harmful for other living things also needs to be addressed since water used for personal washing without soap can be used to water needed vegetable plants and herbs. Finally, and perhaps most important, the attitude of women toward the use of water in childcare during illness must be addressed. The withholding of water at the onset of certain critical illnesses contributes to the death of many infants.

Unfortunately, this treatment pattern is deeply ingrained and based on traditional medical lore.

Modern classification and use of water somehow have to be integrated with some of the existing categories and uses in rural Yemen - and clearly divorced from still others. Based on its experience in districts Mahweit and Khabt, American Save the Children/Yemen is developing a methodology for water-related hygiene/sanitation instruction. The goal of this methodology is a capacity both to deliver effectively water-related hygiene/sanitation messages to rural women and to train locally-based male water technicians to perform this function in the course of assisting communities in the design and construction of improved water systems. It is hoped that this methodology will prove worthy of adoption by others involved in delivering cleaner water and better health to rural Yemen.