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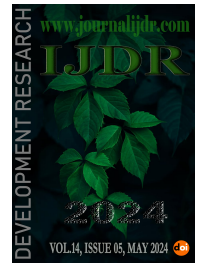
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GENDERED RURAL HOUSEHOLD WATER - A CULTURAL STUDY

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ABSTRACT

Fresh water is almost exclusively used for agriculture, while rural households require small amounts. Many regions have an annual rainfall of 1 000 mm that provides an average of some 20 litres daily from a roof area of 7 m² given that it can be stored. Bridging the seasonal gap requires some kind of measure to be taken. Household water conditions may thus be described as 'enough water most of the year' or 'water scarcity for part of the year'. The paper looks into remedies of this gap from an inter-disciplinary perspective carried out in a semi-arid area in Tanzania south-east of Lake Victoria. Physical features such as rainfall pattern, geology, access to material, economy as well as residents' knowledge and skills all play a role. Yet, gendered roles and expectations seem to play a decisive role when it comes to taking action. The focus of the interviews and observations is on residents' perceptions, knowledge and resources to enhance provision of water on their own. The finding is that knowledge, skills and access to physical resources are available in the villages to perform improvements, while existing gendered norms and individual perceptions are less conducive to taking action. The complex of norms may be conflicting and household seem to be harmony-rational rather than time- or cost rational. The family consists of not one but two competing entities with separate rationality: the husband's unit responsible for improving water sources and means of transport, and the wife's unit responsible for fetching the water. The two activities are closely interlinked, and rather small and inexpensive improvement measures could result in a long-lasting reduction of the time spent to fetch water or reduced incidence of diarrhoea in children. However, changes may come with a negative price of e.g. fewer social encounters. Making the household or local community more responsible for the provision of water would require adjustments of gendered norms without challenging the positive impacts of adjacent norms.

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INTRODUCTION

Female contribution to national or family wealth has been observed and analysed from time to time. Recently, Claudia Gold in was awarded the Nobel Prize in Economics for increasing our understanding of women's labour market participation in the US during and after the shift from rural to urban living. However, little is known about how decisions are made in rural households. Gendered perceptions are expected to shape and be shaped by physical water issues and people's perceptions of improving water sources and transport of the water to homesteads. Household water has been on the agenda of United Nations for long and in 2002 it was enlisted as a human right by UNESCO. In this study, this universal right is being complemented by an analysis of intra-house hold responsibilities to carry out water-related improvements. Incentives and constraints were studied which bear upon people's ability to improve access to and quality of household water through their own household efforts. The article focuses on how female and male members contributed to house hold wellbeing and wealth in rural Tanzania at the end of the 20th century. Before entering into the micro-world of our informants, some global data on gendered tasks are presented. Murdoch and Provost (1980) coded the gender division of 50 technological activities in 185 rural societies. Their result of a ranking of the household activities according to gender is as follows.

The data show that household-related activities are dominated by women in almost all societies. The task to develop water sources is not included in their survey, and the Wasukuma people in our study are not part of this cross-cultural sample, but their division of water-related tasks will be discussed against such general patterns.

Lewis Mumford (1956) wrote: "In passing from the past to the future we pass from memory and reflection to observation and current practice and thence to anticipation and prediction." A similar route is followed in this article: a brief reflection of the past, and the main focus on the current through interviews and observation. A short tentative prediction of the future follows about improving rural household water sources and transport.

Methods of inquiry and selection of informants and their villages: An in-depth study of household water development in rural Sukumaland south-west of Lake Victoria in Tanzania was carried out 1990-1993 (Drangert, 1993). This article draws on this thesis, and has not been published before.

Selection of Villages: Access to water is crucial both for households and agriculture. The semi-arid to sub-humid climate in Sukumaland south-west of Lake Victoria is more conducive to husbandry than agriculture since animals can be moved during droughts while plants cannot.

Table 1. Ranking of 50 tasks according to gender in 185 societies

Rank	Tasks	Male	Mostly Male	Equal	Mostly Female	Female	Index
1	Hunting large aquatic fauna	48	0	0	0	0	100
47	Laundrying	5	0	4	8	49	13.0
48	Waterfetching	4	4	8	13	131	8.6
49	Cooking	0	2	2	63	117	8.3
50	Preparation of vegetal foods	3	1	4	21	145	5.7

Source: Murdoch and Provost, 1980:293.

The study focus is on household water, where water availability is governed by the 800 – 1000 mm annual rainfall during about hundred rainy days divided into two rainy periods, and by the availability of groundwater and high evaporation.

The exhaustive Water Master Plan for Mwanza Region (WMP, 1978) provided the data for selecting villages situated south-east of Lake Victoria. The six selected villages represented the varying conditions of water availability and accessibility in Sukumaland. At any given point in time, the water endowments are determined in part by the existing natural water sources like lakes, rivers, and spring and in part by man-made sources like dug holes, wells, ponds and dams.

There were hardly any villages in the area which had not been affected by modern interventions at one time or another. For instance, the colonial administration supported a tsetse eradication project and well drilling scheme in the 1930s followed by small dam projects in the 1950s (Drangert, 2007). In 1971 the political target was to provide all Tanzanians with piped water supply within 400 metres by 1991 (Kleemeier, 1984). None of the studied villages had a piped water supply in 1993 (and not in 2023).

The six selected villages with a population of 2 000 to 5 000 residents, represented the wide range of water endowments in the region. During the dry season, according to the Water Master Plan, two of our villages had no access to natural or man-made sources, two only had less than 5 litres and 15 litres resp. per person per day from man-made sources, while one could access 2 litres from a spring and one was bordering Lake Victoria with unlimited access. Villagers could hardly survive if they can access so little water. A potential underreporting of the access to water, may arise partly due to villagers' reluctance to disclose their springs for fear of losing them, or betting on a major water scheme coming their way in the same way as some of the WMP enumerators did. This issue was resolved in this study through extensive observations.

Selection of informants and areas of inquiry: Most inhabitants belong to the Sukuma people here called Wasukuma. Thirteen women and seventeen men were proposed by the village chairmen.

These 30 informants were aged between 20 to 75 years old with an average age of 46 years. They all lived in the selected villages, and even though most of the informants had been born in the village they now lived in or had lived there for many years. This did not mean that they were unfamiliar of the world: twelve had lived in a town at one time or another and three had spent time in Europe – and all had relatives living in nearby towns. As for personal assets, half of the informants lived in houses with iron-sheet roofing, half under thatch. Twenty-three claimed to own cattle in numbers ranging from a few to over a hundred. Twenty-one households owned a bicycle, eight had draught oxen, and only six lacked both bicycle and oxen.

The bulk of the information for the study was provided by these knowledgeable informants. Each informant was interviewed (and audio-taped) half a day for three consecutive years by the same interviewer who stayed in the village for the occasion (Boot & Cairncross, 1993), complemented with systematic observations (White et al., 1972). Observation of actual behaviour may occasionally solve the reliability problem in interviewing. Another powerful use of observation is more qualitative and discovery-oriented. It may generate new questions which lead to new insights (Patton, 1990: 124-25). The first round of interviews and observations were geared towards general matters and what changes had taken place, including knowledge about water availability in Nature (rain pattern and geology), water quality and disease - and Sukuma

norms. The second round largely dealt with measures to improve access to water and its quality through efforts of their own. This time the informants were invited to choose three measures that they desired the most; they were asked in detail what they thought was needed (skills, knowledge, materials, equipment, funds, management, etc.) in order to implement each kind of the proposed improvements. The third round explored the outcome of any stated measure in round two, which thus turned into an initially not planned study within the main study. Individual perceptions and values became possible to compare with what had been stated the previous year. Through the statements of our informants we are in a position to interpret what is taking place in intra-family negotiations about water-related issues. The main focus is upon the relationship between husband and wife (s), occasionally also involving gender of children. Here, scenario-questions turned out to be particularly helpful. In the analysis we shall make use of some elements of cooperative conflict (Sen, 1990) to organise the material.

The importance to avoid interviewer biases: One way of improving the researcher's understanding of informants' views and behaviour is to refer more or less unintelligible issues to similar occurrences in his more familiar Swedish context. This requires good knowledge and a desire to probe the interviewer's own perceptions. Four elaborated examples are given here referring to the author's efforts to understand the informants' reasoning and behaviour:

The inside of water-fetching: Carrying a 10 L bucket of water on the head is hard work, and visitors to rural areas are concerned about how to relieve women of this task. Rural women, however, may not automatically think about fetching water as drudgery but rather in socializing terms. The interaction between the visitor and the woman may improve if the visitor recognizes some kind of parallel with a familiar experience at home. Town-dwellers and rural women in some developed countries do not fetch water, but they fetch food. Shopping for a family may take just as long as fetching water does in Sukumaland (Nyberg, 1989). Townspeople carry heavy bags (even containing drinking water) to the car or all the way home, without thinking of alternatives. If they are short of time, they send a child to the shop (and get angry if the child grumbles). Some people enjoy shopping and meeting friends in the shop, while others dislike shopping. Hardly anyone suggests that shopping should be abandoned in favour of some public or private agency delivering the items to the home (this was written before the era of home-delivery services). Such a change might relieve people from drudgery, but it would also cause disruption in social relations and take away the opportunity to get out of the house.

To know or to assume? In the course of this study the author was frequently puzzled by the slow rate of progress on water matters in Sukumaland. He was drawn to make comparisons with the speed of similar development of household water in rural Sweden. A study of this issue changed the author's view of a fairly successful rural water sector development in Sweden. Dispersed rural homesteads had access to water bodies, shallow wells or ponds, and water was transported in buckets. After the First World War farmers began to pipe water from the well (often one per household) to the house and to fit hand-pumps inside the house; when this was possible they began to supply water by gravity. In this way many women were relieved of the chore of walking to the well, especially in the cold winters. Official statistics show that 17 per cent of rural households in Sweden had a tap indoors in 1918, and 29 per cent in 1941¹ (SOU, 1951:26). Twenty years later the figure was 66 per cent;

¹ In 1941 most wells were lined with rocks; only 20 per cent had cement rings and one per cent were boreholes. Four out of five farmers complained about leaking well-covers and well walls which allowed contamination from overland-flow to enter and cause seasonal diarrhoea (Source: SOU, 1951).

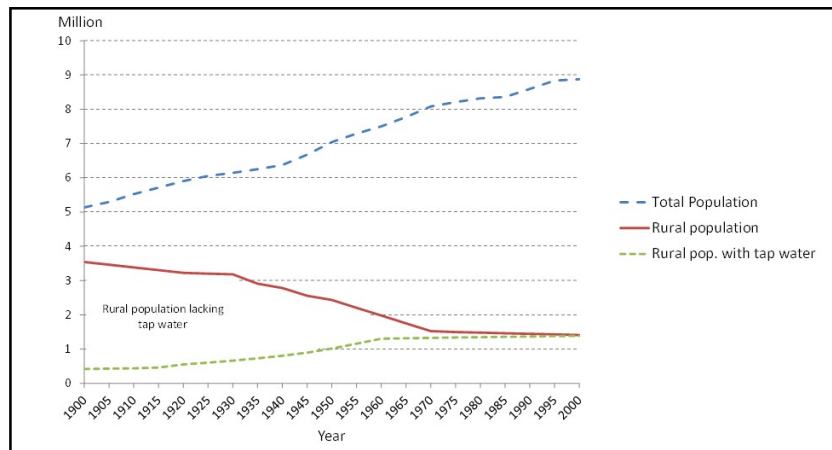


Figure 1. The proportion of Swedes living in rural areas and the with tap water indoors, 1917 to year 2000 (Drangert, 1992; Statistics Sweden, 1999)

and only by 1990 was the coverage 90 per cent. Thus, it took Swedish farmers a full century to arrange their household supply satisfactorily with tap water. This interpretation is challenged when one also takes into account the pattern of concomitant changes in the rate of urbanisation in Sweden (congregation of more than 200 persons) that increased from 21 per cent to 84 per cent in the 20th century. If urbanisation and the proportion of rural household with a water tap in the house are considered, we arrive at the following graph showing the proportion of rural households with and without tap water. Those with tap water indoors at the start of the century made up the majority of the ones with tap water at the end of the century, while those lacking tap water moved to the towns where they could find an outcome – and tap water – instead of improving their rural homestead. This salutary observation that the increased proportion of indoor tap water was not achieved through universal improvement, helps to put down the presumption that Tanzanian farmers should have solved their water problems in the same way as their Swedish counterpart were believed to have done.

Why not just do it? As a follow-up of the general development of rural household water in Sweden the author interviewed elderly relatives about their local experience. He was told about heads of household often refused to dig a well in the yard, forcing their wives and daughters to go on fetching water in nearby ponds, lakes and swamps in the winter. In one case a husband refused to allow his sons to dig a well for their mother. Neighbours and relatives grumbled for a long time about this treatment of his wife and in the end he succumbed. It took the sons less than a week to dig a 4 metre deep well which is still in use. In this case the head of household was known to be hard-working and he could afford the money required for the investment. One can only ponder about his reasons for the long overdue decision to develop a new well in terms of knowledge, skills, norms and individual values. It was too late, however, to interview anyone alive about such reasons. This case tells that lack of knowledge, skills or money is not necessarily the reason for non-action in Sweden - and not likely to be in Sukumaland.

Temperate-climate experience: The actual hydrology affects whatever is done to supply water. This sounds self-evident but is forgotten over and over again. In brief, the Swedish experience is that water is easily accessible, to the extent that major drainage works were carried out by ditching enterprises for over a century to rid agricultural land and forest of excess water. However, the force exerted by the atmosphere on water surfaces and soil moisture differs from place to place as the following example shows. If we fill two open drums with water to a depth of, say, one metre, and place one in the open somewhere in Sukumaland, it will contain only 0.3 metres of water after an (average) year - because 900 mm of rainwater will have fallen into the drum over the year while the evaporation has removed 1.6 metres. If the other drum is placed in central Sweden it will contain more than a full metre of water after a year (almost four times more than in Sukumaland), because the precipitation of some 600 mm is higher than the potential evaporation which is about

500 mm. The Swedish experience may deceive the researcher (who may think that evaporation does not matter) about what is potentially possible to achieve in Sukumaland (where farmers know that it affects soil moisture and groundwater). The atmospheric thirst over Sukumaland competes successfully with human beings for the water in dams, for instance, and evaporates away almost a metre of water during the dry season.

SUKUMA NORMSON IMPROVING WATER SOURCES AND TRANSPORT

The informants were generally well informed about the local water conditions and measures to improve access and quality. In the 1980s the government rolled out adult education on health issues connected to household water and sanitation which was reflected in the interviews (Drangert, 1993). Most informants also expressed their views of where groundwater could be available as evidenced by existence of certain trees or physical shape of the landscape.

Less than half of the informants, six of 17 men and six of 13 women, conceived of their own household water supply as a major problem. Seven said the long distance was the major problem; four emphasized water quality; and one complained about queueing at the source. The absolute distance does not seem to matter so much as the variation in time demands between seasons (Drangert, 1993). As indicated in the below comment by a male informant there were geographical variations.

“I think that we who live in the Mwanza district have water close by. For instance, my wife just left to fetch water and she is back in a short time. So we do not face a water problem here. Perhaps people living in Kwimba district have water problems.” (L1fa:320)

The other 18 informants rated problems such as poor housing, shortage of firewood and lack of a nearby health facility or milling machine as more serious than the household’s water problems.

Fetching water: The informants gave a fairly coherent picture of who expects what from whom in relation to household water. The first aspect is the transport or fetching of water. All female informants said that it is their task to fetch water unless it is too far away or they are sick or disabled. This view was shared by all male informants. Simple observation of activities at the water source confirms that the task belongs to women and girls. The compulsory character of this task was indicated by female comments like the following.

“Perhaps my husband sees a bucket of water and he tells me “Bring me water to bathe!” The child has not been bathed and this bucket was for the cooking of food. It seems as if the problem you get doesn't matter. He knows it does, but he does not care.” (M4f2a:500)

A husband is supposed to help, however, if his wife is unable to fetch water due to some good reason. Precisely when that should happen is elaborated later. He can decide when to assist to fetch water without violating the norm - irrespective of distance to the water source. He is only restricted by upholding good family relations as discussed later.

Most male informants expressed a willingness to assist the wife

"As far as I understand it, a man may assist in fetching water if the mother or a small child is sick, or if the woman has too much to do." (L1f2a:350). The informants told about cases when men used a bicycle or oxcart during droughts. If done, it brings prestige to the husband not only in the family. One male informant, who expressed a willingness to assist his wife to fetch water, was asked when he helped her last. He answered it was during a drought some ten years back.

Developing and improving water sources: Both men and women said that men are expected to perform the task of improving water sources. Women are expected to dig a shallow pit in the dry river bed, which is done every time they draw water, but not to dig a well proper. Women may take part in donor-driven water projects by carrying spoils from the excavation. Digging a deeper well is not deemed possible, however, since a woman cannot climb a ladder with dignity.² It was also reported that female heads of household engaged male relatives or hired a well-digger if they wanted a well to be constructed. A male informant argued that developing water sources is the men's task as follows:

"My wife has said nothing, not because she cannot but because women have no horizon of the future. They cannot foresee tomorrow. Often they try to imagine, but since I am around to do all the things they relax and rely on me. One day I turn up with a drum for rainwater loaded on my bicycle. I tell them to clean the drum. They expect me to plan for tomorrow and the day after!" (I4f2:410)

The development of a new water source happens rarely and is therefore difficult to observe while being done, but could be deduced from what was on the ground. The author's general impression from discussions is that the ideal among the Wasukuma is when women fetch water without being told and husbands develop water sources without being told.

Transgressions of the Sukuma norm: The pressure or expectation felt by women and men to fulfil their obligations may be indicated by sanctions against wrong-doers and slackers. The Sukuma society treats husbands' negligence of duties very differently from that of their wives. Women who refuse to fetch water face ground for the husband to divorce and she has to leave the home and her children.³ The wife's domestic duties are defined and bound in time in rules like:

Continual neglect of domestic duties, such as cooking, carrying water and fuel, and field-work, or habitual drunkenness of the wife, are acknowledged grounds for divorce." (Cory, 1953:79)

On top of this, all women know that in case of divorce the husband can claim part of the dowry back from her father and that the husband has the custody of their children, if he wants it. This is a poor female fall back position. Married men who transgress the norm by fetching water on a regular basis are rare and would face ridicule. One female informant told about two cases in her village. In one the wife had had an accident injuring her jaw, preventing her from carrying water on her head. In the other case the whereabouts of the wife were uncertain. Their husbands fetched water by bicycle very early in the mornings before anybody was awake and able to see them - and without provoking other men by meeting their wives at the well.⁴ Another practice to avoid ridicule was

when the husband used his oxcart to haul water from a spring to the homestead in order (publicly) to water the calves; at the same time he supplied the household. In this case the fetching of household water was done under the cover of the traditional male task of watering stock. The Sukuma law and custom, compiled by Hans Cory (1953) does not mention development of water sources specifically, and according to the informants there is no set or hinted maximum distance when the norm requesting men to act.

"... the wife will be granted a divorce only if the husband is known to be a waster and provides neither clothing nor other necessities of life for his family...Intentional gross neglect of the family, accompanied by general misbehaviour, is considered grounds for divorce. Lesser signs of neglect such as failure to provide clothing, female accessories, or relishes are not considered grounds for divorce." (Cory, 1953:72)

This is an infrequent activity and there is no definite limit beyond which men have to act. This makes transgression of this male norm less likely. Also, many female informants hinted that men were not interested in doing the work entailed in developing water sources.

"It is difficult because water problems become women problems. You may tell your husband about the problem, but he will not take action. He expects his wife to look for water everywhere, irrespective of distance. So long as he finds water at home the thought of digging for water is simply not there." (M4Ia195)

A few female informants blamed men in general, not their own husbands, for not developing water sources closer to the homesteads.⁵ Male informants did not raise this issue, except one elderly informant expressing surprise about women who were "demanding"; he wondered what their men thought when scolded. When asked, another male informant said that *"women could claim changes like more wells, but I have never heard of someone who would ask for a well at their homestead."* (M3f1c:410).

A female strategy to avoid confronting the husband in case he refuses to act might be to ameliorate the situation herself by digging in the river bed or *lambo*. Women who adhered to the norms may, however, need to account for local conditions.

"The men dig for water during difficult times especially for watering cattle in the dry rivers. They do not dig for household water supplies. Since I left ... to come here this has been the case. We women work until we have finished the pond. The conditions may differ from one village to another. Some villages may have promising sites for wells without stones and boulders while others have plenty of hard ground." (R4Ia550)

But the author did not encounter any woman who had transgressed her duties by building a water tank or fixing gutters to collect rainwater. There is no penalty for that, but it may be enough to know that if she did so her husband would feel publicly humiliated for his negligence.

Children and teenagers. Before proceeding, the role of children should be mentioned.⁶ Families have more children today than a generation ago,

emphasize his acquired rights over his wife's labour input a husband may warn her not to be late going to the fields, may complain when his meal is not ready for him at an accustomed hour, and, if he continues to be kept waiting, may beat her. To cook, to draw water, to sweep the house and to wash kitchen utensils are female activities which adult men only perform in cases of exceptional need. Otherwise they expose themselves to ridicule." Brewiset *al.* (2022:5) made a similar observation "When women do not adhere to gendered expectations of water acquisition, water use, hygiene and so on, they may be at significant risk of both physical and emotional abuse within their own households."

⁵ The comments give a picture that women have little say, but they too may use negative "threats" as Noble (1970:70-1) described: "... a wife in her dealing with her husband may use sulking, grumbling, gossiping, and running away. Such words may destroy a man to a serious degree since they amount to an announcement to the community at large of his failure as a man."

⁶ A Sukuma proverb says: "A small child will bring water if you ask for it." (Cory, 1953:87).

²This has clear connections to the digging of graves, which is strictly within the male sphere.

³A negligent wife has even got a special name and is called *ng'wolo*. Cory pointed out (1953:18) that a woman's facial beauty is of slight significance and he quoted the Sukuma proverb: "The face does not bear a child and the neck does not handle a hoe."

⁴Varkevisser (1973:78) observed "To become suspicious a man needs no more than witness his wife coming back from the well with a pail of water but without the protective company of a neighbour or child... A husband-to-be and his relatives' concept of a wife's duties are well-defined too. Every so often to

but many of them attend school and are not free all day to assist in the household. Our informants claimed that young girls (and very young boys) cannot refuse to fetch water, and boys may not refuse to take part in the development of a water supply should the father decide to do so. Young people know what would happen if they refused; they would, if the case is serious, be summoned to a meeting where many relatives are present.

"Our children cannot refuse to do what parents tell them to do. Should they persist in disobeying we can, as a last resort, call in relatives and have a serious discussion. The relatives would make it perfectly clear that unless the youngster abides (s)he will be 'frozen out' by the whole family and cannot count on any assistance in the future." (M2:B7)

The most severe punishment is to be ostracized or ignored which has a long tradition, for example in the *basumba* group as a means to ensure that everyone takes part in their activities.⁷ There were still cases where discipline is low. One informant said that youngsters who do not assist their parents are exposed at a public meeting, and are liable to a whipping or to be given such tasks as cultivating a given area or herding cattle for three months without assistance.

Much has changed and the universal formal schooling has affected the lines of authority within the family. Nowadays young people are allowed to dispose of their own income, whereas in the past the income used to be given to the mother who probably invested the money in cows (K2:W);

"This practice was discontinued when the talk about self-reliance and exploitation started. Since then the young men may use their earnings to drink pombe (local beer) and smoke bangi (herbs) and they do not listen. Before, you could not work without telling your parents what you earned, and we could advise what to do..." (K2IIa:380)

This gloomy view of declining parental authority is an expected reaction amongst elders. It still seems reasonable to assume that if the head of household wishes to organise an improvement of the household water, he has the authority to do this and can count on the support of all members of the household. Likewise, mothers can still rely on her daughter(s) and other female members of the household to fetch water.

INDIVIDUAL VALUES AND GENDERED STRATEGIES TO PROVIDE HOUSEHOLD WATER

Men and women indicated a common pattern in assessing household water conditions and about every third informant ranked household water as one of their major problems. Sukuma norms are fairly explicit about who is expected to do what, while individual male and female values represent a continuum as to how much each spouse should cooperate. Husband and wife may have differing individual values however, and there is a need for negotiation to reconcile these.

Male and female positioning in household negotiations: A broad outline of male values can be discerned in the words of a male informant (retired civil servant) who himself attempted to dig a well at his homestead.

"If we only had equipment we could do things and the women would rejoice. However, many of us do not understand how tiring it is to fetch water each day. We heads of household differ in our views;

some give encouragement and others treat their women as slaves. They force a woman to work and sometimes forget that she has a body just like us and strength like ours and they are tired by hard work every day. Those who think like this say "You have failed to do your work and you have left us without water to drink." But those who are wise remember that the work is a heavy one; they do not reproach the wife in a bad manner. It is a must to give her a meaningful response like I did when I started to dig the well." (R5f2a:510)

Another male informant living about 500 metres away from a river expressed his view on the possibility of transporting water to the homestead.

"The river is close and there is water all year round. Fetching water is no problem. You can ask my girls. (They nod approval). I can bring water using an ox pulling a sledge with a drum, but it is not necessary." (R1:G3)

He went on complaining that he had no resources and was not prepared to pay half the price of a calf to buy a drum (he had a herd of 30-40 cattle). He guessed that it would take his wife more than a year to save enough money to buy the drum herself. After further discussion he said he feared becoming responsible for all water fetching if he bought a drum, since only men could drive an ox.

Individual values among female informants seemed to vary less; only two sets were identified. One group wished to cooperate both in fetching water and developing new sources. The other group consists of those who do not contribute to developing water sources but who fetch part or all of the household water in accordance with the Sukuma norm. Female informants argued along cooperative lines more often than men, and women were more inclined to take action on their own:

"We cannot tell the men to dig when the lambo (pond or small dam) has dried up. Every woman has to find her own way to collect water. We have to look for all kinds of places and in the end we have to dig a pit in the dry lambo itself to extract seepage water. Usually this is the task of the man because it is hard work to remove big stones. But, alas, he does not do this. Instead he only sits waiting for us to fetch water and we are forced to use our own efforts by hoe, shovel and crowbar. If the water is completely finished the men may start, but traditional cooperative efforts have been reduced. It is no longer certain that the men will be able to convene and agree on an action, and they do not want to be given orders by leaders." (B2Ia70)

Scenario questions set the scene: Scenario questions probe informant perceptions without making him or her responsible for the situation, and they could tell the version they prefer. Two scenario-questions delivered responses that enlightened the study about how various values are being combined. In the next section we come back to the issue of what changes the informants would like to carry out.

Informant responses to the scenario of only men fetching all water:

Male informants were asked what would happen if they were given the task of fetching all water in addition to their present task of developing water sources. For such a hypothetical scenario-question to be accepted and properly considered by the informant, he required additional aligned questions covering several minutes. For example, one informant argued as follows when closing in at his response:

"To help to fetch water is okay. But that men should perform this task regularly is impossible because we as well as our wives are used to the present situation. Since our forefathers it has been like this. It would not be bad if men had had this responsibility from the very beginning, but now we are used to women fetching water...If a law was passed telling men to fetch water, well, ..." (L1f2a:380)

The mental effort needed to think 'outside the box' about transgressing the norm by altering the division of tasks is a reflection of how deeply entrenched the present norm is. Eventually, when the men had accepted to consider the scenario question, it took them a split of a second to do the comparative time calculus of fetching water daily or to dig a well or

⁷ Tanner (1955:162) wrote "No-one in the parish would talk to him, nor provide the normal communal duties to a neighbour such as grave-digging, harvesting and housebuilding; no-one would visit him in his house nor let him have water, fuel or food on loan. In a society where a tolerable existence is dependent on mutual service, it is impossible for anyone to live very long in such complete isolation and he must either capitulate, or beg for forgiveness from the community, or move to another locality."

carry out another improvement. In the end, they unanimously told that in such a case they would develop a new water source closer to the homestead or use some kind of transport.⁸ For instance, the above informant concluded: "...then we would use wheelbarrows, oxcarts, etc." (L1f2a:380).

A man may feel embarrassed on entering the female scene of a well if everyone knows that his wife is healthy at home. On top of that other husbands might object to their women meeting this man at the water source, had the informant thought that the ruling applied to him only. Taking these and similar factors into account it is to be expected that men interested in sharing tasks would concentrate their efforts on developing new water sources closer to the home or introduce another means of transport.

Female informants' response to the hypothetical scenario of men being assigned the task of fetching water was similar for them all: no one expected men to fetch water regularly. Some laughingly said men would be able to carry half-empty buckets only, due to their weakness. They more readily accepted to consider this scenario-question than the men, and many female informants foresaw that men would introduce an improvement in that case.

"Why should they agree to fetch water? No one can introduce a rule forcing men to fetch ... hihi ... Ours is ours and they will never agree at all. If he were to fetch water from far away he would look for another way to have it closer. But as long as he knows that they do not fetch water... If there was a divine law prescribing that they were the drawers? They usually get tired quickly. They think of us as donkeys." (L2f2a:50)

Another female informants underlined the drudgery:

"At first we will face difficulties. He will not bring enough water, because this task is unfamiliar to him. After years, if this division of tasks prevails, he would get used to it just like women have done... But, maybe not, he would use a yoke. And later he might pay a vendor to get water if he can afford it... No, he will carry water for a short period only before he realizes that this is a heavy chore. The thought will crop up to dig for water. It will not take more than a week before he starts digging a well." (M4f2a:460)

These responses show that it took some consideration to envisage what would happen. The first thought of the woman was that things would not change, which may be interpreted as an indication that she had not thought that a well could be dug closer to her home; or we could interpret the initial lack of change as an indication of how unusual the combination is of one person in charge of both tasks. Either way, after a few minutes the female informants usually concluded that their husbands would soon start digging a well. The outcome is very similar to male informants' conclusions, and the difference was that women readily accepted the scenario while men needed to be persuaded.

This anticipation of men not being up to the challenge could also be interpreted as a way of defending the importance of the woman's task of bringing water to the home. Perhaps she did not want to be replaced by anyone else because the task of supplying water was an important one and carried with it certain rights and a certain status. In real life, women when possible draw water for drinking, cleaning dishes, and washing purposes from different sources. But, she expected men to draw water from the nearest source for all purposes, and thereby complicating her household work. Other circumstances for not rendering the task to men

could be that the Sukuma norm gives wives freedom to meet and socialise with friends at the common well. If she understood the scenario-question to apply to her husband only, she would object on grounds that he would fancy other women at the communal well or spring.

Informant responses about the case of women developing water sources and transport: The second scenario-question on shifting tasks was about what would happen if women were responsible for developing and improving water sources. One male informant who was knowledgeable in building and who had worked together with a group of female villagers to construct a rock-well expressed doubts about females taking upon themselves to develop water sources.

"Women cannot dig a well and they depend on us men. There is nothing that prevents them from doing things, except habit. The woman is not afraid to do it, only that it does not occur to her." (L5f2b:40)

Men could see little need of women taking part. It is interesting to find that male informants generally were reluctant to be relieved of the largely theoretical task of developing a new water source. One interpretation is that men were keen to emphasize the importance of a male input in order to boost their own self-esteem. Other male informants said that women could learn to do the construction work, but thought it would be better if the men did it. They argued in terms of habit and their strategy was to accept, at least in theory, that this remains an all-male task.

Although men spoke in favour of keeping their theoretical task of developing new sources, the impression is that many husbands acted and reacted in specific ways in order to ease the pressure to implement any specific improvement. This becomes obvious in negotiations about solutions which could be implemented immediately, e.g. lending a bicycle to the wife or daughter; using the oxcart to fetch water; buying a drum; making a simple gutter of locally available materials; or providing a stepping stone at the pond. For instance, if an ox-cart were used to haul water the men would automatically become solely responsible for fetching water since women may not drive oxen. The female informants were asked the same scenario-questions as the men about what would happen if women were given the task of developing water sources in addition to their present task of fetching water.

"I cannot judge other people's views but my own opinion is that the women are ready to develop water sources, but the men are not prepared to pay for the materials." (B1:F13)

Several female informants were partially in favour of developing new sources, but they added that they did not have the time, while others were less certain about their ability.

"If you tell your husband that there are possible sites for developing wells, he will get angry and tell you "You go there and dig yourself!" I can dig and throw the spoils away, it is not difficult. What is difficult is to get enough time to do it since you have so much to do. All tasks themselves are easy to do." (M4f2a:320)

"We women find it difficult to improve water conditions under present conditions. I believe it is only habit making fetching water our work. The assistance we would be given by the men if they understood would lessen the problem once they were ready to help. However, on our own we will continue like today!" (R4f2b:140)

It is not possible, given the last statement only, to interpret whether this informant would have refrained from taking part in, for instance, deepening a well. In fact, she had taken part in the development of one new communal dug well. The interpreted reason why she expressed the Sukuma norm rather than what had happened could be that she did not want to be considered as a transgressor of the Sukuma norm. These three comments indicate that female informants also avoid to commit to taking on the new task. In later interviews the informants did not come back to

⁸Studies of horses and dogs show that energy expended in carrying a load increased in direct proportion the weight of the load. Gebhard (1944) investigated some Finnish methods of carrying water as for their efficiency compared to hand-carrying one bucket at a time. He found that using the double yoke the efficiency could be raised by 80 %; with the hand-pulled cart by about 200 %; and with a cow-drawn sledge some 230%. Maloyi *et al.* (1986:668) found that both Luo and Kikuyu women in Kenya could carry loads on their heads or back of up to 20 per cent of their body weight without increasing their rate of energy consumption.

the scenario-questions on changed gendering of tasks and they returned to the restrictions of their everyday reality.⁹

Impacts of gendering of tasks: The two activities fetching water and developing/improving sources are closely linked but kept separated by gender. For instance, digging a well at the homestead or construct a roof catchment with a collection tank may take a week or two, and thereby save an hour or two every day compared to carrying water by the bucket. This major impact on labour inputs resembles the Swedish case of slow pace of introducing piped indoor water presented in Section 2.

The position of head of Sukuma households is always occupied by a man if there is one around, and he has a major influence on decisions concerning investments and labour inputs. This hierarchy in the case of providing water rarely results in increased efficiency in developing water sources and/or in transporting water to the home. Most heads of household are blinded by upholding the gender of the two tasks.

Each task was assessed separately as to its benefits and inputs, which in turn supported a decision to do as little work as possible of each kind. The consequence is that the total amount of labour involved in obtaining water is higher than it ought to be if the two tasks were viewed as a unit as evidenced in the responses to the scenario questions. Now, the burden of "doing more of the same" is carried by the women and children exclusively. The few female-headed households in this study did not differ as to access to household water sources. Each party attached a lower value to the time spent by the spouse on his/her task. The routine nature of fetching water tend to make the effort invisible and about half of the male informants rated it as light work, while the others saw it as toil. All men, however, described fetching water as toil once it was made visible by putting them in a situation where they themselves had to do the work.

Table 2. Major positions in a negotiation between spouses about how to share the tasks to develop a water source and to fetch water. Likely outcomes of open or hidden negotiations are change or continuity

Individual female values:	Sharing tasks Sukuma norms	Sharing tasks		
		Open negotiation/ <i>Change is likely</i>	Hidden negotiation/ <i>Uncertain outcome</i>	Conflict position
		Open negotiation/ <i>Change is likely</i>	Sukuma ideal/ <i>Change possible</i>	Hidden negotiation/ <i>Uncertain outcome</i>
				Hidden negotiation/ <i>Continuity</i>

Thus, male heads of households were able to make an objective or gender-free analysis of the household water situation only when they were compelled to perform both tasks. The same applied to female informants, who were unwilling to take full responsibility for developing new water sources, although it would assist them, for as long as the present Sukuma norm remained in force. The value of daily socializing with other women at a distance from the homestead may also dampen their desire to improve the situation. Women also gain status by fetching water since it is of prime importance to the well-being of the household.

The account of tasks has so far covered access to and transport of water. All practices to protect water quality are the business of the individual household and implementation is a matter solely for the women, who also command the few resources needed. A male informant said "*I am not allowed to enter the kitchen.*" (K2f1:WI) and men are not supposed to tell their wives how to go about the kitchen work.¹⁰ Thus, the Sukuma norms and individual values about water quality mainly affect the wife. There is little reason for a woman to negotiate with her husband or with village leaders about when and how to go about this task. This makes the analysis less cumbersome and gives an excellent opportunity to assess how a woman in a household acts when she is the sole decision-maker.

Most informants knew how to minimize water contamination. Women chose bacteriologically fairly safe water sources for drinking and

cooking. There was virtually unanimity on handling of water in the home, adding up to a kind of Sukuma norm. The conclusion was that, although few specific precautions were taken, the quality of drinking water was good in most households (Drangert, 1993). The instances of contamination could possibly be avoided by stricter control of the way children draw water from the storage vessel in the home, but the general impression is that most women are fairly successful in protecting water quality.

Household negotiations: Negotiations have to take place as a preparation for decisions on whether to continue to do the same or do new things. Women's bargaining power is different from that of male household heads, and often weaker. One reason is that water must be carried every day, while improving access to water can wait. Another reason is that women are responsible for the well-being of the children and therefore must fetch water irrespective of the distance or time required. Thirdly, women may face a fallback position of divorce or being abused. The fact that most household water sources are common-pool resources also weakens a woman's argument that her own husband should develop one, since he can argue that it is a cooperative male responsibility. Most informants discussed water issues in terms of open or hidden negotiations (Sen, 1990). The spouses' individual values shaped their positions in the negotiations and affected the outcomes. The more outspoken female informants tended to follow a strategy of "sharing tasks" while most followed the "Sukuma norm". Most male informants expressed views in line with the Sukuma norms. Only a few expressed willingness to share both male and female tasks. No-one took up the extreme position of total refusal to assist in emergencies, although it was said that such men did exist. As long as husbands are not sanctioned by the society for evading the task of improving water sources, their actual practice may sometimes more closely resemble the conflict position than any other.

The arena for negotiations is illustrated by the matrix in Table 2. No woman took the extreme position to refuse to take any part in providing the household with water and therefore this option is left out in the table. The Sukuma norm for communication is that men and women perform their duties without being told. About half of the female informants said they had not discussed water problems with their husbands, indicating that open discussions are not universal. The alternative is a kind of hidden negotiation. If both spouses are in favour of sharing the two tasks an open negotiation takes place and the probability is high for a *change* in the form of improving a source or transport. Husbands prefer that kind of effort, compared to taking part in fetching water. Even if the wife is unwilling to take part in development work a husband in favour of sharing tasks is expected to develop a source on his own. If the husband cherishes the Sukuma norms, negotiations, if any, take place under the pretext that the wife is not supposed to tell her husband about the water situation. The examples given earlier show that women are careful not to give the impression of pushing their husbands. It is hard to imagine that negotiations or actions would take place as long as women do not even suggest to the husband or father that he should act. However, a lack of discussion in the family did not necessarily imply that the husband was inactive. On the contrary, some of the husbands who had solved the water problem on their own by improvements were the ones who said that their wives had not told them.

Men who favoured the Sukuma norms could act either way. In general they tended to delay *change* by blocking immediate measures to facilitate water-transport like using bicycles, oxen or carts. Women often perceived solutions to water problems which their husbands may be reluctant to implement. If they favoured sharing tasks they usually claimed that they could develop water sources by themselves and a few

⁹ Cases of rapid regression were experienced in Europe after the Second World War when women returned to household duties after a war period of working in factories and other workplaces.

¹⁰ Cory (1953:118) noted that "A husband who interferes and criticizes his wife's method of housekeeping is called a *manji*, and such criticism, if not justified, is considered a grave insult."

of them had done so. But there is a widespread tendency among women to say that they do not want to involve themselves, since it is the task of the men. She is expected to believe that he knows the problem and will act once the possibility is at hand. Some men evidently used this vagueness to dodge responsibility. They may choose to remain ignorant and inactive by taking advantage of the Sukuma norm that "men take action when things are bad enough". He can exercise power to keep the water issue away from the household agenda, sometimes with the help of the ideal norm that the spouses should not be told what to do.

A man favouring a conflict strategy may use force and rough language to tell his wife that he is not going to develop or improve any source or transport. Such an attitude may well develop in a society where men are not actual breadwinners and may face a problem of becoming marginalized due to e.g. drunkenness. Husbands in that predicament are often meticulous about exerting their authority over their households. In case the husband is a drunkard, the wife's chance to negotiate successfully is slim. Wives of husbands who are reluctant to improve access to water may have the choice of confronting their husbands; transgressing Sukuma norms by taking their own measures; or carrying on as usual, or asking for help by their children if there are any. The outcome of the first alternative is not possible to foresee generally, the second alternative leads to *change*, and the third secures *continuity*.

Had no husbands taken action, more women might have grasped the nettle and responsibility for development work. But because they observe some men developing water sources and facilitate transport, they tend to go on waiting for their own husbands to act. By the same token, many men use the fact that most other men do little or nothing to alleviate water problems to justify their own continued inactivity.

IMPROVEMENTS PROPOSED BY INFORMANTS – AN UNINTENDED STUDY WITHIN THE MAIN STUDY

Both male and female informants tell about earlier communal water sources programmes in response to the population increase and insufficient existing sources. Villagers constructed large communal dams (*lambos*) for cattle and people in Sukumaland organised by the colonial administration (Drangert, 2007) and in the 1970's the compulsory villagization programme forced many to find new water sources. The piped water schemes adopted by the Water Master Plan failed due to lack of fuel and spare parts. Later on, donor-driven programmes of dug wells have always cooperative efforts to construct communal, not private, wells. Collection of rainwater from roofs has been promoted by NGOs with little success, even for public buildings such as schools and health centres. Since political Independence in 1961 up to the period of this study (1990 – 1993) more than half of the informants claimed to have been involved in communal improvements of springs, and ponds or digging shallow wells.

During the second round of interviews the conversation was centred on potential improvements of water-related conditions that could be carried out by the household. The informants were invited to propose three technical installations that they would like to have. For each proposal they were asked to explain in minute detail what would be required (knowledge, skills, equipment, material, money etc.) and how to find everything needed. The informants embarked upon a process in which they thought through their own water problems and solutions. As a result, without any guidance from the interviewer, ten informants asserted after the broad-ranging discussions that they would implement an improvement of their own choice before the author's next visit¹¹. The proposed improvements included digging wells, buying drums or making a cement tank to collect rainwater, constructing a hand-trolley or bicycle carrier to haul water, lining a spring, attaching a fulcrum to lift the water, and making a water filter of clay.

The detailed interviews about specific improvements of water accessibility and quality indicated that informants were sufficiently knowledgeable to plan one or more improvements. They had seen and heard of most improvements in water conditions, and they had used most of these during travels and visits. The needed resources could be acquired locally. Most of the work could be done either by an individual household or a group of neighbours: in some cases they may rely on wider networks. Some said they could ask a relative or a friend working in town to give a hand. Lack of money was rarely an obstacle.

Local material and equipment will suffice for all low technology measures, on a scale similar to what is required for constructing houses and latrines. Some activities call for cement, iron sheets, bicycles, etc. which have to be bought. The cash needed for most activities is affordable for almost all individual households, but assets like bicycles, ox-carts and iron roofs are in short supply. However, some households have substantial financial capacity to implement improvements, while others rely on a surplus of dry-season labour.

A majority advocated self-reliant household approaches. A comment expressing this shift from the usual dependence on "government" solving things to an individual household approach is given:

We have always thought that we had to come together and ask for help to solve the water problem. But in fact here are solutions we can manage. We may be able to manage this shallow well.
(B41b180)

Two-thirds of our informants did not commit to carry out a project and expected that water sources would be improved with some assistance. Only one relied heavily on an intervention and he proposed a piped water supply as part of a village strategy to encourage a religious agency to build a hospital in his village.

This exercise provided a pre-project background for a detailed follow up the year after as to what concrete actions had taken place. Three improvements were more or less successfully implemented within a year, and are described below. Seven improvements had not been tried out for a variety of reasons. Both successes and failures provide insights into the complex mechanisms which are at work in water-related activities, and are presented in the discussion section. Names of the persons below are not genuine.

Collection of rainwater: Mr. Uhaba ranked water as number one problem mainly because the source was far away but also because one had to queue in the dry season. The distance was 1.1 km in the dry and 600 m in the wet season. He spoke strongly in favour of building a cement tank to collect rainwater in order to end his wife's drudgery. He had a clear picture of the required costs (equal to a new bicycle) and amounts of cement, sand, small stones and the assistance of a local builder. His main worry was that he might move away from the house which the family rented and thus lose the investment. One way of avoiding this risk would be to invest in a large water tank of steel or aluminium that could be moved to the new place. Such tanks used to be common at public buildings.

Simple roof catchments have been used at least since iron roofs were introduced and are, together with bicycles, one of the most popular household investments. Iron roofs relieve men of thatching the grass roofs every third or fourth year. Perhaps every sixth house in the studied villages had an iron roof.

Mrs. Uhaba told that the couple always sit down to discuss whether they (he) may be able to implement an idea or not. A year later, Mr. Uhaba had made no progress with the installation of a water tank. The reason given was that they would not be able to bring the tank along if they moved. Instead he had bought a 200 litres (petrol/tar) drum to replace most trips to the well in the wet season. The water in a drum would according to him last a week in the wet season from the end of October up to May, if washing and bathing was done at the source. The drum had started to leak and he had bought a second one. Mrs. Uhaba told a slightly different story saying that they sold the old drum which she had mended with tar. The new leaking drum was harder to mend because of its thin plate. She appeared to make excuses for her husband on all

¹¹23 per cent of the respondents in a survey 1976 indicated that they would like to do water improvements themselves (WMP, 1978: Volume16:322).

permanent solutions, and despite his expressed intention to mend the drum in town, she would probably go on mending it herself with tar. His initial willingness to invest ten times as much in a cement tank was not translated into a willingness to invest in a durable drum or two.

Mrs. Uhaba said that she had the right to buy a drum from her own money, but he was expected to pay for such items, while she spent her money on food and clothes for the children. A year later, however, when still nothing had been done she mentioned somewhat casually that she “would purchase a drum since she was the one who suffered.” (Sf2:80).

Bicycle to transport water: Mrs. Safiri used a newly protected spring some 450 steps away for drinking and a shallow well with a hand-pump 300 steps away for water of lower quality. During the author’s first field work she talked about building a rainwater tank, and did not expect it to be any problem to build. She was also keen on having a well constructed at a potential site she knew of some 150 steps away. Her husband has had an interest in buying a tank for rainwater for a long time. A while ago, she heard him saying that he had found that the price of a tank had gone up dramatically. He told the family that he wanted a bicycle and we agreed because he argued so vigorously for it. Sometimes he coughs to the extent that he cannot even walk to the health centre. The wife said “*Last year I mentioned that I would use a bicycle to fetch water if I had one. Now, I do not know if my husband will agree to lend it to me to fetch water because he says that his bicycle will help him now that he is old.*” (Af2:80)

Among the nine female informants living in households with a bicycle, four had used it to fetch water while five had not. The husbands of the non-users claimed that their wives had not asked for it. Six of the female informants said that they had used bicycles when they were young. Then, Mrs. Safiri had a bicycle of her own. The case shows that when access to bicycles is very limited, the ones available seem to be reserved for men. If there are lots of bicycles, women are also allowed to use them for household chores. Men may accept young women to use a bicycle but not an older wife - despite the flat landscape. It is not very likely that Mrs. Safiri supported her husband’s purchase because she wanted to use the bicycle to fetch water.

The well became a dam: Mr. Mfugaji was in favour of the Sukuma ideal that each spouse does what he and she is expected to do, without being told. He had experimented by digging a small fishpond and a shallow well for gardening in this draught prone area. The wet season water source was 400 feet away and the dry season source was more than a kilometre away. Most water was hauled with an ox-cart or by his sons using a bicycle. He said “*My family is large and water consumption is high. Not all cattle are out on the grazing areas: the sick ones are in the kraal... I have wished for a well or lambo (small dam) for years. It will not be long before I have one of those...*” (Df1b225). He concluded that after the inventory it was clear that he could manage.

On visiting Mr. Mfugaji a year and a half later he showed a medium-scale lambo some fifty meters from the house. He told that he knew a person who worked with mud-road maintenance. He hired him with a road grader, a kind of bulldozer, over a week-end to excavate the lambo. The lambo was some twenty by fifteen metres and more than three metres at the deepest point. The catchment area was several thousand square metres and it would fill to the brim early in the rainy season. It was used to water his 10-15 calves and neighbours were allowed to draw household water from there – but not watering animals.

The total water volume when full was some 600 cubic metres that should last over the dry four months. His estimation was that evaporation would take away almost half of this volume while seepage was unknown. This theoretical calculation proved to be too optimistic for the first two seasons, since the water was depleted before the end of the dry season. Mr. Mfugaji told that the survival rate of his calves had increased markedly with the lambo in place and repaid the outlay of three bulls for the grader in one year. Also, he observed no increase in the incidence of malaria and the mosquitos did not seem to breed in the lambo, only in small puddles. Nor were there any signs of snails housing

schistosomiasis, because the grass along the lambo was removed regularly.

Next year he organised a second adjacent lambo to secure year-around water for himself and his neighbours. The grader had broken down so he hired three villagers to dig and paid the mone bulls each for the toil. They dug a 17 by 6 metres and 1.5 metre deep excavation by hand using hoes, crowbars, shovels, buckets and a wheelbarrow. Also this lambo filled and the two provided enough household and kraal water. It is unlikely that Mr. Mfugaji would have dared to hire villagers for the first lambo due to the risk of becoming a laughing stock had it failed. The opportunity of a grader in the vicinity made it possible for Mr. Mfugaji to excavate the first lambo. Had this enterprise failed he could blame the grader. In addition, owning many cattle in this pastoralist community he had already broken one norm by letting his sons fetch water, and he could also avoid the norm that “the government” is responsible for larger water projects.

DISCUSSION

In more urban settings as we know them today, the task of fetching water belongs to men who are engineers and blue-colour workers employed by water utilities. It is considered as a business and men are paid to do this work. The responsibility for providing water does not lie with the individual or family but the municipal council, and households pay for this service. This fulfils the new norm that water is a human right, and the household remains with a pecuniary responsibility. The Tanzanian Water Master Plan (1978) planned to bring piped water from drilled wells to all villages similar to urban settings. Had this plan been successful, the human rights requirement would have been met. Instead, with no pipes, this study investigates how the rights-responsibility played out in rural Tanzania before the Millennium shift.

Seasonal variations and droughts: The informants’ formulation of the water problem decides the solution. Most informants’ assessments may be described as ‘*enough water during most of the year*’ whereas the Water Master Plan (1978) could be summarized as ‘*a serious water shortage for part of the year*’. These general views point to the need for seasonal surveys to reach valid assessments. Responses such as “The situation is satisfactory so there is no need for action” should be analysed further. The response could well reflect precisely that view. However, such an answer could also reflect the informant’s sophisticated unwillingness even to let him/herself become aware of the work which will be required of him if he answers that the situation is unsatisfactory. Similarly, the interpretation of assertions that water problems do exist is tricky. Some problems are genuine by any yardstick. But partly because of the seemingly haphazard distribution of official assistance, informants may exaggerate the seriousness of the problem in order to attract outside support. However, there are at least two important indications that the expressed assessments are consistent. As far as distance is concerned there was a reasonable match between those with long but varying distance to the water and those claiming a “major problem”. And almost all our informants were in favour of further improvements to their water supplies over the course of time.

“During the drought in 1984 we really did not think too much. Every morning when we woke up we started thinking about where to collect water that day. Should we walk to the borehole two kilometres away or try at another place? Even elders walked this distance. For me it was easier to fetch water with my bicycle. I did not really think of trying to dig a well here at my place. Instead all thoughts went into pondering on where to collect water for the day”. (B41a220)

Seasonal variations in distance to water sources increase female awareness of the benefit of having a nearby source the year round. Being the immediate beneficiaries of all improvements of water sources and water quality, females are expected to be alert to cooperate to get improvements carried out.

Rules and regulations about access to water: All informants subscribe to the Sukuma norm that everyone is entitled to water for human consumption and no person can be denied the use of any water source,

whether natural or man-made (Cory, 1953:131). In contrast, watering of animals is restricted. Roof catchment in drums and tanks is a recent technology introduced on a small scale when iron roofs became popular in the 1950s, and the norm is questioned whether the owner can refuse access for a neighbour who asks for water from the household tank. The idea that water is given by God seems to suggest that it cannot be under the ultimate control of an individual.

Knowledge, skills and resources: The informants have seen and heard of most improvements of water conditions, and they have used most of these on travels and visits. Also, most had previous experiences of taking part in communal water projects. Traditionally, several tasks such as building houses, thatching roofs, digging graves and constructing dams were done with the support of neighbours. Moreover, they displayed knowledge about hydrogeology, health aspects on water quality, and available resources required for specific tasks. This explains why they could make detailed descriptions of what was needed to carry out a proposed improvement and felt rather confident in implementing each of their suggestions.

The follow-up of their promises provide an understanding of how a household project can evolve. It seems as if it is not enough to know and have the skills and resources to fulfil the idea. For instance, the status attached to certain solutions may be too low to even allow them to be perceived as alternatives, as in the case of gutters made of downmarket banana stalks; using clay urns instead of a drum; or lining a well with rocks instead of high status cement rings. Another impasse occurs if the husband agrees and says that the matter is on the agenda of the village council, so he does not want to do the job twice.

"If you tell the husband he is very well aware what the water problems are. He also knows that if a project comes this way he will be forced to carry out a lot of tasks i.e. to bring stones from the hills and sand from the river bed, dig a pit, etc. He knows there is a lot of work. Therefore he lets the situation remain as it is." (L4f2a:510)

If a husband agrees to a suggestion and, at the same time, claims that he does not possess the necessary tools to do the job, his wife can only force the issue by trespassing into male territory.

"He told me that he did not have tools, perhaps later. Had I told him where to find the tools he would have snapped "I know what to do!" Therefore I have to remain silent. There are other tasks which are not difficult for men, and if it was my task I would do it right away. Take for example a leaking roof..." (A4f2b:150)

The women have to stick to the prevailing conditions for some time, probably until the rains have started and eased the problem once more. Occasionally, an opportunity may crop up, like the case of the grader to excavate the *lambo*, which will require preparedness to seize the moment. Male informants wanted to be seen as exclusively responsible for development work, but not necessarily to perform this task. This responsibility boosts male self-esteem since most men claimed that women could not perform development work.¹²

Impact of Sukuma norms on actions: One important reason for marriage, apart from affection and status, is that a lot of transfers and transactions are institutionalised; first and foremost inheritance but also everyday decisions. In the rural household it is prescribed by and large, who will do what: cook, build houses, fetch water, etc. (Murdoch and Provost, 1980:293). Such prescriptions may reduce potential household conflicts arising in everyday decisions about who does what. The transaction cost of changing the customary division of tasks - which is the essence of Amartya Sen's model of cooperative conflict (1990) - is probably much higher than would have been the case if the society was not permeated with norms and expectations. In brief, the conjugal

contract seems to reduce uncertainties about who does what and, at the same time making changes/innovations less likely. A norm does not exist in isolation, however.

A number of factors are at play, strengthening or weakening the spouses' positions. When one norm is changed or transgressed it may change the outcome of other norms. For instance, shorten female time to transport household water by using a bicycle is heavily impacted by norms on who can use a bicycle. However, using a bicycle will not prevent a woman from socializing with other women at the well (norm), as does a new well close to the homestead.

In the discussed cases of using a bicycle or drum to collect water, all the physical prerequisites were in place. Still the husband did not want to mend the leaking drum in town due to the cost and the cumbersome bus ride with a drum. He sold the drum and bought another inferior one which soon started to leak. He knew that his wife would continue mending it. But she had thoughts of buying one using her own money. As for the bicycle being used also for transporting water, the husband had proposed to add a carrier with space for two *debes* (10 L cooking oil containers). But after purchasing the bicycle he did not proceed with the carrier and his wife did not want to ask him to let her use the bicycle to fetch water.

In both cases, the physical ingredients were present. Only that other, more favoured norms came into play. This brings up the issue of to what extent the family/household can be viewed as a unit making rational decisions. From an economic (money and time use) point of view, the scenario question on men taking responsibility for fetching water clearly shows that both male and female informants were rational. But, only if the Sukuma norm was changed. This indicates that the family, viewed as a production unit, consists of not one but two competing entities with separate rationality: the husband's unit responsible for improving water sources and transport, and the wife's unit responsible for fetching of the water. These two units do not add up to economically rational decisions but more often to sub-optimization.

The two activities are closely interlinked, and rather short and inexpensive improvement measures could result in a long-lasting reduction of the time spent to fetch water or reduced incidence of diarrhoea in children. Instead, it seems as if the family unit is harmony-rational keeping good or reasonable conflict-free relations between the couple rather than being time- or cost-rational. The improvement task turns out to give room for many options while a husband more or less decides when the circumstances "require" his attention. From a woman's point of view it may be hard to develop water sources, not only because she would have to use unfamiliar objects like crowbars, but because of a strong feeling of what is and is not feasible. Despite this some women said they knew how to use a crowbar. These women had deepened ponds and wells themselves to extract water as the dry season progressed. The frustration among women waiting endlessly for their husbands to take action was rarely voiced. A woman may tell her husband that it takes a long time to extract water at the source because the yield is low, but she should not hint that her husband could deepen the well or pond. Women can escape from too much work, however, by letting their children fetch water. A number of studies from other parts of East Africa have shown that children fetch about half of the required water to the household (WMP, 1978; Republic of Kenya, 1980). This figure could be reasonable also for the villages in this study given the number of children encountered at the water sources. However, some of them may have accompanied their mother instead of being left alone at home. This being the case, observation is not enough. Yet, one can expect that a wife's strategy would be to ask her children to assist in fetching water rather than to argue about water with her husband.

CONCLUSIONS

This qualitative study of rural household water conditions and prospects builds on in-depth interviews with 30 informants in the semi-dry Sukumaland south-west of Lake Victoria in the early 1990s. The area has been exposed to several water development programmes over the

¹²Safilios-Rothschild reported (1990:ch.13:3) about a research finding from rural Kakamega in Kenya which showed that "women whose men worked in Nairobi, and only visited for about one month per year, had difficulty admitting that they made all the agricultural decisions by themselves. Such an admission would indicate that husbands no longer played a dominant role in the family and would shake the established sex stratified order."

years, but still the conditions could be improved particularly in the dry season. The focus of the interviews and observations is on residents' perceptions, knowledge and resources to enhance provision of water on their own. The finding is that knowledge, skills and access to physical resources are available in the villages to perform improvements, while existing Sukuma gendered norms and individual perceptions are less conducive to taking action. The complex of norms may be conflicting and household seem to be harmony-rational rather than time- or cost rational. The family consists of not one but two competing entities with separate rationality: the husband's unit responsible for improving water sources and means of transport, and the wife's unit responsible for fetching the water. The two activities are closely interlinked, and rather small and inexpensive improvement measures could result in a long-lasting reduction of the time spent to fetch water or reduced incidence of diarrhoea in children. However, changes may come with a negative price of e.g. fewer social encounters. Making the household or local community more responsible for the provision of water would require adjustments of gendered norms without challenging the positive impacts of adjacent norms.

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