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intermediary report on

THE POSITION OF RURAL WOMEN

in watermanagement
animal husbandry, agriculture
and mother-and-child-care

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Rada'/Al Khabar, July 1978

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by order of the Dutch International Technical Assistance
on behalf of the Rada' Integrated Rural Development Project
and rural health care in the Rada'-area of the Y.A.R.

draft - not to be quoted from

R 823-6832

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ISBN: 6832.
LC R023 VE. RA 78

INTRODUCTION

This report presents the first results of the research onto the socio-economic position of women in the rural society of the Rada'-district,

The research is undertaken on behalf of the Rada Integrated Rural Development Project (RIRDP) and the rural health care to provide general information on women in the Rada'-area and especially on their position in watermanagement, agriculture, animal husbandry and mother-and-child-care. In the end the research is to serve future community-development and extension-work among women.

The research consists of two phases. The first phase - of which the results are presented here - had the aim of collecting basic information on women as well as the first identification of women's position in watermanagement, animal husbandry, agriculture and mother-and-child-care. The second phase of the research goes into all other aspects of the life and work of rural women. The information gained therewith is to contribute to a fuller understanding of women's position in the above mentioned matters. Besides this it should result in guidelines for development activities undertaken or to be undertaken.

This report thus presents intermediary findings and does not intend to give an overall view of the position of rural women, nor explicit guidelines for development activities.

The base of the research lays mainly in three villages in the area north of Rada'-town and the results are therefore not representative for the whole of Rada'-district.

II

BACKGROUND-INFORMATION ON THE RESEARCH

Definition on the position of women. The research undertaken is operationalized in such a way as to account not only the position of rural women itself but also for the relationship between their position and existing or possible development activities.

The position of rural women is defined as the position that women hold in the maintenance and development of the rural society. Within the research 5 aspects have been stated to determine the position of women. These are:

1. the labour contribution of women to maintaining or raising a living and therewith their specific activities undertaken and methods or techniques used;
2. the autonomy or dependency of women in decisionmaking concerning all matters of livelihood;
3. the (in-)formal organisations of women and the ways of and possibilities for promotion of their interests;
4. the juridical attitude towards women;
5. the historical changes in the preceding aspects.

The position of women as such implies a comparison with the position held by men and can thus never be seen as an instance "itself".

A second implication is that women's position is seen relative to the socio-economic structure of the society in question and in the end to the relationship between this society and other social formations.

Within the research emphasis is laid on the socio-economic position since the social and economic activities of women are of most relevance to the development activities of the RIRDP and the rural health care.

Therefore the research has taken the labour contribution of women or their activities, as mentioned under 1, as its point of departure. All other aspects of the position of women are mainly seen from the angle of the economic and social activities.

Research-items. After a short field-survey a set of items have been defined, which would most likely serve as a checklist of all the aspects that determine the position of rural women and its relationship to development activities. This set of items presents first of all the social and economic activities of women which are of significance or the direct interest of the RIRDP and the rural health care.

These are watermanagement, agriculture, animal husbandry and mother-and-child-care. Each of these items has been further divided into sub-items, which are to represent, when possible, all aspects stating the position of women from the activity itself to historical changes. The 4 mentioned items received priority-attention during the first research-phase. Secondly, for a good understanding of the above mentioned matters, research onto the following items is deemed necessary: household and the purchase of goods, commercial activities and crafts, social gatherings, social responsibility and migration. The same procedure for defining sub-items has been followed as in the case of the priority-items. During the second phase of the research the main attention will lay on this second set of items.

Selected villages. Three villages, located in the area north of Rada'-town, have been selected to serve as the base for the research. The area can be roughly defined as the area within half a circle of 20 to 25 kilometers north of Rada'-town. It has been chosen as the research -base because it was very likely for the RIRDP to start here its activities, especially those in the field of watersupplies. As the selection of the research-villages two matters were taken into account: availability of water and presence of the mobile clinic of the rural health care. As far as possible the existence of different kind of villages in the area was taken into consideration. The following three villages were selected:

Garia As Sawda. This medium-sized village is located in the Wadi Thah, north-west of Rada', which is abounding in water. The mobile clinic attends this village every fortnight.

Al Wadbah. A hamlet located north of Rada' on the basaltplateau. There is locally no water available for domestic use all year round. The hamlet does not take part in the program of the mobile clinic.

Ar Ruba't. This small village is situated on the southern rim of the Matar Valley to the north-east of Rada'. The village has enough water all year round. It is visited monthly by the mobile clinic.

Selected households. In each research-village 8 households were at random chosen on behalf of the questioning on the said set of research-items. To ease the questioning and the research in general, basic information on each household and its female members above the age of 12 years was collected. These quantitative data concern mainly demographic and socio-economic matters of the selected households and women thereof. Each village is visited bi-weekly and the questioning directed most often towards the women of the households chosen. Every research-item is discussed twice in each village with the use of standard-lists of sub-items.

The number of 8 households per village was reserved to render representativeness to the different kind of households in a village, as well as reliability to findings on women. Moreover the number of 8 households served practical field activities, since it would have been bothersome for women, in case fewer households were chosen, if they were questioned every fortnight by the research-team. For the research-villages a household can be defined as a group of people who live and eat together in one house and share common work. They do not necessarily have to live on one budget. In the research-area it is impossible to distinguish budget-groups. The occupants of a house all benefit since budgets are partly combined.

The sample-population. The sample-population consists of 57 women who together belong to 24 households. Quantitative data on women given are based on the unweighed sum of data on 57 women. As a matter of fact the sizes of the villages differ so that an adjustment should be made by weighing the sample-population of each village before adding their figures. However the number of 3 villages is too small to allow for weighting since then certain (sub-)variables are likely to be overweighed. It is considered unjustified - on the basis of existing knowledge on the area - to give most weight to the largest village, Garia As Sawda, since then characteristics of the Sada-class would be overrepresented in the research findings.

The villages of Al Wadbah and Ar Ruba't are considered, as far as the general position of women is concerned, to be more representative of the area than the village of Garia As Sawda.

At The present state of the research it is thought most justified not to apply weighing. The following exercise is considered to merit some justification to this procedure: to the unweighed sum of the data of 57 women have been added the data of 19 women of 8 households of the village of Al Khabar; the addition did not change outcomes substantially. This exercise however, should be interpreted with caution since the village of Al Khabar lays outside the actual research-area. The figures given in the following should thus be seen as being indicative.

Al Khabar. The village of Al Khabar is included sideways into the research for different reasons. The village is located south of Rada'-town and is the project-site for the RIRD. On behalf of its activities on the project-site the position of Al Khabar's women in respect to agriculture and animal husbandry is investigated. This offered the possibility of comparing the research-results of the 3 research-villages to a village outside that area so as to obtain a first impression of their representativeness. On behalf of this the same basic information has been collected in the village of Al Khabar and the same standard-lists were used for the discussions on the research-items. Wherever figures obtained from Al Khabar differ from those of the research-villages - although this only occurs in a few instances - it will be mentioned in the following. The same counts for qualitative information obtained. As much the research undertaken in the village of Al Khabar forms part of the third research-phase. Once the basic research in the three selected villages has been finalized a comparative research will be held in other areas in the Rada'-district.

III THE RESEARCH-VILLAGES

The three research-villages differ not only to matters for which they have been selected - water availability and presence of the mobile clinic - yet also in respect to size, socio-economic base and infrastructure. These differences might have or have a large influence on the position of women and therefore merit special attention. The kind of village in which a woman lives defines to a large extent her life and work.

Garia As Sawda. Garia As Sawda is one of the many villages located in the Wadi Thah. The village itself is situated in the middle of the Wadi on the rocky-outcrop and is surrounded by agricultural fields and fruityards. It is a medium-sized village consisting of appr. 50 houses with an estimated population of 400. The village counts some 35 migrants, who mainly work in Saudi-Arabia and who occasionally return home for a few months to take a rest and invest and spend the money earned.

The area of Garia As Sawda is abounding in water all year round. Several streams ran next to the village. A well serves as the water-supply for the village water-system, which has been set up in cooperation with the Local Development Authority (LDA).

There are two shops in the village; one is owned by the same person who owns the well and the other is owned by the village headman (Aql). A few houses are connected to the aql's generator.

Outside the village a school has been built which serves several villages of the Wadi Thah. Every two weeks the clinic of the Church of Scotland Mission is held in the school so that it is open to all neighbouring villages.

Garia As Sawda owns a large mosque which is used by many surrounding villages on fridays and feastdays. For services the people of Garia mainly go to Malah and Rada'.

There are no carpenters or taxidrivers having the village as their base. The villagers are either farmer or farm-labourer.

In the Wadi mainly crops for self-sufficiency are grown: sorghum, wheat, barley and alfalfa. A few farmers grow vegetables. Oat-cultivation has been tried, yet because of the siltiness of the soil it proved to be a failure, much to the discontentment of the farmers. The leaves turned yellow and the taste was disliked. The village is said to have little rainfed land outside the wadi. Some farmers own a fruityard in the wadi proper and sell their surplus of apricots, pears, peaches and figs on the informal local market.

The animal population is small in comparison to Al Wadbah and Ar Ruba't. Only a few households own sheep.

Taken in its total the village of Garia As Sawda is much richer at least in the traditional sense of large families and much land - than the other research-villages. The houses are rather large, they consist almost all of 2 stories and are relatively modern and well-equipped. This especially counts for the Sada and less for the Arabs of the village.

The fact that three-quarters of the villagers are Sada particularizes the village in comparison to the other 2 villages and also to other villages of the research-area. Sada, the direct descendants of the Prophet Mohammed, belong to the highest social class in Yemen.

They usually hold higher and religious positions, yet not all can be considered rich in the economic sense. For the position of women it is important to notify that Sada women cannot marry Arab men, while Arab women can be married to Sada men. The contact between Sada and Arabs is limited in social respect, not necessarily in economic respect. Although Sada are no tribesmen the Sada of Garia As Sawda resort under the uzla (tribe) Al Arsh. The Arabs of the village belong to the uzla Gayfa.

Al Wadbah. The hamlet of Al Wadbah consists of 8 houses and counts at present 54 inhabitants; 7 migrants left for Saudi-Arabia. It is located some kilometers north of Al Hanaka on a minor track to Al Manasa. The hamlet is situated in a dry wadi of the basaltplateau and is surrounded by agricultural fields. The village does not have enough water throughout the year, although recently the villagers have revolutionarized their watersupply by constructing new cisterns. Because of its size the village does not have a mill or a shop; once a week a tradesman from a neighbouring village comes by donkey to sell some household-necessities. For services the hamlet fully depends on Al Hanaka, Gawl Athra and Rada'. There is no transport available in the village, men go either by donkey or hitchhike to Rada'. Al Wadbah is like Garia As Sawda a farmers village, founded some 6 generations ago. The important rainfed crops are: cereals, alfalfa and qat. Two farmers own irrigated land in Wadi Sir, a branch of the Wadi Thah. The 8 families of the hamlet own some 6000 habl of rainfed land. Every household owns about the same acreage with the exception of the aql, who owns more than the others. People from other villages also own land in the wadi of Al Wadbah. The animal population is large in comparison to the other research-villages. There are some 250 sheep, yet no goats. Furthermore the hamlet owns some camels, 8 cows, several dozen chickens and 25 donkeys. The latter being important for water fetching and transport of goods and agricultural produce. Recently the outlook of the village is changing tremendously. A year ago a small mosque has been built by the aql and at present three families are constructing a new house while others have built additions to their houses. The original houses were small, built of cobble-stones, and only one story high. Besides their agricultural income, the villagers seek additional income in Saudi-Arabia. The money earned there is used for house-building and cistern-construction. Once the money is finished the young men return to Saudi-Arabia. At the moment however they think migration will be of less importance since lack of job-opportunities in Saudi. Besides this they think it will be less necessary to migrate now most of them grow qat. This is changing their economic base considerably. Many fields have been changed into qat-fields. Al Wadbah considers itself one big family where everyone is known to the other. Exchange of labour is a common feature between the villagers, yet in essence everything is organized per household. Migration however seems to individualize the households to a great extent, especially now since each household plans to build or has built its own private cistern.

Ar Ruba't. The village of Ar Ruba't differs greatly from Garia As Sawda and Al Wadbah as far as the economic base of the village is concerned. Ar Ruba't is located in the southern part of the Matar Valley in the rim of agricultural fields. The village consists of 28 houses with an estimated population of 175. At present there are some 20 migrants who are on and off in Saudi-Arabia, where most of them work as a carpenter. They usually stay in the village for some three months to rest and spend their money on house-building and other luxury-items.

Ar Ruba't consists like Al Wadbah originally of small one-story houses. Many of these houses are owned by people who reside in other villages and for which no rent is paid. Migration is also here changing rapidly the outlooks of the village. At present some 6 houses have electricity. The village has 2 shops, which are owned by someone in Rada' and which serve the basic-grocery-needs of the village.

As far as minor services or infrastructural aspects are concerned Ar Ruba't should be considered part of a group of 4 villages, located in the southern part of the Matar Valley. One village will have a shop, the other a mosque and a mill. For more important services Ar Ruba't relies on Rada'. There is a school in a farther-off village located in the middle of the valley, but none of Ar Ruba'ts children attends it. Ar Ruba't is visited once a month by the mobile clinic, which is held in someone's house.

Although Ar Ruba't belongs to uzla Gayfa it entertains many contacts with uzla Al Jauf. Many women from Al Jauf are married to Ar Ruba't.

Compared with its direct surrounding villages and especially to Garia As Sawda, Ar Ruba't seems originally a poor men's village, where people have tried to gain a meagre living from the land and sheep- and goat-rearing. None of the villagers owns land in the irrigated valley in front of their door. Many men now have their occupation outside agriculture and are working as construction-labourers in Rada'. One of them is a taxi-owner and driver. A few people thus remain farmers working their own rainfed land or rented land and some work as agricultural labourers. The usual scale of crops are grown. Qat and vegetables have been tried in the area yet their cultivation was unsuccessful. Soils are considered too silty, especially for qat.

Thus in contrast to the migrants of Garia As Sawda and Al Wadbah, where many return to farming, the former migrants have changed their occupation on the basis of their experience in Saudi-Arabia.

As in Al Wadbah, there are no cooperative activities undertaken by the villagers. There is also no active LDA.

Al Khabar. Although Al Khabar is only sideways involved in the research, a few remarks on this village are justified.

Al Khabar distinguishes itself from the three research-villages mainly by its total size - its population is estimated to be some 700 -, its large houses and somewhat larger households. As far as known more men find an employment outside agriculture than in the other villages. Its nearness to Rada' is of importance.

III GENERAL INFORMATION ON WOMEN

Before going in detail into women's position in watermanagement, animal husbandry, agriculture and mother-and-child-care respectively, a general impression on their overall position will serve to clarify specific positions.

Activities. A woman's life and work is bound to her husband's family and village. In many ways she is involved in securing the substance of the family and usually performing ~~more~~ work than men.

A village woman is remarkably busy throughout the day. The duties of an average woman are many:

- the preparation of food several times a day;
- the processing of agricultural and animal produce on behalf of the daily needs;
- looking after animals - cows and chicken - and fetching their fodder;
- fetching of water several times a day;
- washing clothes of the family;
- working in the fields;
- cleaning of the house;
- ~~rearing~~ ^{rearing} of children.

Rada

The household-related activities might be the most important duties of a woman, but they very often do not outweigh in time the necessary work for agriculture and animal husbandry. ^{they then} will be decided.

Each household ~~divides~~ the work according to the number of women, their relative status and age. As such there is not only a workdivision between men and women, but also between the women themselves. Elderly women don't look after the typical household-activities such as cooking, fetching water and washing, yet they usually tend to look after the cow. Besides they perform all sorts of handy-jobs such as the sorting out of kishr cereals, etc. and they will look after the little children when their mother is busy outside the house.

Younger women are left with the daily work of cooking and water fetching and next to this they often help on the land and with the animals.

A girl of 6 years old is taught all the things a woman is expected to do in and around the house and by the time she is ten or twelve she will do all the necessary household-work and other duties while her mother attends to other things. A large part of the workload is thus done by young girls of the house.

alp.

Next to ^{these} daily activities women are engaged all year round in all sorts of jobs that have to occur on behalf of the house (-held) or otherwise, such as remudding the house, whitewashing, carpet-cleaning, preparations for feastmeals and so on... These activities are done more or less intensively several times a year and often coincide with occasions such as weddings, births, Ramadan and feastdays.

Rada

During the afternoon some women have time to do some craftwork, such as spinning, basketmaking, sewing or embroidery. The handicraft-items however do very often serve household purposes and some women are commercially engaged in craftwork. ^{although}

Rada

More than 15% of the women entertain commercial activities of some kind: sewing clothes, making baskets, pottery work, selling in a store or agricultural labour. These commercial activities are usually undertaken when the woman needs to support herself or partly support herself.

alp. / Rada

She will then be a widow or divorced woman without a family to support her. Som times she might be engaged in the commercial activity of her husband. Or, the woman likes to have her own cash-income, which she otherwise would not receive from her husband.

↪ Support by men. The mentioned commercial activities of women leads to a very important issue of the position of women, namely that women are the ones to be supported by men. Stating it the other way around: a man is responsible for looking after his family, whether this be his wife, his children or his widowed mother. A man is foremost responsible for his family's food provision whether this by means of own production or by means of buying the necessary items.

The fact that men are the ultimate responsible persons can be traced back in hardly everything where decisions have to be taken. It also means that a man is representing his family to the outside world in about every case: in buying household necessities, in arranging the marriage of his children, in case a house or a water-reservoir has to be constructed, when a child has to be taken to the hospital, etc. The fact that men are supporters of women finds its roots in Islamic law and its expression in common law.

What makes a decision or responsibility an ultimate one, depends in its very instance on the individual case or household. This also means that an ultimate decision can be strongly influenced by women. In practice women are left with the responsibility and decision making in daily matters or routine activities. Here the daily responsibilities of women concern first of all household activities - except the purchasing of goods and the ^{rearing} ~~rearing~~ and looking after the children. Secondly it concerns many agricultural activities and the rearing of cows and chicken.

As already somewhat indicated the legal position of women has to a great extent to do with the fact that men are the supporters of women. Since women have the right to be supported by men, it is the men who should inherit the largest part of the necessities of life. A woman inherits half the amount of what her brother receives. She can divorce her husband when he does not support her properly and after the divorce she can demand the support of her father or brother again.

A woman's legal position is most clearly stated at marriage and support is then only one of the aspects. Obedience towards the husband, mutual inheritance and bride price are also of importance. However one will find the actual position of women to differ in many respects from the official juridical one indicated.

Organisations. Formal organisations of women are non-existent. Women organize themselves informally within the sphere of the family-group of women and within the neighbourhood-group. The family-group is the most important one for the individual woman as well in the economic as social sense. Her daily life is scheduled through this group and her individual position determined by it.

The neighbourhood is of significance in respect to services on behalf of agriculture and animal husbandry. Social gatherings among neighbouring women relate in the villages to special occasions such as weddings and births. Neighbours are often relatives.

↪ A woman's mobility is limited to the village in general and to the husband's family in specific, however not limited to women alone. Women have to promote their interests through the informal family-channels, where the husband or his mother are the most important people to reach.

Changes. Women's position in the maintenance of her families needs is certainly not a static one. Recently it changes in many aspects through the desolation of village-life. The most important matter in this respect is migration. About every woman is sooner or later confronted with migration of her husband, son or brother-in-law. Of further importance and directly or indirectly related to migration is the raised cash-income of many families and therewith the introduction of new items for many purposes. The effects of these changes can hardly be overseen when it comes to women's position. They do not only touch upon their material well being and subsistence of life, they go beyond to influence women's role in decision making, their mobility and interests. Although the instance of migration influences almost all women, it does not influence them all in the same way.

Differentiation. It appears important to differentiate the positions of women in all their aspects. As has been found thusfar, a woman's position is strongly influenced by her age and marital status. Moreover of relevance to her are the social and economic background of her and her husband's family and in relation to this the size of the household to which she belongs. Furthermore the occupation of her closest male relative is important and as indicated before, migration. All these matters are to effect women's positions in different ways and this in turn complicates the whole of the identification of different socio-economic groups of women. Their identification however is considered of utmost importance to development activities and therefore merits much attention in the research. In order to identify different groups of women background information on women - especially their demographic background and specific activities as well as the households to which they belong - was collected. It will be shortly presented here.

Marriage and divorce. The average age of the sample-population - consisting of all women above the age of 12 years belonging to 24 households - is estimated to be 33 years, yet two-thirds of the women are below this age. Only a few women did not marry yet. The average age at which women first marry is 13 to 15 years. At present some 75% of the women are married. There is no woman who does not marry and only elderly women remain divorced or widowed. Only half of the women of all ages are at present in their first marriage, meaning that the other half has already married twice or will remarry soon.

A small percentage of the second or third marriages are caused by the death of the former husband, leaving divorce to be the main cause for another marriage. Since the above given figures are based on an average for all generations it can be concluded that it is very likely for a woman to marry twice in her lifetime.

This has a tremendous influence on the life and work of a woman, since she is the one who moves from one family to the other or moves back and forward between her own family and those of her husbands.

Divorce in itself can be caused by many reasons, the most important being that a woman does not bear children soon enough; that her husband dislikes her and that she either dislikes her husband or his family.

Especially when these factors coincide a divorce is likely to happen. It is important to stress the fact that a woman should have children as soon as possible after marriage. The present women who do not have children are all less than 20 years of age - however their chance of ever having children can be said to be 99% if not 100% - and of whom some are already in their second marriage. Unless a woman marries to someone

- in her own -

The remaining part being either divorced or widowed.

in her own village, which occurs only to a minority of the women, she usually does not know her husband and his family before marriage so that the chance of mutual dislike is large. In this respect it should be emphasized that she does not only move to her husband but in many cases to his family and that it is important whether she can get along with the women of the house. Since divorce is such a normal thing to occur, divorced women are not looked down upon unless they remain unmarried. A divorced woman returns to her own family, especially when she is young to be able to remarry. In many cases, if she has children, they stay with the husband's family since children belong to the man. For the time being the divorced woman has some "advantages" above the married woman. She does not have to ask her husband's permission when she wants to undertake something. She has usually more freedom of movement and while living at her parents house often does not have to do as many duties as her sisters-in-law. On the other hand a divorced woman misses the direct support of a husband and in certain cases will have to provide her own living.

Cross-cousin marriage More than one third of the present marriages are cross-cousin marriages. A woman can be married to as well the son of her father's brother as the son of her mother's brother. A marriage between cousins occurs more often at the first marriage than at the second marriage of the woman. The obvious reasons for these marriages are that both families know each other and have a possibility to keep wealth within the family.

It is uncommon for a man to marry more than one woman, when a man would like to have another wife he usually divorces the first one.

Family-composition. Most women thus stay at the house of the family-in-law and participate fully in the family-life of the husband, having often minimized contacts with their own family to occasional visits and duties. For the individual woman it is important which position she has within her husband's family. Half of the households to which the women belong are extended families, meaning that more than 2 generations or congenial lines live in one and the same house. Nucleus families, consisting of husband, wife and possible children, make up for the other half of the household.

Around 40% of the women are the wife of the head of the household, whether he be the head of an extended or a nucleus family. These women usually have a large say in household-matters and can have a large say in the activities of their daughters and daughters-in-law.

Some 25% of the women are daughters-in-law while 12% are (divorced) daughters, who live at their parental home for a short period. The remaining relations between the head of the household and other women living in the house are either his mother, nieces or cousins or sisters-in-law. The younger women - young wives, daughters-in-law and daughters - are the most active persons in especially household-activities.

|| A few women live by themselves; they are either a widow or divorced and they make their own living. Men never live alone.

Family-size, The average family-size is 6.5, not counting migrants. This figure is higher for the village of Al Khabar. An average family of 6.5 persons consists of 1.3 men and 2.4 women above the age of 12 years. Women thus far outnumber men when counting the defacto population. On the average one out of every two families has a migrant

)} Migrants usually come from larger families which have many male as well as female actives.

Occupation. The occupation of the male relatives on which the individual woman depends varies greatly. Only 1 out of every 4 women relies on a full-time farmer for her living. The same number of women has a husband who presently migrated. Some 10% of the husbands has an independent profession outside agriculture, while 40% of the men are farm labourers or full-time labourers.

The occupation of a woman's supporter, in most cases her husband, determines to some extent the amount and kind of work she has to do besides the household-activities and the looking after children.

Education. With the exception of a few Sada-women, who received some Koran-education, none of the women ever went to school. The fact that a woman should marry and bear children and that she thus should be prepared for motherhood and household-duties does not leave her time to go to school when she is a young girl. Moreover, village-women never had a chance of going to school since these only have recently been built in the area. The present situation is changing somewhat since a few girls start attending school.

V WATERMANAGEMENT

An identification of women's position in watermanagement here refers to domestic water use. Women's role in watermanagement is especially important in reference to the fetching, storage, use and re-use or disposal of water. Watersupply is a man's business, wherever these are man-made. Improvement in watermanagement - this is in domestic watersupplies - is thus in first instance a male concern. However women's interests in the kind and amount of supply cannot be neglected. Moreover once improvements are aimed at water use, such as hygienic measures, etc. these aim mainly at women's position in watermanagement.

Watersupply. The annual rainfall for the Rada'-area is estimated to be some 400 mm. However there is a large difference and discrepancy in the availability of water in the area. Roughly spoken one should distinguish between the area north of Rada' - going from east to west and the Wadi Thah, the basaltplateau and the area west of this plateau around the Matar Valley. The extreme cases are the Wadi Thah and the basaltplateau. The inhabitants of the Wadi Thah have plenty of water throughout the year, while the villagers of the basaltplateau are lacking water parts of the year.

Although the research-villages chosen are located in one of the three respective areas, one cannot say, when talking about water availability, that they are representative for each of their areas, rather their situation and solutions for waterproblems are indicative for possible improvements in the area north of Rada'.

There are many kinds of watersupplies to be found in the area: natural springs and streams, natural and man-made cisterns, hand-dug wells of different sizes and a complete village watersystem.

Collecting rain from roof-services is not practised here.

Garia As Sawda: springs, wells and a watersystem

The Wadi Thah counts many natural streams deriving their water from the 99 springs at the rim of the basaltplateau. Until 6 years ago the villagers of Garia As Sawda took all the water they needed for domestic use from these streams.

The streams are less than 1 meter in width and no deeper than 50 cm. The water appears of very good quality and does not seem to be polluted by its many users in the wadi. The water is used on the spot for any purpose - clothes-washing, dish-washing, animal drinking and irrigation. The water-edges are cleaned yearly from weeds by the people whose land borders on one of the streams.

At present, 2 wells belonging to Garia As Sawda, can be found in the wadi not far from the village. One of the rich men of the wadi constructed his own well in the middle of the wadi on his own land mainly to ease irrigation.

The well with a waterlevel of 1 meter below fieldsurface and containing water of good quality, has been dug in the light alluvial soils of the wadi.

It is appr. 6 meters deep, has a width of 2 meters and is lined with cobble-stones. Although the well is open it is walled and equipped with its second dieselpump, for which a small mud-house has been built. The well was dug 6 years ago by the owner himself and with the help of some labourers. The costs at the construction-time were 1500 Y.R. The pump runs several hours a day and the water is guided into a small cemented basin from where it runs into the irrigation-ditches. Farmers can rent the water for 8 Y.R. per hour. Villagers could make free use of it for domestic purposes.

The well has become the most important and permanent watersupply of the village since its connection to the village-watersystem. Under the auspicien of the L.D.A. the village started to construct the supply-system for domestic use. The government (L.D.A.) contributed 50.000 Y.R. and a pump. On behalf of the village watersystem a special well has been constructed and equipped with the pump. The whole proved to be a failure because of the bad quality of the water and a solution was found in

The first L.D.A.-idea was to construct a well next to the existing well but the landowner -in-question refused to provide land. After a trial elsewhere on a spot which was considered to oily, the fruityard of the aql became the site for the new well. The yard is situated on the edge of the wadi directly below the outcrop on which the village is built. The well is some 10 meters deep, square - 3 by 3 meters - and dug in alluvial material of different compositions. The well is open, not lined, yet the surrounding surface is walled and cemented somewhat to keep the well clean. The construction took 35 days and was executed by a contractor yet with the help and labour of the villagers. Construction-costs for the well were said to be 20.000-25.000 Y.R. Once the well was finished and connected to the village watersystem, the water appeared of very bad quality. It contained malaria-worms, its colour was yellow and the taste disliked because of silt. The well has been used for several months only on fridays for one hour in the morning. The water then was only used for clothes-washing and animals.

Removing the pump from the new well to the old well in the middle of the wadi, for which all the users pay a contribution. Now the elevated concrete watertank in the middle of the village is kept full so that the women can make permanent use of the watersystem, against a small monthly contribution. Not every house has its connection to the system. Although the village has always had the advantage of a permanent watersource next to the village, the watersystem has certainly relieved the women of one of their heaviest task: transport of water from down the wadi up to the village. Compared to other villages which cannot avail over water all year round and then often over water of bad quality, the village watersystem of the Garia As Sawda is quite luxurious. The example of Garia is therefore only of interest as far as organizational aspects are concerned.

Al Wadbah: cisterns and wells

In sharp contrast to the village of Garia As Sawda stands the example of Al Wadbah where revival of rain collecting took place.

The village, consisting of 8 houses counts at the moment; an old well, 2 old cisterns, 3 new cisterns, one cistern under construction and 1 well of which the construction has been stopped since the idea of the possibility of a borehole struck the village.

The remarkable amount of watersupplies is on the one hand an account of the difficulties the people of Al Wadbah had in providing themselves with sufficient water and on the other hand an account of private initiative made possible by the money migrants earned in Saudi-Arabia.

At the establishment of the village some 6 generations ago a well was dug and somewhat later 2 reservoirs were constructed to provide the first settlers with water. These supplies are still in use nowadays.

The old well is at present village-property and used by those who don't have other sources of water or whose other sources are exhausted. The well can only be used for a short period after the rains. The well is very narrow and about 8 meters deep dug in rocky material. It is located half a kilometer outside the village-proper in the upper part of the wadi. The well is open and the women fetch the water with bucket and string.

A shallow drinking-basin for animals is located 1 meter from the well, while a simple washingplace lays some 10 meters apart from it. The latter's place was said to be chosen to prevent wash-water from re draining into the well. When the well has been exhausted someone might go inside to clean it from alluvial material. The well ends up in a shallow cave, where it is possible for a man to walk. This gives the dried up well the function of a sub-surface reservoir.

The 2 old cisterns can also be used by anyone in the village. One has an estimated content of 45 m² and the other of 65 m². When filled, the water will suffice for two to three months when their use is combined with the well. Both cisterns are located in the upper parts of the wadi. They are lined with kathath, which can be found in the area and was formally always used for lining reservoirs. When the cisterns are empty they are cleaned and when necessary repaired with cement. Both are equipped with small drinking-basins for animals and washing-places - the latters are not always used. Dirt-water cannot drain back into the reservoirs.

The water is used for all purposes except irrigation.

Once the water in the old well and cisterns is used up the women have to - and nowadays not all the women - fetch water from the large well in Al Hanaka or from the Wadi Sir, a branch of the Wadi Thah, both several kilometers south of Al Wadbah.

It is estimated that prior to the construction of new watersupplies there was no water available in the village during 4 or 5 months of the year.

Recently and within a year's time 3 families constructed their own cistern for private use, while one family is still busy to construct its own. As indicated before, the construction of the cistern was mad possible by the money earned via migrant-labour. Migrant-labour is usually only possible for those families who have a large number ~~in terms~~ of active persons. ^{They} ~~who~~ presently own a private cistern.

The 3 new cisterns vary in size considerable: one is estimated to have a content of 10 m², the second one 25 m² and the most recently constructed one 150 m².

All cisterns are located close to the village yet outside agricultural fields. Their catchment area appears to be small. Measurement was impossible to undertake. All reservoirs are partly dug and partly blown in rock on a seemingly suitable site. The basins are all almost completely cemented to prevent leakage to occur. They have been provided with steps so as to ease waterfetching once the waterlevel has lowered. All cisterns are covered with a simple construction of wood with mud or corrugated iron and provided with a door. Doors are kept locked to prevent others from fetching water and women of the house have to ask for the key.

On several sides of the cisterns there are inlets to guide the water into the cistern. Only close to the reservoir these might be cemented. Outlets are also present to make run-off of surplus water possible, which is led to the agricultural fields. Some of the cisterns have drinking-basins for animals, there are no washing-places. The smallest cistern has been constructed by the owner himself with the help of labourers and its construction was said to have cost 20.000 Y.R.

The second reservoir of some 25 m² was constructed by a contractor working with 5 or 6 labourers for a period of 3 months. The construction-costs, including the materials, food and qat for the labourers, were 30.000 Y.R.

The largest cistern with an estimated size of 150 m² has been constructed by a company specialized in cistern-construction for the amount of 70.000 Y.R.

Since the owners lack experience onto the lasting of the supplies not much can be said to that. It has been observed that the cistern with the content of 25 m² lasted its users after 2 weeks rainfall of some 200 mm at least 4 months.

This meant a daily use of 200 liters water for a family of 14 persons with a large herd.

When the contents of the largest cistern could possibly be usefull once a year, it would leave its owner - with a family of at present 8 members - to consume 400 liters of water per day. This consumption would be 2 or 3 times the average household-consumption for the area.

The new cisterns have a large influence on the water availability in the village, the problem of polluted water however remains to be solved. Since no provisions are made to filter the surface water before it is led into the cisterns, the water in the reservoirs is naturally polluted with silt, stones, animal dirt, etc. Moreover the water is standing which gives certain mosquitos a breeding-ground as can be observed not only in Al Wadbah but in almost all natural and man-made cisterns in the area. The owners try to keep the water "healthy" by leaving holes in the covers through which sunlight can penetrate. Half a year ago the men of another house of Al Wadbah started with the help of other villagers digging a well close to the village on a piece of useless land in the middle of the wadi. At a depth of 4 meters they reached hard rock. At that time they were informed about the possibility of a borehole so they stopped digging and started transactions with a local drilling-company. After a few months it appeared that costs for one drilling were 250.000 Y.R.

The villagers simply could not afford to pay this amount. Now they try their utmost to find a sponsor or fund, since a borehole also means to them irrigated agriculture. In the meantime they have lost their enthusiasm for the well and believe that they won't reach water anyhow.

Ar Ruba't: wells

The village of Ar Ruba't offers a less interesting example compared to Garia As Sawda and Al Wadbah. None of the villagers owns a watersupply but they can avail free over the water from ~~one of~~ the 4 wells which are owned by rich men of neighbouring villages. The wells have been mainly constructed for irrigation-purposes. Although ~~one of~~ the owners now has constructed a reservoir for domestic use which is provided with water from his well.

The wells are located in the middle of the valley and the women of Ar Ruba't have to walk half a kilometer for fetching water. When the pumps are not operating for irrigation-purposes, one of the owners will run his pump free of charge. Although the water is rather silty, people do not find its taste bordersome.

Before the construction of the wells, some 4 years ago, the villagers relied on springs and natural cisterns not far away from the village. These are said to have contained less water during the last years because of lack of rain.

Transport of water

The transport of water for use in and around the house is a heavy and time-consuming activity of women. It is therefore mainly done by younger women and girls.

Depending on the distance from the village to the watersupply the necessary time for transport lays between 15 minutes and one hour per fetchment. Waterfetching is always done in the morning and sometimes in the afternoon when supply for early next day is required. Usually the women fetch water individually and when it comes to it two neighbouring women might join eachother. If they carry a bucket of water on their heads - which occurs only when the watersupply is located close to the village - the women can go many times a day.

It is however more common for women to use a donkey for the transport of water and so they never need to go more than twice a day.

Sometimes a girl will fetch water for neighbours when her own family does not own a donkey. She then will pay by fetching one donkey-load for the owners of the donkey.

On the average each household will possess ~~one~~ one or two donkeys - in Al Wadbah the average number is 3 donkeys per household, but these are also used for other kinds of transport. In principle it is rather easy to keep donkeys since they require little attention as far as feeding is concerned, they do not necessarily need a stall and initial costs are rather low as well for the donkey as the rubberbags used for water-transport.

It is not easy to make an estimate of the daily amount women fetch on behalf of their household. There are all kinds of different sizes of buckets, tins and rubber-bags in use. From the accounts made on the amount of water fetched it can be said that the daily ratio varies from 50 liters to 200 liters per household. The mean for the three villages is estimated to be some 125 to 150 liters per day per household consisting of 6 or 7 persons - with several animals.

The quantity fetched depends not always on the size of the household. The nearness of the watersupply and the number of animals that have to drink water in the house - not all animals drink water in the house and cows usually receive leftover water are also important in this respect. Moreover weight has to be given to whether women wash clothes in the house or near the watersupply.

One would expect the village of Al Wadbah to fetch far less water than the villages who are more bounding in water. The difference in amounts fetched however does not differ greatly between the villages. This might be due to the fact that Al Wadbah has a larger animal population and that the women wash clothes more often at home than near the place of supply compared to other research-villages.

It is important to notify that the efficient use made of the water - and this is the same for all three villages - in many cases determines the maximum amount needed. All women reason that it is easier to use water twice than to fetch it twice. It is only for special occasions that they fetch more water. The minimum amount fetched is mainly stipulated by the size of the rubber-bag, which donkeys carry on their back. According to the women questioned, the amount of water fetched should have increased somewhat since the introduction of the rubber-bags a few years ago. Before donkeys were loaded with goat-skin-bags which are smaller in size.

Storage. Since women fetch water daily, storage of water concerns only small quantities to be used during the day and early next morning. About every household possesses one or two large round-shaped tin containers, varying in size from 100 to 200 liters. In Garia As Sawda these were used for storage of water obtained from the watersystem prior to its proper functioning.

Furthermore clay earth jars are in use for cooling water. The jar is kept [wet on the outside and placed in a windy spot on the roof of the house or elsewhere. Besides in the containers and jars, water is stored in any handy thing, buckets or tins. Water is usually not stored for more than one day. "Old" water is disliked for drinking-purposes and it will always be given to animals or used for dung cakes. Water is stored in or near the kitchen, where most of it is used since only a few houses have a bathroom or other place for personal hygiene. Washing of clothes can either be done in or near the kitchen or in the inneryard.

Use of water. Water can be used in and around the house for many purposes. The most important uses are: cooking (including drinking and dish-washing), clothes-washing, personal hygiene, animal consumption and the making of dung cakes.

Since highly efficient (re)use is made of water it is difficult to estimate comparative quantities for different kind of uses. At first sight it would seem that animal-consumption requires the largest amount: a cow needs and receives 30 liters per day and a donkey little less. Cows however hardly receive fresh water, they are usually satisfied with 2 buckets of left-over water, meaning water which has been used for cooking. A donkey often drinks at the place of watersupply. Dung cakes which also require large amounts for their making can also be made with left-over water.

When not taking reuse of water into account clothes-washing and cooking require the largest amounts of water, although many women wash clothes

near the well or in the wadi. Where women will wash depends not only on the distance of the watersupply but also on the fact whether they dislike to be seen by men of the village. The latter applies only to Garia As Sawda and counts especially for the Sada-women. Quantities used for personal hygiene are strikingly small, since people consider their hygiene important in accordance with the rules of the Koran. The water needed for washing hands, face, etc. is very economically used. A full bath is taken once or twice a week. For housecleaning hardly any water is used because the mud surface is unsuitable to be washed. Only a few houses have their walls painted with washable paint and vinyl, a floor cover, is only used in small quantities for one room. Carpets and rugs are washed several times a year in the wadi. The kitchen and the inneryard are the places where most of the water is used. Cemented washing places are not a common feature in the villages yet.

Reuse and disposal of water. When considering disposal of used water one should make a distinction between water containing and water not containing soap. Water with soap can only be reused for the making of dungcakes but is most often let run away through a gutter or pipe onto the village street or into the inneryard.

Water used for cooking is always given to animals. Usually this water contains left-over food or food rests are added to it. Women who, for example do not have a cow will always bring their left-over water to some neighbours to receive buttermilk in return.

Improvements. The water situation in the three research-villages differs considerably in water availability and watersupplies. Until recently in all three villages the water was fetched and used in the same way. Although the water availability has changed profoundly in Al Wadbah the village is still worse off as far as the quality of the water concerns. Moreover half of the villagers have to go a long way when there are no rains, to fetch water.

Recent changes in the odds and ends of water use are of utmost importance to women in easing their workload. New wells from which the water can easily be fetched, new nearby cisterns, cemented washing places and gutters, large rubber bags, large containers provided with a tap indicate already significant changes for women who are daily faced with fetching water, using it efficiently, saving some for the next morning, looking after water for animals to drink, etc.

It is a matter of course to the women who have been questioned, that their family is willing to spend money on improvements of watersupplies.

Two villages definitely proved their willingness. As far as improvements in the field of waterhygiene are concerned - and therewith extension on water use - the answer will necessarily have to be left open until the end of the second phase of the research. One final remark has to be made on the amounts of water used once watersupplies have been improved and on behalf of which estimates will have to be made on average consumption. Given the small difference in daily amounts fetched and used per household in Al Wadbah compared to Ar Ruba't and Garia As Sawda - prior to its village water system - as well as the economic wateruse in all three villages one can conclude that with new watersupplies the average amounts of water fetched will not raise to a great extent. This could be concluded when women even with new watersupplies still have to fetch the water from a distance. Once a village is provided with a reservoir, water consumption will rise considerably according to the example of Garia As Sawda. The same can be said when women do not have to wash anymore in the wadi's.

VI ANIMAL HUSBANDRY

Introduction. The research onto women's position in animal husbandry has laid emphasis on their position in dairy-farming and poultry-farming.

Women are involved in sheep-rearing up to a certain degree. They fetch fodder, look after young animals and might shepherd the herd when there is no one else to do so.

The taking care of animals, especially cows and chicken, is one of the important tasks of women. Both cows and chicken are mainly kept for subsistence. Their farming is an important economic base of the households.

Only 15% of the women are not active in animal husbandry of some kind. Two-thirds of the women are daily busy with looking after cows and another ~~one~~ third is daily occupied with chicken. Because of a strong work-division between women of the household, only a third of the women are busy with both cows and chicken.

When a woman is not active in animal husbandry, especially when cows are concerned this usually means that within the context of all her activities she does not have time to look after cows. In case a household does not have chicken, different factors are involved: their poultry might have died or consumed or there might be lack of space to keep chicken.

① In principle women are the sole responsible persons for looking after cows and chicken. In the case of cows they fetch the fodder, feed the cow, milk it, collect its dung and process the produce. Men however take the cow for mating and sell or buy cows. In the case of chicken men will enter the scene sometimes when they have to be slaughtered and consumed or traded on the informal local market

Dairy-farming. Dairy-farming is a highly time-consuming activity and ~~demands from a woman~~ ^{may} some 5 hours per day, when the ~~processing of the produce-making of~~ ^{produce} butter and dung cakes ^{is} included. It is therefore understandable that not every household owns a cow or that women put out to contract all or some related activities to other women.

For this reason
not
well
Only two-thirds of the households of the sample-population possess a cow. It does not occur that a household has more than two cows, and usually the second one is a calve. Given the existing feeding-practices women can hardly apply economies of scale. The presence of a cow is highly related to the number of women in the household and to a lesser degree to the presence of elderly women. The caretaker can be any woman. However since elderly women are freed from household duties they are usually the ones who look after the cow. Or, in case of a large number of women or young daughters it will usually be the woman who is relative the eldest in age who takes care of the cow.

well
Furthermore the availability of fodder from own produce could be a determinant factor, yet it has been found that many women earn of buy fodder for the cow they keep. This means at the same time that social value must far outweigh the economic value of the animal, since production-costs are estimated to be extremely high in comparison to milk production.

Ownership It is most common for a household to own a cow by either having bought or raised one. However it does occur that a cow is put out to contract on a 50% basis with some women, or that some activities such as the fetching of fodder and the making of dung cakes is boarded out to another woman. In every case with the exception of fodder the owner will receive half of the produce, whether this be a calve, butter or dung cakes. When someone else takes care of the cow, the caretaker will have to provide all the fodder. If a cow is put out to contract it is usually to a relative or a close neighbour so as to ease control. Full ownership is preferred because of occurant difficulties between owner and caretaker, but the amount of work involved does not always allow for this.

Housing. Cows are kept in a stall during the night and part of the day. In the stall no special provisions are made. Straw is never used for the cow to lay on. Cows are usually kept separate from other animals. It is never fed in the stall, this always takes place outside the house in the inneryard. During the day the cow should be outside to prevent it from catching a cold and to give it fresh air. Stalls are dark places and in most cases there is no window or a hole through which sunlight can penetrate. Only when there is relative abundant vegetation for grazing the cow gets body exercise. Although exercise is considered to be good for milkproduction, the cow is tied to a stone all day.

Fodder. Fodder consists of sorghum stalks, sorghum leaves and alfalfa. The total amount of feed given to a cow can be considered rather satisfying given the circumstances. Sorghum is grown for the dual purpose of food and fodder. Usually the stalks and leaves are from own production. Sometimes a woman might earn stalks by harvesting sorghum for someone else, or buy stalks when she does not have enough to last for one year's feeding or when her household does not cultivate sorghum. A cow's daily ratio of sorghum is estimated to be 3 kg. dry weight or some 20-30 stalks. The market-value of this amount is some 5 Y.R. Alfalfa, a special fodder crop grown for several years in a row on one plot, is unlike sorghum given fresh - although it is dried sometimes - to the cow. It is cut and fetched daily or every other day. The cow's daily ratio of alfalfa is estimated to be 6 kg. fresh weight of which the market-price is 4 Y.R. Alfalfa is not always obtained from own production. Some women cut and fetch alfalfa for others and may keep 1 bundle for themselves; other households might rent a plot of alfalfa. Besides this basic fodder, some women will give their cow weeds, which they cut themselves in the fields, or they might let the cow graze with the village herd after the rains. Moreover the cow receives most of the left-over food from the house.

Feeding-practices. A cow is fed by hand twice a day, in the morning and in the afternoon. The sorghum-stalks are broken into pieces of 30-40 cm., which are split, wrapped in alfalfa and then stuck into the cow's mouth until it has a good grip on it. While the cow is eating the woman will make a new package. This time consuming feeding practice requires 1 to 1.5 hours per time, depending on the business of the woman. At the most two cows can be fed at the same time on the basis of this feeding practice. The reasoning behind the practice is that a cow cannot eat the stalks by itself yet needs them to build up a body.

After the cow has been fed it receives one bucket of left-over water. This bucket contains very often food-rests. This can be anything: bran, sorghum, wheat, bread, vegetables or chicken bones. As said elsewhere neighbouring women who don't have a cow will also bring left-over water with food rests to receive some buttermilk in return. The amount of food can be a large quantity especially when there has been a feastmeal. Since the left-overs usually have a high nutritional value they are an important additional feed. However the quantity is sometimes such as to leave the cow with stomach problems. Salt is added to the cows water twice or three times a week. It is said to give the cows good appetite.

A calf, which is kept separate from its mother to prevent it from sucking, receives milk from two teats during its first 2 or 3 months. After that it receives sorghum-dough and a little alfalfa. When it has reached the age of 4-5 months it is fed in the normal way. The mother-cow is given special food - cereals and alfalfa - and during 10 days after delivery so it will regain strength quickly. When in calf the quantity of food might be reduced as not to upset the cows stomach.

Reproduction and economic value of animal. Bulls are kept only by a few people and not every village has a bull. Garia As Sawda is the only one of the three research-villages that own a bull. Yet this is a young animal and therefore only used for young cows. The men take the cow for mating to other villages. The bull-owner will charge 20-30 Y.R. per time. Close to Rada', prices for mating are higher. The age of a cow at first mating is 2 - 3 years.

Mating is not always successful at the first time. Miscarriages are said to occur rarely, yet there are enough cases where delivery was difficult. Young calves are usually killed - especially males - when some months old. The first calf of a cow is always killed, often for some special occasion. In between calving-time is estimated to be one and a half to two years, to ensure milkproduction as well as the production of young calves for slaughter or raising. A male calf is usually slaughtered before one year of age. A female might be kept to replace the mother-cow or to be sold at calving-age. The life time of the animal is thus strongly related to its sex and production-purpose, as do prices. For a young cow a far higher price - 4000 Y.R. - is demanded than for an elder cow - 2000 - 3000 Y.R. -. The price for a calf varies from 300 for a 3-month old calf to 800 Y.R. for a one year old one.

Selling and buying of animals - and their produce - occurs at the informal market. Animals hardly ever reach the Rada'-market. The trading of animals is a male business and men benefit from the money earned at sale.

Milkproduction and -produce. The cow is milked two to four times a day. The woman holds in one hand a small tin container and with her other hand she will milk the cow. The average daily milk production is estimated to be 2 to 4 liters yet 2 liters seem to be more common than 4. The milk production for a lactation period of one and a half year is some 1000-1500 liters. When taking factors like dry periods into account, the utmost yearly milk production for the average dairy cow is estimated to lay between 500 and 700 liters.

Milk products are valued very high especially butter. The fresh milk is hardly ever used as such, although it might be given in very small quantities to children or drink when it is considered to do good to someone's health. Usually women make butter out of it.

They sour the milk collected from one day and shake it the next morning until the fat has been separated from the milk. The fat is then heated and smoked above the fire - if one can afford, a special kind of red hard wood, jedbah, is used as firewood - for some 30 minutes to give the butter its special flavour. Then the butter from several days is collected and treated again in the same way until the butter turns red. The butter can be preserved for a long period. A cow will produce 2 pounds of butter per week. Since locally produced butter is valued so highly and because of its high production costs it will yield at present 80-100 Y.R. per pound when sold. Butter is eaten on bread and on special occasions or when there are guests, since it forms an important part of special dishes like masoup and sabaya. Its speciality made one of two co-wives remark: "we women have to do all the work, fetch the fodder, feed the cow, milk it, make the butter but even now while our husband is in Saudi, we have to save the butter for his return and his guests".

Buttermilk is surrounded with less speciality. It is an important regular dish. Buttermilk is never sold, yet frequently given away to neighbours.

Milk, considered as the gift of Allah, is never traded in the research-villages. In the village of Al Si~~h~~ - part of Al Khabar - one family is said to sell milk.

Money earned from the sale of butter usually benefits the women and although they might have to spend the money for household purposes, they will use some for private things. Cheese is not made in the area.

Meat and hides. Beef is of little importance as a source of meat; veal somewhat more. A cow or calf is usually slaughtered for home consumption for special occasions. Meat is rarely sold at the informal market. Surplus meat will be salted and dried or smoked so that it can be kept for a rather long period. The meat suspends from a room ceiling at a windy spot to keep flies and cats away from it. Hides and other parts of the cow are never used in the research-villages.

Dung. An important advantage of keeping cows is the dung, which is used as a fuel. ^{than firewood} Dung is a far more important source ^{of} fuel than ~~that~~ fuel is. The cow-dung is collected and when suitable laid drying in the sun and as such used as fuel. It can also be mixed with sheep-dung, soaked in water for a day in a special hole near the village, mixed with the feet until it is dough. The dough is then shaped by hand into cakes which are left drying on rocks for a few days. The cakes are collected and stored next to the house in large piles. The making of dung cakes is a rather intensive activity, moreover since water has to be brought to the dung-hole. Women usually make dung cakes several times a week. When the dung has been used as a fuel the ashes are collected to be used, sometimes together with human excreta, as manure, samad baladie. Women are allowed to collect dung from outside the village for their own fuel. Sometimes a woman will be asked to make dungcakes for the owner of the dung and then she may keep half the dung cakes.

Illness and curement. Knowledge of diseases and the way of curing is very limited. Although it is difficult to define a pattern of physical complaints and ways of curement the following can be said:

The most common complaint of the women concerned the frequency with which cows have swollen stomachs. This can be caused by fresh alfalfa or an overdosis of foodrests and some women recognize these causes. The second complaint concerns lack of appetite - this might be due to lack of specific nutrients in the fodder -. Low milk production is another complaint.

It takes a while before women try curement, if they try at all. The way of curement depends very much on the individual woman and advise she receives from others. When a cow has a swollen stomach the woman might try anything: she can give her liver-salt, which is soaked in water and left on the roof all night or she might give a bottle of pepsi-sola, which makes the cow burp and loose its excess air. Some women try dried alfalfa. Another woman might solve the problem by cutting part of the ear of the cow.

Lack of appetite can be overcome, according to the women, by giving the cow salt and/or onions. Salt is also given when the cow has bad breath. When milkproduction remains low the cow will be sold or slaughtered. The only curement which is common for any disease is burning the cow with a hot iron stick near the location of the disease. The extend of burning depends on the considered seriousness of the problem. Burning is only practised in the last instance and usually a cow is not burned more than once or twice its life time.

There is no special person in the area who occupies himself as a "veterinarian". Sometimes a local doctor might be called upon. Often the owners of the cow themselves will try a curement and it does not seem a special male or female job.

Improvements. The outstanding features of dairy-farming are its high costs of production in relation to milk production, its labour intensiveness and the high social value attached to the butter.

As far as women's position in dairy-farming is concerned the labour-intensity is of utmost importance. It is especially the time-consuming feeding which receives the complaints of women and the main reason why a cow might not be kept by certain households.

Women are interested in a dairy project, mainly because of the high social value attached to the milk. In saying, they are interested in any improvement that reduces their work-load and gives a healthy and good milk producing cow. They stand open for modern curing methods a different bull-breed, less-time consuming and different feeding practices and even for cooperative ownership of dairy-cows.

Parting from the presently required amount of work women are mainly interested in having better cows instead of more cows. Whenever feeding-practices would be less time-consuming some women might own more cows. Women said to be commercially be interested in a dairy-project. Others warned that it is not good to sell milk. Whether it would be the women who benefit from a commercial project remains to be seen. It can be said however that the chance of them keeping the benefits from produce is higher in case of a small-scale project than in case of a large-scale project. Important in this respect is also whether large investments have to be made and which kind of improvement is introduced.

X Once a cow is mainly seen as an economic asset and requires large investments, the daily responsibility of dairy farming will enter into the hands of men, leaving women as mere labourers and only in the indirect sense benefits, beneficiaries.

A woman's direct interest would thus be small-scale improvement especially in the field of labour techniques for feeding and processing. Cooperative ownership of cows as such did not raise problems for the women questioned, and the women would join a cooperative project when they would have money. However cheque-questions clarified that not all women knew the consequences as well as pro's and con's of a cooperation. Cooperative ownership might raise the same difficulties as the existing shared-ownership of cows. The introduction of certain cooperative aspects on a small-scale and which aim at cost-reduction and work-reduction - such as stalling several animals in one stall and feeding them at the same time, the cooperative buying of special feed - would certainly be more successful and leaving a woman's individual interest the same. Whenever dairy-farming is improved on a small-scale, it might happen that more women - those who don't have time and thus those who belong to smaller households - are able to keep a cow.

Poultry Farming.

Chickens are like cows kept for subsistence for as well a source of meat as a source of eggs.

Sometimes all the women of a household will look after the chickens then again it will be the woman who owns the chickens who looks after them, while others care less. About two-thirds of the women occupy themselves with chickens.

nature The responsibility for raising chickens is thus much less explicitly stated among women than it is in the case of cows. The nature of the care is due to this. In principle it is quite easy to keep chickens. One just has to have them in a separate store, throw feed and collect the eggs and during the day the chickens will scavenge the streets in search of food themselves. It does not take much of a woman's time and energy. Men might be involved when a chicken has to be slaughtered on behalf of an unexpected guest or when a chicken has to be sold. However their involvement is far less outspoken than with the selling of cows. And usually the women slaughter the chicken themselves.

The number of chickens per household varies considerably and varies per moment. Some households will not have chickens because all have been consumed, all died or they lack the room for them. When a household has chickens, and this counts for their large majority, the average number is about 2 chickens and 5 chicks. The number of chickens varies however per village. The village of Al Khabar had at the moment more than twice the average stated for the 3 research-villages. The size of the household is not a decisive factor in the number of chickens. The impression is rather that poultry farming is not related to anything special, except for the necessary space which is however not a problem for most households. The individual woman's interest is of more importance than anything else, in determining the number of chickens that can be found in the households.

Ownership. Chickens often belong to a specific woman in the house. Some might put their chickens on a 50% basis to a neighbour or relative and receiving half of the number of eggs or chicks produced. Chickens are, unlike cows, owned by the women, which means that they can in most instances decide what is to happen to them.

Housing. Chickens are kept in a stall or store of the house during the night. There are no special arrangements made, except when a chicken is put for breeding, then a box with some straw will be provided. Chickens lay their eggs wherever there is a suitable place: on a bag or straw that is laying around. During the day they are always outside in the yard or in the village street, picking whatever they can find.

Feeding-practices. A few times a day grain will be thrown in the yard. These can be any kind of grains which are available in the house. Sorghum seems to be used more often than wheat or barley. Rice is also given. In rare instances alfalfa is provided on purpose. The chickens pick their share from the cow's provision. Sometimes they receive food-rests from the house, but this is neglectable. Grains are in most cases taken from own produce, yet they might also be bought. Chicks are given crashed seeds or sorghum-dough when very young. Fresh water in a tin is placed daily on a reachable spot for the chickens, yet some women might let them drink from the water in the streets.

Eggs and meat. Chickens can be slaughtered at any age depending on the needs of the family when chickens are good layers. Women try to keep them as long as possible. If this is not so they are slaughtered. Chicks of some months old are also used for consumption, especially when these are cocks. For a guest a fat chicken is killed. In general however the chickens are small and of little weight. Only a few women own a cock and hens thus far outnumber cocks. The village-cocks usually perform their duties for all chickens in the village. Women practice some sort of selection; the cocks are often large. Mating is considered essential for egg-production and thus not only for reproduction. When chicks are desired and there is a breeder 8 to 12 eggs from several animals are collected from several days laying, and the sitter is put with the eggs in a dark place. The fertility-rate is fairly high, an average of 7 to 8 chicks out of 10 eggs. The survival rate of the chicks however is somewhat lower since they disappear or are frequently eaten by cats or foxes. Chicks are raised for as well meat and egg-production. A chicken will produce egg when it is around 6 months old. The average number of eggs per laying-cyclus of 3 to 4 weeks varies from 10 to 20. A chicken lays an egg every one or two days. When a chicken is off laying it takes one or two weeks before it is in laying-condition again. Counting a yearly frequency of breeding of 3 times it lays a maximum of 90 eggs per year. When a family has 2 layers this means one egg every other day for an average of 6 to 7 people. Eggs are small. Surplus-production for sale cannot be said to occur, nor in the case of eggs, or in the case of meat. Eggs are rarely traded; they are like milk, considered to be a gift of Allah. Yet people do not keep as strict to this rule as in the case of milk and everybody knows the price of 1 Y.R. for one egg on the local market. It is also not uncommon that eggs are given away. In the village of Al Khabar the selling of locally produced eggs seems to be more common than in the 3 research-villages, but the average number of chicken per household in Al Khabar is however higher. Local chicken are also rarely sold, although there are set prices in each village. The prices do not differ much per village. For a hen 25 to 30 Y.R. is paid, for a chick 15 to 20 Y.R. and sometimes a good layer will yield 50 Y.R. Cocks are cheaper than hens.

Bought produce. At present it is common that men buy frozen chicken in Rada'. In Garia As Sawda there is a shop which is equipped with a freezer. Some families consume the frozen produce quite frequently, others never. Eggs are hardly ever bought in Rada'. In Al Khabar, boiled, imported eggs are sold in the village shop. Foreign livestock-produce is also rarely bought, since the local chickens are much more preferred. Besides this the foreign hens are said to cause a disease that kills the local chickens.

Dung. The yard is cleaned daily or several times a week from dirt and chicken-dung. Dung is thought of as a bad thing, which attracts mites, and is of no use; one should get rid of it as soon as possible.

Illness and curement. The women are acquainted with the disease - New Castle Disease - that can kill yearly a large part of the chicken population. Some will slaughter their chickens before they are caught by it, yet many just let them die. They did not develop a curement for it or try to counteract the disease. For other problems, lack of appetite and bad laying conditions, no curements are tried either. Chickens in bad laying conditions are slaughtered, dead chicken however are never eaten.

Improvements. The present state of poultry-farming with its low meat- and egg-production as well as poor housing conditions and feeding practices leaves much to be improved. The women did not complain explicitly about their poultry-farming. Their problem is that they can all of a sudden die and be eaten by cats and foxes. Nothing is done to prevent thieves from killing their poultry. Women's thoughts on improvements concern giving the chickens more grains and water. From the present state of farming one gets the impression that chickens are not worthy of too much attention.

The latter impression is contradicted by the outspoken interest in anything that can help to produce better chicken and more eggs provided that improvements do not ask too much energy. The scale and kind of improvement are thus of importance.

There are different reasons why a woman might be interested in improvements: the taste of local produce is highly esteemed; eggs are considered good for one's health in general and for small children, cash-income enables women to purchase private things.

Whether women have a commercial interest in poultry-farming remains to be seen as in the case of a commercial dairy project. It will depend on the individual woman's interest, saying that some women will definitely go for a commercial project, while others are only interested in and content with improvements that gives them more eggs and meat for home consumption.

It also depends on the individual relationship between man and woman whether it will be the husband or wife who will go for and benefit from a commercial poultry-project. When investments have to be made, men will necessarily have to be involved.

VII AGRICULTURE

Women's role in agriculture gives a somewhat different picture than their involvement in dairy- and poultry-farming. Men are in most cases the responsible persons for the agricultural production. They decide on what and how it is produced, on whether land is sold or rented, etc. Yet women perform an important part of the agricultural work. In the case of agriculture it depends foremost on the social and economic background of a woman whether and how she participates in agricultural production. In this respect the following matters have to be kept in mind:

- the number of active women and men in the house. For large households in terms of active members, women can be freed from household duties to perform work in the fields. *while the husband is away*
- the occupation of the closest male relative or husband, when the husband's main occupation lies outside agriculture, the woman might either not have to work in agriculture at all or work on behalf of others. *(for cash or kind)*
- the fact whether a husband or other male relative has migrated. This usually counts for the larger households. It can influence woman's role in agricultural work to be performed or in decisions to be taken on behalf of production.
- the fact whether a household can employ paid labour. For many Sada-women - although their households can usually afford to do so - it is not done to work in the fields and give men a chance of seeing a woman. This especially counts for the younger women of the house.

the ability of the husband to employ

Age in general determines a woman's role in decisions making or management, more than it influences the amount of work performed. All these matters and more render it difficult to determine women's position in agriculture, not to speak of the differentiation therein. More than two-thirds of the women are to some extent actively working in agriculture. In Garia As Sawda only half of the women perform agricultural labour.

If women's activeness in agriculture is compared to their participation in animal husbandry, it appears that less women are involved in agriculture than in animal-farming. The main cause of this is probably that not all households have agricultural land, while it is common for most households to have at least chickens. There is no household that does not keep any animal.

Agricultural activities. In general every activity can and is performed by women, from ploughing and irrigation up to the storing of agricultural produce. However ^{part} half of the activities are not commonly done by women. Women's duties concerns mainly - although they are also done by men - ~~harvest-related activities~~: stripping of sorghum-leaves, bundling of sorghum-cobs, harvesting, threshing, winnowing and transport of the produce to the house. Besides these weeding can be important. A woman's work is ~~then~~ mainly related to the cultivation of cereals and ~~the~~ fodder and the picking, but in general qat is considered a man's crop. Although fruits and vegetables are not grown in large quantities, their cultivation is also considered to be a sole male responsibility. Women are said not to work in either fruit-cultivation or vegetable-gardening yet they have been observed picking or harvesting the produce and fetching it home.

in crop production

planting man and harvesting

see top part of page

Top of qat

To each one of the important female activities something should be said to indicate the intensity and amount of work involved as well as methods used. However for practical reasons not all the necessary information could be obtained so that the description thereof will be postponed

to later reports. What can be said is that the harvesting, bundling drying, winnowing and treshing of cereals are altogether extremely labour-intensive. Most of it is done by hand with the help of simple devices and only for treshing donkeys are used.

Women are extremely busy during peak-periods in the agricultural seasons and often have to leave part of their other work to be able to work in the harvest. Ploughing, irrigation and recently also fertilization and use of insecticides are mostly done by men. Planting and manuring are both done by men and women.

Storage of agricultural produce is mainly a man's task, exemplifying the importance of men in supporting the family. Many women have to ask the men of the house for the key of the store when they want to prepare a daily meal.

The marketing of cereals hardly ever occurs. Qat will always be sold by men. For the sale of alfalfa it is more likely that women have a say, but this can not be said with certainty. It occurs that fruits are sold by women, yet it is unknown whether the money is handed over to men in some cases.

Organisation of labour. Agricultural labour on behalf of a household can be performed by 3 different categories of people: first of all it are the family-members themselves - men, women and elderly children - who in most cases take the largest proportion of the necessary work for their account. Secondly professional agricultural labourers - men and women - are hired to do a large part of the remainder of the work, yet in some cases might do almost all of the work on behalf of a household. The use of agricultural labourers depends mainly on the economic status of the family or whether one or two members of the family have migrated. Labourers usually do not have much agricultural land themselves or do not own or rent land at all. An important research-question is, as yet unanswered, whether both husband and wife perform paid labour for farmers. There are only a few female labourers in the 3 research-villages and they are widows or divorced women who cannot depend on a male relative for their support and necessarily have to provide their own living. Other women, who are known to perform labour on behalf of others, are usually paid in kind so that they are difficult to differentiate from the third category of workers. This third category concerns neighbours and relatives - also men and women - who are called upon during peak seasons. This does not necessarily mean that labour is exchanged between households, the idea is rather that certain women - and men - work for certain households in times these have labour shortages. This could especially be noticed in the village of Al Wadbah, where 2 women are regularly called upon by the largest farmers. In Raba't the notion of neighbour service has probably been replaced by paid agricultural labour, as is most likely the case in Garia As Sawda, although paid agricultural labour can also be tied to certain families. Women thus can be involved in many ways in agricultural production, the most common being in the work of the own household. Women might then work alone or with other men or women of the household. In case women of other families help or female labourers are demanded all women will work together.

During the peak season women-labourers work all day. They are still most often paid in kind. One woman said she gets as much as she can carry home. More common is 1/6 or 1/7 of the yield of sorghum, wheat, barley or alfalfa. The labour will always receive the necessary food-lunch for the day.

When paid in cash the daily salary varies from 30-50 Y.R. per day - depending on whether work is done during the morning or during the whole day - plus food. In the village of Al Khabar payment in cash is more common than in the 3 research-villages. Payment nowhere differs between men and women, whether this be in kind or not.

Decisionmaking. Women are involved in decisionmaking in agriculture up to a certain degree. It is considered common sense that women take daily or routine decisions or advice on agricultural production, especially when women are older. It occurs also that they run the farm, hire labourers, even if they are not active themselves. This applies again mainly to elderly women, in case their husband had died and the son is absent.

Women are made responsible for whatever they do within agriculture, meaning that the husband or another important male relative can call them to account. This indicates the in general subordinated position of most women in agriculture.

Ownership of land. A woman is entitled to inherit her father's land. Her share is half of what her brothers receive and 3 times as much as what her mother receives. It rarely occurs however that land is divided up on behalf of the daughters. A brother will manage her land. There can be many reasons for this. A woman leaves her family to be supported by her husband and therefore does not depend anymore for her living on her father or brothers. When her own family needs the land she will feel it an insult to her family when she demands her share. Moreover it would be a blame on the supporting-capacities of her husband. It might also be that she just does not care or does not think it worthwhile to go into troubles with her family. Women in general have less knowledge on juridical procedures. Important is also that women marry outside their village and contacts with her own family are necessarily limited. The relationship between her family and her husband's family is also of importance as well as the marriage-grounds. Thus not all women, entitled to their families land receive or demand their legal share. Whether they form a majority can not be said.

Furthermore a woman is entitled by law to inherit her husband's land. Important in this matter is whether she will have children, especially grown-up sons. The presence of children does not only reduce her share considerably, it also means that she can be supported by one of her children. When the son has to make a living from the land, he will take over his father's position, the management of the farm and the support of his mother. It is also possible that, in case of extended family, another close male relative takes over the function of the head of the household and the woman will be supported by him.

It also occurs that, in case of a young woman, she will return to her own family to remarry and not demand her husband's share. When the death of the husband concerns a nuclear family the widow might take over the management of the farm with the help of some male relative's aid. A widow or a divorced woman can also inherit via her sons, yet nothing is known onto this.

The individual circumstances and the way she inherits land determine women's position towards their own land.

Migration. The influence of migration on women's position in agriculture is difficult to indicate at this moment. The issue of migration is complicated and significant enough to ~~want~~^{merit} separate attention within the second phase of the research if not within the context of a separate research.

Migration in itself means drainage of labour from the household and in some cases drainage of ~~management~~ or part of the management. Besides this a woman can be confronted in different ways with the leave of a migrant. It depends whether he is the husband, the brother-in-law or the son. Moreover the duties of the migrant can be taken over by more than one person: by another male relative if present, by an uncle - member of a different household -, by the mother or wife, when managing aspects are concerned. When considering the labour duties also many solutions are possible. First of all the money sent home by the migrant can be partly used for the purchase of food-items, which would otherwise have been produced by himself and that thus part of the land is left laying idle. Another way out of the labour problem is that labourers are hired and paid by the migrants-money, or that the remaining persons, men and women, perform more work than before. It is also possible that part of the land is rented out or returned. To know which solution is preferred requires knowledge on the existing surplus-labour and the organisation of labour from within and without the family on the basis of the research undertaken thusfar it can be said that almost any possible combination of solutions for raised managerial and labour-problems occur. For example: an uncle can take over the organisation of the farm together with the wife of the migrant and hire labourers. It also occurs that the mother of the house takes over and that her daughter-in-law performs more work. In general however it can be said that a male relative, who either belongs to another household or the same, is called upon by the migrant to look after his family. This trustee will try to find a solution together with the migrants family.

On the one hand migration can leave some women with more responsibility, independency and work and on the other hand others with less of all these. The size of the household, and therewith other socio-economic factors, have a large influence on the kind of effect of migration on women, since migration is highly dependent on the number of active persons in the house. Migration does not seem to determine whether women are active in agriculture, rather it draws on the amount and kind of work they perform within agriculture. Moreover the influence of migration on women's position in agriculture differs seemingly per village. In Garia As Sawda women said that migration leaves them with more work, yet less land is being cultivated since the village has a labour shortage. In Al Wadbah the same amount of land is cultivated although with the help of labourers. The introduction of the tractor, seen as an indirect effect of migration, has not notably changed women's position in agriculture. Tractors are mainly used for ploughing and soil removal which are predominantly male activities. Except when it is equipped with a cart and used for the transport of agricultural produce it is of importance to women. Yet the number of tractors found in the research-area is so small that it only effects a few women.

Improvements. Women are less aware of problems, although they might be acquainted with them, than men are. Their life, limited to the village is such that different ideas or possible changes, only reach them when they are told by men. Moreover their involvement in agriculture does not touch enough upon managerial aspects.

However women were very conscious of the lack of water for agricultural production, stating at the same time their interest in irrigated agriculture. This especially counts for Al Wadbah where there are no possibilities for irrigation. In discussing vegetable-gardening all women said to be very interested in it and when they would know how to grow them they would immediately try to do so and in the case of Al Wadbah, when they would have irrigation-water. They are interested in all the vegetables they need: tomatoes, potatoes, spring onions, horseradish, pepper and water-melon. In Garia As Sawda a few farmers grow presently some vegetables and in Ruba't people have been unsuccessful in the cultivation of tomatoes. It seems however very unlikely that women will go for vegetable-gardening, since at present this is done by men. Yet women consider them to be of high value as a daily source of food.

What should be kept in mind, once the RIRDP starts its activities in the area and at present in the field of extension-training, that independent of whether improvements are introduced in the field of rainfed or irrigated agriculture, it should be tried to involve women directly into activities undertaken. Women form an important part of the agricultural labour-force and they might be the managers of agricultural production. It is to their interest and the interest of their family that they receive first-hand information.

As can be seen thusfar, women's position in the rural society is definitely not a constraint to involve them in development-activities in agriculture, provided that the proper procedure is followed in approaching women. Once an extension-agent is known to the village - at present an agent will always be a man - he will not encounter problems in talking to women on agricultural improvements especially when the women are busy in the fields. A village like Garia As Sawda might form an exception in this respect.

↳ A special interest of women will lay in the field of labour devices for harvest related activities. Simple mechanical equipment could certainly diminish their workload to a great extent.

VIII MOTHER AND CHILD CARE

A woman marries at the age of 14 to perform the important duties of bearer and mother of children. She receives her husband according to tradition on the wedding-night when she has to prove her virginity. A woman has proved her womanship when she has delivered her first child. Only at marriage she will be prepared for all that comes to having children.

Ante-natal care. When pregnant, although their pregnancy is considered of utmost importance, women carry on their life and work as before. The household- and other activities demand this. Heavy workloads are avoided only during the last month of pregnancy and only then when there is someone else in the house to do these tasks. Many women in their ninth month climb the ladder to paint the house all the way for it to be proper to receive the child and the guests thereafter. Although many women would like to lessen the amount of work and especially heavy tasks, they simply cannot afford to do so: meals have to be cooked, water to be fetched, cereals to be harvested, fodder to be fetched and children to be looked after.

There is usually no change in diet during pregnancy. Particular dishes or special food-items are not deemed necessary, as they are considered to be after delivery. Many women however recognize that they should eat good, but not extra ordinary. It is on the other hand not uncommon for women to eat less during pregnancy, because they think there is not enough room for all the food and or a large baby might render delivery difficult. Especially experienced women recognize the relationship between the mother and fetus, although they do not express it in scientific terms. There are many different ideas on this relationship and the ideas differ strongly per woman or group of women. For example there are many ideas on the amount and kind of food that reaches the fetus: some women think all food consumed by the mother will reach the fetus in some way while others think only residues of certain food-items serve as nutrients of the fetus. A few women recognize the function of the embilical cord and placentia.

Women mainly think in terms of other relationship in connection to characteristics of the mother which can be transferred to the fetus. When the mother gets emotionally upset, angry or "hot", the baby will react in the same way and wants to get out of its mothers body. The same occurs when the mother is breastfeeding the child, then her state is transferred via the mothermilk. A pregnant woman or mother should thus try to prevent herself from getting upset or too "hot" from working in the sun.

Special cares during pregnancy are thus rather limited. It is difficult to say whether there is a direct relationship between the occurrence of miscarriages and the state of nutrition and workconditions of pregnant women. 10% of the conceptions for women of all age-groups resulted in a miscarriage. However there were no miscarriages recorded beyond the fourth month of pregnancy; 17% of the women has had a miscarriage and once a woman has had an abortion she is liable of having another one. When one would figure the number of miscarriages for generations of women the above given figures would be much higher. Only 2% of the recorded births are still births. When one compares the above findings to figures stated elsewhere for Yemen the above outcomes are strikingly low.

The women questioned did not complain about physical problems during pregnancy, except for back-aches and reoccurrant miscarriages. To prevent miscarriages some women - those who can afford to do so - go to Rada' for treatment. The mobile clinic is sometimes consulted.

A local midwife is said not to be asked for advice on the matters of miscarriage, although some women consult her in order to get pregnant. The midwife will then massage the abdomen.

When the fetus is thought not to lay in a good position women practice a method of shaking - called zelwala - . A woman will shake the legs of the pregnant woman as to shake the fetus into a good position.

Delivery. In the rural areas there are less preparations made to ease delivery than in Rada'-town. There is a high believe in Allah's care and will. When a woman is in labour she sends for her mother - in - law to help her during delivery, while the delivering woman sits kneeling the helping woman will sit behind her to press her back. Once the baby is born and the helping woman does not know how to cut the embilical cord, a local midwife is called upon. She will cut the cord some centimeters away from the child's body. Nothing is done to cover the embilical cord, as is the case in Rada'. The actual delivery is not announced to anyone in the house besides the mother-in-law, nor is it seen by anyone, not even by helping women. It would make the delivering woman ashamed and upset. The placenta is handled with much care. It is washed several times, after which spices and grains are added and put in a tin. It is then placed on a hill out of reach of dogs, but to be eaten by birds. After delivery the mother and child are washed. The birth of the child is then announced to the villagers and in case it is a boy accompanied by gun-shooting.

30 Days childbed. The mother is allowed to rest and should officially not perform housework during 30 days after delivery. However in the villages women hardly ever have the occasion to rest. Usually a younger sister is asked to do the housework during the first one or two weeks. The mother stays in childbed often not longer than one week and then she only feeds and washes the child. As soon as she can - and she usually has to, she starts working fully again in the house. When there is time and money the mother receives special attention from the other women in the house and is visited during her first 30 days of new motherhood by relatives and neighbours. Special attention is given to the food of the mother for her to regain strength: chicken, chicken-soup, (canned) fruits, and local wheat porridge with local butter. In some cases the mother eats seperated from the rest of the family. Many women complain about abdominal pains after delivery. During the first 30 days not much is done to relieve pains. They might press the stomach with a waterpot or waterbag. In general women consider it a bad thing to leave the house before the 30 days are over. They would never consider of going to the Rada'-hospital unless the problem is very severe. And usually in that case the husband will have to give her the advice to go. The same can be said in case physical problems occur with the baby during its first 30 days of life.

The baby is surrounded with somewhat less attention than the mother is during the 30 days after delivery. During the first 3 days of life the baby is given sweetened water and fresh cream from cowmilk, about 1 teaspoon three times a day. The cream is said to be good for the growth of the child and moreover it will make it feel full. As soon as the baby is breastfed the mother will continue in giving it cream once a day, when she can afford this.

The matter of hygiene of mother and child is treated with speciality. There are five fixed days when the mother and baby have to be washed completely, for both to become pure. These special days are the third, seventh, fifteenth, twentieth and thirtieth day. The third, seventh and

thirtieth day the birth of the child will also be celebrated with neighbours and relatives. There is no difference between the celebration of a boy and girl, with the exception of the circumcision of a boy on the third day. The circumcision is usually done by a special man - a taylor or barber -. The prepuce is pulled, tied and cut with a razorblade. Afterwards an egg is broken over the penis to stop bleeding and very often peneciline-powder is used to prevent inflammation.

Once the 30 days-period is over the mother will visit her parents and other relatives with the child, whenever possible. Then again the birth of the child is celebrated.

Breast- and bottlefeeding. Breastmilk is valued much higher than bottle-milk. The bottlefeeding is of far less importance in the research-villages than in Rada'-town. In the village of Al Khabar however bottle-feeding is observed more often than in the research-villages. Women think it will add to their status when they bottlefeed the child. The mother will give the breast whenever the baby cries. No hygienic measures are taken. Children are breastfed for up to two years. Only when the mother becomes pregnant again she will stop breastfeeding her child, since breastmilk is then considered to contain certain elements which are harmful to the child. However, because the pregnancy-interval is on the average more than two years, this is unlikely to occur. Usually the mother will stop the breastfeeding when she is tired of it and sees that the child eats all the regular food. Many women now start using the bottle in addition to the breast, especially when they do not have enough breastmilk. This might influence infant-mortality in as well a positive as negative sense. In a positive way since many infants are said to have died because of lack of milk and in a negative way because bottlefeeding is not surrounded with enough hygienic measures. Besides this, women do in many instances not prepare the milk in the proper way. They boil water with sugar, pour some spoons of milkpowder into the -sometimes -dirty-bottle.

The amount of milkpowder used is often insufficient. Women cannot read instructions and moreover think that thick milk makes the baby vomit. When the child is able to do so it will suck the bottle itself. Usually in a busy household the bottle can be found laying on the floor, empty or not. Besides lack of milk, women might have other reasons to start bottlefeeding. Breastmilk is considered part of the mother's body and when given to the baby it will transmit the conditions of the mother. One should avoid giving the baby the breast in case of angryness, when one has been out in the sun or when one is upset. Also in case the mother has been drinking a lot of water, the baby will get stomach-problems. When she is angry or upset the milk becomes hot and causes blisters on the babies mouth and throat. In case problems occur one has to milk a red cow directly into the babies mouth. Thus when children are bottlefed many problems are avoided. When the mother is ill and she has less milk she will also start bottlefeeding.

While the period of breastfeeding is becoming shorter, bottlefeeding can be practiced for more than two years. Children of 3 or 4 years of age have been observed sucking the bottle.

Concerning breastfeeding, women recognize to a certain degree the relationship between their nutrical status and the child's health. Some try to eat good - wheat, sorghum and fruits - to increase their milkproduction.

Weening-foods. Women start giving their child weening-foods when it is around 6 months old - at irregular intervals - until the child is one or one and half a year old. The most common foods are biscuits soaked in tea and small pieces of bread soaked in tea, soup or buttermilk. Beans and sometimes potatoes are given when available. Wheat or sorghum porridge is considered too heavy for small children. Whenever the family can afford it, and this is usually after meals, or when there is a guest, the child will receive fresh or canned fruit. These are considered more a delicacy than a regular food-item. When the children are somewhat older, they occasionally eat eggs or tunafish. These are considered to be good for children. As such infant-feeding practices are mainly based on what is locally available or produced and is thus mainly cereal-based, as is the general diet of the rural population.

Child-reaning. Personal hygiene is considered of utmost importance and the women were astonished to be questioned about such a matter of course. Hands are washed before meals. A child's face etc. are washed every day. Furtheron the child is bathed fully every second or third day and at that time his clothes will be changed. Soap and towels become items to be found already in many households. The amount of water available and used for personal hygiene as well as environmental hygiene and informal medical care seem of much more importance in determining a child's state of health and its chance of surviving than personal hygiene. Moreover the amount of time required to keep children clean is also important.

The role of men. Although the mother is the first to look after her child, the grandmother or elderly sisters are also important persons in ^{raising} raising a child. Women are thus the main responsible persons for looking after a child. The influence of men and their role in decision-making in what is in the end to happen to the child cannot be neglected. Many men see to it that their wives look after their child properly and give it all it needs. Men buy in many instances the extra food for the child and often also milkpowder. When things can be bought in the village-shop women will sometimes go themselves or send an elder child for an errand. Yet fresh fruit and vegetables have to be provided from Rada'.

Furthermore men have to decide on whether a woman can go to the hospital or mobile clinic in the first instance. Once she is allowed to go she can go on her own the next time.

Number of children. The average woman will give birth to 5 alive born children in her lifetime of less than 40 years. The fertility rate for women in the age-group of 15-45 years is estimated to be 6. None of the women of the sample population gave birth to a child when under the age of 15 years and only half of the women under the age of 20 years bore a child. The latter fact might be due to migration of young husbands.

Approximately 17% of all children born did not reach the age of 10 years; 10% of the children born died in their first year of life. Infant mortality rates are thus very high, yet far lower than the estimates for other parts of the country. The main causes for high infant mortality are most probably malnutrition and bad hygienic circumstances.

Stating the figures given thusfar in another way:
out of all conceptions there are:

- 10% miscarriages
- 2% stillbirths
- 88% life-births of which 10% die before 1 year of age
7% die before 10 years of age

The average number of children of the women of all ages is at present 2.2, which is rather low considering the average age of 33 years. At the time of the survey 1 out of 3 women, who could possibly be pregnant was pregnant. This would result in a crude birth rate of 90 per 1000 inhabitants, a figure twice as high as the national average. The causes for this high pregnancy-rate can probably be found in the instance of migration. The husbands of many women who are pregnant returned home from Saudi-Arabia.

Family-planning. The average woman can thus expect to have 5 children in her life. Women usually start thinking about family-planning when they have already many children and have experienced the amount of work and energy that goes into the bearing and rearing of children. In general there is a strong believe in God's will when the number of children a woman will bear is concerned. Women who experience difficulty in getting or staying pregnant are pitied. Many women wish a large number of children for many reasons. Many children die before they reach the age of 10 years and many women take the low survival-rate into consideration. Children are moreover a labourforce and an insurance for one's old age. Besides this social status is related to a large family and especially to a large number of boys. Many men want their wives to have many children and will do everything to help them in this.

When women are asked the number of children they want their own children to have the answer differs from the number they themselves have or think they should have. Because of the sumount of work involved women state the ideal number to be 2 or 3 children.

Due to the influence of child-rearing on their work and life women talk very often among themselves about having children and all that comes to it. A few women start talking about the advantages of having less children and methods of birth-control enter the discussions. About every women knows about the birth-control pil and three-months -injections, but only a few are actually acquainted with its use. Women lack a good understanding of the working of these and their ideas on their quality differ considerably.

Their knowledge on conception and thus contraceptives, goes as far as women will say: "when there is no monthly bleeding, one is pregnant." Since the three-months-injections prevent women from bleeding, the method is highly disliked.

In this context it is important to notify that women think they can prevent pregnancies by drinking the extract of special spices during their period. They might practice this method when they don't want a second child to be born too soon after the first one. The background to this reasoning might lay in the Koran-statement prohibiting intercourse during the woman's period. Although the discussion of having children occurs frequently among women themselves, some women say they discuss the topic with their husband. Men bring sometimes contraceptions from Saudi-Arabia and a few young couples practice family-planning.

In conclusion one can say that there are 3 categories of women who are, as yet, interested in using contraceptives:

- those who already have many children and cannot take the burden of another child
- those who have just given birth to a child and don't want the second one to be born too soon
- those who are young and think the ideal family consists of a father, mother and two or three children

Improvements. The villages of Garia As Sawda and Ruba't have now been visited for over one year by the mobile clinic of the Church of Scotland Mission. One of the purposes of this clinic is to give special attention to preventive mother-and-child-care. The influence of the clinic on the existing mother-and-child-care is difficult to separate from its general influence on the health-care in the villages and it will thus merit more attention during the second research-phase.

Thusfar it can be said that many more (pregnant) women and children start attending the clinic and that slowly knowledge on a different mother-and-child-care is spreading. In the village of Al Wadbah, which does not take part in the mobile clinic, women have less knowledge on different cares. It is however as yet difficult to say whether the relative isolation of the village is also of importance in this respect.

It is not to say that the women of the other villages know what the first things said on a different care is all for: why they receive vaccinations, why a blood-sample is taken from them, why they have to feed their children differently or should avoid bottlefeeding.

Their clinic-attendance - and this is a first step in a new direction - has very much to do with what they think modern medicine - not preventive health care - can bring them. And once a medicine has helped them to solve a problem they will most likely repeat their visit when new physical problems arise as they will encourage others to visit the clinic. Preventive mother-and-child-care is very much a matter of adapting new knowledge to the existing mother-and-child-care and to the possibilities of women to change their situation.

When taking all this into account, future extension on mother-and-child care has to part from a rather lengthy list of matters.

Important in this respect are:

- the existing knowledge on conception;
 - the existing knowledge on the relationship between mother and fetus;
 - the matter of hygiene as it is related to environmental hygiene, availability of water and informal medical care;
 - the nutrition of children being a reflection of nutrition of the whole of the rural population;
 - the workload of women;
 - the influence of men in decision-making and transfer of new ideas.
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