CHAPTER VI QUALITATIVE DATA: HEALTH PERSPECTIVES IN SERENGETI

6.1. Fieldwork Organisation

This chapter consist of the compiled transcriptions of the key-informant interviews which were conducted in the district complementary to the pilot survey and the household survey. The half-structured interview questionnaire is presented in chapter III on methodology. The qualitative survey was intended to provide background to the analysis of the quantitative data as presented in chapter VII. The choice for the locations was made in consultation with the Public Health Department's acting Chief Medical Officer. On account of the district characteristics it was determined that Mugumu as the capital would serve as one station, a larger rural satellite in the form of Natta, situated on the main road with public transport as semi urban, at a distance of approximately twenty miles from the capital, and Nyamburi, where the household survey took place, on the basis of its peripheral rural setting and remoteness in terms of accessibility, and its homogeneity (see Chapter IV). In line with the LEAD fieldwork protocol, the transcriptions start with an historic perspective, to generate an image of what constitutes Serengeti as a rural area. The informants were selected on the basis of their function in the community and recruited through the network of the Ward Educational Coordinator (W.E.C.), as every community has a liaison within the ministry of education, to a larger extent than the Public Health Department. The selection criteria ranged from health workers, civil servants, schoolteachers, religious leaders, Traditional Birth Attendants, NGO health projects staff, village executive committee members, and retired –local- government officials. Knowledgeable community elders were identified by the research assistants in all locations (see chapter IV), on the basis of their generation age set (*cf.* Shetler 1998), to reach the best possible early parameter in original information. All the names of the interviewees have been recorded, but withheld purposely for privacy reasons, although they all officially consented to being quoted. They are indicated by sequential alphabet capitals hereafter. The transcriptions, as explained in chapter III, were checked by the team of two translators post hoc for accuracy. In the case of the TBA's and elders there were two linguists present to control semantics in translation, when a local dialect designation was transferred to Swahili, and later to English. Wherever possible, historic details relayed through the key-informants were enriched with documented references, as acknowledged in the text. The names of non-interviewees and local organisations are left intact in order to add to the contextual information. Records are kept in the Kisare College of Health Sciences Library, as requested by the Ethical Review Committee and adhering to the ruling regarding research data.

6.2. Serengeti Historical Perspective

Respondents A and B (*retired local government official, religious congregation representative*)
A: The first note made regarding the history of the capital Mugumu is that it was not always there. The elders describe it as a forest area designated as Risaba before the emergence of the name. The reference the name carries is to a tree, identified by type as '*omosongo*' (there is no consensus) but one source insists that it's from Maragoli language spelled as '*Mogumu*'. It is the indigenous name for that species, according to an A-related elder, at a crossroads marketplace where the local groups met to do exchange trading, which location is nowadays marked by a roundabout (loc: '*Keep left'*). Respondent B, a retired member of the KMT local branch, is consulted on the same topic and adds

his knowledge. His reflection goes beyond Mugumu and starts to describe neighbouring groups interactions around the capital after 1900 as the starting point for recent history. For this area, the Ikoma people and their chieftaincy from nearby Morotonga are considered as the truly indigenous. Apparently, they were in the geographical proximity of neighbouring Ngoreme, Natta, Issenye, Kusini and Sukuma, and Maasai further east surrounding them from the onset. But here too, there are early movements of various groups, similar to the Natta situation. All refer to the influx of groups from Kenya, *e.g.* Maragoli, Nandi, Kisii, among others as a result of forced displacement following colonisation, the indication here is that British 'acquisition' of land for their plantations instigated the migration. The next movement is associated with Kurya moving from Tarimé to this particular area. With regard to economic activity it is emphasised that before the influx of the Kenyan groups the single crops were Millet and Sorghum, and, more importantly, the Ikoma were hunters primarily, because at that time there was abundant wildlife. The crops in time were extended with other ones such as cassava and the gradual shift in activities is identified as cattle keepers who started farming on the side, while the original farmers started to buy cattle for economic security. The sedentary character led to community development marked by the construction of the first primary schools in Mugumu central and Robanda. After independence the village development brought the organisation of farming activities, exemplified by the introduction of maize and beans and growing on larger plots in rows. It was enhanced through the establishment of the Mara Co-operative Union, to create a market for food crops, to depart from subsistence, and the introduction of a pure cash crop as cotton although not successful on a large scale. Trading intensified and the establishment of shops further created the semi urban atmosphere. It is described as a place of concentration for a large number of groups which also intermarried extensively and engaged in multiple economic activities. Referring to this large number of groups within several communities, the question is raised whether this would also implicate that each group maintains ties with their own traditional medicine keepers, in the sense that they are regarded as the preferred suppliers.

Respondent A claims that the daily practice shows rather the opposite for a number of reasons; first of all, the number of traditional healers is limited, not every settlement has one, and the existing ones usually have their own specialisation. That motivates people to find the one most revered for his or her specialty, which may involve quite extensive travelling. Another reason is that the obscurity of finding a healer outside one's own community contributes to a feeling of security, especially if a certain disease is thought to be shameful or otherwise controversial. Traveling extensively to find a specialist is supported by both, and they mention famous healers with patients around the entire region who are renowned for a successful treatment. The transfer of knowledge with regard to home remedies however does show that there is an original set and an acquired set, mostly because of the indigenous names which survive this knowledge transfer and are therefore traceable to specific origin. The underlying mechanism for this spread is indicated by the elders as the result of the extensive intermarrying, as many women have learned home remedies from their parents, and they take them along to their new in-law families.

Respondent C (*retired government official, farmers' union executive)*

The history of Natta as far as could locally be reproduced in August 2015 by oral transmission, starts around 1905. Respondent C has been an inhabitant since birth (1931). In his recollection, built around the information transcended through his father, the Natta community originally consisted of around six hundred people, who were mainly occupied with three activities, in order of importance

they were: farming, mainly millet and sorghum, cattle rearing, and hunting after local fauna. The community was rather remote and limited in size as most dispersed settlements were in that period (*cf.* Osafo Kwaako 2011). The influx from other migrating groups was initially twofold, the neighbouring Ikoma were drawn foremost by the fertility of the land, and the open spaces which invited unscheduled settlement. The area in that period is indicated to stretch all the way to the current plot of the Twiboki secondary school. The Ikoma movement was sporadic and did not have any specific impact, since the Ikoma maintained their own original settlement (Morotonga) and chieftaincy (Nyichoka) irrespective of their incidental migration. A different matter was the influx from a group called the 'Issenye'. This group did not arrive in the Natta area as a result of individual migration, but as a result of a conflict with the Maasai, which forced the Issenye to leave their area called Nyiberekera (*i.c.* Tabora B), entirely, making them in effect fugitives, leaving no one behind in the process. According to these elders the Natta people fought them off initially, because their number brought about an imbalance in local proportions, and they actually defeated them in a struggle. It was soon realised that a compromise had to be reached because these fugitives did not have many alternatives. Their leader reached an agreement with the Natta chief Rutiginga, which was underlined by a special ritual. The youngest member of their group would be breastfed by a woman from Natta, while the youngest member of Natta (*C's father in 1905*) by an Issenye woman. After this ritual the group were given an area near Natta called Nagusi. The degree of acceptance was illustrated by giving the newcomers the opportunity to establish a local chieftaincy (*Sarota*) though being resident in another area. After that event there was a return of focus on economic activity and eventually the resident groups started to intermarry.

Another notable event with tangible impact on the community was the first establishment of the Ikizu mission, started in 1918 by the Seventh Day Adventist (SDA) church, which presented Natta with its first formal educational infrastructure although at a distance (i.c. a boarding school at 60 km). The assimilation of the resident groups was furthermore enhanced by the abdication of chieftaincies with the arrival of independence (1961). The next influx from migrants on a large scale in the recollection of the elders is associated with the Developmental Villages (V*ijiji vya Ujamaa*) operation which ran between 1974 and 1982, of which Natta was part, and brought about economic changes. One of the motives was to realise larger communities and assist farmers in resettlement who were unable to harvest successfully as a result of long droughts in the early seventies.

'*...What we must do is to try and make it possible for groups of farmers to get together and share the cost and the use of a tractor between them. But we cannot even do this if our people are going to continue living scattered over a wide area, far apart from each other...The first and absolute essential thing to do, therefore, if we want to be able to start using tractors for cultivation, is to begin living in proper villages...unless we do so we shall not be able to provide ourselves with the things we need to develop our land and to raise our standard of living. We shall not be able to use tractors; we shall not be able to build hospitals, or have clean drinking water, it will be quite impossible to start village industries'* (Nyerere 1962: 183-4 quoted in Kwaako 2011).

The groups which now arrived in numbers did not only encompass Kurya (from Tarimé), Sukuma (from Nwanza), Zanaki (from Ikizu) but even people from Kenya. The fertility and the area of land available were of such proportion that the same pull factors of fifty years before were still in effect. It also stimulated the introduction of cassava, maize, rice, but there was a special stimulant from the government to engage in growing cotton as a cash crop, the first time that something next to subsistence food crops was introduced. That policy was however not consolidated through time,

but the mix of food crops remained. With reference to the last decade of economic activity the community now experiences the exodus of young people in stereotype urbanisation trek, but what pleases the elders is that they do see successful migrants return to establish themselves in Natta to reside, so their exodus is believed to be compensated. The historic perspective makes Natta an example of a mixture of many different groups and the joining of various economic activities with the signature of assimilated pluriformity, representative for a larger area [26]. *'When I asked elders to show me their territorial boundaries, they were quick to respond with both the 'traditional tribal' and the 'colonial' sets of ethnic boundaries. Natta elders said that their 'traditional tribal' boundaries were the (respective neighbouring) rivers'* (Shetler 1998: p.425)

6.3 Qualitative Data I: Interviews with Key Informants

6.3.1. Health Staff Members

Respondents D and E (*local health workers*)
Visiting the health centre in Natta, there were several sessions with the local Clinical Officer and the Village Health Worker on the topic of utilisation patterns and illness classification by the inhabitants, according to their own experience. When consulting the centre's annual monthly morbidity reports over 2014 it was noted that the top five morbidities remained rather consistent although there was an indication of seasonal trends. Furthermore, the registration of HIV came out to be absent from these figures as they were recorded separately on account of a special programme which required its own administration (see chapter IV). In the CO's assessment the people who came to the centre as their first consultation would not exceed 25%. In almost all other instances the sequence would be home remedies and traditional healers consecutively, depending on the severity of the disease. With malaria and anaemia in high incidence it was his opinion that however there had been recent local education campaigns on malaria, executed by mobile public address systems, the connection between the two was seldom made by the local inhabitants, and the prevalence of the morbidity had alas not diminished. Convulsions which may also be related to malaria, were initially almost exclusively treated by traditional healers before ending up at the centre, usually for a lack of result. He stated that these symptoms with children are primarily interpreted as having a spiritual cause. The fact that both symptoms were not consistently related to malaria should not deter from extensive health education.

A similar conclusion is arrived at with regard to HIV infections. Apart from the social implications of the infection being regarded as shameful, it happened often that HIV indicated people would consult traditional healers and be treated by them before finally consulting the centre. In this case there was a distinction made between traditional healers who are aware of not being able to cure HIV, and those who are not. In this respect both welcomed the idea as it would be a new approach to have these healers trained in recognising the symptoms in an early stage and make them an integral part of the referral system. The Village Health Worker did not operate from his own dispensary (*Zahanati*) but only made house calls. It enabled him to early detect situations which needed more advanced care and monitoring, but he feels he does not always carry enough authority to convince people to follow his advice. Some traditional healers would also be opportunistic so as to treat a person anyway as it is their livelihood. Other morbidities which were high in incidence were pneumonia and Urinary Tract Infections (UTI), both of which were also variably

underestimated and treated locally before searching aid in the centre. The referrals made to Mugumu mainly dealt with advanced stages of HIV or those requiring surgery, in particular pregnancy related complications (PRC) such as Sectio-Caesarea and Post-Partum Haemorrhage with an estimated frequency of two a week. In general, their assessment was that the role of traditional medicine (TM) in conjunction with local beliefs was strongly embedded and would need some new form of co-operation to have at least the risk of inappropriate treatment eliminated where possible or necessary in relation to HIV. It was concluded that in many instances the subjective experience of individual symptoms does often not bear a relationship with recognising a specific morbidity, as is especially the case with headache, diarrhoea, vomiting, or fever, because they need to be placed in a certain context before they can be interpreted [27].

Respondents P and Q (*health workers PHC, male and female*).
P: On utilisation motives and disease classifications, he lists a series of prevalent morbidities in the area, ranging from Malaria, diarrhoea related diseases, *i.c.* Amoebiasis, various worm infections (*minyoo*) and UTI. In his view a large number of cases are foremost due to improperly prepared food, whereby ingredients are not thoroughly cooked or untreated (‘*kichuri’*).
He is aware of a lack of hygienic discipline which is persistent, even if there is health education, according to his experience a behavioural aspect which is very difficult to change. There is a distinct lack of interest -and even suspicion- towards health workers, implying they would have an ulterior motive in wanting to make money instead of pursuing humanitarian goals. He feels that with regard to the choice motivation between traditional and modern medicine there is a very strong culturally embedded set of convictions which make people tend to interpret symptoms as having a suspected transcendental cause *(‘mapepo’, ‘majini’*) rather than a microbiological. In that sense it is very common to see people with symptoms attributable to either malaria or pneumonia, or exceptionally disfiguring effects *e.g.* Elephantiasis or Hookworm, to be taken to TM first. The strength of culturally motivated behaviour was displayed during a twelve-month research into the local practice of clitoridectomy (female genital mutilation - FGM), which provided him with much insight into the resistance to abandoning it, though it was already banned by the government. An additional aspect remains a purely economic one: it is commonly accepted that TM is cheaper than MM and is at any time considered an alternative. In terms of improving health education his strategy would be to improve the media-mix extensively, *e.g.* more visual aids, and he is convinced that individual education on household level is more effective than communal events.

Q: She lists a similar set of morbidities, i.c. malaria, UTI, diarrhoea and worm infections. She is convinced that most of these cases will consult MM first. She adds that UTI is treated successfully with TM in the sense that no re-infection occurs, which she says is associated with the treatment at the hospital. There is awareness of a lack of recognition of the treatment by TM, a reason why people will not express these practices to a doctor. As an example of the strong culturally determined behaviour, she presents the resistance to spraying against mosquitos at residential compounds because people believe it invokes infertility. Some people will receive a diagnosis at the hospital and move to TM to have it cured because they are convinced of its efficacy. She mentions the experimental treatment of HIV with TM at Bombo Hospital in Tanga in 2011 as a possible successful co-operation. The popular belief is that severe cerebral malaria cannot be treated at a hospital, a reason why so many children with convulsions (*degedege*) are taken to TM. She thinks

that health education should be increased, and because of this cultural embeddedness, a role play would be effective. It could present a person who has actually gone through his illness process and can relate to the efficacy of a specific treatment. She is aware of the risk in not completing a prescribed treatment but adds that some people are simply not capable of following the instructions given at a hospital, when they tend to get complicated or are extended over a long period of time. She feels that the price level of MM is not in line with a low-income population, and that the attitude of the nursing staff towards patients is often not very inviting or caring.

Respondents X and Y *(senior health staff*)
X: He specialises in dermatology and has sixteen years of experience, in which he acted as a physician in the hospital and as a District Medical Officer in Serengeti. On the motivation of choice in utilisation, he has seen a shift towards an increase in patronising modern medicine on account of more and better education. He is convinced that this trend will be consolidated in the near future. Such in spite of the initial motive of choice, which is still influenced by traditions and especially by result oriented expectations. New insights from education and the spread of knowledge in general through global media, have not influenced the adherence to traditional knowledge which is handed down through generations. *'These people do not like change'*, which he interprets more as traditionalism than as conservatism. There may however be a distinction in the type of diseases directed to one or the other, he mentions advanced obstetric or gynaecological problems which are directed towards MM, whereas mental problems are often suspected with having spiritual causes, and therefore presented to traditional healers.

Cases such as malnutrition, dehydration or anaemia, might be misinterpreted, and when presented to TM may involve a risk because they need to be treated properly to prevent them from growing into serious problems. In his experience, specialties such as Ear, Eye, Nose and Throat (EENT) symptoms are also primarily directed towards MM. He feels that it is foremost the 'acuteness' of the problem which makes patients want to opt for a hospital. Symptoms resulting from diarrhoea, headache or vomiting without a diagnosis, which initially seem moderate, will always be treated with home remedies, self-treatment via a pharmacy, or a traditional healer respectively, on account of accessibility, not necessarily because of the cost aspect. The cost aspect, in his view, is a relative one, because the economic value of livestock is not measured against the feasibility of paying a hospital bill on the same scale. When one sees a physician, either traditional or modern, people expect to be cured, regardless of the intricacy of the problem, and the result carries a long way in the future choices which are made. In his opinion it leads certain traditional healers to claim being able to cure diseases they actually cannot, because that claim is part of their credibility.

Another point he puts forward regards the recurrence of symptoms, with re-infections, or inherent to chronic diseases in particular. They may be interpreted as the result of ineffective earlier treatment, and invoke searching for alternative treatment, because of unawareness of the actual cause(s) of the reoccurrence (*cf.* Stanifer *et al.* 2015). On the topic of referral through TBA's, he cites the district health survey, where more than 60% of the deliveries take place at home and/or in the presence of a TBA anyway, so the question is not how to circumvent them in a referral system, but how to contain the problem of complications by higher awareness among the patients themselves. He feels it is impossible to leave TBA's out, as it would frustrate the system. They could go underground and would be embraced by the community members anyway for lack of alternatives in remote areas.

Moreover, in the light of the long-promoted initiative towards co-operation and integration of TM and MM, this would mean a breach with former insights. The only way this could be solved is by providing MCH services on the lowest community level.

There is no consensus on their level of expertise, but he presents an example whereby a TBA was correct in her analysis and was denied action and instructed to proceed with referral. He illustrates the functioning of the referral through TBA's being monitored by having them collect pebbles in different cups, so indicating the number of women they treated and how many they referred to a hospital or clinic. Ironically, the people who are now trying to contain the problem are the same who were involved in TBA training before. He has ample experience with referred cases of obstructed labour at the hospital. He brings forward the absence of an early detection system which was provided through the Community Health Nurses or Public Health Nurses as they were known, who made house calls, and operated annex the referral system on the lowest community level. He feels that they should be reinstated in the hierarchy of nursing staff, and thus supplement the community-based organisation of what is now being handled by the VHW and the district facilities.

Y: A prominent problem is the referral of pregnancy related complications (PRC) in the district, for which she, as a midwife, keeps records separate from the official district morbidity rates. They are classified in order of volume as a) Post-Partum Haemorrhage, b) Obstructed Labour (*various),* c) herbal infections, and d) incidental Eclampsia. The confidence of community members in TBA's is enormous, and because of their physical and cultural proximity it will be impossible to change the focus of young pregnant women towards MM. She feels that if the proliferation of local rural health facilities continues, more people will be able to reach qualified help in time.

Although some TBA's do refer complications to the hospital, and often even escort their patients, there are also cases where this does not happen timely. One of the underlying reasons in her view is that the majority of women prefer to deliver at home, as it is an act of good stature. On the topic of training TBA's and the co-operation with TM in general, she emphasis the risk implications. In her recollection, it was with the impact of HIV when this policy began to change. Although TBA's were trained and were originally destined to be incorporated into the referral system, it is the experience with the current generation that it is too difficult to get them on the level needed to be safe. Not only with regard to the recognition symptoms of complications, but also in consistency in adhering to minimum standards of hygiene. The insufficient qualifications are mostly related to illiteracy, and, secondly, there are large differences in competence among the TBA's. The risk factor of post hoc infections with the children, as well as with the mothers, in their immediate environment is considered too high. That is why, officially, their services have been suspended on local level.

Simultaneously, the upcoming three-year promotion programme* focused on referring pregnant women to modern health facilities will however make use of the TBA's, but the primary agents are set to be the envisaged new generation of Community Health Workers (**cf.* Johns Hopkins' JHPIEGO). She does understand that the government has set a policy goal of co-operating with TM, because it wants to prevent the traditional knowledge of getting lost, though that refers to herbal knowledge primarily. It will mean that improvements will have to be made in TM with regard to consistent and hygienic preparation of their medicine, maybe even to the extent that special places are created where this can be done (*her emphasis*).

She also refers to the history, as the current convictions have a travelled a long way past several generations of ancestors and this knowledge is not easily replaced by recent insights which have no

local cultural bearing. Simultaneously, although not as a prime motive, these TBA's make their living with these activities so there is hardly any alternative for them. It is noticed that there are very few young TBA's, and the implication here is that it is a problem which may eliminate itself through time, which would not resolve the fading of traditional knowledge. She delivers the annual report on all MCH statistics separately as a reference for our interview, since this level of data are not incorporated in the hospital or public health department's reports.

6.3.2 Education Staff

Respondents F and G (*schoolteachers male and female*)
In conversation with two teachers from Natta, the most pressing health problems were identified as Malaria, Typhoid Fever, 'Amoeba' (i.c. Amoebiasis), and UTI respectively. The female teacher indicated that most people would opt for TM first because they do not recognise certain symptoms as severe enough to go the hospital straight, and additionally there is a strong belief in cultural contextual causes, which are confirmed when the TM treatment is successful. Home remedies are often turned to with any initial headache, stomach-ache or fever. Because of the health education at schools she is seeing a reverse order in the transmission of preventive knowledge, whereby the children will be telling the parents what they learnt in school, instead of the parents teaching the children about health care. Nevertheless, she feels that it is often economically motivated as the people are so poor, they cannot afford a hospital bill, and in effect TM is cheaper. She claims that she is convinced that TM cannot cure the prevalent morbidities she mentioned. Subsequently, she indicates she has been taught a number of home remedies by her mother.

Both teachers give examples of 'medical shopping', where an unsuccessful treatment in either system automatically leads to venturing into another, and more often reversed to the expected sequence. The male teacher recalls a situation where he brought his 1,5-year-old daughter to the local health centre with stomach aches where she was given pills, but lack of result after two days inspired him to visit a healer, where an enema was applied with immediate result which satisfied him. He states that most diseases which were mentioned as prevalent in the area recently could not be cured by TM. When asked which diseases do belong in the sphere of TM, he points out that in his experience any orthopaedic diseases or muscle ache can be cured faster and more satisfactorily by the local bonesetters (*waganga wa mifupa*) than by modern medicine.

Focusing on the classification of the type of disease which determines whether to opt for TM or MM, he answers that the majority of the population is not capable of differentiating between a set of symptoms to make such a distinction ultimately. Most of the experience with recurring symptoms is primarily subject to belief. In his view it is the therapy's result which counts more than the classification of the disease. He refers to the cost of MM, stating that even the most elementary health insurance of 10,000 TZS is not feasible for a large number of people. Although it may finally not come down to an economic issue per sé, both respondents mention cost as a complimentary factor. Subsequently they both emphasise that free health care for children should be extended to primary school, whereas now it is limited to Under Five.

In his reflection on local health topics he puts forward a link with his daily practice at school, where out of the forty pupils he supervises daily, he weekly has a number of between two to five children who complain of severe stomach ache and ask to be dismissed. Although they would prefer to send these children straight to the health centre, they are not allowed to do so because the bills are

not settled by the parents afterwards. In those cases where the teachers advanced the payment, they were not reimbursed. On the issue of health campaigns awareness, the malaria campaign was not mentioned by these two respondents, but the female teachers remembered a campaign on family planning via mobile public address system which lasted for three days, a few months ago. One of the tangible results the female teacher acknowledged, resulting from health education, is that a local government survey, executed by the teachers themselves, proved that over the last five years the number of private toilets annex households had almost doubled.

Respondents J and K (*schoolteachers, male and female, secondary level*)
J: The male teacher sums up Amoebiasis, malaria and UTI as the prevalent health problems. Regarding the determining factors for the choice between TM and MM he answers that most people find it difficult to differentiate between the various symptoms, or possibly the lack of reference to a specific event. Because the incubation period can be variable in length, the sudden occurrence of symptoms may lead people to suspect another cause than an infection which they can relate to their own behaviour. These people may opt to see a traditional healer first for lack of indications. He is not able to provide an indication of how to distinguish between a spiritual cause and psychological disorders.

In his experience most people who are suffering from UTI of ARI do actually go to the clinic first. He is also aware of a situation where people treated for Malaria experienced allergic reactions to the treatment and therefore sought the help of a traditional healer alternatively. For most regular symptoms, referring to stomachache or diarrhoea, he feels that people will always seek treatment with TM first. His students are also known to suffer from these symptoms frequently and tend to relate it to the local water supply. He is convinced that TM is very well capable of treating specific diseases with local herbs. He refers to Typhoid fever, which he is also treating at home with a remedy of herbs and fruits which he was taught by his sister.

The choice is furthermore influenced by the cost factor, and he explains that modern medicine has a price tag on every single aspect, which costs thousands of Shillings. It ranges from a registration card, to a bed, to finally seeing the doctor and picking up your medicine. One can have all this for a single fee with a traditional healer for a fraction of the cost. In his recollection the last health education campaign dealt with malaria, equipped with banners and distributing free impregnated bed nets.

He makes note of a special phenomenon within school, whereby especially female students display unprecedented hyper extravert behaviour accompanied by prolonged outbursts of laughter, seemingly without any obvious cause. They cannot be corrected or contained since they do not react to any inquiry or reprimand. He asks for a hypothesis, since the local clinical officer could not define it and came up with the explanation of lack of personal attention, as it is a boarding school.

K: His female colleague puts UTI, malaria and STD's in the top health problems for the area. She is of the opinion that malaria can be well cured by traditional healers, but Typhoid fever, HIV and STD's should preferably be addressed by MM. In her view it is very difficult for people to differentiate between combinations of various known symptoms. The difference between spiritual and psychological disorders is primarily displayed in the behaviour towards one's direct social environment. She believes that spiritual disorders make a person primarily a threat to his next of kin, while people with psychological disorders could be a threat to anyone, not a specific group in

particular. With regard to the difference of efficacy of treatment between TM and MM, she emphasises that HIV cannot be cured by modern medicine. Malaria can be dealt with by home remedies; she herself applies Aloë Vera (*root*) with good result, a remedy she was taught by her grandmother. She states she can't think of an illness which could not be cured by TM.

To improve upon health education, she believes the best way is to incorporate it in the curriculum at secondary schools (*although according to the WEC this is already the case*). An additional factor in the choices made for treatment she mentions the cost aspect. Identical to her colleague she brings forward that every single aspect has to be paid for separately at a hospital visit, and TM is cheaper in comparison in most cases. Her latest recollection of a local health related campaign deals with a team visiting the secondary school on account of the National Health Insurance promotion. Reflecting at the end of the interview she makes note of the prevalence of STD symptoms with her female students and asks for advice on the matter. The answer provided is that it is the responsibility of the clinical officer to extend health education to the school's premises. The WEC adds that the school compound is not fenced, and no visible security measures seem to be applied.

Respondents R, S, T, and U (*schoolteachers male and female*)

R: As prevalent health problems she mentions UTI, skin infections and allergic eye reactions. According to her, the local population connects the incidence of UTI to contaminated water sources. The majority of the affected are girls who are advised to go the hospital consecutively. The skin troubles are suspected to be seasonal. In terms of choice between TM and MM she describes the sequence whereby the diagnosis of cancer established at the hospital was ignored, medicines remained unused and there was a subsequent visit to a local traditional healer to find relief. With reference to the skin diseases she is aware that TM is very effective and as an example gives a treatment for chicken pox *('Tete Kuanga'*), which is a home remedy as well. She is also familiar with a TM herbal malaria treatment which is known to have a preventive effect and is used by people who have been faced with repetitive infections after hospital treatment. This leads them to seek alternatives within TM. She mentions '*Roimit*' (*i.c. Aloë Vera root prepared as a concoction with a seemingly long-term effect*) which she learned from her father (*Maasai)* although she was not allowed to prepare it herself. In general, the strong cultural belief is predominant in the choice, while TM has the reputation of being cheaper than modern services. She feels that result orientation complemented with economic reasons contribute largely to the decisions made in the utilisation.

With regard to co-operation between TM and MM she is convinced that good communication and mutual respect could make a difference. Until now TM has often been criticised because of suspected dosage inconsistencies. Although the curriculum contains health education, she feels that putting students together in a Focus Group Discussion setting, so they can present their arguments from experience, would have a more lasting effect than traditional media exposure.

She is not aware which categories of patients are entitled to free health care. She emphasises that there will always be a fee to pay at a modern health facility, as every aspect of the visit is individually priced, from a recording card, to seeing a specialist, or medication. Top of Mind recollection of the last public health campaign in the area, she immediately lists breast cancer for women, and cancer of the uterus via a mobile public address system, in the beginning of the year.

S: This teaching colleague names UTI, malaria and skin infections as dominant in the area as well. The suspected causes for the epidemic proportions of UTI are no different from other colleagues. He

states that bathing with contaminated water could affect all persons, the reason why even children under five can contract the disease. For treatment primarily associated with TM he mentions yellow fever *('Manjano'*), followed by malaria and chicken pox. Additionally, he would associate all type of diarrhoea related diseases with modern treatment, as with cancer, Tuberculosis and sexually transmitted diseases (STD).

In his view most individuals regard the first step to use TM, especially home remedies, as a test to establish the actual impact of the disease before moving on to alternatives, making the severity of the symptoms a complementary factor. He is of the opinion that it is the efficacy of a specific treatment which ultimately determines the choice. That excludes the '*Mapepo*' suspected cases, which he, remarkably similar to his colleagues in Natta, experiences quite often among his - predominantly female- students. They display unprecedented outbursts of extremely erratic behaviour, which can hardly be contained. He cannot relate it to stress or their performance in class as they do pass their exams.

Health education at his school is incorporated in the Biology and Life Skills curriculum, and he suggests that having students confront each other with various experiences of treatment would be a feasible way of extending the health education. In his view the interest in TM is gradually diminishing with younger people, probably because of Internet. He can recollect the campaigns identical to his colleague, with regard to publicly organised events in the district.

T: Following her experience the female teacher lists malnutrition and diarrhoea accompanied by worm infections, alongside malaria and HIV as mainstay challenges. Incidentally TB and diabetes occur among the elderly. She sees the majority of the people applying the hospital and is not aware of specific diseases which would be primarily presented to traditional medicine. She is convinced that health education is covering the right topics. The students mainly ask questions referring to the transmission of HIV during her own classes. The knowledge regarding the transmission of UTI leaves something to be desired because it is considered a shameful topic by many residents. Overtly discussing the actual way of transmission is a challenge. Moreover, the role that the poverty aspect plays in this process can not be underestimated as the lack toilet facilities and hygienic routine are not easily brought up in larger gatherings of people. She would personally see a role play type of education as a possible medium of tackling these kinds of topics.

She believes that TM use is common practice, but she has no personal knowledge of this. She primarily associates spiritual diseases with TM, which in her opinion could just as well be addressed by religious functionaries, indirectly referring to the witchcraft aspect (*comparable to the 'diviners' in the 'popular medical system' cf.* Chirangi, 2013).

U: Her colleague is very elaborate on the morbidities of concern locally. From his personal knowledge the water and sanitation problem are extended by a nutritional aspect involving improperly prepared food (*intestines*) which may result in worm infections. It is his impression that UTI could easily be transmitted in boarding schools because of the concentration of people with unsupervised facilities.

He is carefully indicating the complexity between traditional beliefs, poverty, the distance to health facilities, and the severity of the disease respectively, as a constellation which determines where people will go. In his experience the majority of the people will not direct HIV, Cancer, Pneumonia or complications involving eye infections to TM but rather to a hospital. He indicates

that *e.g.* skin disorders, snake bite, palpitations, abscess, or even the so-called Pelvic Inflammatory Disorder are treated with TM. He is the first respondent to mention health risks related to female genital mutilation (FGM), which will be hidden for MM, because it is still practiced in resistance to official policy. He emphasises that there is not one determining factor but that accessibility and cost play in favour of TM. They inspire people to use home remedies, because they can relate to them more than modern medicine. He names a number of fruit-based home remedies which are widely applied.

To improve health education on a larger scale he believes that a platform gathering involving all community members *('masrar'*) would have an impact, because it makes a problem recognisable as universal, irrespective of social status or interpersonal relationships.

When the topic of free health care is brought up, an unexpected criticism extends the discussion. The female teacher is not aware of any official free care, and her colleague immediately emphasises the experience that every aspect of modern health care carries its own price tag, regardless of the official policy pertaining to Maternal and Child Health, elderly care, or HIV patients.

6.3.3. Local Authority Civil Servants

Respondents H and I (*civil servants, male and female*)
H: In the view of the female officer, HIV is the most pressing health problem, followed by Malaria, UTI and Amoebiasis. From her personal experience she expects almost every person to first consult a local traditional healer in any event. In her assessment the decisions are very much result oriented. Repetitive unsatisfactory treatment, or no cure, will lead to a clinic visit eventually, but in some instances she also noticed a reversed sequence.

The connotation of a 'spiritual' cause is often due to specific symptoms, *i.c.* erratic behaviour, but, as she puts it, primarily a result of 'local belief'. As an example of classifications in utilisation she mentions that traditional healers are very capable of treating convulsions (*degedege*), whereas HIV is typically a modern medicine disease. With regard to self-treatment and home remedies she reproduces concoctions she was taught by her mother to treat a sore throat or chest pains.

When consulted privately on health problems by other people it mainly concerns family planning, while all available alternatives could be a topic of discussion. Her recollection of the last major health education campaign in the area refers to family planning by way of a mobile public address system, just a month ago.

I: Her male colleague names Amoebiasis first, followed by UTI, malaria and skin infections. He relates the prevalence of these diseases firstly to the condition of the local water sources, in his view insufficient and mostly polluted, but there is no alternative. In the preference of treatment, he describes the result-oriented behaviour, in this case the reverse sequence from hospital to traditional healer, when the treatment in the hospital is experienced as 'superficial', *i.e.* there is no test, you get a diagnosis and a pill and that is it.

In his opinion traditional healers are well capable of treating Amoebiasis and STD's with a concoction. He is also convinced that ultimately TM is cheaper. He adds that most people would not be capable of differentiating between a set of symptoms to the extent that it could determine their choice, a reason why also HIV and malaria patients may consult a traditional healer. He is aware of a large number of home remedies being used in his surroundings, and he himself prepares ORS in

case of diarrhoea. The most recent health education campaign in his recollection dealt with malaria, whereby impregnated nets were distributed free, and a separate HIV-campaign on local level involving large banners and video projections.

Respondents N and O (*local government officials, both male*)
N: His experience with local health care is through his personal involvement in the Child Survival, Protection and Development Programme (CSPD), when the government decided to take interest in the co-operation and training of traditional midwives (TBA's) in the late 1990's, following alarming infant mortality rates.

His first remarks concern the infrastructural problem of the local dam in the river and the water supply not being up to standard, although the town is now moving towards a facility to clean local pipe borne water. The majority of the diarrhoeal related diseases are traceable to that cause, but he maintains that the priority health issue remains malaria. In his view the consecutive measures which were taken in malaria prevention were too intrusive to local inhabitants. He does not see that as a poverty problem (*he interjects that boiling water is cheaper than paying a hospital bill*) but as a mentality problem. There was resistance to using impregnated nets because they are too inconvenient, there was resistance towards spraying because it would invoke infertility, and the discipline needed to prevent mosquito breeding is just too intricate for the way of life of many inhabitants.

With regard to the choices people make when ill, he regards preference for TM as a matter of confidence, even if there is not always a proper diagnosis. He gives the example of his daughter, who is suffering from diabetes herself, and who turned to TM after long and unsuccessful treatment with MM. Although he was sceptical initially, after three months of consecutive TM treatment, she is now performing well, and he became confident enough to promote it himself.

He is sure that there is a specific role for TM in handling psychological disorders as the healers are much better equipped to deal with underlying social problems than MM. He suggests that co-operation between the two systems is very recommendable, and in his opinion, there should be an equal standard in terms of pre- and post hoc treatment testing of the patients. If this could be done at the same facility, the criticism of non-measurable treatment by TM can be invalidated. He emphasises that traditional cultural beliefs are very strong, and he mentions FGM at this point, which is still being practiced on an unknown scale, although during the CSPD programme there was ample attention to make the practice medically safe by introducing sterility. These remarks are immediately followed by the perception that an uncircumcised person was originally seen as an outcast, or at least not accepted as a mature person.

He feels that the current problems leave little alternatives than to sustain health education at all cost, but he does not present alternative types of message or media. He feels the lack of co-operation between traditional and modern systems is also due to the service level of modern medicine (MM), which leaves much to be desired, not only in terms of too many indirect costs, but also in the unwelcoming attitude of many local service personnel.

Respondent O. who has been in office since 1981, recognises the major local health problems as UTI, malaria, worms, Amoebiasis and Schistosomiasis. He sees unhealthy lifestyles as a result of strong traditions. In his opinion the majority of the local (*urban*) population does patronise the hospital, and he emphasises that the negative aspect of TM is that it is in practice often more

expensive than MM. The motivation of the choice for TM is primarily based on belief. Referring to possible co-operation between TM and MM for mutually referring cases he remains sceptical. He emphasises that most traditional healers are in it 'for the business', while health care should be 'a public service'.

As an illustration taken from his work, he describes the mobilisation of groups within the community's savings institutions as an alternative way of creating social security. They operate similar to rotating savings and credit associations (ROSCA's), and the weekly contributions, however small, are cumulated into provisions for education, health care and farming. That provision however is not limited to modern medicine, but he is not clear whether, as an equivalent to a regular health insurance, this is currently also applied to TM treatment.

He claims not to have personal experience with TM or specific home remedy applications, but he does suspect a risk in certain diseases being handled by TM which may preferably be addressed by MM. One striking feature of MM in his experience is the shortage of popular drugs, which leads people to acquire them from commercial pharmacies. He explains that the central budget allocation of resources is a factor to reckon with in that particular situation. He realises that the treatment in hospitals is based on tests and he perceives that as reliable, whereas the treatment by commercial or traditional services is mostly based on experience and individual assessment. He states that he does not believe any of the current health problems which he mentioned, referring to UTI, Malaria, worms, Amoebiasis, Schistosomiasis, can be cured by traditional medicine.

6.3.4 Religious Affiliations Focal Persons

Respondents L and M (*religious affiliation focal persons*)
L: In his view the most pressing current health problems deal with malaria, UTI, diarrhoea, airborne transmitted diseases, Amoebiasis, and a separate mention for HIV. As part of a bigger church, they have a mission health department annex the church province, which does its own health education programme in their congregations. They recently came to town do a campaign on HIV, connected with sexually transmitted diseases (STD), and the related item of safety in blood transfusions. He furthermore recollects Family Planning as a recent health education topic.

He is personally involved in counselling HIV-patients, and he notes that since his arrival, the notion of social isolation is diminished, and their consults are now more focussed on how to maintain personal motivation in daily life. He is also convinced that the cause of the high UTI and Amoebiasis frequencies are related to polluted water sources. He mentions that the concrete mounted water reservoir on top of the hill in central Natta was taken into use in 2014 and was initially expected provide safe borehole groundwater.

With regard to the choices made for traditional or modern treatment he suspects a strong role for economic reasons, referring to the range of costs involved in modern medicine, and the variable availability of drugs. He emphasises his religious background and upbringing but knows that TM can treat convulsions *('degedege'*), and that there are known effective concoctions to treat diarrhoea and Amoebiasis. He is aware of the fact that the treatment of convulsions by traditional healers has a risk in the way the dosage is unstandardised and he fears that there may have been instances where an overdose was applied. He makes a remark on the side that there is a tree in front of his house which he uses to prepare his home remedy when he has diarrhoea, which is very effective. He regards diarrhoea not as being really ill. He sees a specific role for traditional treatment with

reference to spiritually connoted diseases, *('Majini'*) which can be distinguished from psychological disorders through the communication with the patient. In his view you can have a conversation with a psychologically distressed person, but you can't reach a possessed person with reason. He makes mention of the local belief of the threat of 'being killed at a distance' *('Mana mana'*), for reasons of jealousy or any sort of 'revenge' for a social injustice incurred in the perception of the person.

In respect of efficacy he says TM cannot treat paralysis *('Kulemaa'*), or fever and headache the same way MM can, but with regard to musculo-skeletal diseases, such as joint pains or swellings, the herbalists are very capable of treating these with locally prepared treatment. He was personally curious as to the limitations of TM and recounts a visit made by himself to a traditional healer pretending to suffer from 'general body pains'. The treatment of the healer eventually proved unsuccessful and he was referred to the clinic.

With regard to extending or improving health education, he suggests the medium of role play ('*Maigizo'*) which, in his view, is the most effective way of reaching a wider audience, especially on socially delicate topics such as HIV/AIDS or STD's.

Respondent M. has been with his congregation for ten years. The church has a limited number of members in the community, and he resides in a neighbouring village a few miles away. His first remark on the local health status is the impact of malaria in the area which is often addressed by self-treatment *i.c.* 'Alu' from a pharmacy, and equally often by TM. Especially with regard to the convulsions with children (*degedege*). He makes a reference to the viewing of a bird during pregnancy which will lead to the assumption that the child may die when treated with an inoculation at the hospital (*cf.* Makemba 1996; Hahn 1999; Comoro 2003; Langwick 2011; Denisenko 2013). He subsequently mentions alternative treatments with a bird's feather, its ashes applied in an incision, or the inhaling of burnt elephant dung.

Current health concerns are Amoebiasis and UTI, both regarded as waterborne diseases, which appear endemic for the area, followed by HIV respectively. For diseases typically addressed by TM he mentions stroke -because of the paralysis symptoms- and diabetes, which carries the reputation that it cannot be cured by MM. He also names the spiritual disorders which are locally referred to as '*mana mana*' but he cannot explain these in detail.

Whether TM is preferred because of efficacy, cost or cultural belief, he is convinced that cultural belief is dominant, and a large number of people simply do not believe in the causality which is presented in official health education. He adds that TM -in his opinion- is not cheaper than MM, as it often occurs that a patient who receives successful treatment, is asked to add livestock to the initial payment which can make the total amount much higher than a hospital bill. The health centre has a regular shortage of drugs, whereby a patient after receiving a diagnosis can be advised to go to a pharmacy to buy the required medicine. A patient may be tempted to go to a pharmacy again straight the next time the symptoms reoccur, thus creating a shortcut without a proper diagnosis. He explains the facilities are subject to a procurement system in which there is no relationship between actual morbidity rates and perceived need, but central allocation based on financial turnover.

Regarding HIV-patients, especially if there is no test, people who experience the symptoms may not be able to admit to themselves that they are infected, because of the social implications. He illustrates this by the example of a man who lost his wife as a result of HIV. As he didn't carry the suspicion of being infected himself, he was left to marry another woman and continued to be a hazard for his social environment. He feels that HIV-patients who seek treatment with TM are

actually in a state of denial on many occasions. He emphasises that the decision where to seek treatment is very much dependent of the result and the personal relationship which is developed with the one who provides treatment. He compares the service at the hospital to treatment with a commercial pharmacist or a traditional healer where there is more personal attention, and no waiting room.

On the co-operation between TM and MM he feels that both have a history of mutual criticism, but both sides have created that situation themselves, and it will take time to rebuild confidence. Some alternative providers have been very creative in combining attributes of both medical services to suit their clients. He gives the example of a pharmacist who takes samples and pretends to do a lab test in the back of his shop without having any equipment for analysis. He comes back with the diagnose on a paper slip to support his advice for treatment, purely based on his interpretation of the symptoms. Then there is a clinically trained person in a neighbouring village, who combines both types of treatment, offering traditional herbs alongside modern medicine in his private practice, addressing the needs of his clients by providing the best of both worlds. He proceeds with a personal reflection to indicate his confidence in TM. His son developed convulsions as a child, but similar symptoms reoccurred when he was about 11 years old. It inspired him to take his son to several hospitals *e.g*. Kilimanjaro Christian Medical Centre (KCMC), but he asserts that eventually it was TM treatment which ceased the endless consultations. The diagnosis at KCMC is named cerebral artery problems, but the treatment is not recollected.

On the topic of health education, he as well proposes publicly set role plays as being the most effective way of educating the local people who display strong culturally rooted beliefs. He adds that continued health education is absolutely necessary and illustrates his standpoint by referring to an educational project of 2000 (SHIMWAJAWA). It was set up as a Sunday school for children of people who saw no use in sending their children to school, a group which produced university graduates after years of perseverance.

The free services advertised by government policies are not being implemented in his view, and he inserts a personal anecdote of his mother who is in her eighties, was referred to the hospital to receive an infusion and was yet charged with 20,000 TZS without any consideration.

6.3.5 Community Based Health Promotion Programme (NGO)

Respondents V and W (*NGO management health staff*)
V: In his view, the dominant motive in utilisation is not strictly cultural but economically driven. In his experience, especially poor people in rural areas will initially consult TM because of accessibility, both physically and financially. The fact that many communities are not equipped with modern facilities, or because they are too remote, will sustain such a practice.

He feels the role of poverty is underestimated, and he mentions the promotion of a national health insurance. Even the most elementary investment into that service is considered disproportionate in case one does not fall ill. The idea of being covered through different levels in a referral system is apparently not yet appealing enough, or tangible enough, for the majority of people. Overall, he sees there is a change though. Spending 10,000 TZS fee in a whole year instead of 100,000 TZS plus on a hospital visit is slowly gaining ground. In his view there is the widely felt need for a causal explanation for getting ill, which need is well addressed by TM and not by the MM health staff.

During consultation in MM facilities, a confrontation with initial self-treatment or using TM will lead to denial, or at least, non-sharing of information. He adds that the basic attitude of many health staff in modern facilities is not inviting enough (*'harsh'*) to be preferred over TM. The waiting lines and the impersonal treatment are fending off many people. It is amplified by the lack of recognition of TM by the modern health system, which will not encourage practical co-operation in case of perceived undesirable treatment. In order to establish which diseases are liable to be covered by TM, in his view, can only be determined by directly communicating with traditional healers.

W: Underwrites his colleague that a disease classification linked to either TM or MM would not be an appropriate approach. It is the locally rooted belief which determines most of the actions undertaken, whereby the question of 'why' that disease is occurring with a particular person is dominant. It is widely believed that an individual can invoke illness upon another person on account of any social relationship connected reason. He explains that this concept will be dominant over a microbiological cause at any time, and therefore renders it to a secondary level.

He suspects that this dominance is the most probable cause why there is a large number of morbidities seen crossing over between the two medical systems without a specific pattern. He asserts that it is the attitude of the traditional healers which enables them to sustain their position. They are receptive of personal motives and socio-cultural context, and they also take time for these aspects. It not only makes them more accessible, but also respected from the patient's viewpoint, besides a perceived lower cost level. He later adds that TM can be equally expensive at times.

In his reflection on the effectivity of TM, he assesses many practitioners to have very good psychological capabilities, and making use of such qualities, but without a deliberate advertisement. That leaves the determination of a biological cause of a disease untouched, however he feels this should still be done, in the light of suspected 'inappropriate' treatment. A patient may still be at risk after treatment by a traditional healer in the case of HIV. He gives the example of a misinterpreted symptom of CBP with a handicapped person, which was treated as a 'spiritually' caused illness had an adverse effect considered critical at that stage. At the same time, it is necessary to change the attitude of MM towards these situations, as health staff are not receptive of patients with ambivalent motives, having used TM in an earlier stage. He believes that there is an increase in self-treatment, also with commercial medicine, on account of the attitude of health staff.

A complementary aspect in the process of making choices is related to poverty in a very practical sense. In his opinion the inhibition of exposing one's poverty leads poor people to averting MM health institutions because one feels not representable, which is virtually absent in using TM. He does see possibilities in co-operation between the two systems but apart from giving TM their due respect, something should also be done towards a more receptive attitude with MM staff in order to regain confidence with the general audience.

Referring to the workshops in the recent past to train local healers and TBA's, he remarks that currently the priority of the district lies in reducing the relatively high infant mortality rate (IMR). It is organised through a special three-year promotion programme in co-operation with Johns Hopkins University, funded by the UN, involving his NGO as network in co-ordinating volunteers on village level. The underlying motive is that the IMR is suspected as a result of the large number of women who consult TBA's as a first level of service.

The *Mkunga wa Jadi* are regarded to insufficiently recognise or underestimate the pregnancy related complications (PRC) at hand, and may not refer these mothers to the MCH units, or too late. He brings the ambivalence once again to the attention, because even though co-operation with TM

was always on the agenda, reducing the IMR as a priority now renders these same partners (TBA's) as not reliable enough to contain this problem. The referred three-year programme (JHPIEGO) is set up accompanied by a wide public recruitment campaign.

6.3.6 Traditional Birth Attendants

Respondents X, X1 and X2 (*traditional midwifes, one urban, two rural*)
X: She shows her license for which she paid 60,000 TZS, although the ward executive office has interdicted them from operating currently without a refund of the fee she laments. She is a member of the healers association (CHAWATIATA), but it has been some time since there was a meeting. Besides that, she indicates there is no regular contact with either MCH or the community based health promotion programme (IMARA) [28].

With reference to the co-operation which took place in the framework of the CSPD [29] programme, she says that she was at that time not selected for training because of her illiteracy. She has now been inactive for about a year. She keeps a large file with photographs of her patients for which purpose she uses a photographer on a permanent basis. She has a large knowledge of various herbs and midwifery which she both obtained from her mother over the years. It is clear from the records she keeps that the majority of cases presented to her are people with some kind of mental disturbance, although some of them are also classified as being bewitched. She explains that she interviews people to the extent that she can establish the cause of their mental state. It is obvious from her reasoning that she applies a great deal of psychology and historical perspective. She is suspecting hereditary elements in mental diseases with one group of patients, three sons of the biological father, who display sudden erratic behaviour. She recollects that the grandfather was treated for similar symptoms by her mother before her.

In the field of Maternal and Child Health (MCH) she discusses several pregnancy related complications (PRC) with the Kisare midwife trainer [30]. It is established that she can recognise situations ranging from transverse and longitudinal positions, through cord prolapse and presentation complications, and her criteria for referring cases to the hospital. She can also recognise dehydration and malnourishment, which in turn provides the opportunity to exchange knowledge on the use of ORS, which she did not apply until now.

It is her wish to know more about psychology and she is very eager to know if there could be an opportunity to improve the co-operation between TM and MM, but she does not hear of any progress to that extent. With reference to the workshops of IMARA (CBHPP) in Mugumu, she is familiar with the NGO, but does not have a direct liaison. When asked about the relationship with MM staff she refuses to speak, although she was elaborately negative on their behaviour to our linguist on the occasion of making the appointment leading up to the interview.

X1: This TBA also practices as an herbalist. She too is a member of the association, but in this case she is still active, although she has paid a fee for only a temporary license. In contradiction to her colleague, she does have contact with the district co-ordinator for reproductive health (MCH), and she shows correspondence with the Public Health Department. She indicates that the last meeting of the association was in June, and she has been present at IMARA workshops, primarily dealing with hygienic methods and awareness of riskful procedures. She explains how she obtained her knowledge from both her father and her mother; by watching them perform consultations over the

years and learning how to make assessments of patients, carefully copying their modus operandi. She introduces a protégé, a young niece whom she teaches the collection and preparation of herbs. She is happy to witness that the young girl is showing interest, so her knowledge may be carried over the next generation. She treats cases which, among others, are dealing with female infertility, Amoebiasis, Typhoid fever, and malaria respectively. She presents a bottled concoction which has been composed of at least seven different herbs to serve as a treatment for malaria, with apparent success. In case of female infertility, when she suspects the cause to be mutual, she invites the woman to bring the husband and makes sure that both are given the same medication.

In exchanging knowledge on referral of cases she indicates that she is able to recognise cases which are too severe to treat whom she sends to the hospital. She demonstrates her techniques for establishing temperature levels and signs of dehydration, malnutrition and anaemia with great detail. With regard to making the distinction between spiritual diseases and mental illness, she applies a special session in which the patient is shrouded in an apron and is made to inhale a preparation in isolation. If there is no response to this application, she regards the patient to suffer from psychological problems, otherwise the patients will start responding through erratic speech and acting possessed. She provides no analysis in terms of a strictly behavioural assessment.

In line with the remarks made by her colleague earlier she also emphasises the need for more co-operation with MM. She particular interested in techniques to determine the right dosage as she is made aware that that has been a point of criticism in the past. She admits that their approach is purely from the angle of experience, and she wants to learn more. She asks why there has never been an initiative to test their medicine to prove their performance and eligibility, so that people may also be referred to TM when they are dissatisfied with MM treatment. There has been such a request by the chairman of the healers association in 2013, but the status of that request remains unknown. (*The linguist replies that such an initiative would have to be taken by the association, preferably in conjunction with the local government*). She explains there is a communication and organisation problem within the association. Since they are all individuals who work independently, scattered over a large area, some of her colleagues do not have any form of official registration, or even a mobile phone. Her personal request, on the topic of dosage, is to have modern equipment for cutting, grinding and mixing to prepare their medication more consistently, as it is now handwork which defers exact measurement (*cf.* Marsland 2007).

X2: Although she was originally a member of the association, says that she resigned on account of the lack of clear goals and direction. During one of the last meetings she attended there was a focus on spiritual healing and witchcraft, which she strictly denounces as a devout Christian. During the event, they were trying to force members to disclose the source of their medicine, which she does not agree to. After that she was never approached by any formal institution, nor took part in any of the IMARA workshops, while she does not have an official license anymore.

She explains that her knowledge was handed down from her grandparents in a dream, following her daughter's infertility, which she feels motivated her ancestors to provide her with this knowledge. She greatly cherishes this as a gift from God, although she will later lament that her offspring is not interested in carrying her knowledge forward, and she might take it with her forever.

Referring to the types of problems she is faced with in her practice she first mentions female infertility, followed by regular pregnancies which she will assess to her knowledge, on how to approach them. She explains in detail how she practices, and it comes out that she will more often

monitor a woman for months during her pregnancy until the time comes. That enables her to make a proper assessment. She will refer cases to the hospital when there is an advanced stage of complications, where she feels she is not capable of handling them. After being discussed in detail they are proper assessments according to our midwife trainer (R). She indicates to have knowledge of anaemia and dehydration and she will refer these cases to the hospital, as well as being aware of how to prepare oral rehydration solutions (ORS). She has adopted some techniques in using new blades to cut the umbilical cord and wear surgery gloves, properly boil and filter water, among others. She treats complications which she is familiar with external and manually in repositioning the foetus, just as she is massaging the abdomen after birth to relieve the new mother of post-partum pains.

She underwrites the desire to have co-operation between modern and traditional medicine, but at the same time there is an element of competition between the healers. She calls it 'jealousy' once there is an intimate relationship with MM, which is difficult to appease because there is infrequent contact among colleagues. In terms of willingness to co-operate she is ready to submit her herbal products for testing on efficacy, on the condition that it is done within a timespan which will prevent them from deteriorating. It should preferably be done immediately after she prepares them, and she is not required to disclose which herbs are used in advance.

When asked about the feedback of patients she referred to the hospital, she comes out with criticism towards the invasive type of assessment as is applied in the hospital, and the way they are treated in dealing with pain after giving birth. According to her own patients, the staff often treats mothers in a rude way, verbally as well as physically, which scares off many people because they don't understand what invokes the staff's patronising attitude.

6.3.7 Survey Area Health Facility at Nyamburi

(Y, Z: Dispensary Senior Health Staff-members)

In the triple level range of health infrastructure in the region, the facility at Nyamburi is elementary. The dispensary is equipped with basic medical tools but does not have a full-scale laboratory and is provided with insufficient malaria and HIV test kits. The staff consists of a Clinical Officer (CO), Midwife (male), Nurse, and a Technician. The Village Health Worker does not have an official base and only makes house calls, although he works in close co-operation with the other staff. The dispensary is located just off the main road, as indicated in image 2 in par. 4.3.1. There is an Environmental Health Inspector monitoring waste disposal and domestic hygiene, household annex latrines, although he has no official sanctions to have inhabitants adhere to the standards. He makes his rounds and invests ample time in health education, but he is sceptical about the impact.

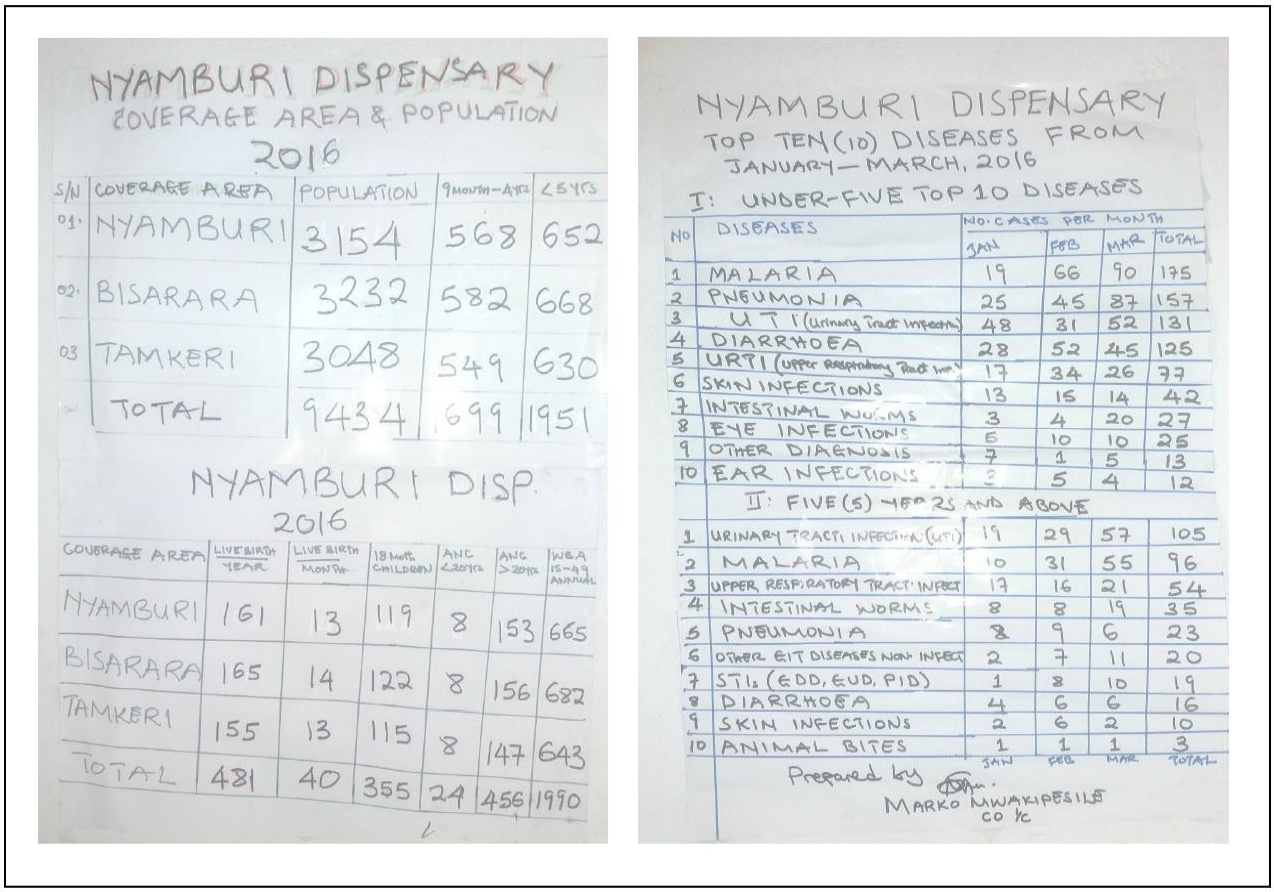
A limited number of over the counter drugs are sold commercially in town, and applied with- as well as without official diagnosis, more often so when the dispensary runs out of medical supplies. That happens as a result of stock being determined by budget allocation and availability, not by registered morbidity rates, according to the CO, as similarly reported during the qualitative pilot survey. Nyamburi's CO also is very keen on creating awareness with his staff and clientele, and he has put up handwritten morbidity rates and coverage area concerning his station on the wall of his OPD (Image 3). From his experience the CO makes mention of the fact that certain morbidities may be underreported because of insufficient clinical testing. On the other hand, the interpretation of symptoms by patients is always very challenging as they tend to popularise specific combinations.

He illustrates this by his treatment of a person who was experiencing a trauma after being involved in a traffic accident but requested the CO to provide him with malaria tablets because he was having a headache, bodily pains and perspiring heavily.

Another aspect which he mentions which intervenes with his protocol is that people who are diagnosed with a certain illness, do not take the prescribed treatment, but go to the pharmacy and buy pills themselves. They purchase insufficient quantities however, and stop the moment the symptoms subside, thereby not completing the required cure with all due consequences. It may as well happen as a result of unavailability of drugs in the system.

He welcomes the idea of a Health Information System in such a way that he could exchange medical statistics directly via internet with the Public Health Department in Mugumu and have the drug supply being linked to the actual data online. Now the information is mostly one way, from the dispensary to the department, without instant feedback or consecutive processing.

Image 4. Nyamburi Morbidity Rates on Dispensary Wall.



NYAMBURI DISPENSARY
COVERAGE AREA & POPULATION
2016

S/N	COVERAGE AREA	POPULATION	9 MONTH–4 YRS	<5 YRS
01.	NYAMBURI	3154	568	652
02.	BISARARA	3232	582	668
03	TAMKERI	3048	549	630
	TOTAL	9434	699	1951

NYAMBURI DISP.
2016

COVERAGE AREA	LIVE BIRTH YEAR	LIVE BIRTH MONTH	18 Month CHILDREN	ANC <20WK	ANC >20WK	W&A 15–49 ANNUAL
NYAMBURI	161	13	119	8	153	665
BISARARA	165	14	122	8	156	682
TAMKERI	155	13	115	8	147	643
TOTAL	481	40	355	24	456	1990

NYAMBURI DISPENSARY
TOP TEN (10) DISEASES FROM
JANUARY – MARCH, 2016

I: UNDER-FIVE TOP 10 DISEASES

NO	DISEASES	NO. CASES PER MONTH JAN	FEB	MAR	TOTAL
1	MALARIA	19	66	90	175
2	PNEUMONIA	25	45	87	157
3	UTI (Urinary Tract Infection)	48	31	52	131
4	DIARRHOEA	28	52	45	125
5	URTI (Upper Respiratory Tract Inf.)	17	34	26	77
6	SKIN INFECTIONS	13	15	14	42
7	INTESTINAL WORMS	3	4	20	27
8	EYE INFECTIONS	5	10	10	25
9	OTHER DIAGNOSIS	7	1	5	13
10	EAR INFECTIONS	2	5	4	12

II: FIVE (5) YEARS AND ABOVE

1	URINARY TRACT INFECTION (UTI)	19	29	57	105
2	MALARIA	10	31	55	96
3	UPPER RESPIRATORY TRACT INFECT	17	16	21	54
4	INTESTINAL WORMS	8	8	19	35
5	PNEUMONIA	8	9	6	23
6	OTHER EIT DISEASES NON INFECT	2	7	11	20
7	STIs (GDD, GUD, PID)	1	8	10	19
8	DIARRHOEA	4	6	6	16
9	SKIN INFECTIONS	2	6	2	10
10	ANIMAL BITES	1	1	1	3
		JAN	FEB	MAR	TOTAL

Prepared by
MARKO MWAKIPESILE
CO i/c

Cover image: Morbidity Rates on Nyamburi Dispensary Wall. Notice that UTI ranks in the top three twice but is absent in the district morbidity rates from the Public Health Department in Image 1. (photo by Mr. Nemes Joseph Sianga, Fieldwork 2016)

6.4 Qualitative Data II: Kurya Health and Healing Concepts

In line with the aim of documenting indigenous knowledge attention was given to the connotations of various diseases recognised by the inhabitants as being specific for the area. Preceding the household survey local traditional healers were classified in four groups by key informants. The first group consists of people which can use divination, capable of foretelling the underlying cause of your problem, and suggest a solution, either or not through medication. The second group applies medicine only (as in herbalists). The third group does not use medicine but uses divination only and refers people to the first two types. The healers are said to receive their knowledge either through dreams, as one TBA in our survey explained in detail, or through the instruction of their parents (mainly applies to the herbalist). Finally, there is a (fourth) group which distributes herbs but acquires these from another herbalist, or they are instructed by them how to apply them. The first group are considered the most reliable, or "*honest*" -the word which was used. Many people consult more than one traditional healer and compare the outcome for accuracy. In that sense a 'second opinion' is in no way an aspect typical of modern medicine.

According to the elders the diseases which were primarily treated with traditional medicine, suspected of having a spiritual cause, were: epilepsy (*iririmo or indoli*), paralysis *Ilisusu*, (a.k.a. Kupooza(S)), female infertility (*ubhughumba*), impotence (*ughuchighala*), infants below seven days who cry for a long time (*Ichindoko - suggestion is that they have not been given a name, or not been given the right name*) persevering headaches (*migraine*), Elephantiasis (*Amatende)* and convulsions (*ukwibhabha,* a.k.a. *Ing'usa*). It is suggested that there is a causal relationship, whereas convulsions (*degedege*) are also perceived as an early stage of epilepsy. Suspected curses from ancestors (*iriraga),* which may be manifest through marital problems, infant mortality, or bad luck, are also presented to traditional healers. The categorisation between mental illness and being affected by witchcraft is made by the level of communication. As is referred to in the qualitative analysis, a mentally ill person can still make normal conversation, a spiritually cursed person cannot communicate in normal sentences. The display of erratic behaviour is not mentioned as a specific symptom for either category. On a different plane the ethical component became visible, as they explained that an extreme focus on material wealth ('*seeking riches*') is classified as a spiritually caused illness. Similarly, the manifestation of impotence is connected to displaying antisocial behaviour in terms of seeking a sexual relationships with family members. Fractures in particular are said to be the domain of the traditional bonesetters, who are generally preferred over MM, and who have such a good reputation that even hospitals occasionally refer their patients to these professionals. Some diseases have shed their original classification though, for example forms of malnourishment, which were formerly frequently associated with witchcraft, but nowadays mothers apparently take these children to the hospital. In most cases people who are regarded as being mentally ill are not taken to a hospital but preferably to a traditional healer.

As explained earlier in 5.4. a distinction is made by respondents between ' old' and ' new' diseases. Those classified as 'new' are usually not presented to traditional medicine, except when the results from a hospital treatment are unsatisfactory. The ones mentioned here as 'new' are HIV/AIDS, cancer, diabetes, cardiovascular diseases, typhoid fever, and high blood pressure. The most confidence with modern medicine is placed in the advanced techniques, such as inoculations, blood transfusions, laboratory analysis, X-rays, mass produced pills and surgery. On the other hand, there is suspicion among patients regarding inconsistencies in quality, where mention is made of fake

medicine, referring to commercially produced 'cheaper' version of the original, but mingled in the official system, to '*make money'*. Then there is a notion of 'fake' doctors, supposedly unqualified practitioners who make mistakes during operations and cause people to die in the hospital. It was impossible to establish the actual validity of these statements by respondents, or to present specific cases where this would apply, but even if it is hearsay, it is an example of where MM proves vulnerable. The fact remains that they were mentioned without being triggered purposely.

In the end however, MM retains the status of a 'final option' as people unanimously indicate that that is where one goes when seriously ill. These ways of dealing with emerging symptoms were familiar to the staff of Nyamburi dispensary. They indicated that there is no experience with taking tests in an early stage, so when the disease is already manifest in an advanced stage, is when decisive action is taken. One example provided was the case where a person had experienced lingering symptoms for several months, tried various remedies, homemade as well as from professional healers, until he is tested at the hospital and diagnosed with diabetes. The Clinical Officer stated that there is a tendency of trying multiple low-key therapies, often because of poverty, but many situations are approached by trial and error, depending on the severity of the symptoms.

6.4.1 Indigenous Knowledge & Medicinal Aromatic & Cosmetic (MAC) Plants

Table 11 shows types of cures and herbal medicine as mentioned by respondents during the household survey. Local people interviewed by the research assistants said they knew the plants and trees but could not always show species at that point because they couldn't trace them anymore. The species included here were photographed on site. The scientific indexation was partly done by Patrick Maundu, Ethnobotanist from National Museums of Kenya.

Most of the respondents knowledgeable on herbs (n=32) came out to be female 68,7% (22) and a total of 17 in the top two generation groups of which the highest single cell is 11 women above 55. The lower age groups also hold a majority of women, 5 out of 8 persons. That is in line with the qualitative research, where the transfer of knowledge is recorded within first grade family members, either or not parents or in-laws, with a strong emphasis on women. A selection of these people was capable of naming more than one or two types of preparations with the accompanying application, see Table 10. Of the selection of respondents (n=32), a majority of 62,5% (20) also utilised TM, but the cross-over to other systems is consistent with the other bivariate analysis, as 34,4% (11) also utilised MM at one point. Of the 20 respondents who used TM, 6 applied home remedies, and 12 consulted herbalists, also travelling outside their homestead in the process.

Table 10. Knowledge of Herbal Medicine over Plural Medical System Utilisation (n=32)

TM knowledge	TM	TR	MM	Total	Percentage
Little knowledge	11	1	8	20	62,5%
Some knowledge	9	0	3	12	37,5%
Total	20	1	11	32	100,0%
Column Percentage	62,5%	3,1%	34,4%	100,0%	

Cramer's V= 0,169, Chi Sq. = 0,05

Source: Fieldwork data 2016

As reported in the qualitative research the knowledge is transferred within groups and between groups, where the spouse is usually taught home remedies by either her own parents or by her in laws. If the spouse moves, the knowledge moves along to the next household. What is noticeable is the relative high age as 75% (24) of these people reside in age group four and five (45+), but there is transfer of knowledge to the younger generation, as 25% (8) people belong to lower age groups. The importance of the measurement is borne in the remarks made by teachers and TBA's in the qualitative research that the interest is diminishing among the younger generation. A sample of 18% (32) respondents out of the household head interviews (N=175), made specific remarks about the position of TM. One household head pleaded for herbal medicine to become over the counter drugs as in pharmacies, but most respondents indicated that it became increasingly difficult to find the right species. The morbidities they are preoccupied with concentrate on abdominal pains, diarrhoea, UTI, allergies, jaundice, anaemia and convulsions, among others. Malaria was mentioned only twice across this range of species. Twenty types were used in conjunction with others from the listing (*cf.* Table 14). The essence is that these respondents (n=26) named them as remedies while not being professional herbalists. The preparation and treatment mentioned are transcribed below;

Table 11. Medicinal, Aromatic & Cosmetic (MAC) Plants Reported in Household Survey.

Local name	Species name & part	Preparation & treatment
ilisibitali (*)(**)(***)	Lamiaceae sp. *(root & leaves)*	Pounded and boiled, used for Amoeba and abdominal pains
urung'uno (*)(**)(***)	*Harrisonia abyssinica Oliv. (root)*	Boiled to drink. Used for UTI, Amoeba, abdominal pains, menstruation
ubhoke bweitimo (*)(**)(***)	Lamiaceae sp. *(leaves)*	Pounded and boiled, drink for UTI, Amoeba and stomach-ache
ikiiri (*)(**)(***)	*Ocimum gratissimum (leaves)*	Pounded and mixed, drink for stomach-ache
iwawa (*)(**)(***)	*Momordica foetida* Schumach. *(leaves)*	Pounded into skin rub for joint pains, and with fractures
ikimusi (*)(**)(***)	*Euclea divinorum* Hiern *(root)*	Boiled, used for Allergies, boils and Jaundice
omosese (*)(**)(***)	*Rotheca myricoides (Hochst.) Steane & Mabb. (root)*	Pounded and mixed, drink for Amoeba and UTI
iririrebhana (*)(**)(***)	*Plectranthus barbatus* Andrews *(root & leaves)*	Pounded and mixed, drink for Amoeba
umuribha (*)(**)(***)	*Kigelia africana* (Lam.) Benth. *(fruits)*	Peeled, cut and boiled, used for Anaemia
irihirirya (*)(**)(***)	*Lantana ukambensis* (Vatke) Verdc. *(leaves)*	Pounded, chewed and sniffed, against fever
omotembe (*)(**)(***)	*Erythrina abyssinica* Lam. ex DC (*bark + leaf)*	Mixed and boiled. Used for Jaundice
kinyonyo (*)(**)(***)	*Oxalis corniculata* L. *(leaves)*	Pounded and mixed, drink for nausea
eghetalatula (*)(**)(***)	*Solanum incanum* L. *(root)*	Pounded, mixed and boiled, Diarrhoea, menstruation.

Local name	Species name & part	Preparation & treatment
mchele (*)(**)(***)	*Ozoroa insignis* Delile *(leaves)*	Pounded, mixed and filtered into drops, applied with eye sores
omupela (*)(**)(***)	*Psidium guajava* L. *(young leaves)*	Pounded, mixed and boiled, drink for Diarrhoea
bhurubhoikonde (*)(**)(***)	*(indet.) (root & leaves)*	Pounded, mixed and boiled for Amoeba
Umunyanduku #	*Zanthoxylum chalybeum* Engl. *(root & bark)*	Pounded and boiled, for ulcers
Umusisi #	*Tamarindus indica* L. *(bark & leaves)*	Pounded and boiled, for ulcers
ilityambwi (*)(**)(***)	*Sesamum calycinum* Welw. *(whole)*	Boiled, eaten for joint pains, specially knees
Omohenga/umunyente (*)(**)(***)	*Hoslundia opposita* Vahl *(leaves)*	Pounded, mixed drink for nausea
umwitanchoka (*)(**)(***)	*Senna occidentalis* L. *(root)*	Boiled and chewed, swallowed. UTI, Amoeba, Typhoid, Stomach
ekeghaghana (*)(**)(***)	*Gardenia volkensii* K. Schum. *(root)*	Pounded mixed with water. Nasal for convulsions (‘degedege’)
omosabhisabhi (*)(**)(***)	*Sesbania sesban* (L.) Merr. *(leaves)*	Boiled and eaten as porridge with body pains (trauma) skin bites
umuchahechahe (*)(**)(***)	*Cymbopogon citratus* (DC.) Stapf *(leaves)*	Boiled. Used to remove poison & Jaundice
ikitabhalali (*)(**)(***)	*Crassocephalum pidicrifolium* (DC.) S. Moore *(leaves)*	Pounded, boiled, applied as drops in sore eyes
omotaminyoo (*)(**)(***)	*Olea europaea ssp. cuspidata* (Wall ex G. Don) Cif. *(root)*	Boiled, drink for epileptic seizure
mwarobaini (S) (*)(**)(***)	*Azadirachta indica* A. Juss. *(root, bark, leaf)*	Boiled to drink for Amoeba, Diabetes, malaria and boils
mbulumatare (*)(**)(***)	*Melia volkensii* Gürke *(leaves)*	Boiled to drink for abdominal pains
inyimirya (*)(**)(***)	*Fuerstia africana* T.C.E. Fr. *(root & leaves)*	Pounded, mixed and boiled. Used for convulsions, Amoeba.
umunyingyi (*)(**)(***)	*Lannea schimperi (*Hochst. ex A. Rich.) Engl. *(bark)*	Boiled, drink for Cholera, menstruation, or stomach-ache
ilibhabhayo (*)(**)(***)	*Carica papaya* L. *(leaves)*	Mixed and boiled. for Jaundice
ilitoke (*)(**)(***)	*Musa* sp. *(root & leaves)*	Boiled, to drink for Jaundice (Manjano)
ubhinyankara (*)(**)(***)	*(Indet.) (fruits)*	Pounded and boiled, drink to induce vomiting to clean stomach
ikyulanse (*)(**)(***)	*Hydnora abyssinica* A. Br. *(root)*	Pounded, grinded, mixed to drink with pregnancy complications
egesamulya (A) (*)(**)(***)	*Kalanchoe* sp. *(leaves)*	Pounded, mixed. Applied nasal for convulsions (degedege)

Local name	Species name & part	Preparation & treatment
egesamulya (B) (*)(**)(***)	*Kalanchoe* sp. *(root)*	Dried, pounded, mixed. Nasal for allergies, and fever (homa)
ilitaghala (*)(**)(***)	*(indet.) (leaves)*	Pounded and boiled, drink to induce vomiting to remove poison
umulutunguli (*)(**)(***)	*Drimia altissima* (L.f.) Ker Gawl. *(leaves)*	Boiled, drink for malaria
nyabhisala (*)(**)(***)	*Adenia gummifera* (Harv.) Harms *(bark)*	Pounded mixed with water. Used to prevent miscarriage, and boils
weisebho (*)(**)(***)	*Ageratum conyzoides* L. *(leaves)*	Pounded and boiled, used for UTI, Amoeba or stomach-ache
iriraraura (*)(**)(***)	*(indet.) (root + leaves)*	Boiled to drink, for stomach-ache, and Amoeba

N.B.: Identification of species through visual recognition by Katalina Marwa, Nchagwa Surusi**, Gaita Chacha***, TBA's and herbalist, recorded and transcribed by Daniel Matinde. Source:* Fieldwork data 2016

Of the species mentioned here, pictures were collected and ranked according to the original numbering during the recording (*cf.* Table 14). They are presented by the transcription in the local language (*Igikurya)* followed by their scientific names. In the questionnaire there were two sets of open-ended question which were dedicated to top of mind knowledge on either of the medical systems and its practices. The first set inquired as to what type of illness would be preferably presented to a traditional healer, which would be suitable for self-medication, and which would involve a hospital visit. The second set inquired after the name of the treatment, the type of medicine or the type of therapy typically representative for a particular medical system. Regarding the type of illness best treated through traditional medicine (question 2.15) in multiple score (N+ ranging from 1 to 4 types) produced the following top ranking out of a total of 245 types mentioned, answered by 161 (92%) of the household head respondents (N=175).

Table 12. Perceived Morbidity Treated with Traditional Medicine (n=161)	N+	%
Urinary Tract Infection (UTI)	33	20,50%
Amoeba (ukaptula)	33	20,50%
Convulsions (degedege)	24	14,91%
Abdominal Pains (maumivu ya tumbo)	21	13,04%
Jaundice (manjano)	19	11,80%
Epilepsy (kifafa)	14	8,70%
Boils (jipu)	7	4,35%
Paralysis (kupooza)	6	3,73%
STD (kisonono – Gonorrhoea)	6	3,73%
Diarrhoea (kuharisha)	5	3,11%
others (miscellaneous)	77	47,83%
Number of respondents	161	100,00%

Source: Fieldwork data 2016

Apart from this listing which shows, with lower frequencies, diarrhoea (*kuharisha*), (partial-) paralysis (*kupooza + kulemaa*), sometimes attributed to epilepsy, gonorrhoea (*kisonono*), the rest category contains infertility, depression, nosebleed, mental illness, fractures, abcess, pneumonia, cholera, typhoid, worms, toothache, among others. These same respondents all indicated they would use other medicine, either through the dispensary or the pharmacy, complementary to herbal remedies if these proved insufficient. The mirrored question in the same set (question 2.17) inquired which type of illness a modern doctor cannot cure, and the listing was almost uniform across the sample, naming HIV/AIDS (*ukimwi*), diabetes (*kisukari)*, cancer *(saratani*), stroke (*kifafa*), Ebola and asthma (*pumu*), respectively. Incidentally, these morbidities would also show singularly in the listing treated with home remedies or by traditional practitioners.

Table 13. Aware of Traditional Remedies for Perceived Morbidities (n=151)	N+	%
Abdominal pains (maumivu ya tumbo)	50	33,1%
Urinary Tract Infection (UTI*)	22	14,6%
Jaundice (manjano)	15	9,9%
Malaria (*ilikengeti (K*)	13	8,6%
Amoeba (ukaptula)	18	11,9%
Diarrhoea (kuharisha)	9	6,0%
Boils (jipu)	9	6,0%
Convulsions (degedege)	7	4,6%
Tooth ache (maumivu ya jino)	6	4,0%
Fever (homa)	4	2,6%
Others (miscellaneous)	107	70,9%
Number of respondents	151	100,0%

Source: Fieldwork data 2016

Open question 2.18 *(For which type of illness do you know a herbal remedy?*) was answered by 151 (86%) respondents, producing a total of 260 types. That listing is compared with Table 12. Here the high volumes have a different ranking. The number of people knowing of herbal remedies is marginally smaller than the number presenting certain diseases to TM, but the type of diseases show an overlap. A remarkable position of malaria in this case, as it was absent in the former listing, yet there is apparent confidence in TM with individual respondents. Incidentally the root of Aloe Vera (*boiled*) was mentioned as the treatment for malaria. Again a wide range of other morbidities were mentioned in lower frequencies (107, 70,9%). Despite these numbers, the majority does not consider itself knowledgeable in TM. The C.O. in Nyamburi suspects that any fever of unknown origin is often labelled malaria (see 6.3.7).

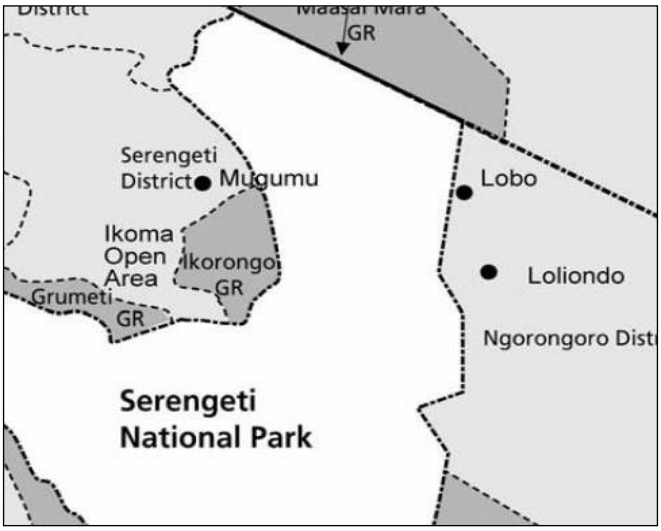
Considering that the source of this knowledge rests with the parents of these respondents, the historical perspective as to the origins of these species was only traceable via an herbalist who was from an early age group, now 66 years old [31]. Told by his grandfather (d.o.b. 1890), the non-indigenous species, said to be introduced by early missionaries, are nr. 26 *Umuchahechahe,* 29 *Mwarobaini*, 30 *Mbulu matare* (Mtishanga), 33 *Ilibhabayo,* and 34 *Ilitoke*. It is emphasised that these do not grow in the wild but are planted around homesteads and gardens or sold in a marketplace. In that respect it is essential to identify the specific age group of the respondents as that is the key to attribute the origin of this knowledge in diachronic analyses (*cf.* Shetler 1998). With regard to the species named in either *Igikurya* or *Swahili* by the knowledgeable respondents during

the household survey, several are mentioned in other research (*cf.* Gessler 1994; Owuor 2012; Chirangi 2013), although the diseases where the treatment is applied for may differ. It may be expected to the extent that the other remedies were provided by professional herbalists, but it does indicate that the applications of local treatments do not serve a single purpose. There may be a difference in local applicability on the basis of the effects as described by Gessler (1994), in the sense that similar species retrieved from different geographic locations also showed different levels of bioactive components. In the cases of *Zanthoxylum chalybeum* or *Harrisonia abyssinica*, for example, these are attributed anti-malarial properties by these respective authors but are not associated with that disease by the respondents in this sample. Considering language syntax errors or possible duplication because of regional differences, there are at least four species which are designated by another -or similar sounding- Igikuria name in the work of Bethwell Onyango Owuor (2012) in Kenya, although the botanical names are identical, as in the case of:

11 *Irihirirya*	*Lantana ukambensis*	noted as: *Irinyente / Irihiriria*
15 *Eghetalatula*	*Solanum incanum*	noted as: *Iritorotoro*
31 *Inyimirya*	*Fuersta africana,*	noted as: *Ekebunga baare,*
32 *Umunyingyi*	*Lannea schimperi*	noted as: *Umunyingei*

In Owuor's description of concoctions, species from this study's listing incidentally reoccur but not in the same constellation, *e.g.* nr. 44 *Weisebho – Ageratum conyzoides*, used to stop bleeding, rashes and constipation, in combination with two other species. Nr. 12 *Omotembe - Erythrina abyssinica*, as well is used in combination with three other species to address sexually transmitted diseases (STD). For these examples there are no similar combinations found in this study. The scheme in Table 14 shows the intricacy of the possible combinations of herbal treatment as described by the knowledgeable respondents. The numbering under the header 'combined' indicates which species are mixed to compose the intended concoction.

Map 4. Ikorongo Area: The Game Reserve & SENAPA.



The location of these species could be projected on the hyphen-circled area named Ikorongo Game Reserve, as the environment for Nyamburi community and its satellites (source: Hassan & Rija, 2011*).*

Table 14. Combinations Applied in Concoctions Indicated by Survey Respondents.

rec	local name	Scientific	parts	preparation	admin.	combined
2	*ilisibitali*	Lamiaceae sp.	root+leaves	pounded + boiled	drink	
3	*urung'uno*	*Harrisonia abyssinica* Oliv. (Simaroubaceae)	root	boiled	drink	3,4,5
4	*ubhoke bweitimo*	Lamiaceae sp.	leaves	pounded + boiled	drink	3,4,5
5	*ikiiri*	*Ocimum gratissimum* L. (Lamiaceae)	leaves	pounded + mixed	drink	3,4,5
6	*iwawa*	*Momordica foetida* Schumach. (Cucurbitaceae)	leaves	pound	skin rub	
7	*ikimusi*	*Euclea divinorum* Hiern (Ebenaceae)	root	boiled	drink	
8	*omosese*	*Rotheca myricoides* (Hochst.) Steane & Mabb. (Lamiaceae)	root	pounded + mix	drink	8,9,10 - 5,8
9	*iririrebhana*	*Plectranthus barbatus* Andrews (Lamiaceae)	root+leaves	pound + mixed	drink	8,9,10
10	*umuribha*	*Kigelia africana* (Lam.) Benth. (Bignoniaceae)	fruits	peel, cut , boil	drink	8,9,10
11	*irihirirya*	*Lantana ukambensis* (Vatke) Verdc. (Verbenaceae)	leaves	pound	chew/sniff	5
12	*omotembe*	*Erythrina abyssinica* Lam. ex DC. (Fabaceae)	bark+leaves	boiled, mixed	drink	
13	*omohenga/umunyente*	*Hoslundia opposita* Vahl (Lamiaceae)	leaves	pounded + mixed	drink	14,15
14	*kinyonyo*	*Oxalis corniculata* L. (Oxalidaceae)	leaves	pounded + mixed	drink	13,14,15
15	*eghetalatula*	*Solanum incanum* L. (Solanaceae)	root	pounded + mix, boil	drink	13,14,15
16	*mchele*	*Ozoroa insignis* Delile (Anacardiaceae)	leaves	pounded + mixed, filter	drops	5,16,17
17	*omupela*	*Psidium guajava* L. (Myrtaceae)	young leaves	pound, mix, boil	drink	5,16,17
18	*bhurubhoikonde*	indet.	root+leaves	boil, pounded + mixed	drink	5,18,31
19	*umunyanduku*	*Zanthoxylum chalybeum* Engl. (Rutaceae)	root+bark	pounded + boiled	drink	19,20
20	*umusisi*	*Tamarindus indica* L. (Caesalpiniaceae)	bark+leaves	pounded + boiled	drink	19,20
21	*ilityambwi*	*Sesamum calycinum* Welw. (Pedaliaceae)	vegetable	boiled	eat	
22	*nyaghasinda*	indet.	root	boiled	drink	43

Source: Fieldwork data 2016

Table 14. Combinations Applied in Concoctions Indicated by Survey Respondents (continued)

rec	local name	Scientific	parts	preparation	admin.	combined
23	*umwitanchoka*	*Senna occidentalis* L. (Fabaceae)	root	boil / chew	drink/swallow	
24	*ekeghaghana*	*Gardenia volkensii* K. Schum. (Rubiaceae)	root	pounded + mixed	nasal	
25	*omosabhisabhi*	*Sesbania sesban* (L.) Merr. (Fabaceae)	leaves	boil + porridge	drink	
26	*umuchahechahe*	*Cymbopogon citratus* (DC.) Stapf (Poaceae)	leaves	boiled	drink	
27	*ikitabhalali*	*Crassocephalum picridifolium* (DC.) S. Moore (Compositae)	leaves	pounded + boiled	eye drops	
28	*omotaminyoo*	Cif.(Oleaceae)	root	boiled	drink	
29	*mwarobaini (S)*	*Azadirachta indica* A. Juss. (Meliaceae)	root+bark+lea	boiled	drink	
30	*mbulumatare*	*Melia volkensii* Gürke (Meliaceae)	leaves	boiled	drink	
31	*inyimirya*	*Fuerstia africana* T.C.E. Fr. (Lamiaceae)	root+leaf	boil, pounded + mixed	nasal	5,18,31
32	*umunyingyi*	(Anacardiaceae)	bark	boiled	drink	
33	*ilibhabhayo*	*Carica papaya* L. (Caricaceae)	leaves	mixed + boiled	drink	12
34	*ilitoke*	*Musa* sp. (Musaceae)	root+leaf	boiled	drink	7,33,34
35	*Ibhinyankara*	indet.	fruits	pounded+boiled	drink	
36	*Iriraraura*	indet.	root+leaf	boiled	drink	5
37	*ikyulanse*	*Hydnora abyssinica* A. Br. (Hydnoraceae)	root	pound, grind, mix	drink	
38	*egesamulya*	*Kalanchoe* sp. (Crassulaceae)	leaves	pounded, mix	nasal	
38b	*egesamulya*	*Kalanchoe* sp. (Crassulaceae)	root	dry, pound, mix	nasal	
39	*ikilunguli kemuha*	indet.	porridge	boiled	eat	
40	*ilitaghala*	indet.	leaves	pound, mix or boil	drink	
42	*umulutunguli/nyaghitu*	*Drimia altissima* (L.f.) Ker Gawl. (Asperagaceae)	leaves	boiled	drink	
43	*nyabhisala*	*Adenia gummifera* (Harv.) Harms (Passifloraceae)	bark	pounded + water	drink	
44	*weisebho*	*Ageratum conyzoides* L. (Asteraceae)	leaves	pound, mix or boil	drink	5

Source: Fieldwork data 2016

5. Images of Table 14. Listed on Used in Conjunction with Others.

No. 3: Urung'uno (Harrisonia abyssinica)

*No. 4: Ubhoke Bweitimo (*Lamiaceae*)*

No.5: Ikiiri (Ocimum gratissimum)

No. 8: Omosese (Rotheca myricoides)

No. 9: *Iririrebhana (Plectranthus barbatus)*

No. 10: Umuribha (Kigelia africana)

Images of table 14. Listed on Use in Conjunction with Others (continued)

No. 13 Omohenga (Hoslundia opposita)

No. 14 Kinyonyo (Oxalis corniculata)

No. 15 Eghetalatula (Solanum incanum)

No. 16 Mchele (Ozoroa insignis)

No.17 Omupela (Psidium guajava)

No. 18 Bhurubhoikonde (Indet.)

Notes Chapter VI

26. Most of the people in this sample were not able to quote a figure on the number of inhabitants of Natta central, asked to create a context for the morbidity rates. The secondary school teachers estimate the number at 1,000+ and 3,000+ inhabitants respectively. According to the W.E.C. the Ward total is 12,495 from which 5,280 are in Natta Central. The Serengeti Public Health Department says there are 3,000 in the clinic's catchment area as defined in the district profile.
27. The registration of the morbidities over 2014 was presented as exemplary of the volume dealt with by the dispensary in Natta. The HIV rate in one quarter was given as 300+ for total established cases (i.c. under monitoring & treatment), with a three-monthly frequency of ca. 20 incidence (on an estimated population of 12.000+) over the same period.
28 The Community Based Health Promotion Programme (CBHPP) acronymed IMARA, located across from Nyerere Hospital, was founded as a Mennonite (KMT) related initiative and originally focused on identifying and supporting handicapped individuals on community level. External NGO funding makes it vulnerable, but it is locally recognised as an expert organisation, and capable of making community-based development work. It is an intermediary in the JHPIEGO project (Johns Hopkins Univ.).
29. The Child Survival, Protection and Development programme was launched in 1988 in the Mlimani ward with the objective of improving the welfare of women and children. By 2001, the programme was operational in all 19 wards of Morogoro municipality. In Mwembesongo and Mjimpya wards, the programme was initiated in 1992 and in 2001respectively (from: Maseta *et al.* 2008).
30. (R): Midwife trainer of Kisare College of Health Sciences, member of the research team and purposely assigned to conduct the interviews with all TBA's in order to create recognition, familiarity, and capable of medical knowledge assessments.