

No. 458

**Indigenous knowledge and the use of traditional
medicines in the Rakai District of Uganda.**

KERWEGI, S A

**INDIGENOUS KNOWLEDGE
AND THE USE OF TRADITIONAL MEDICINES
IN THE RAKAI DISTRICT OF UGANDA.**

Home-Herbal Medicines.

Prepared by
Sophia Apio Kerwegi

August, 1998.

The Scandinavian Seminar Collage. "Policies And Practices
Supporting Sustainable Development In Sub-Saharan Africa"
Project., CDR, Gammel Kongevej 5 DK-1610 Copenhagen,
Denmark

ACKNOWLEDGEMENTS

The following are organisations and individuals who have contributed to preparation of this report.

Participants of the Rakai herbals medicine project listed in appendix 5,

CONCERN WORLDWIDE , Kampala ,Uganda

Patients and the community of Kirumba sub-county, Rakai

Eamonn Brehony and Mrs Moira Brehony, CONCERN WORLDWIDE, Ethiopia

Margret Semukas and Max Ssenyonga, CONCERN WORLDWIDE, Rakai Project.

Mr. Odokonyero Denis, &
Miss Brenda Auma;
King's College Budo, P.O Box 7121, Kampala Uganda.

The Scandinavian Seminar Collage, Copenhagen, Denmark

CONTENTS:

I. INTRODUCTION:.....	Error! Bookmark not defined.
II. COMPLIMENTARILY OF PROJECT TO CONVENTIONAL HEALTH SERVICES.....	6.....
A. MONITORING AND REPORTING OF DISEASE PEEVALENCE:.....	6.....
B. PUBLIC HEALTH AWARENESS:.....	7.....
C. HOME NURSING SERVICES AND DISEASE PREVENTION:.....	7.....
D. DRUG'S SUPPLY:.....	8.....
III. PROJECT STRATEGIES:.....	8.....
A. INFORMATION EXCHANGE:.....	8.....
B. RESEARCH AND DEVELOPMENT OF DRUGS:.....	9.....
C. TRADITIONAL MEDICINE ETHICS:.....	9.....
IV. ASSURANCE OF HEALTH QUALITY.....	9.....
V. PARTICIPATORY SELECTION OF PARTICIPANTS:.....	10.....
VI. AGE RANGE AND GENDER DISTRIBUTION OF THE INFORMANTS:.....	11.....
A. PARTICIPANTS VIEWS OF BENEFITS OF INVOLVEMENT IN THE HERBALS MEDICINES PROJECT.....	11.....
VII. PROCESS OF MOBILIZATION OF RESOURCES:.....	12.....
A. SUMMARY OF ACTIVITIES:.....	12.....
VIII. INSTITUTIONAL RESPONSIBILITIES IN THE PARTICIPATORY STUDY:.....	13.....
1. <i>Organization structure of project:(fig.5)</i>	14.....
IX. PROJECT IMPACT ON HEALTH, INCOME AND EMPLOYMENT:.....	14.....
A. OCCUPATION SOURCE OF LIVELIHOOD OF PARTICIPANTS.....	17.....

Appendices:

Appendix 1. Map Of Uganda

Appendix 2: Map Of Rakai District

Appendix 3: Sample Data Coding Sheet For Prioritised Medicinal Plant Species Used In Treatment Of Diarrhea By Bugaju Group.

Appendix 4: Photo of Interview of Participants.

Appendix5: Prioritized List Of Medicinal Plants Used For Common Diseases Symptoms.

Appendix: 6: Names Of Participants, Source Of Indigenous Knowledge of the Rakai project.

Appendix; 7. Bibliography;

I. INTRODUCTION:

Uganda covers an area of 241,000 square kilometers and has an estimated population of 20 million people. Of the total population, 89% live in rural area while 11% live in urban area. Agriculture is the backbone of the country's economy. There are 56 tribal communities randomly distributed in 45 districts of Uganda (Appendix 1).

Uganda experienced a number of civil wars between 1979 to 1986. Civil wars interrupted health services, destroyed infrastructure and prompted exodus of medical personnel from the country. Despite the shortcomings, Uganda is a blessed country with relatively moderate climate and a rich vegetation cover supported by its geographical location astride the equator and an average altitude of 1,400 meters above sea level.

The World Health (WHO, 1996) report indicates poor health status within the country. Major diseases are malaria, Acquired Immune Deficiency Syndrome (AIDS), Diarrhea, Respiratory tract infections and anemia. AIDS accounted for 17% of hospital deaths among adults. In a country where only 49.3 % of the population is of working age (15-64 years of age), the burden of deaths due to AIDS has a great impact on the economy. Household health is importance to the majority of rural dwellers.

Traditional medical care used to by over 80% of the population, involves a series of activities, order of knowledge, beliefs, customs, organized and employed by a practitioner to generate beneficial effects for diagnosis, prevention or elimination of imbalance in the physical, psychological or social well-being. Traditional medical care founded on personal experience and observation is handed down from generation to generation, either verbally, through apprenticeship. Secrecy is characteristic of information exchange particularly among traditional healers (Mubiru et al., 1993).

Reference to traditional medicine for positive medical effects is synonymous with other commonly used terms for example, 'alternative medicine', 'ethno-medicine', 'folk medicine', 'traditional healing'. Historic account of traditional medicine in Uganda indicates the Witchcraft Act (1957), regulated practices involving use of 'supernatural powers.' A general belief exists among the population that traditional medicines use for intentional infliction of bad omen, induce ill health or destabilize mental state particularly by 'spiritualists' is practiced by some individuals. Literature reviews indicate a number of plants used in traditional medicine to possess poisonous properties (Watt, 1962; Verdecourt, 1966.). Traditional medicine was practice at a low profile partly due to the negative impact of implementation of the 'Witchcraft Act which indiscriminately affected genuine traditional healers and the 'witches' alike (Zeller, D C, 1964). A health policy review commission (1987) incorporated the view of traditional healers in its recommendation to government. The National Drug Policy and Statute (1993) was instituted to regulate research and development of traditional medicines and herbal drugs in Uganda.

The management of traditional medicines by government is shared by the two ministries namely the Ministry of Health, and the Ministry of Ministry of Culture and Gender Development. The former handles material and scientific aspects of traditional medicines while the later is responsible to regulate cultural (spiritual and related concerns) practices of traditional medicines. Inter-ministerial collaboration between the two ministries is weak. The local administration (through the local council system) integrates material (herbal) and spiritual aspects of traditional medicines in addition to all government policies for the interest of local communities.

Kirumba sub-county, a local administrative unit in Rakai district (Appendix 2) covers an area of 88.5 acres, had a population of 22,840 people by 1990. The Baganda are the main tribe in Rakai district. The needs of the community in the sub-county ranged from clean water, food and basic health care following the catastrophic climate and disease epidemics of 1990. As the members of the traditional crisis management informal group -the 'Muno mu kabi' willingly offered their services to the sick, they encountered the dilemma of how to choose herbal medicines for the sick. A herbal medicine project involving a participatory study conceived in 1993 aimed at providing for basic health care of the community at household level. Three main institutions, namely the Natural Chemotherapeutics research laboratory (a government Institute); CONCERN WORLDWIDE (a Non Governmental Organization) and the local community initiated project activities.

II. COMPLIMENTARILY OF PROJECT TO CONVENTIONAL HEALTH SERVICES.

Health services provided at district levels, through the Ministry of Health, accounts for 73% of preventive and curative health services. Non-Governmental organizations and private (commercial) institutions contribute 27% of conventional health care services through private hospitals, clinics and rural area projects. Kirumba sub county, Rakai district, had one health center (health centers in Uganda were distributed at sub-county levels), a dispensary and several poorly stocked over-the-counter private drug shops, to serve 478,940 people. The two hospitals (Rakai and Kyotera hospitals) in the district, suffered shortage of conventional of drugs and medical personnel (Appendix)

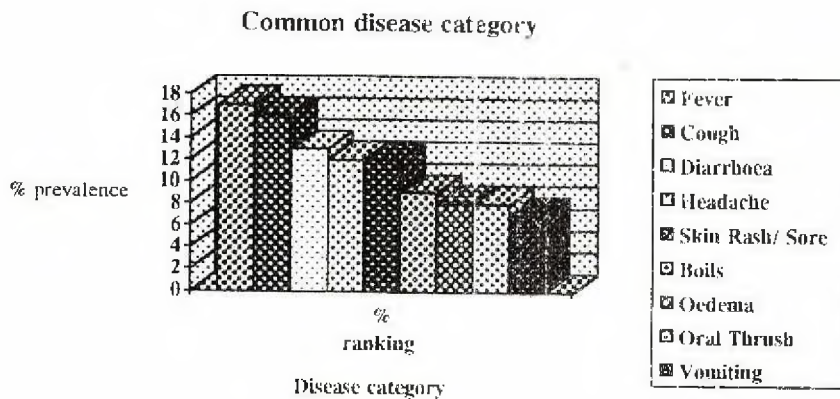
Project intervention was to provide for gaps in primary health care needs of local communities.

A. Monitoring And Reporting Of Disease Prevalence:

Through identification of common disease symptoms, the community gained insight into the prevalence of category of disease. Participants and project administrators reported disease prevalence to local and district health administrators. In this was the project provided the information required by local administration to advise central government authorities.

Patients received herbal medicines in form of 'herbal -medicines' first aid kit' directly prepared by participants or by family members.

Fig. 1 : Common Disease symptoms identified by Project.



Participants reported frequent encounter of patients with more than one symptoms of the diseases.

B. PUBLIC HEALTH AWARENESS:

Under the primary health care program provided by government, sanitation, immunization and maternal and child health are the main areas targeted within community settings. Training of traditional birth attendants in sanitation and diagnosis techniques for pregnancy conditions were undertaken in most districts of Uganda, by the Ministry of Health. However a survey undertaken by the NCRL between 1990-97, revealed that the use of herbal medicines for maternal and child health care were discouraged by the training.

The household survey undertaken by the Government Department of Planning revealed poor sanitation status in the district. In Rakai district, 91.95 % of people live in 1-roomed house, 3.93 % in 2 roomed house and only 1.34% in 3 roomed house. In terms of sources of water (drinking water), 94.42 % collect water from unprotected water sources. While up to 18.61 % had no toilet facilities. Only 81.20 of households had pit latrine toilet facility.

During discussions between participants and household members, issues of sanitation requirements for patients health welfare were involved. For example participants were informed of contagious disease such as the one which caused boils and the mode of transmission though physical contacts. The traditional knowledge related to the cause of boils was that it was contracted through walking over a coin which is dropped on the path of an unsuspecting person. The two views (scientific and traditional causative agent(s) for boils) contrasted but an intermediate understanding that it originated from a source (i.e. an infected person) was the consensus. It was not followed up to what impact the discussions between participants and patients produced.

C. Home Nursing Services and disease prevention:

The project promoted home nursing to patients who were bed-ridden. Participants who had acquired more knowledge on causative agents of symptoms were able to advise households as to ways to prevent spread of disease.

D. Drug's supply:

Government expenditure on pharmaceutical products imports, was US\$ 11.9 million in 1993, US\$ 28.9 million in 1994, and US\$ 39.5 million in 1995 shows an increasing trend (Bukonya et al, 1997). The National Drug Statute (1993) provides for class C licensed drugs that may be sold by retail by a licensed drug seller, but in accordance with the terms of his license. Out of the 28 listed category of Class C (Group I) drugs, 50 % are plant based products. Sale of herbal medicines in Uganda is undertaken by urban based healers in markets under the guise of traditional 'vegetable materials'.

The project complemented the supply of herbal drugs through the adoption of 'herbal medicine's first aid kits' made available by participants.

III. PROJECT STRATEGIES;

The overall objective of the project was to identify and promote the use of available herbal medicine resources and to mobilize the community to develop solving problems' mechanisms to meet their health needs.

Several intervention measures employed by the project included;

A. Information exchange:

Discussions and interviews were conducted intentionally to integrated rational for selective use of herbal medicines at household level. Information exchange was stimulated further information exchange between participants, patients and members of households.

Casual discussions on symptoms of common disease and on characteristics of medicinal plants species were the targeted areas. Bureaucracy and stringent policy at provisions however make it difficult for information exchange at government institutions. A follow-up assessment undertaken by the author and a former administrators of the Rakai project (in mid 1997) could not ascertain the impact of the Rakai report to the district medical office.

The use of proverbs and wise-saying, in addition to visual aids (plant material) was a learning-aid most used for interpretation of otherwise ambiguous statements. The wealth of proverbs associated with most actions of using traditional medicines is a treasure (within indigenous knowledge) to reckon. Proverbs not only acted as 'traditional dictionary' but 'a legal statement' that disciplined users of medicinal plants in particular and traditional medicine generally.

Participants showed preferences for short-term results and benefits. A remark by a participant, Salongo Bwanika, that the lifestyle of a rural-based person is based on 'daily subsistence' which is reflected in the short-term expectations.

The traditional mode of conversation which is characterized by occasional remarks does not only stimulate further information exchange but is enjoyed by the elderly Baganda tribesmen (appendix 5).

B. Research and development of drugs:

Discussions at the onset of the participatory study, identified the need for synchronize activities (indigenous knowledge and scientific knowledge). In order to actively involve participants in the study, statistical data coding was undertaken with participants role model. In my opinion the skills acquired by participants contributed to the continuity of the project. Background characteristics of participant indicated low education level. The wise saying that 'the eye of an African is in the hands' (literal meaning that one learns by doing or touching) was appropriate means to enable participants learn how scientific research methods derive results. (Coding of data was done on a chart in the presence of participants.) Research progress was monitored by the village based contacts on participants record keeping. Literature handouts (translated in Luganda dialect) for participants to share with family members were produced at tri-monthly intervals.

Participant showed great interest in understanding basic scientific principles of chemical extraction and preservation of herbal medicines. An example was a member of the study group knew that the bark of a mango plant was chewed was more effective than in when used dry as a concoction for cough.

C. Traditional medicine ethics:

Participants proposed traditional code of collection, preparation and administration of herbal medicines as a means promotes conservation of plants. For example, while on field work to collect samples for scientific identification, samples were picked by the owner of the plot on which the plant grew but not by field worker unless granted permission. In order to assure qualitative treatment the traditional ethics of 'not saying thanks you until improvement in health status was noticed' was promoted. Patients provided token appreciation for herbal medicines as means to sustain the supply of herb.

The project activity to collect information on names and samples of local names of plants provided tokens for samples brought. Samples brought in by participants were not taken away by project after interviews.

IV. ASSURANCE OF HEALTH QUALITY

Government health service is provided on equal basis for all citizens. The health services were provided at health centers, freely to citizens until the introduction of the 'Cost Sharing Scheme' in early 1990. However several factors determine accessibility of health services by individuals. Long distance to health centers is a major factor that hinders accessibility to health services. The household survey (1990) indicated 73% of the population in Uganda lived 5 km. from the nearest health facility. Services provided by a traditional spiritual-herbalist is costly (in terms of financial and material requirement) is not easily affordable by poor rural communities. Preparations of home herbal at household and village level provided basic health schemes to the community. In normal circumstances, home herbal are provided on recommendation by a patient who was treated by the 'owner' of the drug.

The project intervened to ensure that patients were identified, provided with herbal medicines and encouraged to go for thorough medical checkup at the health centers. The aim of the project was to provide 'community health service', the equivalent of 'the national health

service' in developed countries e.g the UK. There is no specific policy for national health service to regulate assurance of health care. The situation in the rural community of Rakai was pathetic as scenes of burials and births went on unrecorded in national registry as required by law. It was for example challenging for participants to encourage patients to go for tests to confirm their AIDS status when there was no known cure for the AIDS nor any provision for medical care. Declaration by a few participants that they had invented herbal medicines for AIDS, was a challenge to administration of the project.

V. PARTICIPATORY SELECTION OF PARTICIPANTS:

Uganda's Local Council (L.C.) system has arguably provided an innovative democratic mechanism of governance, strengthening citizen oversight, and responsiveness and accountability of leadership and reciprocity within public realm (Allison, F. J, 1996). The project started by promoting awareness on proposed project objectives to the district medical office. Purposeful selection of individuals with background knowledge on herbal medicines was made through recommendations of the L. C's within Kirumba sub-county.

The local council policy is that every adult member of the village (aged 18 years and above) is a member of the local council committee. A village council elects nine (9) executive members referred to as the L.C I committee. The process of formation of L.C II (the parish level), L.C III (the sub-county level) and L.C V (at the district level). is progressively made by each lower level electing a committee of nine executives to represent its interest at the district level. Each household of an adult member was therefore represented at the local council. It was however sad to not families whose head of family were under 18 years due to death of both parents.

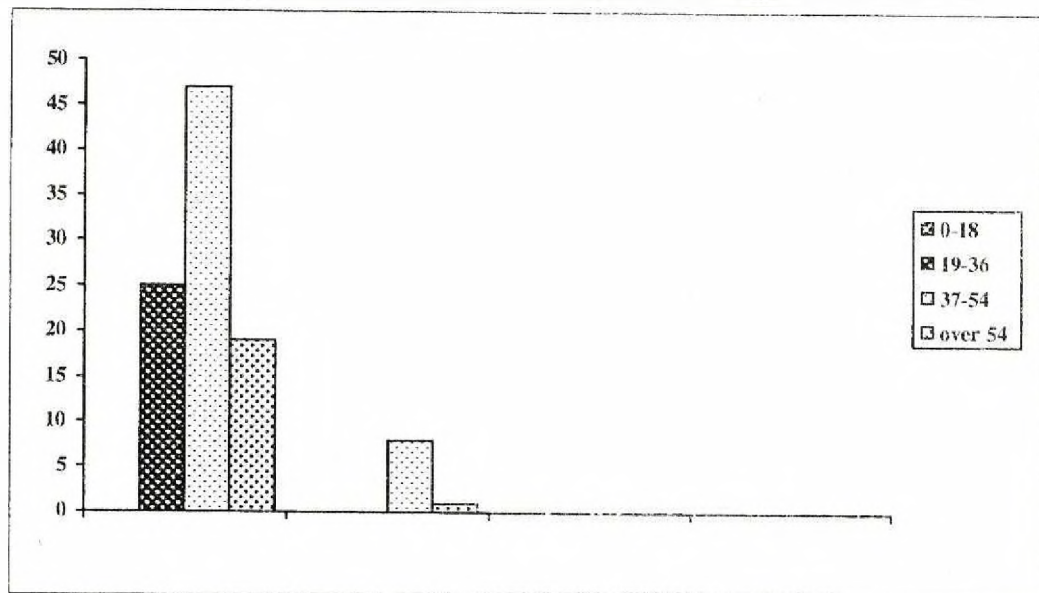
Fig. 2 Local administrative units and level of interaction with project.

Local administration & governance	L.C. I	L.C. II	L.C. III: Kirumba sub-county
Level of project interactions	village; household	Bujaji and zones	Kirumba Study group (73 participants)
Area of interest	individual, patients, medicinal plants	home care & disease monitoring	groups; by laws; policy development & resources

The general criterion for participant identification was limited to at least one person but not more than three persons from the same village.

Thirty-five (35) out of the seventy-three (73) participants were recommended by local councils level I, II and III through consultation with elders in the community. The rest of the forty participants were later identified by colleagues and village-mates. Participants were initially interviewed to identify background characteristics of the group as indicated in (appendix 5)

VI. Age Range And Gender Distribution Of The Informants:



A. Participants Views Of Benefits Of Involvement In The Herbal Medicines Project.

All participants interviewed indicated subsistence farming as their main source of income and livelihood. Other category of occupation indicated included, member of the local council administration, members to other Non-Governmental O within the area. The combination of different background experiences, provided a wealth of knowledge and experience to the project.

Fig. 3: Specific Area Of Use Of Herbal Medicines By Participants:

Benefit Expectations	% Participants' response to use benefit expectation	
	Bugaju group (n=35)	Buyisa group (n=38)
Category of medicinal plants and herbal medicine users		
for sale	6	3
self medication	20	27
use on family members	43	47
use on village members	83	78

Reasons given in relation to the use of herbal medicines for self medication included 'so that I am equipped with the knowledge to protect my health' ; to 'hoe do I know I may be suffering from AIDS'. While the proverb "Omuganga teye ganga" (literal translation: "a herbalist does not treat himself or herself") was commonly cited by those who indicated they did not use herbal medicine for self treatment. Participants provided more than one category of expectations from the project.

VII. PROCESS OF MOBILIZATION OF RESOURCES:

MEDICINAL PLANTS and HERB

A. Summary of activities;

Programmed Project Activities	Participants
I. Identification of common diseases' symptoms by local names. <i>Group role</i>	NCRL; CONCERN; participants; households
II. Categorization of disease ;description of signs and development of diseases - <i>Group role</i>	medical doctor; participants; NCRL; CONCERN
III. Identification of diseases causative agents and traditional treatment option - <i>Group role ; individual interview</i>	NCRL; participants; households Literature review
IV. Identification of local names of medicinal plants used for common symptoms - <i>Group role</i>	NCRL; CONCERN; households; literature
V. Sample collection of medicinal plants and coding- <i>Group role.</i>	participants; NCRL; CONCERN
VI. Scientific identification of samples and literature review on medicinal properties. <i>individual & Group role</i>	NCRL database reference.
VII. Interview on mode of preparation of herbal medicines; <i>Individual interview</i> followed by <i>Group role</i>	participants; NCRL; CONCERN
VIII. Demonstration of preparation and preservation of herbal medicines- <i>Group role</i>	Participants; NCRL;
IX. Demonstration; exhibition of mode of preparation by sub groups. Sample exchange or bought. <i>Group role</i>	participants; community; NCRL; CONCERN
X. Field group-visit to patients- <i>Group role</i>	participants
XI. Collection of seedlings for propagation in backyard gardens. <i>Group role</i>	participants; CONCERN
XII. Preparation of 'herbal medicine first aid kits' - <i>Group role</i>	participants; NCRL; CONCERN
XIII. Diversification of activities	participants
XIV. Review of activities (symptoms, plant resources, new needs by communities)	participants; L.C.; NCRL; CONCERN

Fig. 4. Options to plant species used to treat common disease symptoms.

Disease Symptom	No. species of plants brought by participants and scientifically identified.
Boils	14
Diarrhea	15
Oral sores	15
Fever	20
Cough	22
Vomiting	23
Skin rash ;sore	23
Edema	24
Headache	28

VIII. INSTITUTIONAL RESPONSIBILITIES IN THE PARTICIPATORY STUDY:

Conservation through collaborative management between local community and government agency represented by the Bwindi impenetrable forest resources management, Uganda is rare (Wild, R.G & Mutebi J., 1997) .

Public (government) policy under the Standing Orders (1969) (regularly revised) , provides for collaborative activities between government and non governmental organisations-NGO (other authorities).

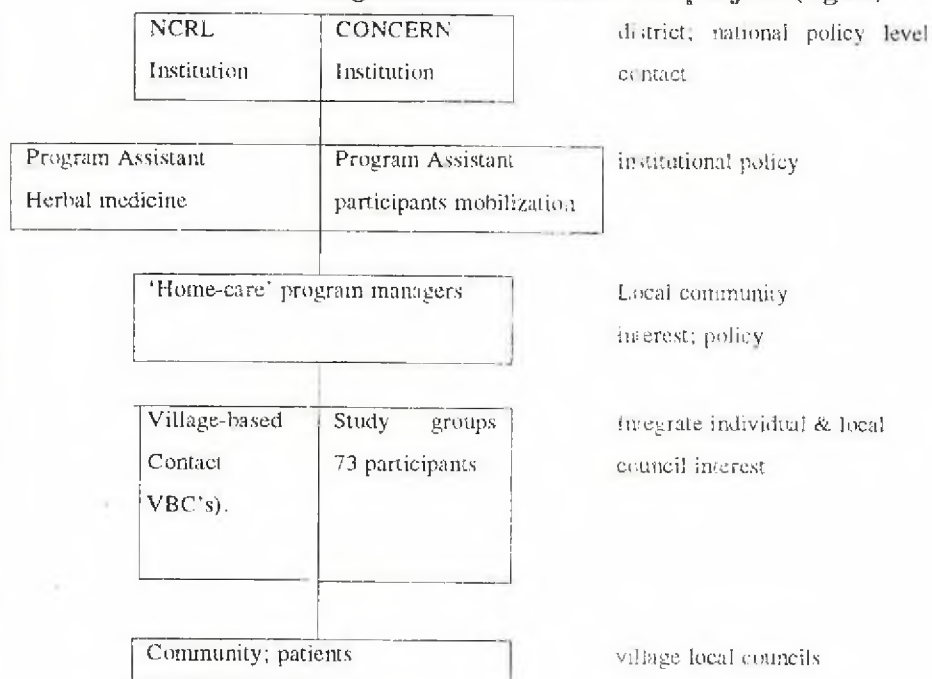
There are several registered NGO in Uganda currently working with local communities on natural resources management. However, institutional missions of the NGO limit the type of activities (Brehony E. ,pers. com.) Existing policy provisions in the National Drug Statutes, The Uganda National Council for Science and Technology and the National Environment Statutes related to traditional medicine use is generally not clearly defined. Further more, existing laws on information are not clear in that they do not spell out what information is accessible to users and what is considered confidential or proprietary (Ministry of Natural Resources, 1995).

The project assigned roles to the different institutions and established a hierarchic structure for reporting of activities of the project in figure 2.

Fig. 5 : Institutional Roles.

Institutions	Major roles
NCRL	Scientific information; government policy guidelines
CONCERN	field work administration; logistics; documentation
Local community	Herbal medicines; patient care; backyard gardens.
ST. LUKE UGANDA CLINIC	record keeping; trial medicinal garden space

1. Organization structure of project:(fig. 5)



The Public Service Standing Order, 1990, provides for government institution (e.g the NCRL) to collaborate with Non-government Organization. However, the NGO facilitates activities of the institution. On the other hand NGO involved in non profit making activities with local communities are registered with the Ministry of Internal Affairs.

Exchange of information between participants and local administration at village Local Council occurred at will. Households also represent cultural clan's lineage.

IX. PROJECT IMPACT ON HEALTH, INCOME AND EMPLOYMENT:

The project had a significant implication towards supplementing government expenditures on drugs for the local population. According to 1993 household figures (Ministry of planning, 1993), the annual expenditure of Ugandan households for medicines (traditional and modern) is estimated at US \$ 56 Million. During the year 1993, import of pharmaceutical products by government was US \$ 11.9 million. It is estimated that 30-36% of actual annual demand for drugs in Uganda are un-met through conventional drugs. The opportunity cost of meeting the

drug demand medicines would amount to US \$ 15-30 million (Bukonya et. al., 1997, estimated actual annual demand for drugs US \$60-70 million, about US \$ 45 million being represented by conventional drugs). The economic value of herbal medicines to a patient per year was equivalent to US \$ 1- 1.7 in 1993. Records of activities of the project indicated more than 600 patients received herbal medicines through the Rakai project, between January to June 1996.

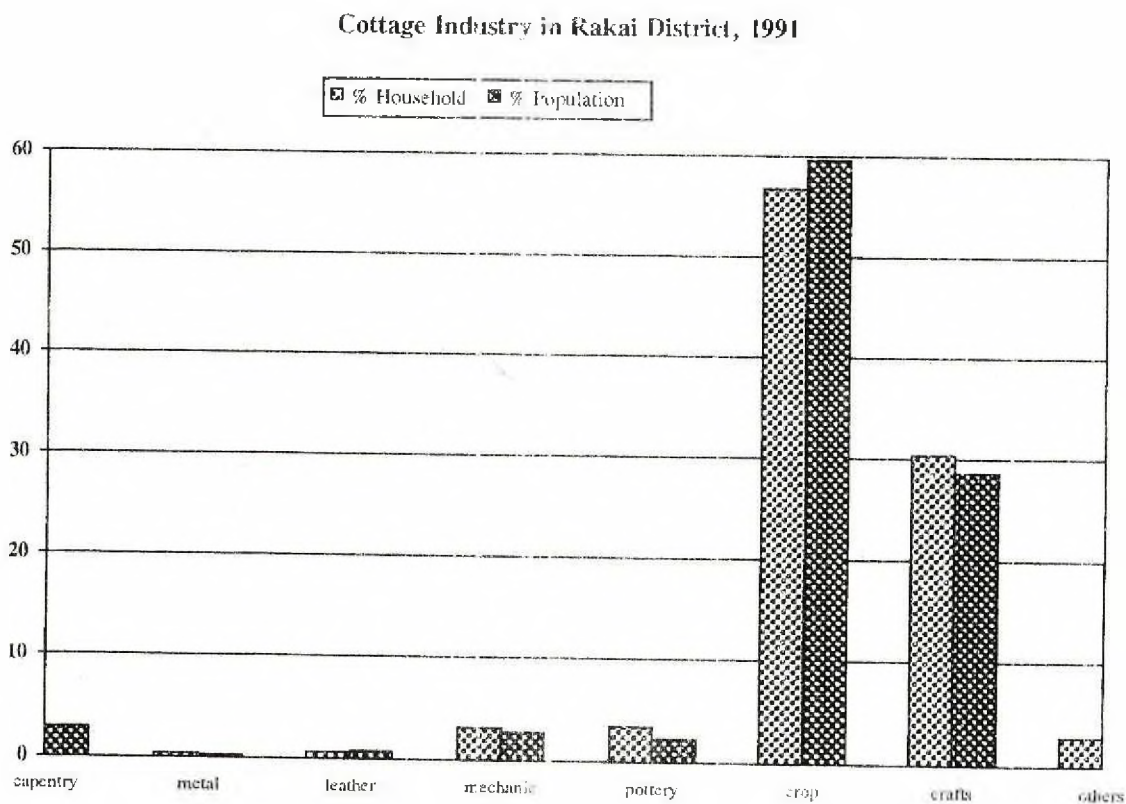
There are health conditions which have social stigma attached to it e.g infections around the genitals and tuberculosis, which individuals prefer to discuss only with confidants. Boils and skin rash was one of those disease symptoms which the Rakai community associated with AIDS and patients preferred not to openly discuss their status nor let it be in public known. Involvement of households and persons closely associated with patients is a strategy to identify health conditions within the community. The Government in an effort to identify persons with the guinea worm disease (in the northern region of Uganda) has deployed the use of radio message (mass media) to offer of a reward to any person reporting cases of the infections for a reward of an equivalent US\$ 10 is gradually paying off but is slow and unsustainable. The situation adopted by the Rakai community and government machinery are two contrasting approaches to disease diagnosis.

Response from a participant I visited at his home in 1996 (who requested not to be named because he feared the consequences of increased 'graduated tax' assessment), on inquiry on economic gains from the herbal projects that 'It pays, other wise would I be involved in peddling herb up to now. I would have turned to another income generating activity otherwise'. The response reveals two categories of economic benefits; the increased income per individual therefore increased tax base for local administration (graduated tax is assessed based on level of income of working adults in Uganda and is payable per annum). Self employment at cottage industry, especially undertaken by female gender, provides a loophole for registered tax assessment.

Policy regulation regarding the use of natural plant-resources in Uganda in the un-gazeted protected area is closely linked with ownership of the land on which the plant grows. The concern of to what extent could peddlers and sub-groups involved in distillation and sale of herb continue without exhausting the natural plant supply, causes concern to conservation and

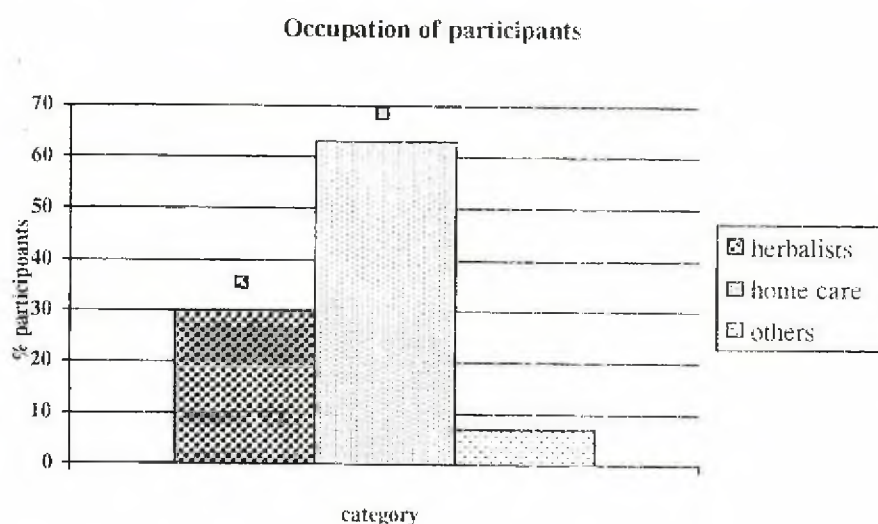
sustainability. My experience with such challenge was, entrenched in indigenous knowledge are alternatives of plant species for use at the present and plant species whose use are gradually changed due to introductions and changing conditions of needs. Asked what would happen if 'Kanzironziro' (*Psorospermum febrifugum*) which participants had indicated as the only species for use against skin rash, were to get extinct. the response in the proverb "You never forget to resort to 'Emboge' (*Aerva lanata*) which you once used during famine because you have 'Ebugga' (*Amaranthus dubiusus*) for relish or food. What was interesting was that the indigenous community knowledge of 'para-taxonomy' associated with the two species was based on use properties and physical appearances.

Fig. 6. Table of Percentage distribution of household and Household population by type of cottage industry in Rakai district, 1991:



The household survey undertaken in Rakai district indicated income cottage industry was represented only 1.49 of household percentage in the district. However there were various activities undertaken at household level. Herbal medicines was not represented as an income generating activity (fig.)

A. Occupation source of livelihood of participants



All participants interviewed indicated subsistence farming as their main source of income and livelihood. Other category of occupation indicated included, member of the local council administration, members to other NGO within the area. The combination of different background provided a wealth of knowledge and experience to the project.

X. SUSTAINABILITY OF INDIGENOUS KNOWLEDGE AND USE OF HERBAL MEDICINES IN THE RAKAI PROJECT.

Two major aspects of sustainability of the Rakai project were; information sustainability and benefits of indigenous knowledge development.

Information transfer sustainability;

Transfer of knowledge (information and skills) to a source that is not appropriately selected is not sustainable to use of traditional herbal medicines. Local communities from which indigenous knowledge originate have direct interest in future use of their knowledge.

Linking benefits of information and skill transfer to output of development of indigenous knowledge is the natural way to sustain indigenous knowledge and the natural resources to which the knowledge sustains.

In my opinion the success of the Rakai project was attributed to accessibility to natural resources to meet human demand at all times and the activities undertaken were simple and easily adopted by the community.

A balance between the community demand and plant resources availability were met through use of alternative plant species.

The adoption of activities of the Rakai Project by neighboring communities and district were attributed to the fact that the ideas involved were familiar to the communities.

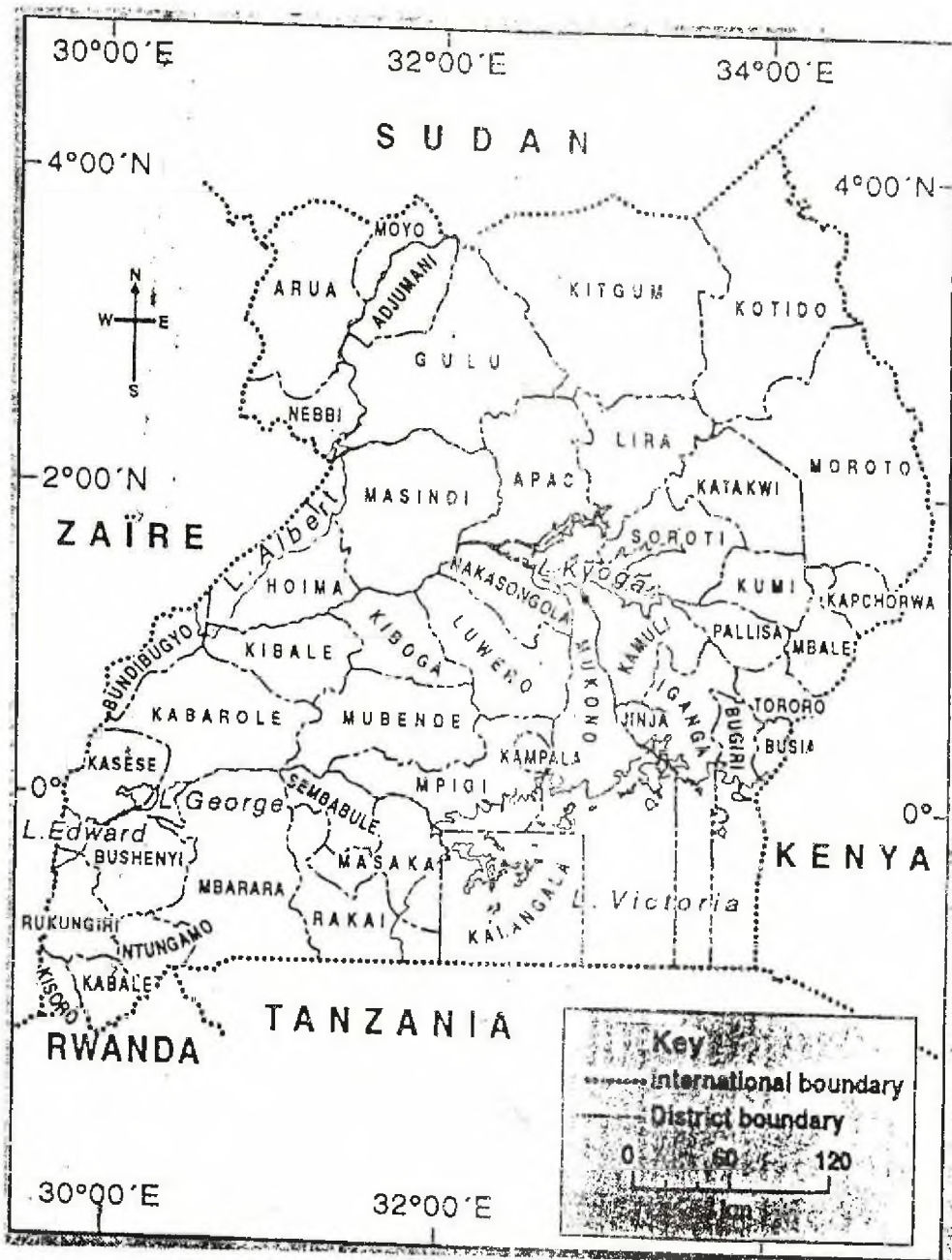
CONCLUSION:

It is clear that in Uganda much of the information from indigenous knowledge on the use of plant and other natural resources is dying out (Wild, R.G & Mutebi, J, 1997) Cultural beliefs and practices plays an important role in medicinal plants sustainable utilization. Securely established criteria for selection of individual and the process of passing on indigenous knowledge which has sustained resources and communities should form the basis of national policy for resources sustainability.

Policy environment to promote resources mobilization in other parts Uganda and in Africa at large would lead to benefits of communities at the same time supporting natural resources availability.

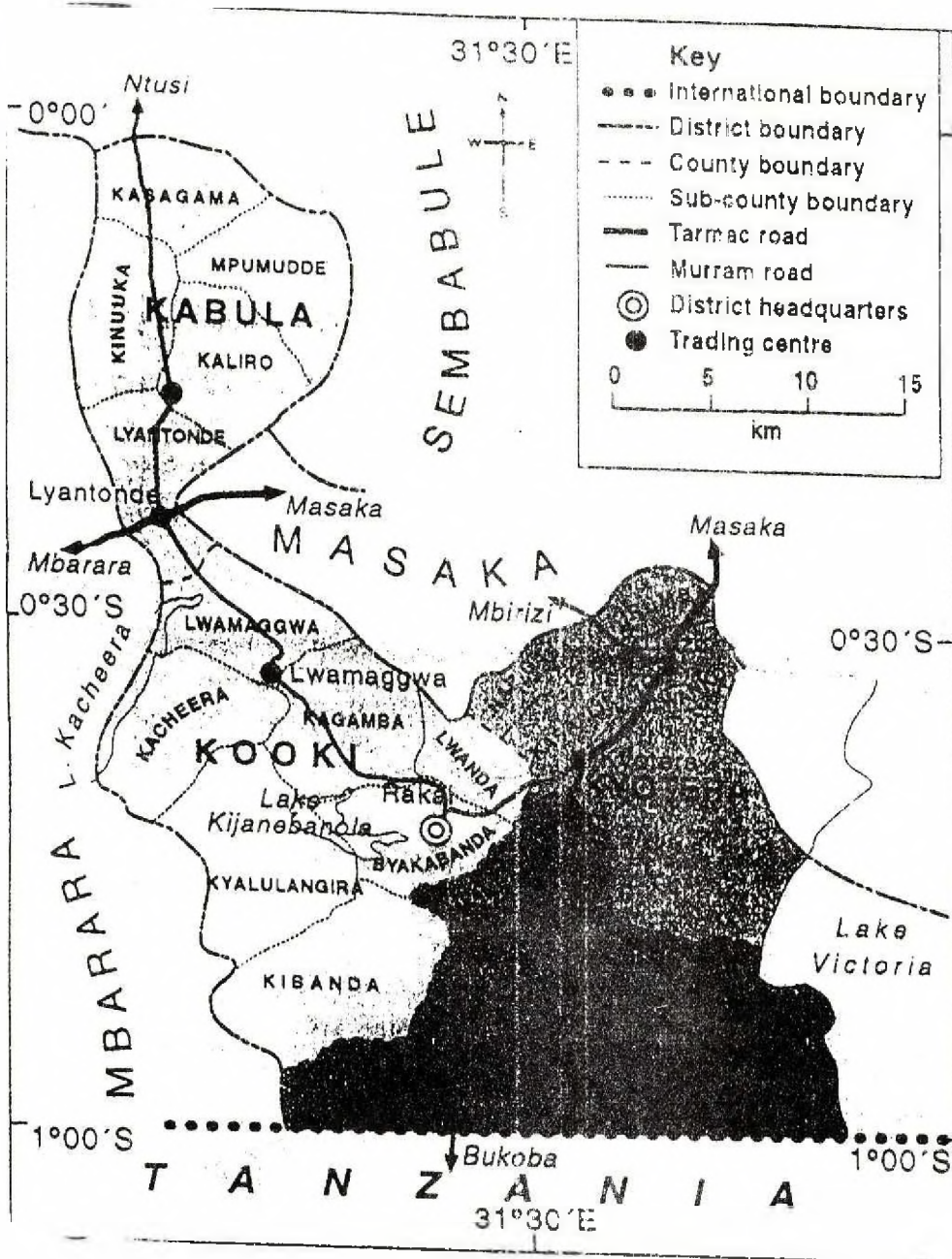
APPENDIX 1.

MAP OF UGANDA SHOWING LOCATION OF RAKAI DISTRICT.



APPENDIX 2.

MAP OF RAKAI DISTRICT SHOWIN LOCATION OF KIRUMBA SUB COUNTY



3. **Appendix : SAMPLE DATA CODING SHEET FOR PRIORITIZED MEDICINAL PLANT SPECIES USED IN TREATMENT OF DIARRHEA BY BUGAJU GROUP.**

n=38; lvs = leaves; rts=roots;

SPECIES	LOCAL NAME	% n	PRIORITY use	Parts used		
				LVS	RTS	others
<i>Priva Cordifolia</i>	Enkami	92	Diarrhea	60		
			Headache	8		
			Vomiting	5		
			Fever	5		
			Malaria	3		
<i>Surghum Vulgore</i>	Omuwemba	61	Diarrhea			58
			Vomiting	3		
<i>Thunbergia alata</i>	Kasamusamu	39	Diarrhea	26		
			Dysentery	3		
			Vomiting	5		
			Cough			
<i>Albizia zygia</i>	Nnongolongo	42	Diarrhea	18	3	8
			Vomiting	8	3	
			Skin rash	3	3	3
			mental disorder	3		3
			Allergy to foods	3		3
			Dizziness	3		

4. Appendix 5: Prioritized List of Medicinal Plants Used For Common Diseases Symptoms

DISEASE	Species	NOTES (plant parts, methods)
Diarrhea	<i>Priva cordifolia</i>	leaf infusion usually mixed with 'mumbwa' clay (natural kaolin).
	<i>Thunbergia alata</i>	Leaves may be added to fruits of <i>Solanum nigrum</i> . infusion.
	<i>Albizia zygia</i>	Roots and stem bark infusion. N.B. porridge made from seeds of <i>Sorghum vulgare</i> as control.
Vomiting	<i>Gloriosa simplex</i>	scent from roots (tied around the neck to stop nausea. Aware of toxic properties (use for criminal purposes known). Juice applied on skin around sternum.
	<i>Senecio stuhlmanii</i>	leaf's snuffs. Toxic properties reported.
	<i>Musa sapientum</i>	infusion from fermented stump - 'NKONDWE'.
Fever	<i>Vernonia amygdalina</i>	decoction from leaves and or roots. Known side effects on hearing and sight and nausea.
	<i>Markhamia platycalyx</i>	Infusion form roots. N.B. both have bitter taste. Sweating reported as indication positive treatment.
Headache	<i>Melanthera scandens</i>	Fresh leaves as poultice
	<i>Myrica kandtiana</i>	fresh roots decoction
	<i>Ocimum basilicum</i>	leaves as snuffs and skin rub
Oral sores	<i>Chenopodium opulifolium</i>	fresh leaves as mouth wash and gargles
	<i>Vernonia cinera</i>	fresh leaves as mouth wash and gargles
	<i>Euphorbia prostrata</i>	fresh leaves as mouth wash and gargles
Skin rash	<i>Psorospermum febrifugum</i>	Leaves and stem bark for herbal bath or as ointment
	<i>Solanum acuelastrum</i>	ripe fruits for herbal bath or as ointment
Edema	<i>Sesamum indica</i>	leaves as poultice, and as infusion.
	<i>Chasmanthera dependens</i>	Leaves as poultice
Boils	<i>Solanum</i>	leaves mixed with ash as poultice,

	<i>lycopersicum</i>	followed by leaves of <i>Oxygonum sinutum</i> (to 'ripen' the pus).
	<i>Solanum acuelasrum</i>	fruit mesocarp as poultice.
	<i>Dioscorea schimperana</i>	leaves as poultice, used with cobweb mesh as plaster. Claimed to be very effective.
Cough	<i>Mangifera indica</i>	fresh stem bark infusion
	<i>Psidium guajava</i>	leaves and immature fruits as infusion.
	<i>Calistemon cacaneus</i>	stem bark decoction.

5. Appendix: 5: NAMES OF PARTICIPANTS, Source of Indigenous Knowledge.

Kateregga Sarah	Namatovu Yurita	Nakyejwe Cotida
Ssamula Francis	Nakirigya Resty	Nzige Mary
Namakula Nive	Ssenyondo Laurence	Nakabugo Joyce
Namuli Leonia	Nandawula Regina	Nakabugo Sauda
Kitiibwa Safina	Nampijja Amet	Nalubowa Aminah
Walugembe Josephine	Kawesi Bernadette	Najjuko Matilda
Namale Fina	Nambi Robina	Nalubega Mary
Kabiswa Alice	*Nakalema Margaret	Bbala Florence
Nakanwagi Pauline	Nsana Charles	Muscoola Lucy
Nakimera Nora	Nansamba Margaret	
Masembe Annete	Namaganda Annet	
Ssemuli Margaret	Lukyamuzi Josephine	
Nakimere Stephania	Bwanika Salongo E. Wafigo Florence.	
Nassamula Josephine	Nabatanzi Giraida	
Namisango Clandia	Nsubuga Marian	
Namwandu Musomesa	Nakamooli Mary	
Namuddu Ludovica	Nansubuga James	
Kiwanuka Mary	Nakalema Priscila	
Nambi Maria Roza.	Nambazire Cate	
Namaganda Rosemary	Kirembeke Nalongo	
Katongole Teo	Magambo Praxeda	
Nalubega Asiat	Namatovu Florence	
Nanyanzi Yueita	Ssebana Berna	
Tibaweswa Robinah	Lukeeya Mary	
Mukibi Desiranta	Lwegaha Filsta	
Kasumba James	Nalubega Kevina	
Ssenkindu Mary		
Kyalubimba Mary	Nambugo Matilda	
Namulindwa Noela	Nalukwago Resty	
Tibulikwa Antonia	Ssempebwa Ben	
Kalule (Mrs)	Kaliisa Dinitria	
Nanteza Teddy	Muyonjo Mary	

6. Appendix 6. Bibliography:

1. Juna C and Ojwang J.B. 1996. In Land We Trust. Initiative Publishers, Nairobi, Kenya.
2. Ministry of Natural Resources, Uganda, 1995, The National Environment Action Plan for Uganda, Ukinzi Enterprises Ltd. , Kampala, Uganda.
3. The Constitution of Uganda, 1995. UGANDA PUBLISHING AND PRINTING CORPORATION, Entebbe, Uganda
4. The National Drug and Policy Statute, 1993. Uganda Publishing And Printing Corporation, Entebbe, Uganda
5. The National Environment Statute, 1995. Uganda Publishing and Printing Corporation, Entebbe, Uganda
6. Tumusimime -Mutebile. Ministry of Finance and Economic Development, Uganda. In: The New Vision Newspaper Printing Press and Publishing Corporation, P.O Box 9815, July, 10, 1998. page 25.
7. Watt, J.M and Breyer-Brandwijk. 1962. The Medicinal and Poisonous Plants of East and Central Africa. E. & S Livingstone Ltd., Edinburgh and London.
8. Wild R.G and Mutebi Jackson, Bwindi Impenetrable Forest, Uganda, In: Natura Resources. The UNESCO Journal On The Environment And Natural Resources Research. Vol. 33, Numbers 3-4, 1997. UNESCO-Parthenon Publishing.
9. Kamatensi, M. 1997. Utilisation of the Medicinal Plant-Nyakabazi (*Rytigyna* spp) in the multiple use zone of Bwindi Impenetrable National Park, Uganda. Unpublished. Msc. dissertation Makerere University, Uganda.