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THE POTENTIAL OF MAKING MARKETS WORK FOR CONSERVATION IN LOW-INCOME RURAL AREAS.

***EXPLORATORY STUDY ON THE MARKETS AND MARKETING OF MEDICINAL AND
AROMATIC PLANTS IN COAST PROVINCE: A LOOK AT POTENTIAL IMPLICATIONS
ON FORESTY CONSERVATION IN ARABUKO-SOKOKE, MALINDI DISTRICT.***



Herbal medicinal plants stall in Majengo Market, Mombasa Town.

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1.0 Purpose of the Study

1.1 Project Purpose and Location

The report is based on the study on the markets and marketing of medicinal and aromatic plants (MAPs) around Arabuko-Sokoke Forest in Malindi District and the potential impacts of the welfare of the residents of the study area. The report is part of the wider FORREMS Project that cover other aspects of MAPs.

1.2 Expected project outputs

The project study is part of a wider study on the conservation and development of medicinal plants for the improvement of the livelihoods of the residents living around the Arabuko-Sokoke Forests. The study was aimed at achieving the following outputs

1. Evaluation on the importance of the herbal plants to the residents living around the Arabuko-Sokoke Forest.
2. Identification of the various players in the herbal medicinal trade in Malindi, Kilifi and Mombasa.
3. Evaluate the potential role of markets on the improvement of the welfare of the residents living around the Arabuko-Sokoke forests who are dependent of the herbal medicine.
4. Recommending the short term and long term interventions that will improve the income from herbal trade in the project area.

1.3 Methodology

The study was done through a stakeholder's workshop for residents living adjacent to Arabuko-Sokoke Forest and herbal product markets survey conducted in the project area and neighbouring towns of Kilifi and Mombasa. The market survey involved some informal interviews with trader's, herbalists and wholesalers who deal with herbal plant parts in the study areas. Some literature search and consultations with various professional in the field of herbal medicines was also done to augment the data collected during the survey.

1.0 Introduction.

The stakeholder's workshop listed a wide range of medicinal and aromatic plants (MAPs) that are commonly used by rural people along the Coast. The MAPs mentioned were mostly derived from leaves, stems, bark, roots and seeds(see Appendix 1 Table 1). The local people have wide knowledge on the range of MAPs and their uses within their villages but few of them were knowledgeable on specialized products for specific diseases. Even fewer ever used their herbal

expertise and products beyond the village level. Two collectors were reported to collect various herbal parts from the Araboko-Sokoke forest for sale elsewhere in the Coastal region. The use of herbal medication in Kenya like elsewhere in the African was admonished by the Colonial administration through legal and administrative orders that systematically limited production and use outside tribal reserves thus shutting them out of the formal sector dominated by the conventional medicines. Traditional healers who are the major dispensers of MAPs were grouped with undesirable actors such as sorcerers, ghost busters and traditional priests among others. However, despite unfavourable conditions traditional healers continued to play an important role in the African societies for centuries. Its low cost and easy availability for use in treating the various diseases affecting a large proportion of the rural population not covered by high cost and limited availability conventional medication services. It has taken many years in the post independence period for herbal medicines and herbalists to be flashed out of the social studies into professional scrutiny in the field of plant and medical science let alone the market analysis. This chain of activities has been as a result of the changing attitudes globally towards traditional foods and remedies that have witnessed steady growth of professional traditional healers that target both rural and urban clients.

The players in the traditional medicine around Arabuko-Sokoke forest in Malindi and neighbouring markets can be classified into several categories.

1.1 Main Players in Herbal Practice and Trade

Malindi District and the coastal region can be classified into three categories: Rural level operators, fixed commercial operators and mobile commercial operators.

1.1.2 Rural Operators

The rural operators form the largest block and operate mostly from their houses or makeshift clinic at an advanced stages. These are men and women mostly residents of the areas their operation who acquired their knowledge through inheritance or learning the skills from older practitioners. The local people mostly seek their services and few extend such services to clients from outside the village. Most of them still adhere to the local traditional ethics and receive traditional tokens mostly in form of chicken, local brew, grains or equivalents and rarely money. Their charges are pecked to successful treatment. Their level of education is low and most are poor by normal village standard. Due to the low remuneration and past association with non-westernized styles have discouraged young educated professional from entering into the activity.

The MAPs used by this group are largely collected from the neighbourhood public and private forests. Their healing skill and knowledge of medicinal plants is largely secretive. Their participation in local market days where they sell their wares is the latest advances of the sector. Unless remuneration improves the sector is fast declining in most parts of the country except in conservative outer back communities where health services are far apart and costly to the masses that are poor. This is because the most skilled practitioners are moving to the towns where remuneration is higher and no new learners are taking up the profession at the village level.

1.1.3 Fixed Commercial Operators

The fixed commercial operators are mostly found in downtown urban areas mostly operating in small stalls or small clinics in groups or individuals on daily routine. Some are registered with social services as traditional healers and usually pay operators license fees to town councils. The members of the group are more innovative and educated or their skills are highly recognized. The group is an advanced form first group. Most still collect the MAPs themselves or use assistants but few have developed some network of trusted suppliers mostly from their home areas. They charge relatively affordable fees depending on the income levels of the clients and ailment. Competition in the sector is on the increase as more entrants enter routinely as the clientele is on the increase with the recent shift to herbal medication by middle and high class Kenyans. The sector is likely to grow faster due to low entry requirement in terms of skill, capital and operational infrastructure.

1.1.4 Circuit Operators

The third group is highly organized commercial operators that operate under brand names or well-known individual practitioners that operate in circuits in the regions, national and even international scale targeting mostly urban centres. Most operate in monthly schedules from their main bases to rented offices cum clinics in the selected urban centres. The leader hire several skilled professionals to operate in the circuits and difficult cases are referred to the Hqts. The leader mostly runs the Hqts and some operators have acquired sophisticated conventional equipments and staffed by qualified health professional. The sector is a multimillion-shilling business that requires high capital and infrastructure (qualified, staff, telecommunication, transport, network of suppliers etc). The sector is almost at the edge of entering conventional medicine in its staffing, standardized medication, diagnostic procedures, patient records, patient follow-ups and clinic standards. The sector spends a lot of money in advertising in the print and

electronic media and the entry conditions are higher for small scale operators and the growth is likely to be modest mostly moving into newer urban centres, emerging diseases and untapped cross-border opportunities. The MAPs used in the sector is from diverse sources through some trusted suppliers and collection by staff in selected parts of the country. The medical charges are similar to those of conventional medical institutions and practitioners to include consulting fees and medication that vary with the disease and medication required.

1.2.0 Institutions and Organization in the sector

1.2.1 Kenya Association of Herbal Medicines

There are various association of traditional herbalists organization under the umbrella of the Kenya Association Herbal Practitioners or the East African Herbal Practitioners Association. These non-governmental organizations represent herbalists in the country and require members to register annually to be recognized as practicing members. It charges fees that range up to Ksh 1000 per member and many rural herbalists and downtown practitioners rarely register due to exorbitant fees. Many claim not to benefit from the fees paid to these organizations.

1.2.2 Kenya Medical Research Institute

1.2.2.1 An Overview

Traditional Medicine and Drug Research Centre is one of the 10 research centres of Kenya Medical Research Institute (KEMRI) whose mission is to contribute to the improving health of Kenyans and beyond through identifying affordable, safe, effective, and quality curative agents against priority disease conditions in Kenya. KEMRI research activities are being done through several interdependent layers to include:

1. Evaluation of Herbal Remedies

KEMRI in collaboration with other institutions such as ICIPE, ILRI, KEFRI Universities etc has evaluated several herbal remedies for various disease conditions. The evaluation of traditional medicines is essential for the following reasons:

- (i) To ensure that they are safe, effective and of acceptable quality
- (ii) Improve documentation
- (iii) Improve standardization
- (iv) To evaluate its relevance to the emerging diseases

2. Drug development

- (i) Pre-clinical evaluation to establish the bioactivity and safety in animal models and standardization and development of quality dosage form
- (ii) Clinical trials to establish efficacy in humans
- (iii) Pilot production of plant drugs for further clinical studies
- (iv) Bulk plant drug production of safe, effective, and affordable herbal remedies and to utilize local resources for country's self-reliance
- (v) Currently potential herbal remedies for malaria, HIV, and OI, mild hypertension etc are being evaluated
- (vi) These herbal remedies are at different stages of development
- (vii) Dissemination of appropriate production technologies and herbal remedies to communities to enhance local solutions to combating diseases.

3. Demystification of herbal remedies through:

- (i) Evaluation of therapeutic significance and socio-cultural importance
- (ii) Collaboration with traditional practitioners (TMPs) and enabling them to come out in the open.
- (iii) Development of atmosphere of understanding and respect between TMPs and conventional health workers.

3. Technological levels in processing

- (i) Ethnomedical evaluation
- (ii) Collection and authentication
- (iii) Cultivation and conservation

KEMRI highlights the challenges of integrating traditional medicine as a key player public health care as follows:

- (i) Mutual understanding between modern and traditional practices.
- (ii) Weak organization of healers to promote ethical TMP and prevent incompetent healers from practicing
- (iii) Clear recognition by government about TMPs role and value for the health system
- (iv) Absence of regulatory mechanisms for traditional health care practices.

Few local operators have knowledge on the important role KEMRI is doing in the herbal sector development and non-reported to have benefited from its various activities. The few that have

heard about its presence have reservation on the list of demand it makes on testing of medicinal plant parts and the high cost charges. In fact most view KEMRI as a competitor more than a facilitator and this may be attested by some of the above activities that may infringe into the intellectual property rights of the traditional practitioners.

1.2.3. Kenya Forestry Research Institute and International Centre for Insect Physiology and Ecology (ICIPE)

Kenya Forestry Research Institute(KEFRI) through Plant for Life Program carried out several inventory surveys on medicinal and wild food plants in some selected districts. . The district covered included Siaya in Nyanza, Kitui in Ukambani and Kajiado for the Maasai and Gede in the coastal area from 1995 to 1999. It documented the types medicinal trees and food trees and parts utilized (leaf, root, bark etc), range of disease conditions treated and conservation by the traditional practitioners. However, no report has been produced yet for unknown reasons. KEFRI lost the lead in the field of herbal and food plants for limited activities took place after the expiry of the project. However, recently KEFRI working in collaboration with other stakeholders have identified several medical and other plants that have the potential for use as aromatics or relaxant purposes. Several products from neem ranging from essential oils, herbal tea, insecticide to herbal soap have been processed, packaged and marketed with support from ICIPE. Similarly, ICIPE in collaboration with KEFR have processed, packed and market mondia tonic a relaxant. There is some work ongoing on development essential oils from Moringa oleifera and soap from aloe being supported by other development agencies in the Coastal area.

1.3 Policy and Regulatory Structures

There is no policy and regulatory framework that cover the sector. Recent World Bank initiative to integrate herbal medicine in the conventional hospital services in the management of AIDS related ailments has suddenly sparked some activity in policy and regulatory development and many promises are coming on new policy and bills. These developments are a welcome and will form the starting block for future development of the herbal sector in the country.

1.4 Research in marketing

There are limited marketing studies on herbal medicines available in any form in the region and not even aware some activity on national scale. The current study may be the only few to have taken place in the coastal regions if not elsewhere in the country.

1.5 Product Development

There is some visible evidence of advancement in herbal product development in the study area. The basic dried plant parts still account for high proportions of the plant forms being traded in the study area. However, some advanced forms found in the market places include powder forms packaged in polybags, sachets or the liquid forms stored in used water or beverage bottles. Except for those developed by ICIPE and imports from Tanzania most of the products found in the coastal region are still in the rudimentary form of plant parts, powder or liquids.

1.6 Market Information Systems

There are some informal market information systems mostly between some group of practitioners and their suppliers.

1.7 Education and Training

There is limited education and training opportunities for herbal practitioners in the coastal areas except for traditional internship where apprentice works with skilled practitioners to acquire the necessary skills. Some practitioners reported that Koranic schools teach lessons on healing plants and those willing to advance their skills in the subject can do so through the various books available on the subject.

2.0 ANALYSIS OF MAIN MARKETING FACTORS

2.1 Introduction

The production, processing and marketing of MAPs in Kenya and in particular herbal plants that is essentially an informal activity of great diversity in players, plants parts, cultural attributes and knowledge. The informal nature and cross-country diversity in use of MAPs influences its market and marketing infrastructure. Trade in MAPs is at infancy stages where there is limited knowledge on collection and collectors, post harvest processing and level of trade. The critical components that characterize market and marketing analysis framework include: Product description, market channels/market chain, promotion, pricing and price regimes.

2.1.0 Product Description

MAPs consist of plant parts of single species or mixture of plant parts from many species. Stakeholders' workshop in Gede indentified 42 plants the have some medicinal values of which 10 were selected for use in market and marketing analysis. However, surveys in Mombasa and Malindi showed that among these more that 15 were widely traded. The plant parts used include bark, roots, tubers and leaves sold in fresh, dry, powder and mixtures. These products are sold

for immediate use by clients in liquid, stick or powder form as prescribed by the herbalist. The plant parts can be used individually or in mixtures done mostly by specialists. The complex mixtures are done secretly by specialist for specific ailments and may contain up to 4 plant parts. The plant parts are preferred because of their chemical contents or magical powers. Some of the chemical and magical attributes are associated with specific sites or general environmental conditions, soils, aridity, rockiness etc.

2.1.1 Processing of Products

The processing of the plant parts starts at harvesting stage where the collector selects specific parts, cleaning off parts that are not needed. Some form of drying of roots, leaves and tubers is done in the homes of the collectors. These parts are bound into bundles for storage or sale. Some plant parts are grinded into powders using simple wooden pestles. Some mixing can be done at collectors home or along the market chain depending on the type of product and skills involved.

2.1.2 Grades, qualities and certification

Most MAPs are traded in the informal markets that are not subject to Pharmaceutical, Drugs and Poisons Act though some have trademarks claiming to heal some ailments with measurable degree. The trade in MAPs is thus not subject to known standardization, grading and certification. These processes are done informally through use of traditional skills mostly acquired through many years in the trade. Some general rules may exist such as collection of the parts in the wild or some specific sites for reasons of potency or magical powers.



Photo 1: Range of herbal and magical products on display in a street in Mombasa in different forms and measures. Held above are a complete prescription bundle of various parts.

2.1.4 Packaging

Most of the traded plant parts are packaged in plastic bags, used bottles, used newspapers and many other cheap packaging materials depending on the product types and quantities. Small quantities are wrapped in plastic bags whereas large quantities are packed in cartons, bags or large plastic papers. Liquid products are packed in used bottles, plastic jerry can of various sizes mostly 1 to 5 litres. However, some products from neighbouring Tanzania that have entered into the local market are packed in fancy materials comparable to those used in confectionary and coffee industry. The packaging materials often have brand name, preparation procedures, dosage and range of ailments that it can treat printed on its outside cover or some instruction that contain same information is inserted in the packaging materials. Few local practitioners based in Mombasa, Kilifi and Malindi have not adopted modern packaging materials beyond small plastic sachets tied by hand or paper stapler or at best electric lathe. However, one practitioner who has some engineering background prepared some tablets of favourite drugs that contain the active

ingredients, preservatives, flavouring materials and sugar coating. The active ingredients for most herbal products are very bitter and hence the need to ameliorate the severity to encourage wide use by clients.

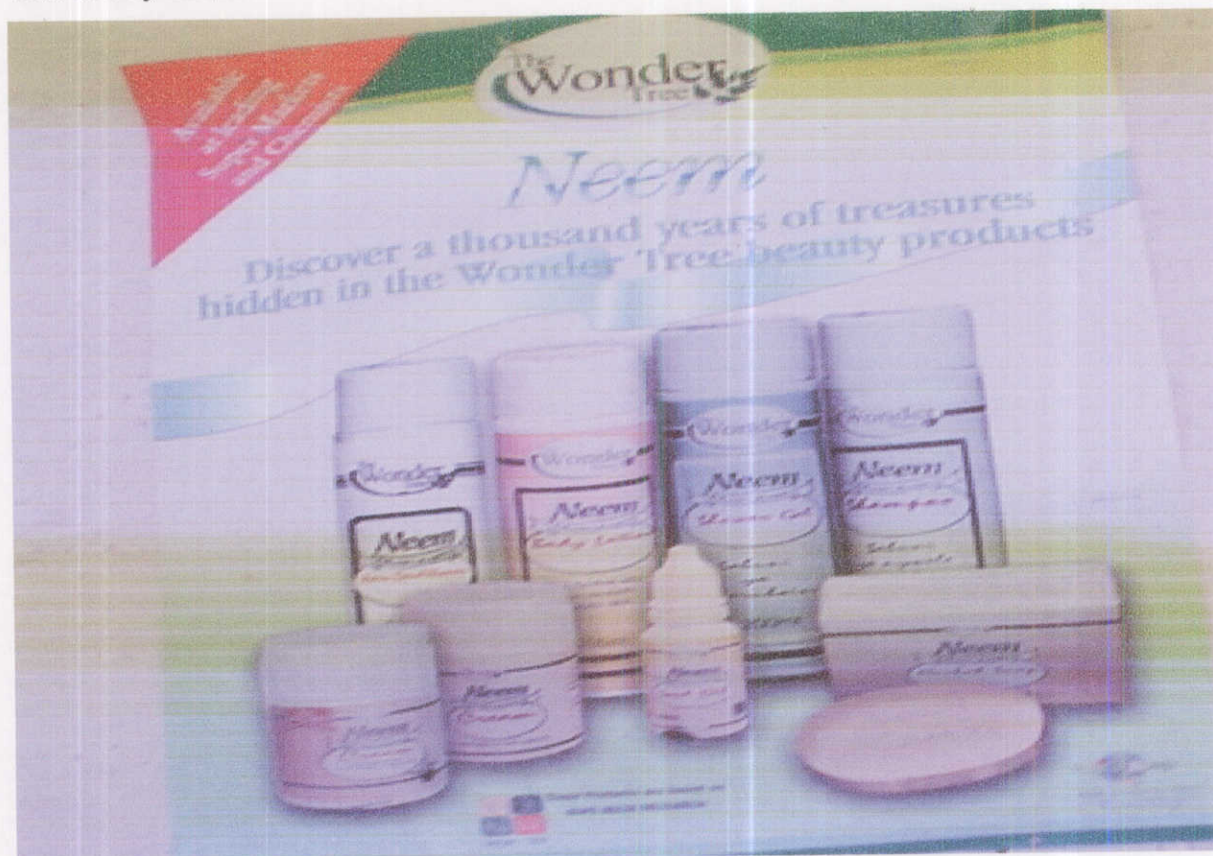


Photo 2: Some range of herbal products from neem tree produced and promoted by ICIPE available over the counter in chemists and super markets in Mombasa.

2.2.0 Distribution Channels

2.2.1 Introduction

Medicinal plants are collected and distributed from a wide range of places and routes to the collection points, wholesaling and retailing outlets. Wholesaling and retailing outlets are found in Mombasa mostly in Majengo, Mwembe Tayari and Marikiti. The businesses are conducted in pavements of specific streets or line of stall inside the markets. The operators are either concentrated in a particular market outlet or disbursed in specific individual spots. The business location rationale is based on the likelihood of coming into contact with as many clients as possible thus enhancing their chances of making some sales. Most of the traders cum practitioners are thus located in market places or next to markets and transport networks. The

deliveries follow established road networks between collection points and rural areas where collection and assembly take place. There is strong relationship between the practitioners and products place of origin and thus the routes the products follow. The product routes follow same pattern of the rural urban migration and common trade routes for other products.

2.2.1 Marketing channels

2.2.2 The collectors and village practitioners

Most of the local practitioners reported to collect the products themselves or sent one of them to do collection for a group of traders or use their established contacts or hire some collectors in their rural homes. The traders cum practitioners know the sources of each of the products they use and how to access new supplies with ease and in time. Most of them reported to have no problem in getting most of the supplies they need for their business at the moment given the low level of business. Most practitioners have some skilled contacts in the rural areas that can be given orders on specific or combination of products to replenish their stock with some regularity depending on the level of activities at their businesses. The orders messages are relayed to their suppliers through contacts verbally or by letter mostly through travelers and in few cases phones. Most of the rural traditional herbalists collect the products and use them directly to treat patients in their homes and thus don't enter into the market chain.

2.2.3 Transfers merchants

According the stakeholders meeting for herbalists adjacent to Arabuko-Sokoke there are two people that have letters from Forest Department to collect medicinal plants from Arabuko-Sokoke forest. They are reported to collect herbs themselves or hire some assistants depending on the bulk of the products demanded and scarcity or secretiveness of the activity. After minimal processing the plant parts are transported mainly to Mombasa the main market for herbal product in the coastal region. The common transport mode is the passenger vehicles mostly buses and minibuses. The collected materials are transported in various types of containers ranging from carton boxes, sisal bags and poly bags depending on the volume of the product to be moved. The unit measure normal is the 50 kg bag or fractions for most products parts such as leaves, twigs roots and bark either in combination of the parts and species. The deliveries are done directly to the practitioners or through some few wholesalers or retailers in the urban centres.

2.2.4. The wholesalers and Retailers

2.2.4.1 Local herbal wholesalers and retailers

Those traders that deal largely on local coastal herbal products in Mombasa are located inside Majengo market and pavements opposite Mwembe Tayari market. Most of the traders in Majengo and Mwembe Tayari were the Digos and Giriama from Kwale and Kilifi districts respectively. The traders in Majengo were mostly from Kwale sourced their product from Kwale District through their informal networks and leaders at the market.



Photo 3: Wholesalers and retailers of herbal parts in Majengo Market Mombasa displaying various herbal products on sale to retailers, herbalists and consumers

Similarly, those from Kilifi received most of their materials from Kilifi District. The products are delivered in 50 and 100kgs sacks with price tag of Ksh 200 to 1600 per bag depending on the constituent plant parts or level of trade. Most of the traders learned the trade through their parents or other practitioners. They were well conversed with the various tree plant parts and the type and range of ailments they can treat. Most clients express their ailments to the traders who

quickly conclude on the type of disease and prescribe the type of herbs and dosage. In most cases the products prescribed are to be found on the shelf. Depending on the quantity of materials each trader occupied between one and three stalls.



Photo 4: Herbal and magical products on display along street pavement opposite Mwembe Tayari Market Mombasa note the product and powder derived from stacked together.

There were three other traders that displayed their wares individually on busy street pavements in Mombasa such as one outside Mombasa Municipal Health Centre. They are from upcountry and retail upcountry products. The products were either their own formulations or those of other known producers such as Kamerithu Herbal Clinic or those based in neem products recently introduced by ICIPE.



Photo 5: Street trader displaying products from own formulations and those purchased from other suppliers.

The traders found in Marikiti were Bajunis whose wares were mostly imported and readily available in the spice shops except for few products that were reported to come from Garissa and other Somali dominated areas of northern Kenya and the coastal strip areas such as Malindi, Lamu and Pate Island. Most of the products traded have been used by the Muslims for centuries and are well known to them. Their wares were located on one street opposite the main market a long textile shops mostly dominated by Somalis and Indians. The products on display were mostly sourced from Garissa or imported from India.



Photo 6: Several herbal and health food products sold by Somali and Bajuni street traders opposite Marikiti, Market, Mombasa.

A Tanzania herbalist with a warehouse cum clinic located in downtown behind Mwembe Tayari market and other clinics in Jomvu and Nairobi. He had in store some herbs produced in branded labels, own pictures, prescriptions and other in information. The store acts a clinic, retail and well distribution point for the range of products formulated by the practitioner. These products were being retailed in Mambasa and Malindi among many other destinations. There are range of other branded herbal products from Tanzania being sold in the coastal regions and elsewhere in the country.

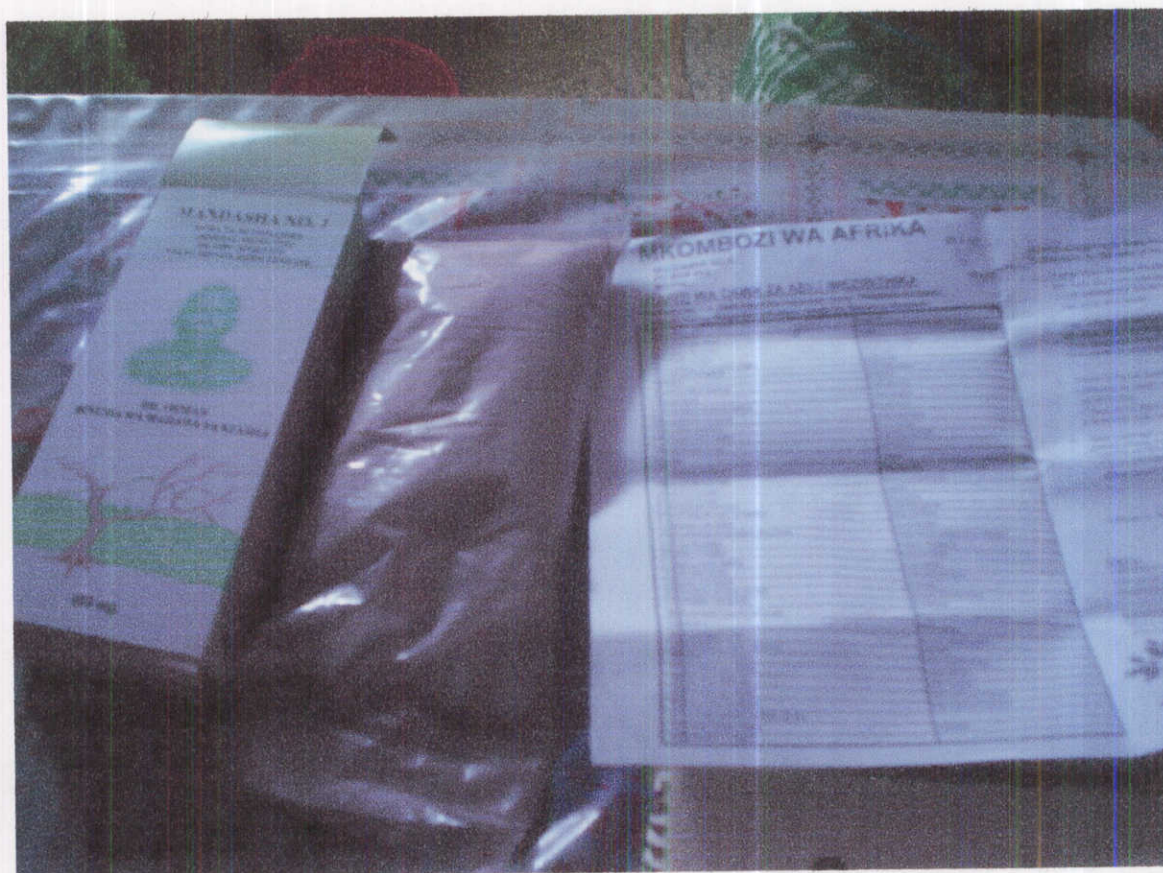


Photo 7: A sample of a branded herbal product from Tanzanian separated into the packaging material, herbal product, prescription and list of diseases it can cure.

2.2.4.2. Imported Herbal wholesalers and retailers

During the survey several outlets of herbal products were identified in Mombasa and three in Malindi that perform some small scale wholesaling and retail business. In Mombasa herbal products markets are located in Majengo, Mwembe Tayari and Marikiti markets. Most of the wholesalers in Mombasa and Malindi deal with exotic and local spices as the major product accounting for over 98% of the stock volume whereas herbal products form a fraction of their activity. Most of the herbal products stocked in these outlets are largely imported mostly from India and Arabian Peninsula hence is a product of historical interactive trade between these regions and the coastal towns. Some herbal products from Tanzania are stocked by wholesalers in most towns along the coast as compared to local products from the coast region and upcountry. Most wholesalers dealing in spices and herbal products in Mombasa and Malindi are of Arabic and Indian extraction.



Photo 8: Stock of imported branded herbal products on display in a grocer and spice shop in Malindi Town.

3.0 The Traders and Clients

There were 20 traders in Majengo, 5 in Mwembe Tayari and 3 in Marikiti who were carrying out some wholesale and retail trade in herbal plants. Those in Majengo had a market chairperson who also owned a stall in the market. The duty of the chairperson is to sort out problems facing the traders mostly related to material supplies and trading conditions. Most traders in Majengo and Mwembe Tayari apart from direct sales to consumers also sold to pavement retailers. The buyers of the product were individuals and in few cases pavement traders. The individual clients must explain their ailments or disease if known to the traders cum healers to enable them identify the herbs for use and some accompanying instructions on how to prepare, dosage and days for complete treatments. Most of the clients were mostly individuals with some ailment problem that could not be treated in hospitals and some were firm believers of curative and majestic values of traditional herbs that is reported to have strong support among the coastal communities.

3.1 Product quantity

Most wholesalers stocked small quantities of a wide range of herbal products in their shops in small paper bags whereas very few had some products displayed in 50 kg bags. The reason being that the sales are usually in few grams due to high prices and as well as low-income buyers mostly small scale herbalists and individual users. Major wholesalers in Mombasa hold some stocks in stores or houses for replenishing their stocks.

The local stockists at Majengo and Mwembe Tayari reported to store surplus stock in their houses ranging between half to two sacks but most of them usually have a large box or half sack of the products beside those on display for replenishments. Most traders display most on their materials on the mats or stalls that can range up to 30 different plant parts mostly roots, bark, stems, powder and liquids. The wares can range from few up to 50 in form of pieces, stacks, bundles, sachets or containers.

Most stockists of local herbal products reported to use between half a sack to several sacks of mixed herbal parts per month depending on the season and popularity of the herbalist.



Photo 9: A bundle of root parts on sale in a market stall in Majengo Market, Mombasa.

3.3 Product suppliers

The wholesalers mostly import or purchase herbal product ready for use or saleable formulations mostly in powdered forms, dried leaves, small size twigs or standard bottles for liquids. Few formulate and repackage herbal products except for practitioners cum distributors who as well formulate and distribute own products for wider use.

The suppliers for local herbal products range from employees, apprentices, colleagues or network of general suppliers. Most traders reported to collect some own supplies from some specific or range of places mostly in their traditional home areas. Some use their apprentices or trained employees to collect and process desired plants parts. Some traders cum practitioners in Majengo market as well supply products to other traders and have to travel to supply areas frequently to organize for collection and delivery. The trips may last between, 3-7 days and up to four bags are delivered in each trip. Most traders source their products from their rural home areas and thus have some elaborate networks and information on some skilled collectors or herbalists who can deliver products on order. The products are transported using normal passenger and goods transport networks. One trader who hails from Kirinyaga District uses a bus to transport the herbal products collected by two employees on schedule times. The orders are communicated through fixed or mobile phones and payments through bus couriers that deliver the consignments. The suppliers are instructed on the priority stock needed and quantity and delivery periods for action. There is an elaborate network for delivery and payments through travelers and bus courier companies.

3.4 Healing services

Most of the wholesalers of imported and local products have some booklets detailing the range of the products on sale and their curative or other services for reference as most of them deal largely on cereals, grains and spices among many other products. The products on sale by both wholesalers and local herbalists are reported to treat a wide range of diseases singly or in combinations of many different products depending on the complexity of the disease. The type of diseases cited range from asthma, TB, high blood pressure, severe abdominal pains, sexually transmitted diseases, infertility conditions, irregular menstrual cycles, skin ailments, nerve disorders, baldness etc. One herbalist retail a branded herbal product that is claimed to treat 43 diseases ranging from diabetes, heart, breast cancer, mental compulsion to typhoid and incredible

potency (See annex1). A Vipee importer of spices and medicinal herbs lists about 62 herbal products that treat specific or related diseases. Herbalists and other traditional practitioners justify the claims that one drug can treat a wide range of diseases on the grounds that most of the diseases are interrelated. They claim that diseases affecting one organ may cause other chain of ailments in organs or other parts of the body and when treated reverses through the chain. Herbalists also offered some unique services to clients such as such generation of wealth, maintaining marriage and keeping away evil spirits.

3.5 Income levels

Except for wholesalers in Mombasa and Malindi that herbal parts sales was a minor component of their business, most traders who were dependent on herbal parts were within the low-income brackets of the general population and earn enough to barely survive in the town and be able to purchase stock. Most traders earned between Ksh100-500 per day thus translating to between 3000-15,000 per month. This is because most of their clients are those persons who are unable to pay for the conventional medical services. The fees charge is usually low to enable them to attract more clients and most of the African traders are still held by the traditional belief of treating patients as their calling and financial benefits is secondary. Most cited their mentor's message when handing over the healing powers and plants that cautioned to treat those who have and those that don't have to enhance their healing powers failure to which the healing powers past on to them may cease. Most expect the patients to reward them once treated or introduce them to new clients and thus greater business opportunities. Some report to have received good token money from patients who were cured of diseases or other problems that conventional doctors could not despite enormous hospital costs. Most especially rural based herbalist blame their inability to generate high income to meet their obligation on high poverty and defaulting rate among their clients despite high cost of purchase of herbs and other facilities.

However, some few shrewd traders make some substantial amount of money from the trade up to 1000-2500 profits per day that translates to 30,000-75,000 per month.

The diversity of the income of the players in the herbal sector is wide ranging from rich urban based operators who have well known reputation thus attracting a wider clientele from all walks of life mostly the rich. At the higher income range are practitioners who have vast properties and fancy offices employing some qualified technical staff, through those that have few well staked

clinic to pavement traders who make sufficient incomes to cover their upkeep cost with little to spare.

3.8 The Rural and Urban traditional practitioners

There were two types of practicing herbalists in the study areas. There are rural herbalists who operate their business in their homes as part time to mostly farming activities. Most of them posses some skill in treating few specific diseases common in the village and beyond using use single or combinations of local tree products. The group is least visible and their skills rarely appreciated beyond the village. Most of the clients are relatives or people known to them and rarely do they charge fees and where payment is done it is more often in kind mostly local agricultural products, chicken or goats and in rare cases some few shillings. They rarely stock herbs but collect on demand for immediate use in treatment.



Photo 10: Rural home based herbalist in Marereni Market, Malindi-Garsen road.

3.9 Rural Trading Centre Clinics

The second group is those to be found in small rural trading centres who operate in hired or own mud or brick walled clinics. This group earn some modest incomes and may have 5-10 clients per day and have some wide range of dry powder, twigs, leaves and liquid herbal formulation in store for use in treatment. Some stock imported oriental herbal products purchased from Mombasa or Malindi stockists. Some herbalists have built their names through their treatment successes and attract wider clientele through their healing reputation as one in Marereni trading centre in Malindi District that apart from the local clients also receive clients from other parts of the country.



Photo 11: Market Herbalist, Marereni Market, Malindi-Garsen road.

4.1 Fixed and Mobile Clinics

The third group includes urban fixed and mobile practitioners who have small clinics in downtown areas or some hotels. The distribution of practicing herbalists highly correlate with the population density, there are several herbalists in Mombasa whereas Malindi have less than 5

and Kilifi non. Some only operate one clinic whereas others have more than one clinic in where they visit to attend to patients on specific days. The mode of operation the downtown herbalists are similar to those to be found in rural trading centres.

4.2 Modern Herbal Clinics

The fourth group are very few operators that have large modern clinics equipped with advanced diagnostic and herbal formulations. Their mode of operation is similar to those of conventional clinics. They keep registers of patients, treatments, follow up dates and revisits. Most formulate their herbal medicines in simple or advanced tablet forms and deal with well labeled and branded products that offer over the counter sale services.

In Mombasa, two fixed herbal clinics were visited, one was located in the town centre in expansive office well equipped office with conventional laboratory and trained laboratory technologist for diagnostic procedures. It stocked well-packaged and labeled Chinese, Indian and Tanzanian herbal products. The practitioners reported to stock and prescribe products of proven efficacy through research and as well affordability. Local coastal herbal products were not stocked because the owners claims that they don't meet the strict quality standards for the type of clients they deal with and as well most are very expensive despite limited scientifically proven efficacy.

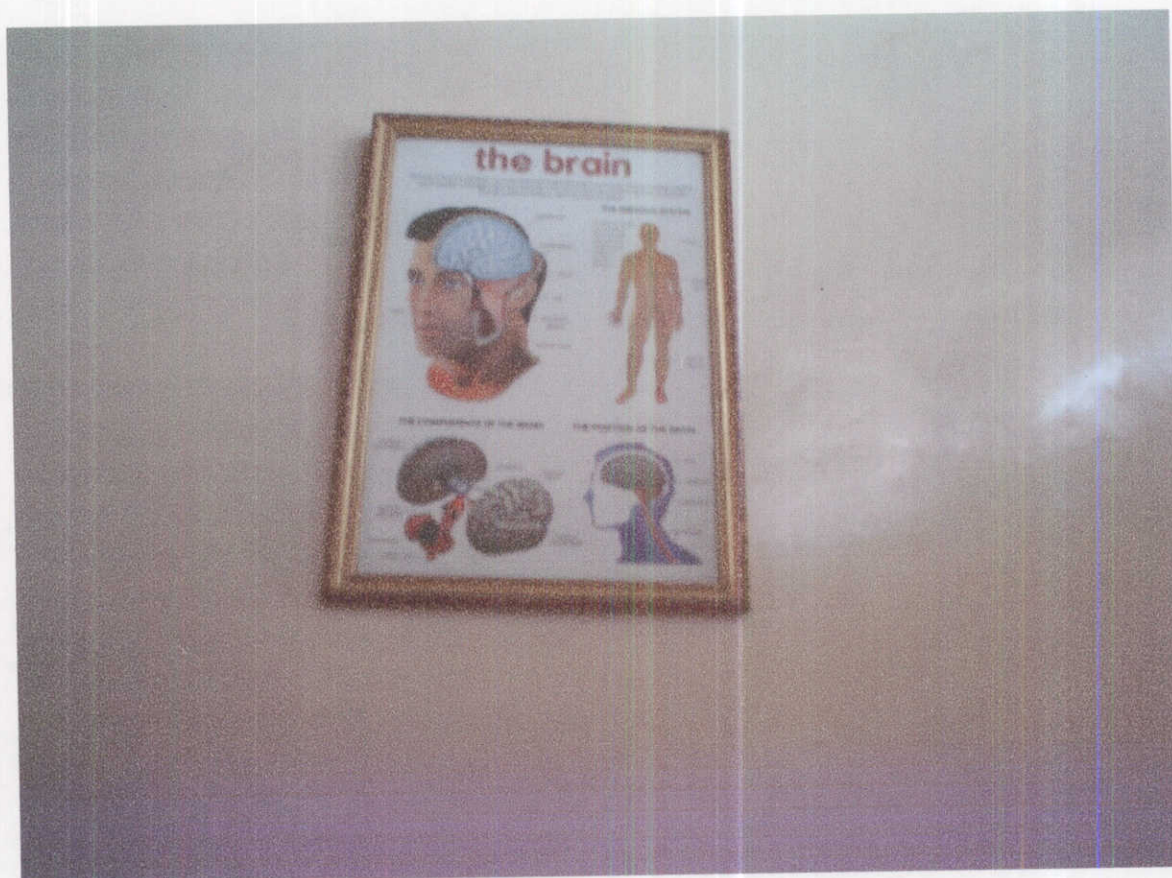


Photo 12: Some diagnostic guide on human organs and body parts on the wall of a modern herbalic clinic in Mombasa.

The second clinic in the downtown is located in some hidden small house type building behind Mwembe Tayari Market. A Tanzanian herbalist operates it and stocks mostly branded Tanzanian herbs. The brand bear the name of the practitioner and instruction notes on how to use and range of diseases it can treat inserted in the packet. The herbs are mostly in powders form. The clinic is staffed with some salesperson that was conversant with diagnosis of common diseases and herbal prescriptions.

The surveyed wholesalers, small-scale traders and herbalists operated as traders and practitioners as well. Most of them have vast knowledge on the range of products, the types of diseases that it can treat and dosages. Most do marketing services of herbal products and as well treatment services to their clients.

4.2.1 The clients

The street herbalists and downtown clinics prescribe array of herbal medicines rarely packaged and possess no scientifically tested efficacy. However, the modern semi-conventional high cost clinic located in the town centre are more likely to be patronized by high class clients as compared to downtown clinics or street herbalists.

4.2.2 Healing services

The range of diseases treated in the clinics are similar to those offered by street and stall based herbalists except for the magical services. Some clinics use conventional diagnostic procedures to identify the causal agents and hence prescription of known herbal products to counter the agents. One clinic had some conventional posters of human body organs, blood systems and range of common disease symptoms on the walls. The developments are signals of the emerging modernization trends in the herbal medicine sector in the coastal region

4.2.3 Product quantity

The products offered in clinics are of wide range but far much less as those of wholesalers and street herbalists. The products are usually transformed forms as compared to the original forms leaves, twigs, roots, powder or liquid forms stocked by downtown clinics for immediate use. These clinics stock medium quantities packed in sachets of various weights ranging from few up to 500 grams inside well-labeled fancy outer packets. Some may be stored in larger measures for reweighing into smaller sachets for client use. The products are stored in clean counters or small stores within the clinics. They stock products sufficient for their client base and thus will vary from practitioner to practitioner.

4.2.4 Product suppliers

Most traditional practitioners in the trading centres and downtown clinics rely on network of suppliers for they are busy all the time in their clinic offering services to venture into collection of the herbal materials from the bush. However, many reported to go searching for herbal product frequently mostly from their rural home areas.

Most town centre clinics rely on imported herbal products mostly distributed by firms in Mombasa and Nairobi or own elaborate collection, processing, and distribution networks. These firms dispatch products by courier or other transport means clinic in Mombasa. Those from Tanzania are delivered mostly by road transport to some appointed distributors in Mombasa. This is a well-organized supply system similar to that of conventional drugs.



Photo 13: Imported herbal products on display in a modern clinic in Mombasa.

4.2.5 Income levels.

The downtown clinic can fall into the medium income businesses that apart from the herbalists have two to three employees and some decent flat that house the clinic. The modern clinic are expensive enterprises that can only be operated by rich practitioners that can afford to hire a receptionist cum record keeper, trained laboratory technologists, imported herbal products, rent for spacious town centre offices and equipped with expensive furniture and telecommunication facilities.

5.0 Market Channels

5.1 Introduction

The herbal products that are traded in the study the coastal regional follow different routes to its major consumption centres mostly in Mombasa reflecting the diversity of the products by origin and knowledge on its use. The delivery routes follow established transport networks connecting the urban centres and rural areas. Most of the products loose viability after some time that vary

from product to product and have to be moved and stored for short periods before consumption. The trade in oriental herbs and recent entry by Tanzanian herbs has widened the distribution networks and range of customers.

5.2 Delivery routes

From the survey, it emerged that there were three distinct routes that herbal products traded in Mombasa are delivered. The popular route for the Digo herbalists who source their supplies from Kwale District is through the Mariakani hinterland that connects the Mombasa - Nairobi highway. The Giriama, Bajuni and other minor herbal products traders and stockists receive their supplies through Mombasa-Lamu route from diverse sources that range from the Arabuko-Sokoke forest and hinterland farms in Kilifi, Malindi and few from Lamu, Garissa, Tana River and Pate Island.

The third route is that for products imported into the region mostly from Asia through importers based in Mombasa and Nairobi that are subsequently distributed using existing transport networks to wholesalers in Mombasa. The mombasa wholesalers act as the point of distribution for imported herbal products for major stockist and herbalists in the coastal areas including Malindi.

5.3 Distribution Pattern

The local traded herbal materials from rural areas flow using existing road networks to assembling traders in major and minor trading centres such as Malindi, Kilifi and Mombasa. The assembling traders cum herbalists at the trading centres and urban markets whose main core business is to provide health services directly to their clients and as well act as suppliers to smaller street and pavement retailers cum herbalists. The trading centres and urban wholesalers/retailers act as the distribution centres for herbal products that grow within specific areas of the coastal belt and outside. The distribution networks follow similar road networks as passengers and other goods flowing in small quantities from various points concentrating in the highly populated and high consumption centres in the main towns.

Imported products flow in the opposite direction to those for the local products through wholesaling and retailing outlets to the modern clinics, herbalists in small rural trading centres or practitioners in the downtown streets.

5.4 Storage facilities

Except for wholesaling and retailing enterprises that have stores, most collectors and practitioners store the herbs in their houses and makeshift structures for limited periods.

5.5 Pricing and prices

Pricing and prices for herbal products is very secretive exercise and those available varies because of lack of uniform standard measure, diversity in products and sources of the products. However, imported products have some standardized pricing procedures usually based on weights, processing levels and potency,

6.0 ROBLEMS AND OPPORTUNITIES IN HERBAL TRADE IN THE COAST

6.1 Problems

The type of problems in the herbal medicine trade varies according to the level of the players in focus that range from collector/suppliers, merchants and practitioner level.

6.1.1 Collector/Supplier Problems

The collector/supplier problems include the following:

- ❖ Destructive harvesting techniques
- ❖ Wide distribution of products to be collected and may involve a lot of travels to get sufficient stock.
- ❖ Lack of control and sometimes access to trees and shrubs as these herbal products are found on communal, private and public lands.
- ❖ Scattered and disorganized collectors that are dependent on the level of activities of the traders and other downstream players.
- ❖ Lack of motivation to practice resource conservation and sustainable production techniques because of the low value placed on the herbal products.
- ❖ Income to rural landowners and collectors is minimal because of limited processing and market participation.

6.1.2 Transfer merchant problems

The transfer merchant problems include the following:

- ❖ Limited alternative market opportunities due to reliance on limited traditional markets outlets.
- ❖ Unfriendly regulatory frameworks that offer least protection and trading environment to transfer merchants.
- ❖ Limited finances hinder their ability to efficiently move desired quantity of products for wider clients and sufficient own storage facilities in the towns.

6.1.3 Downtown traders and herbalists

The downtown traders and herbalists face some the following problems:

- ❖ Lack of regulatory framework to protect genuine practitioners from quacks;
- ❖ Limited product development and innovations to add value to the herbal products;

- ❖ Lack of specialization and differentiation to minimize competition from increasing number of new entrants.
- ❖ Inadequate finance for product development and investment in modern processing and marketing techniques.
- ❖ Lack of scientific approach to product development procedure, dependence on trial and error.
- ❖ Lack of product standardization in formulation and instructive use.
- ❖ Short shelf life of most of the herbal products thus affecting the quality and some have to be discarded after some short periods.

6.2 Opportunities in trade in Herbal products

There are several opportunities for development of herbal trade and practice in the region including the following:

- High and increasing demand for natural product remedies globally a phenomenon that is likely to trickle to Kenya and coastal region in particular which have a large client base of traditional remedial adherents;
- Highly skilled and experienced pool of traditional expertise in herbal and traditional medication techniques across the ages and education levels.
- Some wide claim on successes in treatment of some complex diseases and ailments where the conventional practitioners have failed.
- Diversity in plant species with known herbal and aromatic attributes.
- Existing pool of information on the herbal plants with medicinal attributes already documented and those yet to be documented.
- Recent government goodwill as reflected by the proposed policy and bills by the Ministry of Health and other stakeholders.
- The proposed funding of integration of herbal medicine with conventional treatments in hospitals in the fight against AIDS by World Bank.

7.0 RECCOMENDATIONS

7.1 Producers and Suppliers

The following are some of the activities that both collectors and suppliers of herbal products need to undertake to improve their incomes and clientele base:

1. Embrace selective and advance processing technologies, testing, packaging and standardization of measures.
2. Invest in elaborate storage facilities, distribution networks and more outlets.
3. Investment in product development including product testing, branding, labeling and user-friendly instructions.
4. Form some producer associations to pool their expertise, resources, supervisory and enhance their price bargains.

7.2 Fixed Traders and Herbalists

1. Further value adding, mixing, branding, packaging and labeling of special products.
2. Specialization in distribution or consultation/treatment as a business to enable professional development.

3. Investment in good warehousing or outlet facilities to attractive wider clientele
4. Herbalists to endeavor in specialization in some few diseases as most of them are general practitioners to reduce competition and develop the skill and medication.
5. Brand own innovations and link up with traders and other distributors to access more markets.
6. Embrace technology in product development and dispensation to attract wider clientele.

7.3 The Long-term Impacts on Biodiversity and Forest Resources

The following observation were made during the study:

1. The level of harvesting in the Arabuko-Sokoke forest area and surrounding farms is still relatively low due to low demand for herbal products and wider collection points.
2. On comparative basis there is abundant variety of herbs in the study region and surprisingly those from Asia that Kenyan market form a small fraction of wider global market are widely available even from some arid countries such as Saudi Arabia.
3. There is some need to monitor the exploitation of local tree and shrubs that are popular for herbal purposes in order to develop some resource degradation indicators for policy decision-making.
4. The most popular medicinal trees such as neem can be propagated for wider planting as commercial tree crops.
5. There is limited threat to biodiversity and forestry resources at currently levels of off-take in the Arabuko-Sokoke and surrounding farms.

7.4 Immediate Recommendation for Arabuko-Sokoke Forest Area.

1. Identification of herbal expertise in the region and narrow on some few success cases that have greater potential to attract wider acceptance and clientele.
2. Strengthen the identified collectors cum herbalist through participatory support needs assessment in the areas of harvesting, processing, product development, packaging and promotion as case models.
3. Strengthen local practitioners and promote their innovations through associations for purposes of bargaining leverage, skill improvement and promotion of self-regulatory mechanism.
4. Develop some participatory skill improvement among the selected groups.
5. Participatory herbal resource surveys to be undertaken in both Arabuko-Sokoke forest and neighbouring farms to establish the status of herbal plants in the target areas.
6. Based on the resource survey, the herbalists and Forest Department should work out some modalities to enable some regular and sustainable harvesting of some herbal plants in the Arabuko-Sokoke forest.
7. Facilitate some popular herbal products to undergo some scientific testing and approval based on existing guidelines through KEMRI or Government Chemist.
8. Link collectors to major buyers and distributors of herbal products in Malindi Mombasa and elsewhere in the region.
9. The project staff and some practitioners are advised to visit Moshi Tanzania where some branded herbal products widely traded in the coastal region and other parts of the country originate for some hands on experience where possible.

Appendix1: Table 1: The important Herbal Tree Products traded or used by herbalists and traders in Malindi and Mombasa.

Product in local name	Species	Plant parts	Number of traders
1. Mjafari	Xanthoxylum holtziana	Bark, roots, leaves	8
2. Mwangajeni			7
3. Mkipa			5
4. Mtanga	Elaeodendron	stem	5

	buchanannii		
5. Mbarawa	Xylopia parviflora	Roots	4
6. Mpingo	Dalbergia melaxylon	Root	3
7. Mudungu	Xanthoxylum chaleabium	Root, leaves, bark	3
8. Mdaa(Mukipa)	Neuclea natalensis	bark	3
9. Mhirihiri			3
10. Mubonokoma	-	Roots	2
11. Munwamazi	Ampellossisus africana	tubers	2
12. Mutundukula	Ximenia americana	Roots	2
13. Mzaro	-		2
14. Mukuro	Hugonia casteneifolia	Roots	2
15. Mnukandenge	Euphobia ssp	stems	2
16. Mkayukayu	Ozoroa obova	Roots	2
17. Mkasiri	Pyllanthus reticulata	Leaves	2
18. Mbulushi			2
19. Muhuba			2
20. Jeni			2
21. Mliwa	Mkilua fragrantis	Wood	2
22. Munga			2
23. Mwange			2
24. Mporojo	Albezia anthelmentica	bark	2
25. Mwarobaini		Roots, bark leaves	2
26. Mnukauvundo		roots	1
27. Mwangajini	Polyalthia schumanii	roots	1
28. Muyama	Croton Pseudopulchellus	Roots, leaves	1
29. Muvuma	Premina clasoclada	Roots, leaves	1
30. Kadudumuko	-	Leaves	1
31. Mtsemeri	Acacia nilotica	Bark, roots	1
32. Mdoye	-	Roots	1
33. Mkoko	Rhizophorus, mucrunata	Leaves	1
34. Honey	Honey	Liquid	
35. Mbono			1
36. Mgera			1