

Ethnobotanical Survey of Medicinal Plants and Practices of Traditional Healers in North Pemba Region of Zanzibar: Implications for Sustainable Use and Conservation

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Citation: Khamis Rashid Kheir, Mayassa Salum Ally, Farid Mzee Mpatani, Ussi Makame Kombo, Hassan Buda Juma, Moh'd Mshenga Matano, Sauda Rashid Ismail, Khadija Ali Khamis, Ame Masemo Ame, Rashid George Rashid, Kombo Moh'd Kombo, Thani Ame Ali, Mwanaidi Yahya Kafuye, Ali Mohamed Ali, Bilali Badrudin Khamis, Salum Ali Ahmada, Bariki Salum Juma (2025). Ethnobotanical Survey of Medicinal Plants and Practices of Traditional Healers in North Pemba Region of Zanzibar: Implications for Sustainable Use and Conservation. *Acta Botanica Plantae*. <https://doi.org/10.51470/ABP.2025.04.03.78>

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Received 22 August 2025 | Revised 19 September 2025 | Accepted 18 October 2025 | Available Online 13 November 2025

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ABSTRACT

Ethnobotanical surveys of medicinal plants are essential for documenting both existing and endangered species, as well as for identifying their therapeutic uses. Currently, documented information and practical knowledge of traditional healers regarding medicinal plants found in North Pemba that can be utilized for therapeutic purposes are scarce. The objective of the current study is to identify medicinal plants obtained from North Pemba for implications of sustainable use and conservation. The survey method used was semi-structured interviews, free listing, and guided field walks with 182 traditional healers and herbal practitioners across 23 Shehias (wards). The survey documented 96 medicinal plant species across 47 families, with Euphorbiaceae, Lamiaceae, Rubiaceae, and Asteraceae being the most common. Frequently cited species such as *Erythrina abyssinica* and *Guilandina bonduc* were mainly used to treat fevers, digestive, reproductive, and respiratory conditions. Decoction and oral administration were the primary methods of traditional preparation and use. Most plants (65.9%) were harvested from the wild—often from sensitive areas like Ngezi Forest Reserve—with leaves and roots most commonly collected. Overharvesting and climate variability were each reported by 38% of practitioners as major causes of declining plant availability. Nearly all healers (92.3%) practiced without formal registration but expressed strong support for government recognition and regulation. Although most plant trade was local, several high-demand species were marketed beyond the region. The study shows that local medicinal plant use closely reflects community disease patterns, underscoring the clinical value of traditional knowledge and its potential role in modern healthcare. It also reveals serious risks from biodiversity loss and diminishing ethnomedicinal knowledge. To address these challenges, the study recommends cultivating high-demand species, regulating wild harvesting, protecting key habitats, and formally integrating traditional healers into Zanzibar's health system through registration and training to ensure sustainability, ecological conservation, and cultural preservation.

Keywords: Medicinal plants, Traditional medicine, Traditional healers, Conservation, and Community.

1. Introduction

Medicinal plants constitute a fundamental component of primary healthcare for millions of people worldwide, particularly in regions where biomedical services are limited or culturally less preferred [1, 2]. According to the World Health Organization, up to 80% of the population in developing countries relies on plant-based traditional medicine for basic healthcare needs [1]. In East Africa, traditional healing systems play a especially central role due to their accessibility, affordability, deep cultural roots, and perceived efficacy in managing both common and chronic ailments [3, 4].

Zanzibar, an archipelago located in Tanzania, has a rich history of traditional medicine influenced by African, Arab, and Swahili cultural traditions [5, 6]. Traditional healers known locally as *waganga wa kienyeji* or *watabibu* remain integral to community health structures, particularly in rural areas where formal health services may be insufficient [7, 8].

Despite its cultural importance, traditional medical knowledge in Zanzibar faces increasing threats from environmental degradation, changing socio-economic dynamics, and inadequate documentation [8, 9].

North Pemba, the northern region of Pemba Island, is particularly rich in plant diversity owing to its tropical forests, coral rag zones, and coastal ecosystems [5, 10]. Its communities possess extensive knowledge of medicinal plants used to treat a wide range of ailments including fevers, gastrointestinal disorders, reproductive health problems, and respiratory conditions [7, 11, 12]. However, this knowledge is at risk of erosion as younger generations show reduced interest in learning from elder healers, and plant habitats face increasing pressure from land-use changes and climate-related stressors [12, 13]. The findings of the present study will be very crucial to the government and non-government sectors including policymakers in order to document and conserve the knowledge and identified traditional medicines. Therefore, the current study aim is to document medicinal plant use, traditional healing practices, and conservation of medicinal plants in North Pemba, with a view to inform sustainable utilization and policy development.

1.1 Graphical Flowchart

Study area → Healer selection → Questionnaire survey → Plant identification → Data analysis → Documentation and Recommendations.

2. Materials and Methods

2.1 Study Area

This study was conducted in the North Pemba Region, located in the northern part of Pemba Island, Zanzibar, Tanzania. The North Region has two districts (Wete and Micheweni Districts). A tropical climate with bimodal rainfall characterizes North Pemba, diverse vegetation types (including coral-rag thickets, lowland forest, and coastal bushland), and ecologically critical habitats such as the Ngezi Forest Reserve, the island's last remaining closed-canopy forest [10, 5]. The region comprises small, rural Shehias with mixed livelihoods based on subsistence farming, fishing, and small-scale trade [6, 7]. Figure 1 of the present study shows the map of Pemba Island, including its four districts.



Figure 1: Map of Pemba Isles, Zanzibar, Tanzania, with study sites indicated

2.2 Study Design

A cross-sectional ethnobotanical survey was conducted using qualitative and quantitative techniques consistent with established ethnobotanical research protocols. The study involved: Semi-structured interviews, Free listing, Guided field walks, and Participant observation.

Data were collected from 21 January to 3 February 2019 through semi-structured interviews and field visits with traditional healers in selected Shehias of North Pemba. Healers provided information on medicinal plants, including local names, preparation techniques, and therapeutic uses, while field visits allowed observation of plants in their natural habitats or home gardens. Data reliability was enhanced through triangulation, comparing responses from different healers and validating information through direct observation.

2.3 Sampling and Data Collection

2.3.1 Sampling Approach

A purposive sampling strategy was employed to identify traditional healers, herbalists, bone setters, midwives, and spiritual healers recognized by their respective communities. Snowball sampling was then used to identify additional practitioners. A total of 182 traditional healers and herbal practitioners participated across 23 Shehias of the North Pemba Region.

2.3.2 Data Collection Procedures

The study employed three ethnobotanical data-collection methods. Semi-structured interviews lasting 30 - 60 minutes were conducted in Kiswahili to gather information on medicinal plants used, their local names, harvested parts, preparation methods, treated disease categories, plant sources, perceived threats, knowledge transmission, and healers' attitudes toward regulation and conservation, with responses later translated into English. Free listing was used to document all medicinal plants commonly used by participants, allowing assessment of cultural importance, salience, citation frequency, and identification of core medicinal species. Guided field walks involved accompanying healers to forests, farms, and homesteads to identify plants in their natural environments, verify local names, collect voucher specimens, and document ecological conditions. Plants were taken to a botanist to determine the scientific name of each plant.

2.4 Data Analysis

Qualitative data on healer perceptions, perceived threats, and knowledge transmission were analyzed using inductive thematic content analysis, allowing recurrent themes to emerge directly from the responses. Quantitative data were analyzed using descriptive statistics, with variables summarized as percentages, means, and standard frequencies. The results were presented in tables and figures generated with SPSS v.25 and Excel.

2.5 Ethical Considerations

Ethical clearance was obtained from the Zanzibar Health Research Institute (ZAHRI) Research Ethics Committee.

3. Results

3.1 Demographic Characteristics of Traditional Healers

A total of 182 traditional healers and herbal practitioners participated in the study across the 23 Shehias of North Pemba. Participants were predominantly male, and most were above 40

years of age, reflecting the seniority and experience typically associated with traditional healing roles in Zanzibar.

The majority (92.3%) reported practicing without formal registration or certification. More than half had practiced for over 20 years, and knowledge was primarily transmitted through family lineages or apprenticeship, with only a small proportion reporting self-taught skills.

Table 1 of this study summarizes the demographic characteristics of Traditional Healers in the North Pemba Region.

Table 1: Demographic characteristics of traditional healers in North Pemba

Variable	Category	Frequency (n=182)	Percentage (%)
Age	18-35	63	34.6
	36-55	73	40.1
	>55	46	25.3
Gender	Male	103	56.6
	Female	79	43.4
Experience	<10 years	14	7.7
	10-30 years	98	53.8
	>30 years	70	38.5
Registration status	Registered	14	7.7
	Not registered	168	92.3
Training	Family/apprentice-based	96	52.7
	Self-taught	18	9.9
	Mixed (Profit/Interest)	68	37.4

3.2 Diversity of Medicinal Plants Documented

A total of 96 medicinal plant species belonging to 89 genera and 47 families were documented in the study area (Appendix 1). The most species-rich families were Euphorbiaceae (10 species), Lamiaceae (6 species), Rutaceae (6 species), and Asteraceae (5 species). This high level of species richness highlights the considerable ecological diversity of North Pemba and underscores the long-standing cultural reliance of local communities on plant-based therapies for healthcare. Figure 2 of the current study shows the distribution and frequency of medicinal plants reported by practitioners during the visiting study sites.

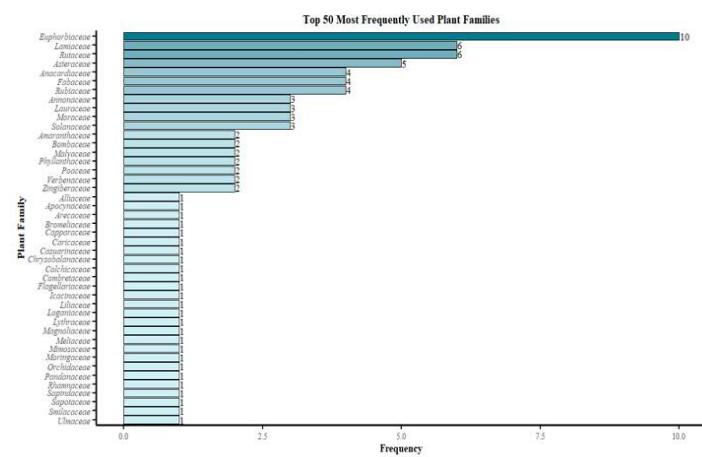


Figure 2: Distribution and frequency of medicinal plants reported by practitioners

3.3 Disease Categories Treated and Plant Parts Used

3.3.1 Diseases Categories

Medicinal plants were employed to treat a wide range of health conditions, which were classified into seven major disease

categories: fever; gastrointestinal disorders such as diarrhea, stomachache, and worm infestations; reproductive health issues including infertility and menstrual problems; respiratory ailments such as cough, flu, and asthma; musculoskeletal disorders including pain and rheumatism; skin conditions; and spiritual and psychosocial ailments. Among these categories, fever accounts for the highest number of uses, followed by gastrointestinal disorders and respiratory problems, highlighting their prominence in local healthcare practices.

3.3.2 Plant Parts Used

Leaves were the most used plant part in medicinal preparations, followed by roots, bark, whole plant, fruits, and seeds. While the predominant use of leaves is relatively sustainable, the substantial reliance on roots and bark raises conservation and sustainability concerns, as harvesting these parts can severely affect plant survival and long-term availability. Figure 3 of this study reveals part of the medicinal plant and its frequency of use.

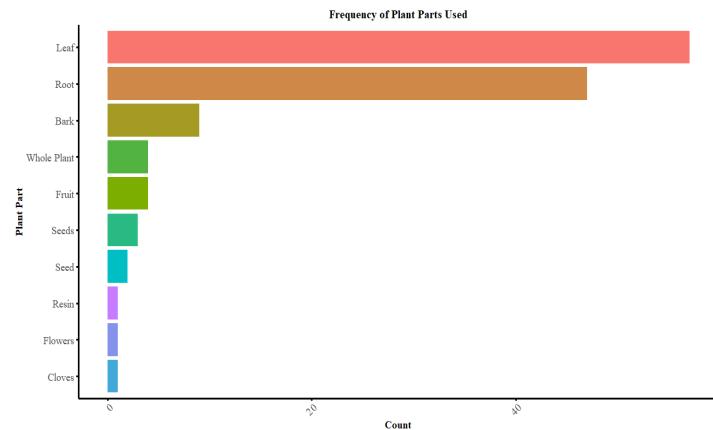


Figure 3: Distribution and frequency of plant used

3.4 Preparation and Administration Methods

Medicinal plants were prepared using a variety of techniques, with decoction being the most common method, involving the boiling of plant materials, followed by crushing, maceration, decoction with additives, and vapor therapy (Table 2).

Table 2: Common methods used to prepare plants for treatments

Preparation Method	Frequency	Typical Route(s)
Decoction	80+	Oral, Shower, Massage
Crushing	10-15	Oral, apply to affected part
Maceration	5-6	Oral
Decoction with additives	7-10	Oral, Gargle, Topical
Vapor therapy	1-2	Vapor therapy

In terms of administration, oral intake was the predominant route, followed by topical application, shower, gargle, and vapor therapy, reflecting both therapeutic and traditional practices in the use of medicinal plants (Table 3).

Table 3: Administration Routes and Their Frequency

Administration Route	Frequency	Notes
Oral	80+	Most common
Topical (apply/massage)	≈20	Used with crushing/decoction
Shower	3-5	Sometimes paired with decoction
Gargle	2-3	Often with honey/coconut
Vapor therapy	1-2	Least common

3.5 Sources of Medicinal Plants and Conservation Status

3.5.1 Source of Medicinal Plants

In figure 4, the survey revealed that medicinal plants were primarily sourced through wild collection by the practitioners, representing 120 responses. A smaller yet notable proportion of around 36 respondents reported that they obtained plants through gatherers and collectors while purchasing from middlemen and cultivating or farming medicinal plants were comparatively rare.

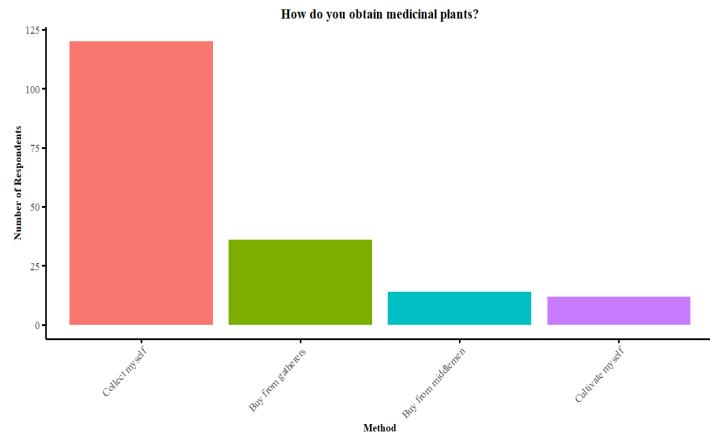


Figure 4: Methods of obtaining medicinal plants among practitioners.

3.5.2 Conservation Status

Traditional healers identified overharvesting and climate change, particularly unpredictable rainfall patterns, as the two most significant threats to the availability of medicinal plants. Additional pressures included habitat loss, soil degradation, urbanization and road construction, and invasive species. Many healers reported a noticeable decline in the abundance of key medicinal species, notably *Warburgia salutaris*, *Zanthoxylum chalybeum*, and *Guilandina bonduc*, underscoring growing conservation concerns.

3.6 Knowledge Transmission and Practice Regulation

Knowledge of traditional medicine was predominantly transmitted within families, although many healers expressed concern about declining interest among younger generations. Despite this challenge, there was strong support for formalization of the practice, with 94.9% of healers favoring government recognition, 91.7% endorsing regulation and training, and 87% supporting the cultivation of medicinal plants. Additionally, 72% of respondents were open to collaboration with biomedical practitioners, highlighting a clear willingness among healers for structured integration of traditional medicine into Zanzibar's formal health sector.

3.7 Harvesting methods

Common harvesting methods reported by respondents included digging (51%), cutting (39%), uprooting, harvesting or picking (28% each), and stripping (19%). Some respondents used multiple methods in combination. Figure 5 reveals the methods taken by practitioner in the collection process of medicinal plants.

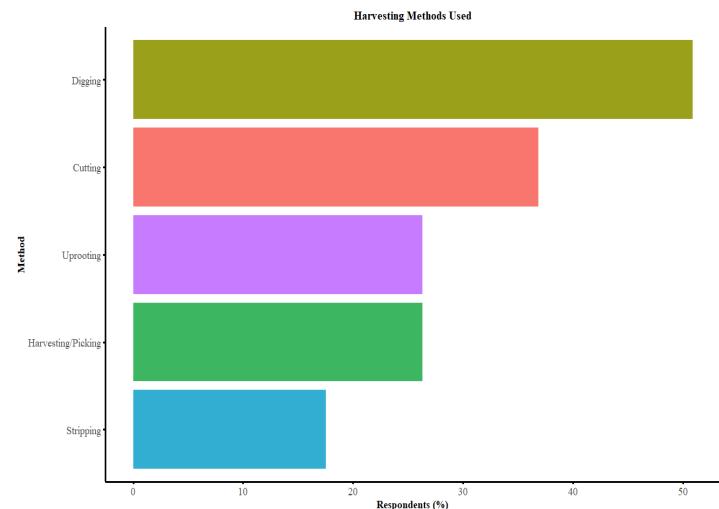


Figure 5: Harvesting methods employed by practitioners in the collection of medicinal plants

3.8 Beliefs, Culture, and Regulation

When asked why people prefer herbal medicine, (41.2%) respondents highlighted preference due to perceived safety and alignment to cultural traditions, (31.3%) cited ineffectiveness of conventional treatments, (24.2%) emphasized affordability, and a small number of respondents (3.3%) noted lack of health facilities nearby (Figure 6).

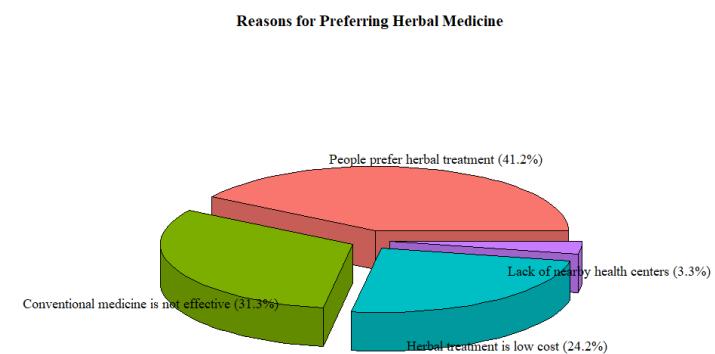


Figure 6: Reasons behind the preference for herbal medicine among the population

4. Discussion

4.1 Diversity of Medicinal Plants and Cultural Significance

This study documented 96 medicinal plant species across 47 families, underscoring the botanical richness of North Pemba and the depth of traditional knowledge embedded within local communities. The high representation of families such as Euphorbiaceae, Lamiaceae, Rubiaceae, and Asteraceae aligns with ethnobotanical findings across East Africa, where these families contribute significantly to traditional pharmacopoeias due to their abundance and diverse of secondary metabolites [14, 15].

The prominence of species such as *Erythrina abyssinica* and *Guilandina bonduc* reflects their multiple therapeutic applications and widespread cultural acceptance. These species are also reported in mainland Tanzania, Kenya, and Uganda as key remedies for fever, malaria, and inflammatory conditions, indicating shared pharmacological value across the region [16, 17].

Their high frequency of citation and broad use-value in this study demonstrate their central role in community healthcare.

4.2 Treatment of Major Health Conditions

Medicinal plant use in North Pemba is highly aligned with the local disease burden. The documented dominance of therapies for fever, gastrointestinal disorders, reproductive problems, and respiratory ailments corresponds with prevalent health challenges in Zanzibar and Sub-Saharan Africa broadly [18]. The strong alignment between plant use and disease burden reinforces the clinical relevance of local ethnomedicinal knowledge and highlights its potential complementary role in modern health systems.

4.3 Preparation Methods and Pharmacological Implications

The dominance of decoctions and oral administration mirrors preparation techniques widely reported in African ethnomedicine. Decoction is well-suited for extracting bioactive compounds, particularly alkaloids, flavonoids, and tannins from woody tissues, roots, and bark [19]. This preparation style may contribute to the perceived effectiveness of treatments for fever, infections, and gastrointestinal disorders.

However, the reliance on roots and bark raises concerns regarding sustainability. Harvesting these parts can compromise plant survival and regeneration. Similar trends in Ethiopia, Kenya, and Ghana have been linked with population declines of slow-growing medicinal species [20, 21].

4.4 Dependence on Wild Harvesting and Sustainability Concerns

The overwhelming reliance on wild harvesting, particularly from sensitive areas significant conservation challenge. Traditional healers reported noticeable declines in several species over the past decade, consistent with ecological assessments indicating forest degradation and pressure on rare or slow-growing plants.

Two key threats identified, overharvesting and climate variability, are consistent with global patterns in tropical ethnobotany. Climate change has already shifted phenology, reduced biomass productivity, and altered species distribution across East African coastal ecosystems [13]. Particularly vulnerable species include: *Warburgia salutaris* (a critically endangered species in parts of Africa), *Guilandina bonduc* (heavily harvested for antimalarial use) and *Zanthoxylum chalybeum* (declining due to excessive bark removal) [13]. These findings highlight the urgent need for conservation strategies that combine cultivation, regulation, habitat protection, and community-based natural resource management.

4.5 Knowledge Transmission and the Risk of Erosion

Knowledge transmission in North Pemba remains strongly family-based, consistent with studies across East Africa and the Indian Ocean region. Elders expressed concern that younger generations show decreasing interest in learning healing practices due to: Formal schooling, Migration, Modern healthcare availability, and changing cultural values [22].

This mirrors trends documented in Madagascar, Mauritius, and mainland Tanzania, where traditional knowledge is eroding despite ongoing reliance on herbal medicine [23].

Without proactive documentation and revitalization programs, the North Pemba Region risks losing invaluable cultural and medicinal heritage. The identification of 96 species in this study represents a snapshot of knowledge that may continue to decline unless systematically preserved.

4.6 Willingness for Regulation, Collaboration, and Integration

A notable finding was the overwhelming support for: Government recognition (94.9%), Registration (92.3%), Training (91.7%), Cultivation programs (87%), and Collaboration with the biomedical sector (72%). This level of willingness is significantly higher than reported in comparable studies in Kenya, Ethiopia, or Uganda, where healers often express fear of losing autonomy or intellectual property [24, 25].

In Zanzibar, healers appear motivated by: Desire for legitimacy, Protection of their practices, Improved access to patients, Avoidance of legal challenges, and Concern for declining plant resources. This provides a strategic opportunity for the Zanzibar Ministry of Health, Zanzibar Health Research Institute (ZAHRI), and Zanzibar Traditional and Alternative Medicine Council to establish a formal pathway for integration and alignment with the WHO Traditional Medicine Strategy (2021–2030). Integration could enhance the safety, quality, and efficacy of herbal medicines while preserving cultural heritage.

4.7 Conservation and Policy Implications

The findings highlight critical conservation priorities:

- a) Promotion of on-farm cultivation of high-demand species
- b) Regulation of harvesting practices, including restrictions on root and bark collection.
- c) Strengthening protection of Zanzibar Forests and other biodiversity-rich habitats.
- d) Development of community nurseries and herbal gardens.
- e) Documentation and digitization of local knowledge.
- f) Establishment of a Traditional Healers' Registry with training modules on safety, dosage, quality control, and conservation.

Such measures would align with national and regional biodiversity conservation frameworks, including the Tanzania National Biodiversity Strategy and the East African Community conservation priorities.

4.8 Contribution to Ethnobotanical Research

This study contributes several new insights:

- a) It provides one of the most comprehensive ethnobotanical assessments in North Pemba, covering 23 Shehias/Wards.
- b) It identifies species of conservation concern based on local ecological knowledge.
- c) It highlights healers' strong readiness for integration and sustainable practice, a finding underrepresented in East African literature.
- d) It creates a baseline for future research on pharmacological validation, conservation interventions, and cultivation programs.

By documenting plant use, cultural practices, and conservation challenges together, this study offers a holistic understanding of how traditional medicine systems function within island ecosystems.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study provides a comprehensive ethnobotanical assessment of medicinal plant use and traditional healing practices across 23 Shehias in North Pemba, Zanzibar. A remarkable 96 plant species were recorded, underscoring the ecological richness and cultural depth of traditional medicine in the region. Medicinal plant knowledge remains central to community health, addressing widely prevalent ailments such as fever, gastrointestinal disorders, reproductive health problems, and respiratory conditions.

However, the findings highlight concerning sustainability challenges. More than 65% of medicinal plants are harvested from the wild, with heavy reliance on ecologically sensitive areas such as Ngezi Forest. Overharvesting, particularly of roots and bark, together with climate variability, habitat degradation, and low cultivation rates, poses significant threats to medicinal plant populations. Species such as *Guilandina bonduc*, *Zanthoxylum chalybeum*, and *Warburgia salutaris* are especially vulnerable.

Traditional knowledge remains vibrant but fragile. As knowledge transmission is still largely family-based and dependent on aging practitioners, the risk of erosion is substantial. Yet, practitioners demonstrated strong willingness to support formal recognition, regulation, training, and conservation initiatives, offering a unique opportunity to integrate traditional medicine within Zanzibar's health system in a culturally respectful and sustainable manner.

Overall, this study underscores the urgent need for coordinated conservation strategies, policy interventions, and documentation efforts to safeguard medicinal plant resources and the associated cultural heritage. In the North Pemba Region, traditional medical knowledge represents an invaluable asset

for public health and biodiversity conservation, warranting sustained scientific and policy attention.

5.2 Recommendations

Based on the findings of the current study, the following recommendations shall be addressed for further research on:

- Developing and evaluating integrated conservation strategies that combine cultivation, community-based ex-situ conservation, regulated harvesting, habitat protection, and ecological assessment of high-demand and vulnerable medicinal plant species to ensure their sustainable utilization.
- Examining the effective models for integrating traditional medicine into formal health systems through healer registration, capacity-building, collaborative practice with biomedical professionals, and the development of culturally appropriate policy frameworks aligned with WHO guidelines.
- Validation of medicinal plants through phytochemical and pharmacological studies, systematic documentation and digitization of traditional knowledge, interdisciplinary collaboration, and long-term monitoring of ecological and climate-related impacts on medicinal plant resources.
- Exploration of effective community-based awareness, youth engagement, and livelihood-support models that enhance capacity building while promoting sustainable harvesting and long-term conservation of medicinal plant resources.

5.3 Acknowledgement

The authors acknowledge the Revolutionary Government of Zanzibar through the Second Vice President's Office for the research permit, the office of the Regional Commissioner of North Pemba Region, for their collaboration in assisting the collection of data from Traditional healers through Sheha (Village leaders).

Appendix 1: Documented Medicinal Plants, Their Uses, and Preparation Methods in North Pemba

S.N.	Scientific name	Part used	Preparation method	Administration route	Diseases treated
1.	<i>Mimosa pudica</i>	Leaf/Root	Decoction/Maceration	Oral/Apply to affected part	Fever, Asthma, Muscle sprain
2.	<i>Allium sativum</i>	Cloves	Crushing	Oral/Apply to affected part	Abdominal pain, Oral infection, Spiritual therapy
3.	<i>Ocimum americanum</i>	Leaf/Root	Decoction/Maceration	Oral	Fever, Reproductive health complications, Asthma, Abdominal pain, Headache, Diarrhea, Spiritual therapy
4.	<i>Cajanus cajan</i>	Leaf	Decoction	Oral	Reproductive health complications, Bleeding, Headache, Cough, Spiritual therapy
5.	<i>Ethulia conyzoides</i>	Root	Decoction	Oral	Abdominal pain, Diarrhea, Ear disorders
6.	<i>Euphorbia hirta</i>	Leaf	Decoction	Oral	Blood pressure, Gastritis, Ulcers, Spiritual therapy
7.	<i>Solanum melongena</i>	Root	Crushing	Apply to affected part	Snake poison
8.	<i>Jatropha curcas</i>	Leaf	Decoction	Oral/Massage	Constipation, Muscle sprain
9.	<i>Deinbollia borbonica</i>	Root	Decoction	Oral	Reproductive health complications
10.	<i>Parinari curatellifolia</i>	Root	Decoction	Oral	Abdominal pain, Bleeding
11.	<i>Catharanthus roseus</i>	Root	Decoction	Oral	Cancer, Burns
12.	<i>Adansonia digitata</i>	Leaf/Bark	Decoction/Crush with coconut oil	Oral/Apply to affected part	Asthma, Skin disorders
13.	<i>Curcuma longa</i>	Root	Decoction	Oral	Skin disorders
14.	<i>Cymbopogon citratus</i>	Leaf/Root	Decoction	Oral	Blood pressure, Urinary tract infection
15.	<i>Acalypha fruitcosa</i>	Leaf	Decoction	Oral	Fever
16.	<i>Oldenlandia bojeri</i>	Root	Decoction	Oral	Muscle sprain
17.	<i>Uvaria acuminata</i>	Leaf/Root	Decoction with ginger	Oral	Gastritis, Haemorrhoid
18.	<i>Flacourtie indica</i>	Root	Decoction	Shower	Fever
19.	<i>Rhus natalensis</i>	Leaf	Decoction	Oral	Diabetes
20.	<i>Launaea cornuta</i>	Leaf	Decoction	Oral	Blood pressure, Diabetes, Haemorrhoid, Ulcers, Spiritual therapy
21.	<i>Citrus aurantium</i>	Root	Decoction	Oral	Haemorrhoid
22.	<i>Citrus aurantiifolia</i>	Leaf/Root/Fruit	Decoction	Oral	Fever, Reproductive health complications, Abdominal pain, Gastritis, Headache, Muscle sprain, Spiritual therapy
23.	<i>Suregada zanzibarensis</i>	Leaf/Root	Crushing/Decoction	Oral	Abdominal pain, Emesis
24.	<i>Raphanus raphanistrum</i>	Whole plant	Decoction	Oral	Blood pressure, Constipation
25.	<i>Morus alba/Sny; M. nigra/M. Japonica</i>	Root	Decoction	Oral	Abdominal pain
26.	<i>Vitex doniana</i>	Root	Decoction	Oral	Reproductive health complications, Diarrhea

27.	<i>Musa paradisiaca</i>	Root	Decoction	Oral	Reproductive health complications, Abdominal pain, Diabetes, Gastritis
28.	<i>Flueggea virosa</i>	Leaf/Root	Decoction	Oral	Abdominal pain, Asthma, Bleeding, Muscle sprain, Skin disorders, fever, reproductive health complications, spiritual therapy
29.	<i>Erythrina abyssinica</i>	Leaf/Root/Bark	Decoction/Maceration	Oral	Blood pressure, Abdominal pain, Asthma, Inflammation, Bleeding, Muscle sprain, Spiritual therapy
30.	<i>Senna tora</i>	Leaf	Crushing	Apply to affected part	Snake poison
31.	<i>Gynandropsis gynandra</i>	Leaf/Root	Decoction	Oral	Bleeding
32.	<i>Pandanus kirkii</i>	Leaf	Decoction	massage	Muscle sprain
33.	<i>Gloriosa superba</i>	Leaf/ Bark	Crushing with honey	Oral	Reproductive health complications, Asthma
34.	<i>Hibiscus sabdariffa</i>	leaf	Decoction	Oral	Anaemia
35.	<i>Achyranthes aspera</i>	Leaf	Decoction	Oral	Diarrhea, Emesis
36.	<i>Abrus precatorius</i>	Leaf	Crush with coconut juice	Oral	Asthma
37.	<i>Polysphaeria parvifolia</i>	Root	Decoction	Oral	Fever, Haemorrhoid, Diarrhea
38.	<i>Eugenia caryophyllus</i>	Root/Fruit	Decoction	Oral	Haemorrhoid, Oral infection, Bleeding, Abdominal pain, Back pain
39.	<i>Smilax kraussiana</i>	Root	Decoction	Oral	Asthma
40.	<i>Punica granatum</i>	Root	Decoction with honey	Oral	Diarrhea, Haemorrhoid
41.	<i>Anacardium occidentale</i>	Root	Decoction	Oral	Diarrhea, Bleeding
42.	<i>Ziziphus mucronata</i>	Bark	Decoction	Oral	Bleeding, Urinary tract infection
43.	<i>Terminalia catappa</i>	Leaf	Decoction	Oral	Reproductive health complications, Abdominal pain
44.	<i>Inhambanella henriquesii</i>	Leaf	Decoction	Oral	Fever
45.	<i>Leontis nepetaefolia</i>	Leaf/Root	Decoction	Oral	Fever, Abdominal pain, Blood Pressure, Diabetes, Diarrhea
46.	<i>Tamarindus indica</i>	Leaf	Maceration	Oral	Asthma, constipation
47.	<i>Apodytes dimidiata</i>	Leaf	Decoction	Oral	Fever
48.	<i>Achyranthus aspera</i>	Leaf	Decoction	Shower	Fever
49.	<i>Celtis drandii</i>	Root	Decoction	Oral	Spiritual therapy
50.	<i>Clerodendron spp</i>	Root	Decoction	Oral	Abdominal pain
51.	<i>Ananas comosus</i>	Root	Decoction	Oral	Fever
52.	<i>Cocos nucifera</i>	Leaf/Root/ Fruit	Decoction	Oral	Abdominal pain, Oral infection, Spiritual therapy
53.	<i>Gossypium hirsutum</i>	Leaf/Root	Decoction	Oral	Fever, Reproductive health complications, Asthma
54.	<i>Lippia javanica Sny; L. Asperifolia</i>	Leaf	Decoction	Oral	Fever, Abdominal pain, Gastritis
55.	<i>Carica papaya</i>	Leaf/Root	Decoction	Oral	Fever, Schistosomiasis
56.	<i>Persia americana</i>	Leaf	Decoction	Oral	Blood Pressure, Headache, Anaemia
58.	<i>Plectranthus barbatus/</i> <i>Syn:Coleus barbatus</i>	Leaf	Decoction/Maceration	Oral	Reproductive health complications, Abdominal pain, Blood Pressure, Gastritis, Inflammation, Haemorrhoid,
59.	<i>Flagellaria guineensis</i>	Root	Decoction	Oral	Fever
60.	<i>Keetia zanzibarica</i>	Leaf/Root	Decoction	Oral	Fever, Reproductive health complications, Emesis
61.	<i>Psidium guajava</i>	Leaf	Crushing	Oral	Fever, Headache, Diarrhea
62.	<i>Daturametel/D.Fastuosa</i>	Leaf	Decoction	Oral	Asthma
63.	<i>Ocimum basilicum</i>	Leaf	Decoction	Oral	Fever, Gastritis, Headache, Diarrhea
64.	<i>Moringa oleifera</i>	Root/Seed	Decoction	Oral/Massage	Fever, Reproductive health complications, Blood Pressure, Diabetes, Abdominal pain, Asthma
65.	<i>Ficus exasperata</i>	Leaf	Crushing	Apply to affected part	Snake poison
66.	<i>Aloe vera</i>	Leaf	Decoction	Oral/massage	Blood Pressure, Diabetes, Abdominal pain, Skin disorders
67.	<i>Croton sylvaticus</i>	Root/Bark	Decoction	Oral	Inflammation, Allergy
68.	<i>Guilandina bunduc</i>	Leaf/Root/ Seeds	Decoction	Oral	Reproductive health complications, Diabetes, Haemorrhoid, Gastritis, Spiritual therapy
69.	<i>Annona muricata</i>	Leaf/Seeds	Crushing/Decoction	Oral	Blood pressure, Headache, Cancer
70.	<i>Ceiba pentandra</i>	Bark	Decoction	Oral	Fever, Asthma, Emesis
71.	<i>Lilioceridion spp</i>	Leaf	Decoction	Oral	Fever, Haemorrhoid, Snake poison
72.	<i>Phyllanthus sp.</i>	Whole plant	Decoction	Oral	Ulcers
73.	<i>Cassytha filiformis</i>	Root	Decoction	Oral	Blood pressure, Diabetes, Gastritis, Ulcers, Inflammation, Constipation
74.	<i>Zingiber officinale</i>	Root	Decoction	Oral	Allergy
75.	<i>Strychnos innocua</i>	Leaf	Decoction	Oral	Abdominal pain
76.	<i>Annona senegalensis</i>	Leaf	Crushing	Apply to affected part	Snake poison
77.	<i>Ocimum Canum</i>	Leaf	Crushing	Gargle/ Apply to affected part	Allergy, Oral infections
78.	<i>Solanum incanum</i>	Leaf/Root/Fruit	Decoction	Oral	Fever, Reproductive health complication, Abdominal pain, Diarrhea, Haemorrhoid, Allergy, Spiritual therapy
79.	<i>Azadirachta indica</i>	Leaf	Decoction	Oral	Diabetes, Malaria
80.	<i>Mangifera indica</i>	Leaf/Bark	Decoction with coconut oil	Oral/Gargle/ Apply to affected part	Blood pressure, Diabetes, Oral infection, Skin disorders
81.	<i>Spondias dulcis Syn: S. Cythereia</i>	Leaf	Decoction	Oral	Blood pressure, Diabetes
82.	<i>Manihot esculenta</i>	Leaf	Crushing	Apply to affected part	Snake poison
83.	<i>Clerodendrum glabrum</i>	Leaf/Root	Decoction	Oral/Shower	Fever, Abdominal pain, In-appetence
84.	<i>Vanilla planifolia</i>	Leaf	Decoction with milk	Oral	Blood pressure
85.	<i>Casuarina equisitifolia</i>	Leaf	Decoction	Oral	Reproductive health complications, Headache
86.	<i>Murraya koenigii</i>	Leaf	Decoction/Vapor therapy	Oral/Vapor therapy	Gastritis, Spiritual therapy
87.	<i>Milicia excelsa</i>	Root	Decoction	Oral	Haemorrhoid
88.	<i>Oldenlandia bojeri</i>	Leaf	Decoction	Oral	Reproductive health complication, Abdominal pain, Asthma, Haemorrhoid, Bleeding, Fungal infection
89.	<i>Vipres zanzibariensis</i>	Leaf/Root/Resin	Decoction	Oral/Apply to affected part	Reproductive health complication, Abdominal pain, Asthma, Haemorrhoid, Wound healing
90.	<i>Psidia arabica</i>	Root	Decoction	Oral	Fever, Reproductive health complication

91.	<i>Pluchea dioscoridis</i>	Leaf	Decoction	Oral	Ulcers
92.	<i>Phyllanthus niruri</i>	Leaf/Root	Decoction with basil	Oral/Shower/ massage	Fever, Reproductive health complication, Abdominal pain, Headache
93.	<i>Syzygium Cumini</i>	Seed	Decoction	Oral	Diabetes
94.	<i>Ocimum basilicum</i>	Leaf	Crushing	Apply to affected part	Wound healing
95.	<i>Panicum trichocladum</i>	Leaf	Crushing	Oral/ Apply to affected part	Fungal infection, Wound healing
96.	<i>Tragia brevipes</i>	Root	Decoction with milk	Oral	Asthma

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