

# Sustainable Production of Traditional Medicines in Africa

O.A. Osunderu

**Abstract** Since the dawn of history, mankind has been actively experimenting with a variety of available plants as means for food, alleviation of pain and to safeguard its health and promote improved quality of life. Over the years, traditional knowledge, science and technologies have accumulated to form a rich background of cultural heritage.

In Africa, over 70% of the population depends on traditional medicine (Federal Ministry of Science and Technology, 1985) because the rich resources of traditional remedies and practitioners are available and accessible.

However most Government/policy makers and financial investors do not pay much attention to herbal medicine as a means of creating wealth and transforming lives, especially for the poor people living in these countries. As the medicinal plants in use are neither classified as food or cash crops of health concern. Also no policy is in place to ensure the sustainability of traditional medicine and the protection of the environment.

This essay is focused on the role of medicinal plants in creating markets and transforming lives. In Nigeria so much emphasis has been placed on revenues generated from crude oil to the detriment of other revenue sources like herbal medicine.

**Keywords** Medicinal plants · traditional · medicine · resources · market · health and prosperity

## 1 Introduction

The WHO in its Alma-Ata declaration of 1978, gave due recognition to the role of traditional medicine(TM) and its practitioners (TMPs) in achieving comprehensive and affordable health care delivery, previously tagged “Health for all in the 21st century” although the situation remains “Health for some”.

---

O.A. Osunderu (✉)

Hermon Development Foundation, P.O. Box 17331, Ikeja, Lagos, Nigeria  
e-mail: kosunderu@yahoo.co.uk; hermonest@gmail.com

Traditional medicine refers to health practices approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly are in combination to treat, diagnose and prevent illness or maintain well-being. Traditional medicine which includes herbal medicine is also known as Complementary/Alternative medicine.

Traditional medicine plays a primary role in people's health, as they have for thousands of years there is a wide range of therapies and practices, varying greatly from country to country and from region to region. The most well known are the Ayurveda of India and traditional Chinese medicine and these systems of medicines have now spread to other countries.

Traditional medicine has always maintained its' popularity worldwide. For more than a decade, there has been an increasing use of traditional medicine (inform of complementary and alternative medicine) in most developed and developing countries.

## 2 Objectives

The objectives of this essay include the following:

- Provide information to economic and financial policymakers, the international financial community and/or international domestic investors on the huge economic opportunities that herbal medicine provides in Africa, particularly Nigeria, the most populous black nation in the world
- Provide insight into current Herbal Medicine Development (HMD) research in Nigeria which includes innovative and data-supported research resulting from the author's own professional and academic work
- Develop and support the implementation of leading-edge HMD initiatives that will ensure sustainable development
- Design a balance between conceptual and practical considerations for private-sector involvement in developing countries, and the effect of that involvement on development and the attainment of the Millennium Development Goals (MDGs) by the Nigerian government

The federal republic of Nigeria is situated along the golf of guinea, in the eastern part of the West African subcontinent. It extends over an area of 923,768 km<sup>2</sup> making it the tenth largest country in the world. Nigeria has a wide diversity of habitat, ranging from arid areas, through many types of forest, to swamps. Associated with the varied zones is an array of plant and animal species. The major vegetation formation are the mangrove forest and coastal swamps, fresh water swamps, low land rain forest, derived savanna, northern guinea savanna, Sudan savanna, Sahel, mountain, sub-montane forest and grassland.

In Nigeria, traditional medicine plays a significant role in meeting the health care needs of the majority of Nigerians. It also provides a livelihood for a significant number of people who depend on it as their main source of income, 75% to 80% of the Nigerian population uses the services of traditional healers (Federal

Government of Nigeria 2002). It can be extrapolated that 75% to 80% of Nigerians use herbal medicine because medicinal plants are the primary sources used by traditional healers in Nigeria (WHO 2006). The percentage could even be higher because almost all Nigerians eat herbal vegetables.

Several medicinal plants of global importance originate in the country. For example Calabar bean (*Physostigma venenosum*) was traditionally used in Nigeria as an “ordeal poison” in trials of wrong doers, from it the major component physostigmine (eserine) and its derivatives, very important drugs have been discovered, and are now used against intra ocular pressure (glaucoma) (Landis 1996).

Nigeria has been ranked 11th in Africa for plant diversity. Out of the 5,000-plant species that exists in the country, 205 are considered endemic making the country the ninth highest among the 12 African countries in the level of endemic species (Ref FGN, 2002). With an estimated population of over 120 million people, distributed among over 250 distinct ethnic groups or tribes, the country is unique in having high cultural diversity and a significant share of the global biological diversity.

### **3 Distribution of TMPs in Nigeria**

In a study carried out by the author and her team in South West Nigeria 2005, the following results were obtained:

#### **3.1 Methodology**

Interviews and short questionnaires were used to elicit information from the practitioners. 126 practitioners were interviewed in three states Lagos, Ondo and Oyo states.

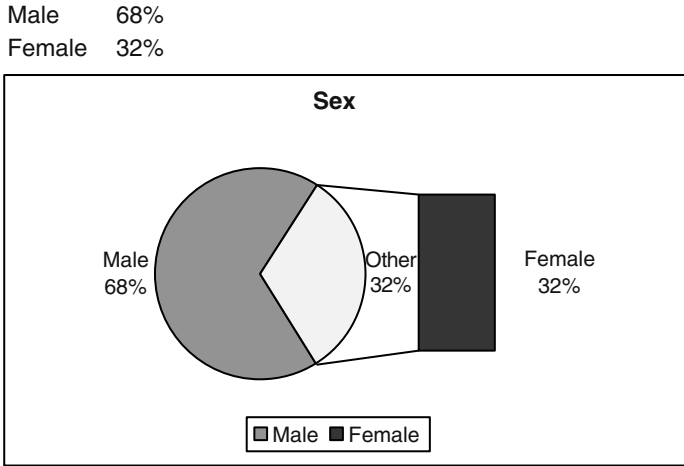
##### **3.1.1 Results**

One hundred and twenty-six questionnaires were distributed to TMPs in the South Western geographical zones of Nigeria comprising Oyo, Ondo and Lagos States. Sixty-eight percent of the respondents were men while 32% were women (Fig. 1).

### **4 Traditional Medicine Practices in Nigeria Include**

#### **4.1 Traditional Birth Attendants (TBAs)**

Traditional delivery, obstetrics and gynecology are services rendered by traditional birth attendants in Nigeria. They are widely practiced in the rural and urban areas of



**Fig. 1** Gender distribution of TMPs in Nigeria

the country and are highly patronized by our people due to increasing costs of health care in our conventional health institutions. Their positive contributions to health care delivery system can not be disputed. The services of traditional birth attendants are relatively cheap, readily accessible, personalized and does not carry out unnecessary surgery as a line of treatment, as practiced by conventional medical practitioners. However, this practice has to be improved upon.

The number of TBAs far out number that of their allopathic counter parts. The National Demographic and Health survey report (NDS 1999) indicate that only 37% of birth take place in conventional Health centers or hospitals. By inference 63% of Births are handled by Traditional medicine practitioner.

WHO seminars have recently highlighted the roles of TBAS in African society and many countries like Nigeria have arranged formal training in hygiene and obstetrics for these practitioners to improve their effectiveness. Some of the herbs used by TBAs include the root of *Carica papaya L.* chewed with seven seeds of *meleguata pepper* during labour, which is suppose to cause an immediate delivery of the baby. The bark of *Blighia sapida koeng* ground and mixed with locally made black soap is used for bathing through out the period of pregnancy. This ensures an easy delivery process for the pregnant woman (Sofowa 1982). Thus prevents surgeries.

## **4.2 Traditional Bone Setters and Massage Therapists**

Traditional bone setting and Massage therapy are services rendered by traditional medicine practitioners and they are part of our culture and accumulation of our

peoples' experience in the management of fractures, pains and other related problems through the ages while making use of herbs. They need to be financially empowered in view of the immense contributions they make to the health care delivery system. There is no ailment known to man which nature has not provided remedy or cure for (WHO 2006).

Traditional bone setting is a specialized section of traditional medicine which uses;

- Fingers in the assessment of the extent of damage to a broken bone often without the use of x-ray.
- Application of herbal formulations to relieve pains.
- Application of local splint/caste to immobilize the bone in the management of fracture (WHO 2002, 2006), while traditional massage therapy is the application of gentle but firm pressure with the tip of the fingers and palms in order to relieve pain, stress, aching muscles, nerves, ligaments and tendons. Traditional bone setting and massage therapy are widely practiced in the rural areas due to their cheapness, availability and accessibility. They provide services that require no amputation as a line of treatment.

## 5 Global Market for Traditional Medicines

It is obvious that Traditional Medicine (TM) has maintained its' popularity in all regions of the developing world and its use is rapidly spreading in industrialized countries. Countries in Africa, Asia, and Latin America use TM to help meet most of their primary health care needs. In industrialized countries, adaptations of traditional medicines are termed "complementary" or "alternative" (CAM).

The global market for herbal medicines currently stands at over 60 billion US Dollars annually and is growing steadily (Federal Ministry of Science and Technology, 1985; Brevoort 1998). Nigeria like some other African countries with their vast bioresources and biodiversity are not making any contribution to the global market because the relevant stake holders are not showing enough interest to harness these vast resources to improve the lives of their citizens while creating markets. More than half of the populations live in poverty while these God-given resources waste away (Brinker 1998).

## 6 Sources of Medicinal Plants in Africa Include

- Home gardens and agricultural lands
- Botanic gardens
- Few proven cultivation practices for medicinal plants e.g. silviculture although this is minimal in developing countries although the potentials for this form of supply is enormous
- Traditional Medicine Practitioners also harvest from the wild e.g. natural forest remote and marginal lands

The result below was obtained from a survey conducted in South-south Nigeria and South-west Nigeria respectively in 2006 by the author on TMP's sources of medicinal plants:

<b>South-south Nigeria</b>		
Sources of herbs plant parts	Forest	45%
	Garden	24%
	Market	31%
Frequency of harvest	Daily	37%
	Weekly	48%
	Monthly	15%
<b>South-west Nigeria</b>		
Sources of herbs/plant parts	Forest	48%
	Home garden	15%
	Market	37%
Frequency of harvest of herbs	Daily	42%
	Weekly	46%
	Bi-monthly	7%
	Monthly	5%
Method of harvesting applied	Uprooting	30%
	Plucking/pruning	46%
	Debarking	24%

### ***6.1 Current Herbal Medicine Development and Research***

The government of Nigeria desires to maintain and encourage the growth and development of traditional medical practice through coordination and control.

These Government agencies like NAFDAC, NIPRID etc., NGOs and tertiary institutions work together, to facilitate national and international cooperative and collaborative research development and promotion effort in traditional medicines. They research, collate and document all traditional medicine practices and products in order to preserve the nation's positive indigenous knowledge on traditional medical science and technology development and promote safe, efficient traditional therapies and facilitate their integration into the national health care delivery system (Holmstedt 1972).

## **7 Accessing the Natural Medicine Market**

The World Health Organization (WHO) estimates that one-third of the world's population has no regular access to essential modern medicines, in some parts of Africa, Asia, and Latin America, as much as half of the population faces these persistent shortages. However, in these same situations the rich resources of traditional remedies and practitioners are available and accessible.

## **7.1 Ways of Generating Income from Natural Medicine**

### **7.1.1 Medicinal Plant Trade**

An economic venture. The demand for products from the medicinal plants trade has been on the increase worldwide (Quansah 1998; Sergi and Kadriye 1995; Sofowa 2002). The trade so far relies heavily on wild collections to meet the ever-increasing demands. Nat Quansah reported that in Madagascar during 1996, one primary supplier earned 67.5 US Dollars for providing 225kg of the raw material (raw plant) of *Sigesbeckia orientalis* to two sellers. These sellers sold the plant material to a total of 1,500 people and made 450 US Dollars. Thus, 225kg of *Sigesbeckia orientalis* yielded 517.5 Dollars in a market. Also the market value of 399,447kg of 11 species of medicinal plants and/or their extracts in 1995 was estimated at 1,382,000 US Dollars. Nigerian plants such as the *Ocimum spp.*, *Vermonia amygdalina*, *cympopogon citratus* have great marketing potentials because of their multipurpose uses as spices, ornaments, medicines etc.

### **7.1.2 Horticulture and Perfumery**

African plants are valued ingredients but have been traded only at the lower end of business, for example, many Africa pelargonium species are offered for sale in other countries. Revenue generated from the sales of pelargonium species in Belgium, Netherlands and Germany approximately 6 billion US Dollars annually (Rosonaivo 1996).

### **7.1.3 Pharmaceuticals**

The array of medicines derived from plants is impressive – analgesics, diuretics, laxative, anti-cancer and anti-parasitic components, cardiovascular, anti-inflammatory and anti-viral drugs, just to mention a few. It has been estimated that as many as 75% to 90% of the worlds rural people rely on herbal traditional medicine as their primary health care (WHO 2006) and this is a source of incomer for the growers such plants and practitioners. African flora is potential for new compounds with pharmacological activities. Such efforts have led to the isolation of several biologically active molecules that are in various stages of development as pharmaceuticals.

### **7.1.4 Cultivation**

The time has come for economic & financial policymakers, the international financial community and/or international domestic investors to start large scale cultivation of medicinal plants especially those with proven efficacy and safety. Most of these plants grow well even on deteriorating soil.

To ensure the production of standard plant drugs with acceptable quality, uniformity and purity, factors such as, sources and identity of the plant, its physical characteristics, its chemical constituents, the pharmacological and biological activities of the crude drug and method of preparation, uses and storage, amongst others, need to be identified and documented.

## **8 Drawbacks of Herbal Medicine Markets in Africa (Nigeria)**

Drawbacks to our traditional medicine heritage and medicinal plants that can serve as raw materials for traditional and modern drug production:

- Rapid destruction and degradation of our environment
- Loss of useful medicinal plant species
- The passing away of the custodians of knowledge on our medicinal plants
- The lack of documentation of our medicinal, aromatic and pesticidal plants and traditional medical knowledge

## **9 The Steps Forward**

Careful identification and documentation of an inventory of Nigeria's Medicinal Plants, their usefulness and the knowledge base for their utilization amongst other factors is expedient. An inventory/database on available plant raw materials, among others, should be available. These will stimulate the processes for the development of legislative and administrative framework for their conservation and as raw materials for exploitation.

## **10 Conclusion**

In order to effectively protect the environment, there is need for government to recognize and formulate policies ensure the uniformity of herbal medicine practices. Factors such as, sources and identity of the plant, physical characteristics, chemical constituents, the pharmacological and biological activities of the crude drug and method of preparation, uses and storage, amongst others, need to be identified and documented.

The development of herbal medicine will create markets and ultimately improve the lives of the people who depend on it as a source of livelihood; the Traditional Practitioners, the cultivators/gatherers, the market women (hawkers), the manufacturers of packaging materials, increase the income generated by the government and attract foreign investment. It will also contribute positively to the attainment of a befitting primary health care for the citizenry.



## References

- Brevoort, P. 1998. The booming US botanical market: A new overview. *Herbal Gram* 44:33–48.
- Brinker, F. 1998. *Herb contraindications and drugs interactions*. Sandy, OR: Eclectic Medical Publications.
- Federal Government of Nigeria. 2002. *National biodiversity strategy and action plan* Abuja. Government Press 2–7
- Federal Ministry of Science and Technology, Federal Republic of Nigeria. 1985. *Report of the national investigative committee on traditional and alternative medicine*, Abuja. Government Press.
- Federal Ministry of Health, Nigeria Demographic and Health Surveys, 1999.
- Holmstedt, B. 1972. The ordeal bean of old Calabar; the pageant of physostigma venenosum in medicine. Swain Ted. *Plants in the development of modern medicine*. Cambridge, MA: Harvard University Press, pp. 303–360.
- Landis, P. 1996. Market report. *Herbalgram* 36:69. American Botanical Council and the Herb Research foundation USA.
- Quansah, N. 1998. *Medicinal Plants: A Global Heritage* 16: 160. Proceedings of the International Conference on Medicinal Plants for Survival.
- Rasoanaivo, P. 1996. *Plantes Medicinales et Aromatiques a Valeur economiques a Madagascar*.
- Sergi, H. and Kadriye, T. 1995. The strength and weakness of Turkish bone setters. *World Health Forum* 16(2) 203–205.
- Sofowa, A. 1982. *Medical plants and traditional medicine in Africa*. Wiley.
- World Health Organization. 2002. *Traditional medicines – Growing Needs and Potential*. WHO policy respective on Medicine, Geneva (WHO/EDM/2002. 4).
- World Health Organization. 2006. WHO report on traditional medicine, my documents/WHO traditional medicine.htm 15/06/2006.