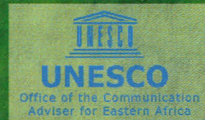
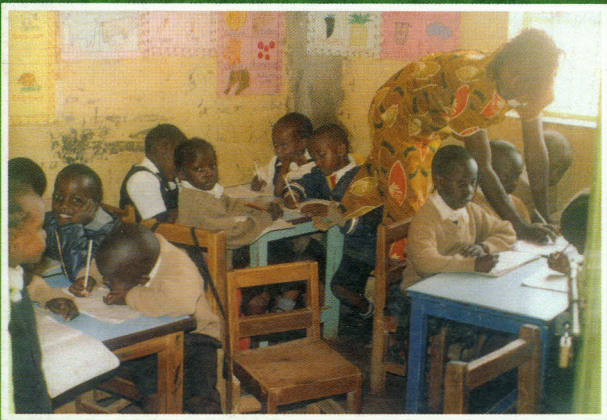


STATUS OF ENVIRONMENTAL HEALTH EDUCATION IN THE EASTERN AFRICA REGION: OPPORTUNITIES, CHALLENGES AND THE WAY FORWARD



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Abstract

There is great potential in the sale of herbal medicine in the world. The trade worldwide currently exceeds USD 5 billion per year. In Eastern Africa, consumption of herbal medicines especially in arid and semi arid areas has long been high. It increases poor people's access to health care since clinics and drug stores are rare in these areas. The raw material used to make herbal medicine can earn producers who are mainly resource poor farmers millions of dollars a year. Small-scale entrepreneurs can earn a living by processing and trading in herbal medicines. This sector therefore has enormous potential to contribute to poverty eradication by raising incomes and creating jobs in the arid and semi arid areas.

Currently the demand for numerous popular plant species used for herbal medicines exceeds supply. Many of the popular species are becoming extinct. The declining supply of these plants is likely to generate significant economic and social losses considering the huge number of people who depend on medicinal plants either as a cure or as a source of income. Most of the trees and shrubs which are the main source of medicines, have neither been documented nor studied and are still being considered solely as products of the wild. The local health traditions are also being lost because they are oral and largely undocumented. A decline in the availability of a culturally important and easily accessible consumer goods is likely to generate significant losses for the community. The loss of income-earning opportunities for people active in the plant trade also represent a serious loss to those involved in the trade. This paper identifies the potential of medicinal plants in Africa and the challenges for environmental health

Introduction

In Africa, Arid and semi arid lands make up a big percentage of the continent's total land area. Drought, famine and relief aid, in that seemingly perpetual cycle of hardship and suffering, appears to be commonplace in these areas. Throughout these areas, wild, naturalized or non-cultivated plants provide a 'green social security' to millions of people who almost entirely depend on plants for their human and livestock medicine. Some of these plants often help prevent starvation during drought. In many countries, trees are

the main source of medicine for traditional healers and provide medicine to majority of people in rural areas.

There are many indigenous healers who practice in Africa using indigenous plants as their *materia medica*. The plant trade can generate a large volume of economic activity and if well managed, it has a potential to provide millions of dollars to poor people. Observations of the market indicate that most of the plants are harvested from wild populations and are not cultivated. The current demand for numerous popular plant species used for herbal medicine exceeds supply, with traders reporting acute shortages. Several plant species have been exploited to such an extent that they are seldom found in unprotected areas.

The declining supply of indigenous medicinal plants and associated products is likely to generate significant economic and welfare losses considering the large number of people who either consume or trade in herbal medicinal plants in Africa. A decline in the availability of a culturally important and easily accessible consumer good can generate significant losses for the user community. The loss of income-earning opportunities for people active in the plant trade can also represent a serious loss to those involved in the trade. Additional losses would also occur as potential income-generating opportunities associated with a growing local and international demand are not realized. Furthermore, intensive harvesting of wild stocks is a serious threat to biodiversity.

As a result of declining supply of medicinal plants and the localized extinction which have occurred, there is need for integrated management of this natural resource. The cultivation of indigenous medicinal plants can not only be an important source of income and capital formation for the farmers, but also can lead to conservation and an increase in value of natural resources while at the same time procuring social well-being.

The Demand for Medicinal Plants

Medicinal plants are used in the manufacture of a variety of many medicinal compounds and pharmaceuticals as well as nutritional supplement products. Medicinal compounds used for naturopathic remedies include a large number of herbs used to make teas, oils, and other products that are alleged to have curative or therapeutic effects on many common ailments. Other plants possess specific physical chemistries of interest to manufacturers of

pharmaceutical drugs e.g. *Prunus africana* which has a natural remedy for prostate disorders in its bark. While modern medical technology has enabled pharmaceutical manufacturers to synthesize many natural chemical compounds, there is renewed interest in exploring medicinal applications of a great many new plant chemicals. In the future, it will likely become more important to make a distinction between medicinals and pharmaceuticals because the difference in economic opportunities represented by the two types of compounds will become increasingly great.

Some experts feel that demand for plant products that possess desired pharmaceutical chemistries will become much more important than demand for alleged medicinals in the not-too-distant future. In addition, many plants with medicinal uses are also used as foods, cosmetics, dyes, dried florals, and for a variety of other uses (fungicides, insecticides, animal products, and aromatics). All of these plants have a potential for commercial cultivation or for management on forest lands in Africa.

Medicinal and Pharmaceutical Uses

The continuing popularity of natural remedies and nutritional supplements and the growing interest in plant-derived chemical compounds for pharmaceuticals are creating important new market opportunities for forest plants. In many countries, medicinal plants are sold as alternative health care products or nutritional supplements and are readily marketable through herb and botanical buyers or, in some cases, directly to the retail market. Specialists in herbal medicine marketing worldwide emphasize that the trade in herbal medicine is worth billions of dollars.

The Supply of Herbal Medicine

The medicinal plants' market in the world is based on indigenous plants that are generally harvested from wild plant stocks. The plant stocks and their harvesting techniques are not managed and there is little cultivation taking place. The combination of high demand and the lack of any significant resource management and plant production have resulted in a decline in the supply of numerous indigenous medicinal plants. The cultivation, management and enrichment planting of high value plants is therefore an important strategy to meet consumer demand and to reduce the impact of market on biodiversity. There is therefore a need to establish cultivation trials on herbal medicines both at farmers fields and at the community level in arid and semi arid areas.

Institutional Support for Marketing of Indigenous Plants

The popularity of herbal and alternative health care
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products worldwide makes new product market entry relatively easy. Small scale farmers in arid and semi arid areas who may harvest herbal medicine plants correctly to produce a consistent, high-quality product may be able to produce a direct retail product with processing and packaging assistance. Unfortunately, there is very little policy support that has been developed to support the marketing of indigenous plants. As a result, there has been insignificant education, training, research and extension regarding medicinal plant. Producers and those marketing medicinal plants need to be trained in order to be familiar with the world regulations regarding health care products. While many biologically based drugs have been replaced with synthetic drugs, there are still many drugs that are produced from cultivated or wild medicinal plants. For example, reserpine, used to reduce hypertension, is produced from *Rauwolfia serpentina*, while colchicine, which relieves gout, is produced from meadow saffron (*Colchicum autumnale*). Recent discoveries, such as the cancer-fighting potential of taxol, are creating renewed interest in the exploration of the chemical composition of forest plants. However, since pharmaceutical firms seek synthesized compounds if possible (for quality control purposes), the market for medicinal plants used in prescription and over-the-counter drugs is still very small. But if a plant compound cannot be artificially synthesized, then these firms seek first cultivated plants grown under very uniform growing conditions and then wild plants if they cannot be field-grown. There is therefore a great potential growing some of these medicinal plants at farm level.

Potential for Medicinal Plants in Arid and Semi Arid Areas

Poor people in ecosystems with low arable potential have always turned to wild medicinal plant resources for their survival. Understanding which species they turn to, the ones they sell, how much they sell for, quantities sold and their trade network, is a key to designing practical conservation, resource management for rural development programme for the identified species. The species that are sold are a 'short-list' of a much wider range of species that are available and which can be cross-checked with information from social surveys. There is therefore a need to carry out systematic ethnobotanical surveys in order to identify the relevant species even in the local markets which will not only classify the species on sale, but also arrange them into hierarchical levels- reflecting their relative demand and importance.

One need also to come up with research information that can support individual farmers, farmers groups, communities, organizations and government bodies to realize opportunities for cultivating high value medicinal plants for poverty alleviation and environmental

conservation in arid and semi arid areas. Information on which species are sold, how much they sell for, quantities sold and their trade network, is a key to designing practical conservation, resource management for rural development programme for species in trade.

Conclusion

There is a great potential of medicinal plants in solving peoples' economic problems in arid and semi-lands in Kenya today. Unfortunately, very little research has been carried out to identify the plant species and their market potential. There is need for an urgent study to identify the relevant medicinal plant species so that an integrated management plan can be formulated. There is need for decision makers at all levels of government, business and civil society to acknowledge the importance, magnitude and permanence of medicinal plants in meeting people's health care needs. This can then lead to public awareness and domestication of the threatened plant species.

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