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Medicinal Plants of the Ogiek Community in the Upper Watershed of River Njoro

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This research brief presents findings on gendered knowledge of medicinal plants among the Ogiek community of River Njoro watershed that shows that both men and women of various ages know and use medicinal plants found within the watershed. A total of 94 plants were found to be used by the community to treat various diseases. The plants included trees, shrubs, herbs and grasses, which are found along riverbanks, in open uncultivated fields, and in the forest. Men mentioned more plants than women, but women are responsible for the collecting, preparing and administering of the drugs. The older men and women know more plants than the younger people. Medicinal plants are threatened to extinction mainly due to habitat destruction for cultivation and indiscriminate vegetation clearing for charcoal burning. Participatory three-dimensional mapping showed that women are able to identify plants found mainly along the river and in open fields as opposed to men who locate plants deep in the forest. This is due to gendered responsibilities in the community. Men and women showed interest in being involved in conservation interventions, such as establishing tree nurseries and botanical garden, and are willing to contribute labor and other materials needed for the interventions.

Background

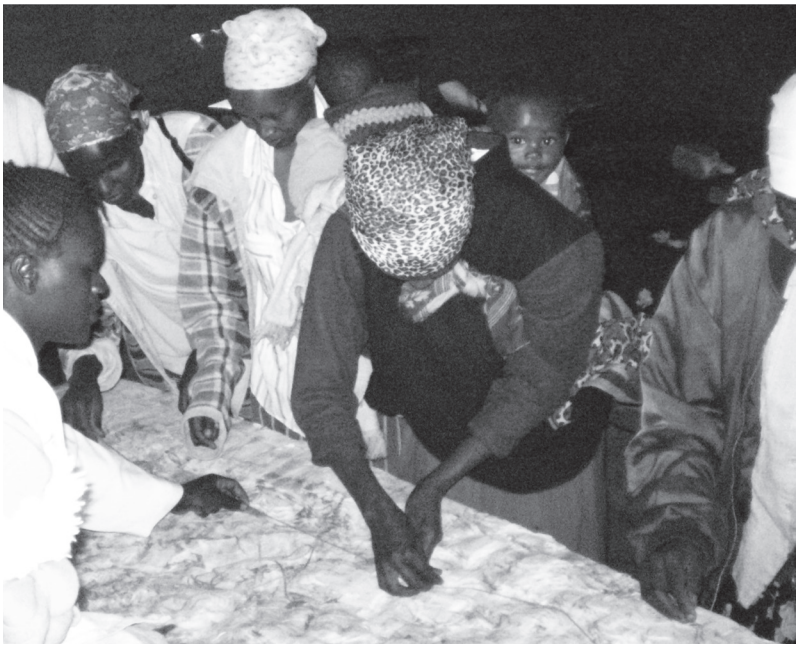
Medicinal plants play a great role in meeting health needs of rural communities, and in Kenya, 75-90 % of local communities depend on medicinal plants as the dominant health care systems. Knowledge of these plants is threatened to extinction, for it is passed on orally from one generation to another and is influenced by culture change due to development. Habitat destruction leads to diminished numbers of medicinal plants in people's surroundings, thus affecting their access to traditional treatments. Indigenous communities are the most affected, as they depend on the plants for their main source of medical care. The Ogiek of the upper River Njoro watershed, Kenya, are part of an indigenous community who utilize the forest as their source of livelihood, for they are hunters and gatherers. The community used to live in the forest and obtained food and other needs from it; however, they have now settled elsewhere and are practicing agriculture, as forest policy in Kenya does not allow people to settle in the forest. The Ogiek community depends on medicinal plants to meet their health needs. Not only do they believe that the plants are effective against most common diseases, but modern health services are limited in the area.

The eastern Mau catchment where the River Njoro originates has undergone excessive vegetation clearing for agriculture and charcoal burning. Such reduced forest resources have negatively affected the Ogiek community. There has also been ethnic interaction between the Ogiek and other communities, and other settlers in the area are influencing the culture of the indigenous peoples. The knowledge of medicinal plants, which is mainly in the minds of the elderly, is threatened, as this knowledge is not passed down to younger Ogiek generations. Documentation of traditional medicinal knowledge is imperative for the future generations.

Participatory three-dimensional modeling provides the local community with an opportunity to transpose their mental maps on to a graph that can be used to address many issues of ownership, conflict, and development as people discuss the locations of various features in their area. Furthermore, gender influences medicinal plant knowledge, use, and conservation, since men and women are charged with different responsibilities in the Ogiek society. This study aimed to document the medicinal plants and gendered knowledge, which is important for gender equity and inter-generational involvement in conservation of medicinal plants and the biodiversity of the catchment area in general.

Preliminary Findings

From the data obtained through a questionnaire responded to by 60 men and 60 women, 72% of men and 70% of women cited that they prefer traditional health services where medicinal plants are the backbone. Men mentioned more plants than women with the mean number of 8.08 for men and 6.35 for women. There was high consistency in the diseases a plant is



Women mapping in the Upper River Njoro Watershed. In this study, women and men mapped separately. Women showed location of plants mainly found in open fields and along the river, where they frequently visit in search of water and firewood. Photo by Carrie Chitty.

believed to cure as indicated by both men and women respondents. Such agreement was observed in the following plants: *Cucumis ficifolius* (Sweet melon of the wolf) used to treat malaria, *Urtica massaica* (Stinging nettle) for kidney problem, *Rhus natalensis* (Dessert date) for constipation, *Dombeya goetzenii* (Forest Dombeya) for stomach complications, *Cyathula cylindrical* (Hookweed) for malaria, *Olea europea spp. Africana* (African wild olive) for eye infections, *Plectranthus barbatus* (Fasle boldo) for stomach complications, *Toddalia asiatica* (Orange climber) for fever, *Schifflera volkensii* (Schefflera) for chest pains and *Gomphocarpus physocarpus* (Balloon cotton bush) for tooth ache.

Medicinal plant knowledge is passed on orally from the elderly to the younger generations by going to the field to collect plants and by preparing the plants in presence of the young people. Mothers and grandmothers show young girls while fetching water and firewood, whereas fathers and grandfathers show young boys as they herd their cattle.

Medicinal plants are believed to be effective against most diseases affecting the community. Some diseases, however, including pneumonia in children, cerebral malaria, ulcers, cancer, brucellosis and tuberculosis, affect both men and women and need modern medicine to treat. These diseases have no known medicinal cures, or those known have proven to be ineffective. Most of these medicinal plants are found growing in the wild; however, few have been domesticated, such as *Dombeya goetzenii* (Forest Dombeya), *Cotyledon barbeyi* (Hoary navelwort) and *Olea europea spp. Africana* (African wild olive). Roots, leaves, bark and flowers are the plants parts that are most commonly used.

The community expressed concern for the diminishing numbers of medicinal plants, blaming indiscriminate vegetation clearing and unsustainable harvesting techniques such as excessive debarking. Some species of medicinal value are threatened to extinction such as *Engleromyces goetzei* (Bamboo parasite - see photo), and *Cucumis ficifolius* (Sweet melon of the wolf). Men and women indicated that there are few traditional conservation management systems, and those that do exist are no longer being employed, thus more plants may be threatened by extinction. Participants also reported that medicinal plant knowledge has eroded in the community. Reasons given for such knowledge loss included: presence of modern health facilities, in-accessibility of some medicinal plants, and the influence of Christianity.

In the three-dimensional model of the watershed, men and women indicated useful locations where they obtain their medicinal plants. Researchers provided the participants with a blank model and asked them to show where the features are in the area using pins and threads of various colors. The vegetation along riverbanks, open fields and the forest include plants of medicinal value.

In the mapping exercise, 30 men and 30 women between 17-78 years were involved. Men and women mapped separately. The plants mapped in the model are those most commonly used in the community; men mapped 26, and women mapped 31 plants. Women located plants in open fields and along the river, where they frequently visit in search of water and firewood. Men showed plants deep in the forest because that is where they go hunting and grazing and use the plants while in the forest.

Dry Engleromyces goetzei *is a parasitic plant that grows on bamboo plant. It is used in the community to treat malaria and headache. Photo by Eunice Ngari.*

Both men and women indicated that there is need to conserve the remaining medicinal plants for future generations. They showed their efforts and interests in being involved in any conservation intervention aimed at protecting the medicinal plants' habitats as well as the plants themselves. They community proposed establishing tree nurseries where they would collect the plants' seeds and seedlings from the forest, nurture the trees, and later plant them in a botanical garden, in riparian zone, or in their farms.

Practical Implications

The results of the study are useful to many end users, both in the community and other outsiders. It shows that men and women of various ages value medicinal plants and have knowledge of and access to alternative medical treatment. The future generation of the Ogiek community will now have a reference for their medicinal plants and their uses. This means that even with the introduction of model medical services in the area, the people can have an alternative and supplemental source of medication. This is particularly useful to the community since the health centre is only one in the area, and some people live far away from the centre.

Carrying out gender-differentiated research is important to understand the community responsibilities and gender involvement in development activities. This study therefore shows that both men and women are stakeholders in conservation practices of the watershed. While men would like to conserve forest for other reasons such as source of honey, grazing fields and medicinal plants, women indicated that riparian zones also need to be conserved for medicinal plants and firewood. This means that by involving both men and women, its is possible to conserve the catchment area of River Njoro as well as the riparian zone, which in turn would increase the river flow, as well as protect other watershed resources. The results provide a basis for gender mainstreaming in all conservation practices in the watershed, for some activities are better carried out by women than by men.

From the results of the study, a list of trees to be included in on-farm tree planting can also be obtained. This means trees can be domesticated for medicinal purposes as well as provide other benefits, such as wind protection and erosion prevention on-farm.

The participatory three-dimensional model allowed the Ogiek community to transpose their mental knowledge of their surroundings to a graphical representation of the watershed. The resulting map can be used by the community to inform policy makers of the issues and problems affecting the community, as well as the solutions proposed by the community. For example, in the upper watershed, few social amenities are available as compared to other regions in the watershed. The Ogiek can use the model to demonstrate their ancestral land and where they obtain various resources.

The study is also useful to scholars, as it provides a basis for further research in bio-assay tests to determine the efficacy of the plants against certain human diseases. Perhaps leading to the development of more modern medical treatments obtained from the plant extracts.

Further Reading

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The GL-CRSP Sustainable Management of Rural Watersheds (SUMAWA) project was established in 2003 and is a multidisciplinary research effort focusing on biophysical and human-related factors governing health in the River Njoro watershed in Kenya. The Principal Investigator for SUMAWA is Dr. Patterson Semenye. Email: semenye@sumawa.or.ke.

The Global Livestock CRSP is comprised of multidisciplinary, collaborative projects focused on human nutrition, economic growth, environment and policy related to animal agriculture and linked by a global theme of risk in a changing environment. The program is active in East and West Africa, Central Asia and Latin America.

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