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sharing knowledge, improving rural livelihoods

Rural Radio Resource Pack

07/3

MEDICINAL PLANTS

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Medicinal plants

TECHNICAL INFORMATION

Introduction

Plants have been used as medicines throughout history. Indeed, studies of wild animals show that they also instinctively eat certain plants to treat themselves for certain illnesses. Medicinal plants are widely and successfully used on every continent. In Asia, the practice of herbal medicine is extremely well established and documented. As a result, most of the medicinal plants that have international recognition come from this region, particularly from China and India. In Europe and North America, the use of herbal medicine is increasing fast, especially for correcting imbalances caused by modern diets and lifestyles. Many people now take medicinal plant products on a daily basis, to maintain good health as much as to treat illness.

In Africa, attitudes towards traditional, herbal medicines vary strongly. One reason for this is the confusion between herbal medicine and witchcraft. The use of medicinal plants is sometimes associated with superstition, and therefore rejected by some people in favour of western medicine. On the other hand, there are millions of Africans who prefer traditional methods of treatment.

The valuable medicinal properties contained in certain plants are not, however, in doubt. In recent years, for example, the Chinese plant *Artemisia annua*, has become the essential ingredient in a new generation of anti-malaria drugs. The plant is now being grown in East African countries to supply pharmaceutical manufacturers in Europe. The bark of the tree *Prunus africana* is used in making treatments for prostate cancer. *Sutherlandia*, a native plant of South Africa, is being increasingly recognised for its value to HIV/AIDS sufferers. Other African plants, such as Devil's Claw and African Geranium, are also gaining popularity as herbal medicines, particularly in Europe.

Medicinal plants therefore represent an important opportunity to rural communities in Africa, as a source of affordable medicine and as a source of income. Governments too need to be thinking about how to promote the benefits that medicinal plants have to offer, which may involve integrating herbal medicine into conventional healthcare systems. This raises important issues, such as regulation of traditional healers and ensuring certain standards are met.

This resource pack

The primary aim of this resource pack is not to examine the validity and usefulness of medicinal plants. Rather, it aims to raise awareness in rural communities about the opportunities and challenges relating to the harvesting and cultivation of these plants. This will include issues such as sustainable harvesting, cultivation techniques, growing for the pharmaceutical industry and small-scale processing and product manufacture. There are also interviews looking at international trading standards for medicinal plants and integration of herbal medicine in national healthcare policy.

The problem of over-harvesting

The manufacture of pharmaceutical drugs is a highly profitable industry. Supplying the raw materials for drug manufacture can therefore offer big rewards. The danger is, of course, that this leads to unsustainable harvesting of the plant material. One of the best known examples of this comes from West Africa. The bark of the tree *Prunus africana*, found across much of Africa, is used in manufacture of drugs to treat prostate illnesses, a fairly common but serious condition, normally of older men, which interferes with bladder function. It is both painful and dangerous, and can result in potentially life-threatening cancer.

The Lebialem Highlands are one of three areas in Cameroon used to supply *Prunus africana* bark for manufacture of prostate medicines. In the 1970s and '80s the bark was in high demand by French pharmaceutical companies, but this led to over-harvesting. Trees were cut down for their bark but not replaced. As a result, by the 1990s *Prunus* trees were virtually extinct in the Lebialem Highlands, and this source of income lost to the people there.

Over-harvesting is not an easy problem to deal with, not least because the communities who harvest the plant material may be very poor. Obtaining money now may be a very strong attraction, overriding the advantage of having a steady stream of income in the future. There are different strategies that can be adopted to prevent over-harvesting, and several of them are presented in this pack. In the case of the Lebialem Highlands, communities are working to restore *Prunus* trees through planting programmes, and to regulate harvesting by creating community forests. A local NGO is also encouraging rural families to have a wider range of income sources, so that harvesting of *Prunus* bark is just one part of their livelihood strategy. See *Recovering an over-exploited resource*.

In Malawi, the Forest Research Institute is conducting research into sustainable harvesting techniques for tree bark. Some trees naturally heal themselves if bark is removed, so people can remove sections of bark over a period of a few years and the tree will not die. Other trees cannot survive this, so sustainable harvesting may only be possible through planting of new trees. Harvesting bark from branches rather than the trunk of the tree may be another way to harvest sustainably. It may also be possible to obtain the same medicinal substances from other parts of the plant, such as leaves and fruit, which can be harvested without damaging the health of the tree. See *Sustainable harvesting of tree bark*.

Cultivation for home use and local markets

The organisation Action for Natural Medicine (ANAMED) began its work in the Congo, where years of civil war had a terrible impact on health services. ANAMED wanted to support rural populations to get more benefits from the plant medicines that were available in the forests around them. Since then, the organisation has spread to many other countries, and trains people to establish medicinal gardens, growing plants that they can use to treat themselves for common ailments, and reducing their dependence on imported medicines.

Many common plants grown in Africa have valuable medicinal properties. Paw paws, for instance, can be used to treat asthma, rheumatism and intestinal worms. Lemongrass can help in relieving fever. Sap from the *Aloe vera* is excellent for treating burns. These plants, and many others, can easily be grown in home gardens for domestic use. See *Growing medicines in home gardens*.

Moringa oleifera is another plant that has great potential, both in terms of home use and as a source of income. It has high levels of iron, calcium and Vitamin A, and can be used to boost the immune system, as well as treat a range of illnesses. It is normally consumed by drying the leaves and them pounding them into a powder. This can then be mixed with flours, or with other foods such as meat. For HIV/AIDS sufferers it offers an excellent source of nutrients

which can help to support their immune system and slow down the advance of the disease. See *Moringa - the miracle tree*.

Propagating medicinal plants

Those who wish to cultivate medicinal plants need a good source of planting material. Plants vary greatly in their ease of propagation. For some, like Devil's Claw, even obtaining the seed from the plant is difficult. Others like moringa are easy to propagate. Moringa stems can simply be cut and planted directly. Within two years they will have established themselves and can be harvested from. Moringa can also be easily grown from seed, which people can harvest themselves.

For other species, farmers may have to look harder to find planting material. In Zimbabwe, the Adventist Development and Relief Agency obtains planting material on behalf of rural communities from a permaculture centre. Those who grow for exporters, for example farmers growing *Artemisia annua* will be supplied with planting material. As Kobus Eloff explains in *Trading standards for export*, for those who grow for export markets, or for the pharmaceutical industry, choice of planting material is vital in order to grow plants that have high level of the medicinal ingredients, and which therefore earn farmers the maximum profit.

Quality and purity

Using good quality planting material is essential for producing a high quality medicinal plant. In addition, growers have to consider their cultivation methods. Use of chemical products must be done very carefully. The company African Artemisia, for example, does not allow the use of synthetic chemicals to control pests or diseases. Instead, farmers are encouraged to use biological controls, such as pyrethrin, a natural insecticide obtained from the pyrethrum plant, to control pests such as cut-worms. See *Artemisia annua – a plant cure for malaria*. Farmers may also be discouraged from using inorganic fertilisers; ADRA in Zimbabwe trains farmers not to use them in their production of medicinal herbs.

Post-harvest handling is another key area for maintaining quality, especially the methods used for drying plants. It is very important that fungus should not be allowed to grow on the harvested plants. ADRA has introduced solar driers as an affordable and hygienic method for drying herbs. These can be made locally, which is a great advantage to rural communities. See *Getting into commercial production*.

Trading standards for export

Unlike medicinal plants from India and China, few African medicinal plants have been extensively documented. This is a big obstacle to the promotion of these plants outside Africa, since it is difficult for growers or exporters to prove what medicinal properties the plants have, how effective they are and how safe – do they have any side-effects, for example?

Fortunately this problem is now being addressed by the Association for African Medicinal Plants Standards, which is writing 'herbal profiles' for the 50 most important African medicinal plants. These profiles will essentially be a summary of all the information that is known about each plant. Through writing the profiles, the Association will learn what gaps in knowledge there are. For example, it may be that certain plants have excellent medicinal qualities but their safety has never been properly tested. Once this becomes clear it will be easier for researchers to know where they need to focus their efforts, and it may help them in obtaining funding to do the necessary research work.

Once plants have been sufficiently documented, it will be much easier to market them internationally, for example to pharmaceutical manufacturers. Standards for cultivation can be

drawn up to ensure cleanliness and quality, and exporters will be able to offer guaranteed standards to international buyers, including the concentration of medicinal substance found in the plants. See *Trading standards for export*.

Making medicinal products

Making medicinal products from locally grown or harvested plants can be an excellent way of adding value and generating income. In this pack, there are several examples of how this is being done. In Uganda, the Natural Medicine Development Organisation (NAMEDO) has established a business making soaps, skin creams and oils. These are made using a variety of medicinal plants including moringa and neem, using locally appropriate equipment for oil extraction. Teams of able-bodied and disabled people are involved in making the products, which are attractively packaged for sale.

Having a selection of different products can increase the number of customers. For example, the *Mondia whytei* processors in Kenya sell the raw roots of the plant, but also produce a powdered form. This is preferred by hospitals, which use it to promote appetite in patients and to increase milk production in nursing mothers. The powder is also used to make fortified foods for the sick. Other products for sale include mondia seeds and seedlings. See *Cultivating an endangered vine*.

Once products have been formulated for sale, gaining official recognition and approval from the authorities is valuable. In Kenya, NAMEDO is working with the National Drug Authority to have its soaps, creams and oils approved. The organisation is also working with the National Bureau of Standards, so that the products are standardised. This makes it much easier to market the products, for example through clinics or supermarkets.

Integrating herbal and conventional medicine

Herbal and conventional doctors are frequently seen as rivals, having little respect for the skills and knowledge of the other. But, according to Nelson Moyo of ANAMED and various other contributors to this pack, both forms of medicine have an important role to play, and they should be working in partnership rather than opposition.

For example, hospitals and clinics can be swamped by people with relatively minor ailments, some of which might be treated with herbal remedies. This would allow hospitals to devote more of their resources to deal with serious diseases and operations.

However, for a government health ministry to promote or encourage people to use herbal medicines normally requires a radical change in thinking and policy. In The Gambia, this process is underway, with the government working to have traditional healers registered in associations. This will make it easier for their practice to be monitored, to ensure that it is in line with the national traditional medicine policy. This policy, currently in draft stage, aims to protect the rights of patients, to introduce standards for traditional medicine, and to protect the intellectual property rights of traditional healers. See *A national policy for herbal medicine*.

Integrating plant medicine into national policy involves not just the health ministry. Agriculture, environment and trade ministries will also be involved, so that farmers can be given support in growing the plants, harvesting from the wild can be controlled and quality standards introduced for those trading in medicinal plants and their products.

Using this Rural Radio Resource Pack

Recovering an over-exploited resource

This interview will be particularly interesting in places where over-harvesting of a medicinal plant is threatening its future. Restoring *Prunus africana* to the Lebalem Highlands has demanded the combined efforts of local communities, an NGO and government departments. If over-exploitation is either occurring or is a risk in your country, it would be good to get a spokesperson from the environment ministry to respond to this interview, in terms of how the problem can be addressed. Another area for discussion is the advantages of community forest management, and how this can help rural people to derive income from forest resources in a sustainable way, while preserving the environment.

Sustainable harvesting of tree bark

One point to come from this interview is that different trees respond differently to having bark removed. Some can regenerate the bark if not too much is removed; others cannot, and will die if their bark is removed. It would be useful to discuss with someone from the ministry responsible for forests about the best practices for harvesting bark from local species of medicinal tree in your country. This could include: the best tools to use; how long it will take for the bark to regenerate; how to organise harvesting to ensure regeneration takes place; any other precautions to protect the tree once bark has been removed. You could broaden this subject to include harvesting of other types of medicinal plants; how can they be harvested sustainably?

Another important topic that this interview raises is about how to build trust between authorities and traditional healers. In this case, forestry staff needed to build trust in order to help traditional healers protect their own resource. Could you get a local traditional healer to comment in terms of his/her relationship with the authorities? What is the attitude of traditional healers to collecting bark or plants from government-controlled forests? It would be interesting to organise a debate between the healers and the forest management authorities.

Cultivating an endangered vine

Medicinal plants are normally harvested and sold through very informal systems in Africa. One disadvantage of this is the lack of control over how much is harvested, and from where. Transforming this uncontrolled harvesting into a profitable, sustainable business can potentially increase the amount of income that can be earned from medicinal plants. This interview gives an example of how this is being done with one plant in Kenya. There may be similar projects happening in your country that you could investigate.

Moringa – the miracle tree

One way to supplement this interview would be to invite listeners to call in with their experiences of growing and using moringa. Try to find out where people can access planting material, and how the plant is used in your country. Moringa is an exciting plant, because of its potential both for home use and income generation. If there are any organisations (government or NGO) that are promoting moringa cultivation, they could also be invited to contribute to the discussion.

Growing medicines in home gardens

An interesting aspect of this interview is the many medicinal uses of some common plants, such as pawpaw. This could also make a good subject for a phone in: listeners' could suggest their herbal treatments to common ailments. You might want to invite a respected herbal doctor to join you who could comment on the ideas. ANAMED – featured in this interview – have representatives in many countries, who would probably be very happy to come on your programme. See the contact details at the end of this technical information.

Getting into commercial production

This interview documents how a development organisation, ADRA, is helping farmers to go into commercial production of medicinal herbs. Is either ADRA, or another organisation, doing the same thing in your country? If so, why not invite a representative onto your programme. Farmers who want to cultivate medicinal plants for sale need to have a good source of planting material. What sources are available for local farmers? A representative from a plant nursery that sells medicinal species could be interviewed. There is also the issue of whether churches should be supporting herbal medicine. This could make an interesting subject for a phone in.

Artemisia annua – a plant cure for malaria

If you are based in Kenya, Tanzania or Uganda, you may be able to do your own coverage of *Artemisia annua* to build on this interview – perhaps with a representative of East African Botanicals, the parent company of African Artemisia which features in this interview. Artemisia is best grown in areas of high altitude, so in other countries that have highland areas, a ministry spokesperson might be able to comment on whether the crop is one that the government is thinking of promoting.

Herbal soaps and creams

One issue to come from this interview is the use of local equipment to extract essential oils from medicinal plants, in order to manufacture products such as soaps, skin oils and skin creams. Is there a local organization that is promoting oil extraction technology? Are their companies or NGOs that are manufacturing medicinal plant products? If there is a company that makes such products, it might be possible to link them up with farmers who could grow the medicinal plants.

Trading standards for export

The AAMPS has selected 50 most important African medicinal plants which it wants to document fully by writing ‘herbal profiles’. It might be interesting to ask your listeners to suggest their own ‘most important’ medicinal plants. What are they used for, and how are they used. Do they have any side-effects? You could also contact an agricultural research organization to find out if they are doing any work on medicinal plant species. Which plants are they working on, and what will be the outcomes of their work?

A national policy for herbal medicine

Should national health policy have a place for traditional or herbal medicine? Would traditional healers accept being regulated by the government? Your listeners are likely to have strong opinions on this subject, so it would be an excellent topic for a phone in. You could invite a government spokesperson from the Ministry of Health to discuss the place of herbal medicine in national policy. A representative from an organization for traditional healers or herbal doctors could also contribute.

Other aspects of medicinal plants not covered in this pack

Essential oils

In many cases the medicinal properties of plants can be concentrated in an essential oil, which can be extracted using certain equipment. It may be possible to use locally manufactured equipment to do this, which will reduce the cost substantially. Essential oils are used to cure or relieve many types of medical condition:

- Lavender oil, for example, is used against insomnia, anxiety and headaches. It helps to heal wounds, burns, insect bites, and is good for skin problems in general;
- Tea-tree oil acts against infections, and is also an antiviral which strengthens the immune system. It helps to relieve insect bites and sun burn and to disinfect wounds. It can be used to treat ear, nose and throat infections.

You could also find out which essential oils are used in your country. A ‘naturopath’ or herbal doctor could advise, and might be able to suggest which plants would find a good market for essential oil production. Listeners might also be interested to know about the process of extracting essential oils, the equipment used, and where they can access such equipment.

Responsible practice of natural or herbal medicine

Herbal medicine is often associated with superstition and the practices of traditional healers, some of which may actually cause harm, instead of cure. But use of medicinal plants can also be done under very controlled circumstances, using scientifically validated medicines, paying attention to hygiene, prescribing accurate dosages, and with an awareness of any potential side-effects. This is an important subject, but is not covered in this pack.

Propagation from seed or through vegetative propagation

While some information is given on this subject – e.g. for moringa – the methods that farmers will need to use to produce planting material, and how to cultivate the seedlings or cuttings, are not fully covered in this pack.

Cultivation of medicinal plants

This pack contains certain information about cultivation of some medicinal plants, such as *Artemisia annua*. However, you could give your listeners more detailed information about how to cultivate a plant which is suitable for cultivation in your country, and is likely to have a rewarding market. Subjects to cover would include: which plants to choose, and for what reason; where to obtain seeds or seedlings; challenges in cultivation; post-harvest handling and processing; optimum production and marketing.

Packaging and storage of medicinal plants

Medicinal plants may lose their valuable qualities if poorly stored. If different species are mixed together this could also create health risks. Labelling of plants and using containers which protect the plant from contamination are both important, but are not always practised. What are the best methods of storage? A knowledgeable herbalist could give you an answer. Alternatively, you could speak to a scientist to find out the potential risks associated with poorly stored or unlabelled medicinal plants.

Use and efficacy of herbal medicines

This pack is mostly concerned with issues of concern to those who may harvest or cultivate medicinal plants. How medicinal plants can be used as medicines, and how effective or safe they are, are not extensively covered in this pack. This subject is important but needs to be handled carefully, taking advantage of expert knowledge, including scientific knowledge and traditional knowledge.

Prescribing accurate dosages

The exact dosage of medicinal plants is often the weak point of traditional healers. You could invite a pharmacist or a pharmacologist to explain the factors which have an influence on the dosage to be prescribed

- the weight of the patient: even when it comes to adults, dosage is different if you are tall and big, or if you are small and thin;
- the seriousness of the illness: if the disease is acute, the plant must be administered at frequent intervals and in larger doses. Chronic diseases require a less frequent dosage;
- The nature of the plant: certain healing plants can be ingested several times a day without side effects whereas for others, the effect of taking several doses in a short time can be dangerous;
- The speed of absorption: certain preparations are very quickly absorbed by the body and require frequent doses to maintain the curative effect. Others must be digested first by the stomach and take more time to act;
- The particular circumstances relative to the patient: certain plant medicines are highly inadvisable for pregnant women, for persons suffering from high blood pressure or for those who are taking other medicines that may be incompatible with medicinal plants.

Identifying and conserving endangered plant species

Pressure on grassland and forest areas from factors such as human development and climate change is threatening the diversity of plant species. This includes medicinal plants. Protecting these species for the benefit of future generations depends on documenting where they exist, and ensuring that they are protected, either in their natural habitat or through plant gene-banks. It could be interesting to invite those responsible for managing and protecting national parks or reserves how they are able to enforce the rules concerning harvesting of forest products. Often they will have very limited human or financial resources to do so.

Preserving traditional knowledge about medicinal plants

One interview in the pack highlights the danger that knowledge of herbal medicine is being lost, with few young people interested in continuing the practice. But this kind of knowledge is valuable, both in terms of its cultural significance, and in potentially leading to the development of new pharmaceutical drugs in the future. Recording the knowledge of traditional healers and herbal practitioners requires considerable resources – both human and financial.

Further information

Useful websites, online articles and fact sheets

Action for Natural Medicine (ANAMED) <http://www.anamed.net/> - the site contains information about this organisation, which offers seminars, publications and other training to those interested in natural, herbal medicines. The organisation has specific programmes to support herbal treatment of Aids and malaria. The site includes an order form for ANAMED publications – see below for a list of titles.

Kenya Forestry Research Institute (KEFRI) <http://www.mnh.si.edu/kakamega/plants.html>
Information about on farm cultivation of two species of medicinal plant, *Ocimum kilimandscharicum* and *Mondia whytei*, which are now being grown by communities near the Kakamega Forest, in response to unsustainable harvesting.

Environmental and Rural Development Foundation (ERUDEF) <http://www.erudef.org/>
The organisation aims to protect wildlife and fragile environments in western Cameroon. Its work includes support for sustainable *Prunus africana* harvesting.

African medicinal plants: setting priorities at the interface between conservation and primary healthcare

<http://peopleandplants.org/whatweproduce/Workingpapers/pdf/wp1e.pdf>

A technical working paper reviewing the danger posed to certain species of medicinal plant in Africa, and how, with co-operation of health care providers, these species can be protected.

Medicinal plant ‘fights’ AIDS - BBC article on how *Sutherlandia frutescens* is being used to treat AIDS in South Africa <http://news.bbc.co.uk/1/hi/world/africa/1683259.stm>

World Health Organisation Factsheet – Traditional Medicine

<http://www.who.int/mediacentre/factsheets/fs134/en/>

International Development Research Centre – This organisation funds and co-ordinates numerous research projects on medicinal plant species across Africa. Brief descriptions are given at http://www.idrc.ca/en/ev-4902-201-1-DO_TOPIC.html.

A Uganda-based research project on use of medicinal plants is described here:

http://www.idrc.ca/fr/ev-5471-201-1-DO_TOPIC.html.

An article titled Recognition and respect for African traditional medicine can be found at http://www.idrc.ca/en/ev-55582-201-1-DO_TOPIC.html.

The rape of the pelargoniums – an article in Science in Africa online magazine about unsustainable harvesting of a medicinal plant in South Africa.

<http://www.scienceinAfrica.co.za/2002/june/pelarg.htm>

SciDev Net dossier on indigenous knowledge, including numerous articles on traditional medicine <http://www.scidev.net/dossiers/index.cfm?fuseaction=dossierItem&Dossier=7>

Commercial products from the wild: Indigenous plant commercialisation and domestication in southern Africa

<http://www.cpwild.co.za/>

Encounter South Africa – medicinal plants. Brief information about four medicinal plants commonly used in South Africa.

<http://www.encounter.co.za/article/162.html>

Books

If you belong to CTA's network of broadcasters, you can receive, free of charge, books from our catalogue. For more information, send us a request at radio@cta.int

Titles available from CTA:

The miracle tree: the multiple attributes of Moringa

Edited by LJ Fuglie, CTA no.1062, 2001, 172 pp. 20 credit points

The book provides information about the many uses of moringa – as fertiliser, forage, oil, dye, rope making, honey production, tanning, water purification and medicinal purposes.

Propagating and planting trees

Agrodok 19, ISBN 90 77073 99 X, 2004, 102pp, 5 credit points

A short, practical, technical manual on propagating and planting trees, which could be useful to those wishing to restore tree species that have been lost through over-harvesting of bark.

Spice plants

By M Borget, ISBN 0 333 57460 5, 120pp, 10 credit points

This book describes the cultivation and use of spice plants, some of which have medicinal properties and uses. Brief coverage of the medicinal aspects is included.

Challenges and opportunities for the ACP herbal industry

CTA 1371, ISBN 978 92 9081 308 8, 94pp, 10 credit points

Highlights of a series of seminars on the ACP herbal industry.

Non-CTA titles:

Commercialising medicinal plants: A Southern African guide

Edited by Nicci Diederichs, ISBN 1 919980 83 0(Pb), 216pp, SA Rand 180

Medicinal Plants of South Africa

By Nigel Gericke, ISBN 1875093095, 304pp, £30

Publications from ANAMED (see above for details of order form)

Natural Medicine in the Tropics I, by Hirt/M'Pia, £10.95

Four ULOG solar ovens and one drier: Construction plans and uses, £8.40

Neem in medicine and agriculture, £3.50

Artemisia annua anamed: Cultivation, harvest, and uses, £6.95

Malaria: *Artemisia annua*: From research to experience, £16.65

Moringa oleifera: seeds and information

AIDS and Natural Medicine

Useful contacts

Kenya Forestry Research Institute

Kavaka Watai Mukonyi
KEFRI
PO Box 20412
Nairobi
Kenya

Natural Medicine Development Organisation – Uganda (NAMEDO)

Desai House, Plot No 4, Parliament Avenue
P O Box 16206,
Kampala, Uganda.
Email: kiteesa@hotmail.com

Southern Alliance for Indigenous Resources (SAFIRE) A development organisation supporting sustainable harvesting of medicinal plants in Zimbabwe.

10 Lawson Avenue, Milton Park
Box BE 398, Belvedere
Harare, Zimbabwe
Tel: +263-4-795461
Fax: +263-4-790470
Website: www.safireweb.org

Natural Uwemba System for Health (NUSAG) – A Tanzanian NGO working to produce a whole-leaf *Artemisia annua* drug, which could be much cheaper than current *Artemisia* drugs on the market.

Email: - info@nusag.com

Forest Research Institute of Malawi

Zomba, Malawi
Contact Gerald Meke – gmeke@frim.org.mw

Action for Natural Medicine

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anamed Ethiopia: Ralph Wiegand and Theophilus Tesfaye, Kale Heywet Church,
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anamed Kenya - Nairobi: Roger Sharland, REAP, Box 21083 – 00505, Nairobi

Tel: 020 3871438 reap@maf.or.ke .

anamed Mozambique: Pascoal Cumbane and Helene Meyer

Email: C91HT@gospellink.org

anamed Sudan South: c/o ACROSS, P. O. Box 44838, Nairobi, Kenya

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Rural Radio Resource Pack – 2007/3

Medicinal plants

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<i>Sustainable harvesting of tree bark</i> Forestry research is discovering and communicating better techniques for harvesting medicinal bark, to prevent trees dying.	6'12"
<i>Cultivating an endangered vine</i> Cultivation, processing and marketing of <i>Mondia whytei</i> , a vine that is normally harvested from forest areas.	4'06"
<i>Moringa – the miracle tree</i> Promotion of <i>Moringa oleifera</i> , a plant with numerous medicinal and nutritional benefits which can also purify water.	5'20"
<i>Growing medicines in home gardens</i> There are many plants which can be grown in home gardens which can boost the health of families, and provide income.	6'41"
<i>Getting into commercial production</i> A church-linked development agency in Zimbabwe is supporting farmers to grow and market various medicinal herbs.	4'22"
<i>Artemisia annua – a plant cure for malaria</i> Advice and support on cultivation, harvesting and post-harvest handling for farmers who are growing <i>Artemisia annua</i> .	5'08"
<i>Herbal soaps and creams</i> Disabled and able-bodied people in Uganda are growing medicinal plants and making medicinal soaps and skin products.	4'57"
<i>Trading standards for export</i> Producing detailed documentation on 50 important African medicinal plants, to aid international marketing of these species.	5'13"
<i>A national policy for herbal medicine</i> The government of The Gambia has a draft policy to integrate traditional healers into the national health system.	6'01"

Medicinal Plants

Recovering an over-exploited resource

Cue:

Medicinal plants are a highly valuable resource, both for use by local communities and as a source of income. But as with most resources, they are limited. Over-exploitation can quickly lead to the resource being finished, offering no benefits to future generations.

The *Prunus africana* tree is one of the most famous medicinal plants in Africa. Known as *piju* in Cameroon, the bark of the tree is traditionally used to treat a wide range of illnesses, including malaria, stomach ache and urinary problems. In the 1970s a pharmaceutical company also began harvesting the bark from the forests of Cameroon, to make drugs used to treat prostate cancer. Demand for the tree bark was very high, but the rate of harvesting was not sustainable. By the 1990s, nearly all the *Prunus* trees in one area of South West Cameroon, the Lebialem highlands, were gone. Now, the Environmental and Rural Development Foundation, a Cameroonian NGO, is working to restore the trees, and make sure they are managed in a sustainable way. Louis Nkembi, President of the Foundation explained to Martha Chindong what they are doing.

IN: "We are trying to replant...
OUT: ... the opportunity to talk to you."
DUR'N: 4'23"

BACK ANNOUNCEMENT: Louis Nkembi of the Environmental and Rural Development Foundation. The interview comes from a resource pack produced by CTA.

Transcript

Nkembi

We are trying to replant. We are also trying to push ahead for the creation of community forests which could now become sustainably managed by the local people. The government has put in place this legislation on community forest which provides the opportunity for community groups to organise themselves and manage these forests for their own benefits and also to replant those areas where they have previously existed but today they are no more, to several problems including over-harvesting, landslides etc.

Chindong

So you are not trying to prevent the people from harvesting the bark of the tree again?

Nkembi

No in terms of sustainable management we are not preventing, we are not stopping. We rather want to see there is that the use is done wisely so that future generations could continue to use the same species, the same quantity of products for the wellbeing of these communities. We are not stopping communities from using these products but rather assisting them in a way such that they would continue to use them forever.

Chindong

So how are you doing it, in very concrete terms?

Nkembi

We organise communities into functional community groups and we have been registered with the relevant government departments. We have now identified, mapped out the forest areas and all the farmlands where they have to be planted. Some farmers will like to have these planted in their farms, personal farms. So we have also identified who these farmers are and we have

created what we call the Lebiale Prunus Farmers Association and we are now identifying the different kind of trainings which we want to offer to them.

- Chindong** *Is there a better way to harvest the bark of a tree that you are trying to introduce to the people?*
- Nkembi** We have been able to put into place a better system where not all of the bark is peeled off. Bark is peeled off in certain quantities over a certain period of time and by the time we come back to the same tree to reharvest it has taken two, three, four years, given the opportunity to the tree to regenerate itself. But if the whole bark is peeled off at once that would definitely lead to the death of a tree.
- Chindong** *How are the farmers taking it considering that it is there source of income? Are they patient enough to harvest just a portion and then wait for some years first before they come back to the same tree?*
- Nkembi** Well every new thing is painful to adopt. Gradually they are adopting it and we are also not just taking *Prunus* as the sole enterprise but integrating it into the farming system, so that while they are not harvesting *Prunus* they could be harvesting other products within their farms. In that way they have a kind of a continuous income stream coming from the different farming enterprises.
- Chindong** *Now can you paint us a picture of the relationship between forest conservation, medicinal plants and income generation?*
- Nkembi** These areas are ecologically fragile habitats which need to be protected and by encouraging local population to plant these trees, they are indirectly promoting and protecting the ecological fragile landscapes. They are indirectly conserving the birds, because the trees give the birds the suitable habitats, and promoting conservation in general.
- Chindong** *And where is the place of the income generation?*
- Nkembi** Planting trees of economic importance means that they could harvest these trees for sale, for household use. And we know that *Prunus* has a very high demand both in national and in the international markets. So if this *Prunus africana* is promoted on intensive and large scale this is going to generate a lot of money for local communities once they are organised.
- Chindong** *So how are you getting funding for the project you are carrying out?*
- Nkembi** We, over the last year we have had an agreement or a convention with one of our US partners 'Trees for the future'. They currently are assisting us to develop a country programme on tree planting and *Prunus africana*, neem, jatropha and the moringa are some of the key species which we are promoting alongside some of the fast growing multipurpose agroforestry species. So they are our principal partner 'Trees for the future' and we hope to identify other partners who assist us in funding and so forth.
- Chindong** *Thank you for making yourself available to us.*
- Nkembi** Thank you very much Martha Chindong for giving me the opportunity to talk to you. *End of track.*

Medicinal Plants

Sustainable harvesting of tree bark

Cue:

Sometimes, there is a fine line between creating a business opportunity and endangering the environment. Some species of tree, for example, have bark which can be used to make effective and valuable medicines. But harvesting bark must be done carefully, or else the tree may die and be unable to provide bark for future generations. Many communities cut down trees which provide effective herbal remedies, or kill them by stripping their bark, when actually they could just use a small part of the tree, and preserve the rest.

So how can sustainable harvesting of tree bark be done? It is not a simple question, because the method will vary according to the type of tree. It is this kind of information that the Forestry Research Institute of Malawi, or FRIM, is spreading among communities. The Institute is also advising communities on how they can grow more of their precious herbal trees. Patrick Mphaka spoke to Gerald Meke, a Senior Research Officer at FRIM, to find out exactly what they have been doing.

IN: “Normally what we have been doing ...

OUT: ... the opportunity to talk to you.”

DUR’N: 6’12”

BACK ANNOUNCEMENT: Gerald Meke of the Forestry Research Institute of Malawi. The interview comes from a resource pack produced by CTA.

Transcript

Meke

Normally what we have been doing; for example if we see people are using bark, then we would go and test trees to see how they respond to the removal of bark. If for example the tree dies because the bark has been removed, then we have to come up with alternatives like, one: we would encourage these people to establish an orchard or a plantation of those particular trees, so that when they reach a certain age, they can harvest the whole tree and remove all the bark. Because if they just remove a small portion, it will die. But for some trees, like for example *Prunus africana*, it heals when you remove a piece of bark. So you would encourage these people to harvest a small section of the bark from a particular side of the tree, and then leave that area to grow back maybe for two to three years. Then after that they can go and harvest on the other side of the tree, and they can continue in that type of circular harvesting pattern, and then the tree will not die. But as I said, the trees that will die if they harvest the bark, then there are options like, for example, establishing a plantation, as I said. Or the other option is to look at other aspects like leaves or fruits, which, when harvested, they can not affect the tree. But you have to make sure that you look at if the chemical that cures a particular disease is available also in the leaves, then you can advise them to go for the leaves. Or then you can provide alternative sources of parts of the plant that these people can harvest.

Mphaka

One of the stakeholders in that area of traditional medicines are the traditional doctors themselves, and it is a very secretive area. What kind of cooperation have you been having with them in order to know what type of plants they use and how much you can assist them?

Meke

That area is one of the serious challenges that most researchers meet. But with

traditional healers, you find that if you can show to them that you can be trusted, these people are very easy to work with. Once you are clear of what you want the information for and what you are going to use it for, then they can easily cooperate with you. And whatever we do, we try as much as possible to run away from things like: to give us the name of the tree which they use for what particular type of disease; how they prepare the medicine, and all that. That type of information on how they prepare the medicine and all that, we have tried to avoid that because that is what they mostly they keep it as a secret. But just to indicate to us what trees they use, what plants they use, that is not very difficult. Because as foresters, our concern is that there is a lot of deforestation, over-harvesting and all that. So, if these people are to continue getting whatever medicinal plants, then it means they have to work with us to help them on how best they can propagate them, and also to come up with how best they can harvest. So, it is like to their advantage. So, after explaining these things properly to them, then they trust us and we develop a good working relationship and then they tell us the necessary information that we need as foresters to advise them.

Mphaka *One of the biggest challenges which researchers face is the fact that whatever they have found out to be solutions, things which work, the problem comes in when they have to disseminate that information to the targeted audience. How do you do that yourselves?*

Meke That one is a very serious challenge for us. But for example, with FRIM, we are working in the forest department and the forest department has got an extension unit. So normally what we do is, whatever technologies we develop, we pass them on to our colleagues in the extension area so that they develop messages which can be given out to people and people can easily take them up. The other way is we try as much as possible to use the mass media like the radio, also the newspapers and give out information.

Mphaka *This area of traditional healers and traditional medicines, and looking at the trees which Malawi can provide as a nation, is looked at as an area which is kind of worthless. For you to spend all that time and effort to look at the area, do you think it is an area that can provide wealth to anybody at all?*

Meke At first that is the impression that people get when they have not had a chance to look at that particular area. For example, with the issue of traditional medicine, almost every Malawian uses traditional medicine. Ten million people using traditional medicine. Look at the damage that would happen to forests if all those people are to get that traditional medicine. You will find that there is a lot that is being taken out. So, as foresters, our concern is, if all these people are using these plants, then very soon we will have nothing. For example, if you look at the issue of wealth creation, you find that one: the area of 10 million people wanting medicine; maybe people in the village they would not charge a lot of money to some one if they were to treat them, but there are, for example, people who can harvest and then sell across the border. For example we have people who harvest traditional medicine in Malawi and sell in South Africa. They make money. If they were not making money, they would not waste a lot of money to buy a ticket to go to South Africa. So there is money that is being made. You also find traditional medicine being sold in pharmacies. So, maybe for us in Malawi, it is just a matter of time when may be, some people will think of making cough mixtures, using traditional medicine. So very soon we will have these on the market; so there is a big market for these traditional medicines. *End of track.*

Medicinal plants

Cultivating an endangered vine

Cue:

Mondia whytei is a medicinal plant found in the tropics - from West Africa to eastern and southern Africa. The root of the plant is highly valued as a flavouring and an appetiser, and it is also a good source of vitamins and minerals. In Kenya, the Kakamega Forest is one of the most important areas where *mondia* is found. Unfortunately, the supply is being threatened by over-harvesting. Recently, however, a number of organisations including the Kenya Forestry Research Institute, have introduced a programme to train people in awareness and conservation of *mondia* in the forest. The programme, which is called KEEP, has introduced the cultivation of *mondia*, and the roots of the plant are now being sold by the farmers, for production of a powder which has both medicinal and nutritional benefits. Winnie Onyimbo spoke to Kavaka Watai Mukonyi from the Forestry Research Institute and began by asking him what KEEP stands for.

IN: "KEEP stands for Kakamega Environmental..."

OUT: "...crops maize and sugarcane by far."

DUR'N: 4'06"

BACK ANNOUNCEMENT: Kavaka Watai Mukonyi of the Kenya Forestry Research Institute, which has been working to introduce cultivation and sustainable harvesting of the medicinal plant, *Mondia whytei*, in Kenya's Kakamega forest. The interview comes from a resource pack produced by CTA.

Transcript

Mukonyi

KEEP stands for Kakamega Environmental Educational Programme. It is an association of youth groups all over Kakamega Forest. There are over a hundred members registered. They train people in awareness and importance of conservation of Kakamega Forest. Kakamega Forest is threatened by various factors from over harvesting, exploitation of these medicinal plants including *mondia*. So they are the ones now we have developed a technology of processing, harvesting and post harvest handling and KEEP now train their communities around the Kakamega Forest.

Onyimbo

What processes did you have to go through to have mondia certified as a useable product for consumers?

Mukonyi

Mondia is an edible plant that is eaten by tribes all over. So it is a food. That is one step of certification, whereby it has been eaten as food and as medicinal for centuries by humankind. So it is not poisonous. The second step of certification is we have done analysis on nutritional value, the phytochemicals and toxicology. It is not toxic to man and other animals. These are quality assurance when it comes to certification. And another part of certification on sustainable harvesting, so whatever they harvest they are given a letter showing the source; if it was from the farm, if it was from the forest and quantities are monitored. These are the certification procedures that have been put in place by institutions working with KEEP.

Onyimbo

How is Mondia whytei processed and packaged?

Mukonyi When processing we take into consideration quality assurance. This comes all the way from harvesting and post harvest handling. Now when we harvest from the field we ensure that they are very clean and they go to the processing centre where they are sorted into various crates. But in each process you find quality assurance procedures are put in place. The microbial toxic elements are determined in each and every step to ensure that the quality is maintained at all levels before it reaches the consumer. And every quantity that is sold, a badge is left to ensure at a particular period the quality is in place within the international standards required for medicinal plants.

Onyimbo *What about the marketing?*

Mukonyi Marketing of medicinal plants is a bit complex. The challenge is linking from the primary to the market. So what we did now we have a processor in Kakamega where they are harvesting the plants and taking to the processing farm. So linking the production and the market, this was one of the major challenges. First we begin by the locals where their plant is highly revered because we have a population of over one million in western Kenya and then we have been focusing on major market outlets. These are the big supermarkets where they are packaged and put in and advertised also from newspapers, radios, mostly various products ranging from the developed products. We have the *mondia* seedlings, we have the *mondia* seeds; these are the various products that are marketed mostly through advertisements. Most people prefer the powder, the powder is highly preferred mostly from those in hospitals because it is so good for the appetite, it is so good for the nursing mothers, it increases milk production. We are even putting it in fortified foods.

Onyimbo *How has been the response of the community around Kakamega Forest to your work?*

Mukonyi Putting a new plant in cultivation is not an easy job because they are used to planting maize and sugarcane, so we had to convince them. So it picked up slowly but right now it has picked up, we are not even telling them to plant. There is now a massive planting from all over western Kenya and not only in western Kenya they have spread to most parts of Kenya going to Kilimanjaro where people are really planting large scale because, when you compute, the income from *mondia* is more than the conventional crops maize and sugarcane by far. *End of track.*

Medicinal plants

Moringa – the miracle tree

Cue:

Every day, an estimated twenty five thousand people in developing countries die from water borne diseases. In water treatment plants, the most common purifying chemical used is aluminium salt. This often needs to be imported, making it quite expensive. There could soon be a home-grown solution, however. The Asian moringa tree, originally from India but now found in much of Africa, has seeds which contain a natural coagulant. This can bind impurities, cleaning water and making it safe to drink. Moringa also has many other useful properties. It contains high levels of iron, calcium and Vitamin A, and is used to boost the immune system, as well as treating a wide range of illnesses.

Dr Stanley Hamalilo of the National Institute for Natural Plant Products promotes medicinal plants such as moringa in central and southern Zambia. Chris Kakunta visited his farm, 100 kilometres northwest of Lusaka, to find out more about this plant which some call the miracle tree.

IN: “Well, when we are talking about ...
OUT: ... at the end of the day.”
DUR’N: 5’20”

BACK ANNOUNCEMENT: Dr Stanley Hamalilo describing the many benefits of the moringa tree. The interview comes from a radio pack produced by CTA.

Transcript

Hamalilo

Well, when we are talking about moringa, it has actually been proved that moringa is one of the powerful plants, or trees, which has got very high medicinal properties, and not only on the part of healing. It also contains essential elements like minerals, vitamins, which you cannot find in these other plants. So generally, when you talk about moringa, moringa is like a miracle tree, they way we call it. It’s a miracle tree.

Kakunta

Being a miracle tree, do you have some examples of certain illnesses that it is able to cure?

Hamalilo

When you talk about the problems of high blood pressure, diabetes, osteoporosis – we are talking about the loss of calcium from the bones – it has actually very high calcium, which you cannot compare in milk. So for bone density building up, it is actually very good.

Kakunta

Now you mentioned promoting this particular tree; in what areas are you promoting it?

Hamalilo

Well we are promoting on the nutrition part, and as well on the medicinal part. Because when you are talking about the nutrition part, there is a certain programme that we are doing on the HIV programme. Or just let me give a little formula where you get yellow maize or yellow corn, or popcorn. You know popcorn it has got a very high percentage of selenium, which helps to build up the immune system in human beings. If you get about 1 kg of popcorn, 1 kg of finger millet, 2 kg of soya beans, 1 kg of groundnut. You mix all these ingredients together; of course you have to take for milling.

When you get the flour then you mix it with 400 grams of moringa powder. Then a patient is told to be getting one cup of this mixture, and in the evening one cup. At the end of the day, you will see how this person is going to build up the immune system.

Kakunta *And this has been working out very well?*

Hamalilo And this has been actually tremendously working, and powerful results in all the areas that we have introduced this programme.

Kakunta *Here at the farm you are also feeding your livestock with moringa branches. Are they nutritious too?*

Hamalilo That is the beauty of moringa. As I said in the first place, that this is actually a miracle plant. You see, when you look at all these animals, including even birds. You actually get these leaves of the moringa; then you dry them in the shade. You don't dry them in the open place. There is a special place that we dry these plants; they have to use a shade drying. Then after they have done that then you bring them, you pulverise them. Which means you pound them. Then after they have been pounded, then actually you can add them to any feed, and give it to animals and birds. And at the end of the day you are going to discover that the birds will actually flourish, and the animals also will flourish, and they will have less infectious diseases because of the system which is so powerful.

Kakunta *In terms of encouraging the small-scale farmers to grow this particular plant, do you have programmes on the ground?*

Hamalilo We are working in collaboration with the ministry of agriculture and co-operatives department. So we are actually going to train the members of the co-operatives how actually to grow this plant, how to process it and how to use it at the end of the day.

Kakunta *Wonderful. Now, what type of materials do you use for planting it?*

Hamalilo Well we just use the stem. You can just cut the stem and then plant it directly. It is a very cheap kind of a thing. It is very easy. Within a short time, maybe within two years, you will have a very big forest of moringa. Then the other method is seed. You actually put in the seedling sacks, and then wait for them to germinate. When they germinate you can actually go around and plant them around your farm or any other place that you would like these plants to be.

Kakunta *Here at your farm I have seen quite a number of moringa trees. Are you also using them for other purposes, other than the medicine?*

Hamalilo Yes, yes. We are using them for animals, as I said, we are using them for the chickens. And we are using them also for water purification, we are using the seed. So you just have to pulverise the seed of moringa, and then you add it in the water that you want to drink, and then within 10-20 minutes time that water is purified, you can use it. And also for fertilising the fields. So we can chop some seeds or flowers or the leaves together, and then after you have done that you can actually put them in the growing pots, and then you put your flowers there. The flowers they shoot up nicely.

Kakunta *This tree is relatively new here in Zambia. To what extent do you think that through your programme this tree will be able to be adopted by many small-scale farmers?*

Hamalilo Well we have actually seen already that the movement is very nice, and people have started to appreciate the plant, because those who have already used it, they are actually spreading the information to others. We believe that with the help of the government and other stakeholders and other NGOs who are interested to come up with this kind of programme. Especially to alleviate the problem of poverty. Because I believe the coming of moringa is one way of reducing the impact of poverty in the lives of people. As they have animals, they will feed them, the animals, they will sell them, they will have money, at the end of the day. *End of track.*

Medicinal plants

Growing medicines in home gardens

Cue:

Many common plants and trees found in Africa have recognised medicinal properties. Many others contain high levels of vitamins and minerals which can protect people's health against disease. But there is also scepticism and doubt about the value of such plants. Can they really cure sickness, or is it better to buy a medicine from a shop or a clinic?

The organisation Action for Natural Medicine was originally set up in the Congo, where health services and provision of medicines in rural areas were seriously affected by the civil war. Commonly known as ANAMED, the organisation trained people in how to use locally available plants to treat common illnesses. There are now ANAMED representatives in numerous countries, not only in Africa. One strategy used to promote the use of medicinal plants is setting up medicinal gardens. These provide planting materials and a venue for training courses, so that local people can reduce their dependence on pharmaceutical drugs and may be able to gain a source of income from growing medicinal plants. Nelson Moyo, head of ANAMED's medicinal garden in Malawi, spoke to Excello Zidana about the work being done.

IN: "We have got pawpaws, neem, moringa ...
OUT: ... thing is for them to be healthy."
DUR'N: 6'41"

BACK ANNOUNCEMENT: Nelson Moyo, head of Action for Natural Medicine in Malawi, speaking about the benefits of growing medicinal plants in home gardens. The interview comes from a radio resource pack produced by CTA.

Transcript

Moyo

We have got pawpaws, neem, moringa which is called *chamwamba* in our vernacular and then we have got *Artemisia annua*. ANAMED would like to get this plant given to as many people as possible to be used for the healing of malaria and again other diseases, because it is an immune booster. We can also use this plant for HIV infection as of today. So what we are doing is we sometimes have the planting materials here and make more of them and we distribute through the organisations that we are working with after seminars; they can get these plants and then they open their own medicinal gardens.

Zidana

Many people think that using medicines obtained from stores, groceries is more effective than medicines from plants. How do you look at that?

Moyo

It is not totally true, both sides have got weaknesses and strengths. People should also respect what God is giving them through nature. For example *Artemisia*, when we use it for malaria people get well after taking *Artemisia* for 7 days, most people they get well. But I also believe that no two bodies are the same. Somebody may take the same plants and use them, it may not work well for such bodies but it does not mean that the plants cannot be used. Lemongrass, for example; if I have got a fever I take lemongrass tea, I get relieved. So I do not think that is the truth to say that it is only the pharmaceutical medicines that can do better.

- Zidana** *You also talked about moringa, the plant that is mostly found along the lakeshores. How good is this tree?*
- Moyo** This plant is more nutritional. What we are doing is to tell the people that you have got a lot of worth by having moringa, *chamwamba*, and then what we are telling them is that they should harvest the leaves, dry them in the shade, pound them and then they can be using these leaves, the powder, they add it to porridge or they add it to their meat during lunch or supper and then they get a lot of vitamins from this plant: vitamin A, vitamin B, vitamin C, there is again vitamin K, iron, magnesium, zinc and the like; a lot of mineral salts. So by just taking those leaves you are getting a lot of nutrients.
- Zidana** *And you also said about pawpaws being very good in terms of treating or curing these common diseases. Tell us more about the pawpaw tree.*
- Moyo** Yes the pawpaw plant is really wonderful because the pawpaw leaves can be used for asthma. Let's say I have got asthma, I would take the young leaves of pawpaw and then I would dry them up. I either make like a cigarette, I smoke and then I feel better now in the air pipes. And then if I do not want to smoke a cigarette, I may just burn these leaves and then when I will be inhaling the smoke I will feel better, if I am asthmatic that is. And if I have got diarrhoea I would also use these same leaves of pawpaw and I just boil one handful of the leaves in 1 litre of water and drink. And the roots of this plant you can use when you have got rheumatism. You take fresh roots and then you just rub on the place that you have got a problem and then it helps.
- Zidana** *As a liniment?*
- Moyo** Yes it would go that way. And of course the sap from the green pawpaw fruit is good for, if I have got worm infection I would take maybe two tablespoons of the sap, the milk that we have from the green pawpaw.
- Zidana** *The white stuff?*
- Moyo** Yes of course I do not take off the fruit from the plant I leave it there. I just make incisions and then I get the sap, maybe two tablespoons and I drink this once and I can check again maybe after two weeks I can just drink again. But the worms are going to be paralysed and when I go to the toilet I may pass them out.
- Zidana** *Now let's focus on the environmental aspect. Many traditional healers go out to cut down trees maybe looking for leaves and barks. How do you think this garden will help in terms of conservation of the environment?*
- Moyo** This garden, demonstration garden, we tell them how best they can harvest the leaves without cutting the branches off. And again if they wanted the roots, they take the side roots not the tap root because if they take the whole tree down then tomorrow we will not have medication. Like for example again the bark, if they just take the bark from the trunk you know then this plant is not going to live well.
- Zidana** *It will die?*

- Moyo** It will die. So we say for the bark it would be better to get from the branches because then the food is still going to go to the other branches. So they just take maybe a branch or two branches and then take the bark from there, it could be better.
- Zidana** *How are you helping in this epidemic that has come in, the HIV/AIDS pandemic?*
- Moyo** We try to get the plants that we know that they are immune boosters and the plants that we know they are nutritional. For example we just talked of *chamwamba*, *Moringa oleifera*. This plant, if it would be used in the right way... for example if I am HIV positive I would be getting like 3 tablespoons in the morning, 3 tablespoons afternoon, 3 tablespoons in the evening. If I do that for a month, two months or so I would get most of the nutritional values that I need for my body. And then we have got plants like *Artemisia*, *Aloe vera*, these plants they help quite a lot in keeping our immunity well.
- Zidana** *Lastly, what would you want Malawi to be in future in terms of the availability of medicinal plants in Malawi and even in the whole region?*
- Moyo** Just in general I would like to see that each and every family is having medicinal plants and then know how best can you use this plant and when can you use it. Because there are some plants that we are not supposed to use for example aloe, *Aloe vera* is not supposed to be used by expectant women but maybe people in the villages may be using that plant and then they may cause a lot of abortions and the like. So organisations should be willing to train these people on how best they can use the plants. In that way their lives are going to be developed.
- Zidana** *And what advice can you give to those people in communities where these plants are available but they do not use them?*
- Moyo** What I would say is that we should work together, get them trained and then even some of them they can make IGAs, income generating activities. For example *chamwamba*, they can sell that leaf. With this HIV infection people need a lot of that, so they may sell. Or they can be using it, because the first thing is for them to be healthy. *End of track.*

Medicinal plants

Getting into commercial production

Cue:

In Zimbabwe, public demand for medicinal plants is booming. There are several reasons for this, not least the spread of HIV/AIDS and the shortages faced by the conventional healthcare system. Widespread economic hardship is also playing a part; herbal medicines are usually cheaper than those sold in pharmacies, and for those harvesting the plants, they offer a useful source of income. Unfortunately, this is also leading to over-harvesting of some species, threatening future supplies.

The Adventist Development and Relief Agency, ADRA, is currently working to raise awareness about the dangers of over-harvesting. It is also helping farmers to establish new businesses cultivating and selling medicinal herbs, both to support the livelihoods of these farmers, and to increase the availability of cheap, herbal medicines to the wider population. Herbs being promoted by the organisation include sage, fennel, mint and Sutherlandia, a plant which can benefit those suffering from HIV/AIDS. But adopting a new crop and establishing commercial production is not easy, so when Busani Bafana interviewed ADRA agricultural officer Tingane Ndhlovu, he began by asking what the main challenges had been.

IN: "Obtaining propagation material has been ...
OUT: ... and commercialisation of traditional herbs."
DUR'N: 4'22"

BACK ANNOUNCEMENT: Busani Bafana reporting from Zimbabwe. The interview comes from a resource pack produced by CTA.

Transcript

Ndhlovu Obtaining propagation material has been a challenge. And maybe also the know how, or the knowledge in terms of propagation and also usage, has been one of the challenges. Most farmers also need some reliable sources of water so they can sustain these herbal nurseries throughout. I think that is also one of the challenges that we are facing.

Bafana *There is also the issue of cultivating these medicinal herbs. What challenge have you faced there and how have you solved it?*

Ndhlovu Basically the challenge in terms of cultivation may come with the knowledge of propagation. And what we have done, us as ADRA, we have actually organised deliberate workshops to train them on propagation techniques for all the herbs that we are promoting, whether by vegetative material or by seed.

Bafana *What about getting the sufficient quality and quantity?*

Ndhlovu We make sure there is no chemical usage, because we are trying to say our farmers must produce herbs that are really clean, not contaminated by chemicals. When it comes also to processing, we are trying to make sure that farmers are using very hygienic methods of processing like the solar driers that are very cheap to manufacture. They are an appropriate technology; they can easily manufacture those in communities and they produce very high quality herbs.

- Bafana** *When your organisation decided to support the farmers, what particular support did the farmers need to establish their businesses?*
- Ndhlovu** OK, first of all, acquisition of propagation material was done by us. So we really bought a big consignment. And then we set up a big nursery in Plumtree and other districts so that that nursery could be a starting point for the propagation material, and then cascade into the whole community. At the same time, the issue of knowledge; we actually held some workshops, funded those workshops, and also awareness within the community through the RDC, the community structures and also the general public – we funded those kind of workshops.
- Bafana** *Would you say traditional herbal clinics and pharmacies will in any way help communities in Africa access cheaper medicine than those sold in conventional pharmacies?*
- Ndhlovu** Yes, I think it is already overdue to have such kind of clinics spotted all over our communities, so that our people could access cheaper medicines that are even of higher quality. So I am just thinking that if we could just have more and more of these clinics set up all over the country, or all over Africa, yes our communities would immensely benefit from that.
- Bafana** *But is it easy?*
- Ndhlovu** It is not very easy, looking at the playing field, where the other, western pharmaceuticals are already established. There are a lot of challenges. We need to pull together until the herbal fraternity also gains a lot of recognition.
- Bafana** *What about the superstitions surrounding the use of traditional medicines?*
- Ndhlovu** Yes, you know people think that if you are dealing in herbal medicine then that is a bit satanic; you see that is also a big challenge. Like in Zimbabwe, the biggest part of our community are Christians, and for us to put across the message and make it acceptable, I think it needs some extra strength. I wish churches would also be coming to help in this aspect. At the moment our own organisation belongs to Seventh Day Adventist, you know ADRA. That is the only church at the moment that I think is deliberately promoting these plant materials for medicine. I wish many more would really come into play.
- Bafana** *And what are the farmers' future plans?*
- Ndhlovu** The farmers' future plan is to bring together farmers who are high potential producers, so that they can, together, find a market network at the extent of exporting. Especially farmers that are in Plumtree, because they are nearer the border between Zimbabwe and Botswana. So they are really looking forward to pulling together their resources and making quite a bigger production magnitude, and then, up to the extent of exporting.
- Bafana** *There you are listeners. I was speaking to Mr Tingane Ndhlovu, an agricultural officer with ADRA, who are involved in the promotion and commercialisation of traditional herbs. End of track.*

Medicinal plants

Artemisia annua – a plant cure for malaria

Cue:

The development of pharmaceutical drugs from the plant *Artemisia annua* has been one of the most exciting recent developments in plant-based medicine. Originating from China, artemisia is now being grown in East Africa, often by farmers who have left behind other cash crops such as tobacco. Having a plant-based malaria cure is of course nothing new. Quinine drugs, still used in some areas, are derived from the bark of a tree, the cinchona, which is a native of South America. But there are hopes that widespread cultivation of artemisia, combined with simpler methods for producing medicines, could offer great benefits in the treatment of malaria in Africa, at substantially lower costs.

In Tanzania, farmers are growing the plant on behalf of a private company, African Artemisia. The leaves are then taken to Nairobi, where the medicinal ingredient, called artemisinin, is extracted. This is then exported to Europe for manufacture into drugs. Lazarus Laiser spoke to Peter Masawe about how small-scale farmers in Tanzania are involved in artemisia production.

IN: “We are planting this crop ...
OUT: ... And also it is a malaria cure.”
DUR’N: 5’08”

BACK ANNOUNCEMENT: Peter Masawe of African Artemisia. The interview comes from a resource pack produced by CTA.

Transcript

- Masawe** We are planting this crop for curing malaria, and in Tanzania we have many places where we are growing artemisia.
- Laiser** *You said artemisia is used to cure malaria. Is it that a person just takes direct the leaves or how is it?*
- Masawe** No, no. After cropping it we transport our leaves to our factory, and there we undergo the crystallisation. And then we export those crystals to Europe. After that, the medicine can come back to cure malaria.
- Laiser** *How did these farmers get involved in it?*
- Masawe** In some areas we have the contact farmers who are helping the farmers how to grow artemisia. And these contact farmers are under an agricultural advisor, and the agricultural advisors are under an area manager. And the area manager is under the country director. All these are the services of helping farmers how to grow artemisia.
- Laiser** *Now let us think of the quality, and also safety in cultivation. How is this controlled?*
- Masawe** Artemisia, as we said, is curing malaria, so we do not allow anyone to apply any chemical on this plant. You are not allowed.
- Laiser** *So what else can be used to protect the crop?*

Masawe Yes, actually with this crop we are getting a problem at the earliest stage of the crop. When we transplant it you can find the cut-worms, maybe for a short time, about one month. So what we tell the farmer to apply is pyrethrum powder, and this pyrethrum powder you can dry it, and then you grind it and then you use that powder just around the stem, just a little bit. And then you will finish the problem of cut-worms. And management of getting the good quality is starting from the point of harvesting. We have two ways of harvesting. First we have plucking, but now we are not encouraging the plucking because it gives us the lowest artemisinin content. Now we are going with chopping the crop completely from the field, and then the crop will become dry. We start sieving it after hitting the leaves, and then we remove the stalks, and then the farmer is supposed to put the artemisia in the bags from 'African Artemisia'. Because maybe the bags which they can use have been contaminated with other things. So we provide the bags to the farmer. Mind you, before we were just harvesting this crop after 10 months. But now we are telling the farmer that we have to harvest this crop after 5 to 6 months and not more. Because from 8, 9 to 10 months this crop tends to lose artemisinin content, and this makes even the farmer not to get the profit which he is supposed to get. So this is what we are doing now.

Laiser *How about the rain? How much rain is needed?*

Masawe Artemisia needs enough water during the transplanting, about 2-3 months mainly, and then after that there is no problem. But other farmers also who are having irrigation can grow this crop for 2 seasons per year, so you see the benefit the farmer is getting. Planting this crop in the area where the altitude is low, this plant will pre-flower earlier, so high altitude is better for this crop.

Laiser *Which other parts of the region, for example in Africa, are growing artemisia?*

Masawe I know China are dealing with this crop, and it is the place where it started. But here, I know Tanzania, Uganda and Kenya.

Laiser *What else can you say about artemisia generally, to the listeners who are listening to us now?*

Masawe I can say, let us mobilize farmers to get into artemisia growing in those areas which are conducive of growing artemisia, by looking at the altitude, even the soil type. This will make people to get enough money, it is a cash crop. And also it is a malaria cure. *End of track.*

Medicinal plants

Herbal soaps and creams

Cue:

Medicinal plants have a wide range of uses - they can be used as food supplements, or applied to the skin in the form of soaps or creams. In Uganda, the organisation NAMEDO offers advice on the best ways to cultivate and use certain plants. It also works with both able bodied and disabled people in the manufacture of medicinal products.

Eric Kihuluka is a herbal practitioner at NAMEDO. He spoke to Eric Kadenge about using herbal medicines, and the way in which - with the right support and regulation - herbal products can be a good business opportunity. But he began by explaining the meaning of the name NAMEDO.

IN: "NAMEDO is the Natural Medicine Development ...

OUT: ... medicine days and we celebrate this."

DUR'N: 4'57"

BACK ANNOUNCEMENT: Eric Kihukula of the Natural Medicine Development Organisation in Uganda. The interview comes from a resource pack produced by CTA.

Transcript

Kihuluka

NAMEDO is the Natural Medicine Development Organisation. Our products are organically manufactured health products. We are producing creams, we are producing soap, we produce medicine for ulcers or stomach related problems. So we always refer the patients to the medical practitioners in the health centre to be diagnosed, then they come and tell us what it is and then we can have a formula or a combination of herbs that these people can use. Besides that we are also promoting nutrition through the medicinal plant gardens or the back yard gardening.

Kadenge

Now let's go back to the health products. What are the plants that you use to manufacture your products?

Kihuluka

We have a wide range of indigenous plants. You find mangoes, you find jackfruits, you find the avocado whereby you eat it as a food for nutrition purposes, you use it for your skin or you use it for the coughs and so many other things. Moringa is very good. It has several minerals and vitamin supplements within it and at the same time, the same moringa has a very good oil which is equivalent to the olive oil, whereby we are making very good creams out of moringa. Neem trees also are good, from flowers to the seed, that we are also getting very very good oil. And neem tree actually right now is widely used for eczemas and bad, rough skins. We are teaching people how to extract locally, at the same time we are also developing rural, simple, adaptable and appropriate technologies for oil extraction.

Kadenge

Now how do you get these plants?

Kihuluka

Basically we are developing small gardens. At the same time within the reforestation or the replanting programme we have several plants we are advocating that people should grow for conservation purposes.

- Kadenge** *And who does the actual making of the soap or the creams?*
- Kihuluka** We have the team of people with disabilities, everybody has a stake or need. Behind the whole thing, I have the knowledge and I make the formulations. But at the end of the day you will find that at several stages we have, like at the mixing stage, the cooking or the heating stage, the able bodied people will come because it needs lifting and then pouring, when we are making our soaps because we do not have machines, we do the soap and creams locally. Then when it comes to making the pieces and packaging, the people with disabilities come in to complete the process.
- Kadenge** *Now speaking of marketing how do you get people to notice or to use these organic products in consideration that the markets are full of other kind of products which are also quite aggressively advertised?*
- Kihuluka** People, once they use your product once, they can act like multipliers. One person uses your soap or your cream and he will recommend it to another one. Then we go for also demonstrations; we demonstrate our products in workshops and seminars around the country and sometimes we go in for agricultural shows or trade shows.
- Kadenge** *What would you say are some of the challenges that you face?*
- Kihuluka** One of the biggest challenges is the funding because we do not have enough funds to move out. The other challenge is documentation. We need to document and multiply information via leaflets, booklets, but we do not have enough equipment. Besides that we are also trying to build up a team that in future, when we get a mobile unit for documentation and disseminating information, we shall have to move from one place to another showing people documentaries and educating them about their health in general.
- Kadenge** *And where did you get the knowledge on the formulations?*
- Kihuluka** The knowledge on the formulations, I have been working with a team of people around East Africa. We are teaming up with the National Drug Authority that our medicines are legalised. We are also going to the Uganda National Bureau of Standards so that our products are standardised, that they can go on the market without any interference. And at the same time we are also spearheading or we are advocating fair policy in place, that the traditional medicine or the natural medicine is integrated into the public health system of which we have at least 50% success that the government is in too for this. The World Health Organisation is supporting this and every year we have the Africa traditional medicine days and we celebrate this. *End of track.*

Medicinal plants

Trading standards for export

Cue:

The global market for medicinal plants is huge, amounting to millions of dollars each year. It is also a growing market, with increasing numbers of people, particularly in Europe and the United States, using herbal medicines not only as treatment for illnesses, but as a regular part of their diet.

For anyone using or selling a herbal medicine, having precise knowledge about the medicine is obviously important. In particular, they need to know what the plant is used for, how effective it is, and how safe it is. Those wanting to sell medicinal plants to markets in Europe or America must be able to answer these questions. For African medicinal plants, however, this creates a problem, as many plants are not fully documented.

Currently, an organisation called the Association for African Medicinal Plants Standards, or AAMPS, is trying to address the issue. With advice from experts from across Africa, the association is writing herbal profiles, detailed descriptions of the 50 most important African medicinal plants, in the hope that this will support the marketing of these plants. Kobus Eloff, one of the founders of the association, explained more to Lucas Moloji.

IN: "We have got more plants species ...
OUT: ... Africa of the whole world."
DUR'N: 5'13"

BACK ANNOUNCEMENT: Kobus Eloff of the Association for African Medicinal Plants Standards. The interview comes from a resource pack produced by CTA.

Transcript

Eloff

We have got more plants species in Africa than there are in China and in India but if you look at herbal medicines that are used in Europe you find that a very very few African herbal medicines are used and many many herbal medicines from India and many many especially from China as well.

Moloji

So why do so many people in Europe prefer Indian and Chinese plant medicine compared to African?

Eloff

In India and China information has been written down over a very long time now and all this information is available in a written form and people can read that and evaluate it. Whereas in Africa most of the information has been orally brought over from one generation to the next generation. So the difficulty in Africa is that people wanting to import plant material from Africa, they cannot really evaluate the quality and the value of that plant material.

Moloji

AAMPS has been writing herbal profiles for African medicinal plants. What is a herbal profile?

Eloff

What the herbal profile does, we also call it a trading standard, it tells a person that would want to import this exactly what this plant has been used for, every bit of information that we can collect is in there, and then also what the safety of that plant is.

- Moloi** *How will these herbal profiles be useful to those growing medicinal plants?*
- Eloff** What we hope is that it will create a market. If let's say there is a certain plant species that is grown in Tanzania, for example, and it is also valuable and if people have written these profiles they can see that this is an important plant and it addresses a need in Europe, then it will create a market. So the challenge is really to establish a market and then also to provide plant material of high enough quality. Quality is very important because if the quality is not good enough people will not import it and if the quality is poor then the name of that plant species will go down.
- Moloi** *What will be key factors in achieving consistent quality?*
- Eloff** I think for consistent quality there are a number of factors. The first is that you must have the right plant material, because you must remember in the end if you use a herbal plant for a medicine, it is actually not the plant that we need, it's the chemical compound that is inside the plant. So if you can find a certain plant from a certain area that has got very high concentration of this active compound it will be very valuable to grow that plant. And then the next thing is also, after you have grown the plant material and let's say you need the leaves or you need the bark then what do you do with that. It must be dried under good conditions, there must be no fungus growing on it. So not only during the growing but also after you have harvested it is very important that it should be treated in a very good way.
- Moloi** *Should small-scale farmers expect to work independently or as out growers or members of a group or cooperative?*
- Eloff** I think the way that it would probably work out, a small-scale farmer will not be the person exporting it to someone else, because a person exporting the plant material will probably be contacted by someone from Europe or America. They said, ok they need so many tons of this and this plant, and then he will go to different areas, small communities and ask them whether they are able to grow the plant material. This is going to need something that is very well organised and well integrated and will probably grow through big exporters. I think they will be the people that do most of the work because they will also have the contact with the people in Europe that will have the demand for the plant material.
- Moloi** *So what can African countries do to increase and expand their medicinal plant market in the future?*
- Eloff** We are forming a very important link between Africa and Europe. If we have these written profiles now they will have to be big developments and that is where big enterprises or business companies will have to come in. If we have African businesses that start working in this area where they have good contacts with people in Germany or in France or in Europe or everywhere else where they need the different plant materials, they will then start identifying. This is already happening in some cases where you have got big companies in East, West or southern Africa and they already appoint people to grow these plant materials. But what has happened frequently, they grow Chinese plant materials or Indian plant materials in South Africa and then they export this because there is a market. And I think one of the most important things of these profiles that we are writing is that we identify where

there are gaps in literature. Let's say that you have got a wonderful plant that helps for inflammation of whatever area and people have been using it a long time but we are not sure how safe that plant is. So in such a case there will have to be experiments done to determine the safety and then a scientist could then go to a funding organisation and say, "This is one of the 50 most important African medicinal plants but we do not know what the safety is. We want to do safety experiments." And then there is a good chance that he could get funding.

Moloi *Now Mr Kobus Eloff, I thank you very much and I appreciate your time you have shared with us.*

Eloff I am very glad to have the opportunity because I think it is a wonderful opportunity. We have got such wonderful plants that we have in Africa and we must share it with the rest of the world and remember Africa will also benefit because now we know that the plants that they grow in Senegal for example, when we have all the information available, then these plants growing in Senegal or in Cameroon or Nigeria or wherever, or in Namibia, they can be used for all the people of Africa. Not only of Africa of the whole world. *End of track.*

Medicinal plants

A national policy for herbal medicine

Cue:

Traditional healers and hospital doctors are often seen as rivals, who sometimes show little respect for each other's skills and experience. In The Gambia, however, the government is taking a different attitude. It recognises the value of traditional, herbal medicine as practised by hundreds of traditional healers, and wants to integrate this into the national health policy. This raises many challenging issues. How can people be protected against bad practice, which may cause harm rather than cure? Is it possible to impose standards on traditional healers? Can they be regulated, and can the prices paid for their services be controlled?

Inclusion of herbal medicine into national policy is not just a task for the health ministry. Others will also need to be involved, including ministries responsible for the environment, agriculture and trade. Bubacarr Sillah of the National Traditional Medicine Programme explained to Ismaila Senghore how this is being done in The Gambia.

IN: "We are in the process of developing ...
OUT: ... traditional medicine in this country."
DUR'N: 6'01"

BACK ANNOUNCEMENT: Bubacarr Sillah of The Gambia's Traditional Medicine Programme. The interview comes from a resource pack produced by CTA.

Transcript

Sillah

We are in the process of developing a national traditional medicine policy to protect consumer rights, to protect the intellectual property rights of these practitioners and at the same time to put in standards in the practice. These are some of our major considerations that prompted the development of a traditional medicine policy in The Gambia.

Senghore

What would be the relationship between traditional medical practice and modern medicine?

Sillah

Well the relation is something that WHO is opting for at the moment. In fact the policy is trying to address that issue, integration of traditional medicine into the healthcare delivery system of The Gambia, because by that we can complement government's effort in promoting health in The Gambia.

Senghore

Now have you foreseen in the policy the possibility of creating structures or organisations that can allow maximum access, for example, to all who may need or require herbal medicine at a reasonable cost?

Sillah

What we are doing at the moment, we are trying to sensitise traditional healers, organising them into registered organisations and by that we can regulate their practice to make sure that they practise in conformity with what is required in the policy, to make traditional medicine accessible to the community, affordable and nonetheless not compromise its quality.

Senghore

Will you be interested to make them, for example, come into associations like cooperatives in order to be able to produce some of these medicinal plants which may prove effective in medical cure?

Sillah We have been trying to do that, to organise them, at the same time to encourage them but we have some challenges. That is, people are not investing in traditional medicine in The Gambia, that is the problem. So if people were investing in traditional medicine in The Gambia, we would have developed gardens, botanical gardens for them. At the same time we would have helped them to process some of the medicines but unfortunately there is not much investment in traditional medicine. So it is very very difficult at the moment, but nonetheless we are considering all options and trying to get partners who are willing to come and help.

Senghore *What about the environment, because we know these are medical products that come from herbs and plants and trees and if we extract them from the environment in a manner that is not conducive to environmental preservation in the long run it may not be sustainable. So are those things being put into consideration?*

Sillah Of course, we are very much considering that. In fact it is one of the greatest threats to traditional medicine in this country, because deforestation, logging, bush fires, virtually we are losing most of these herbal plants in this country and eventually that is reflecting on the cost of traditional medicine, which should not be the case because usually people resort to traditional medicine because of its affordable cost. But because of scarcity of these plants now, and most of them on the verge of extinction, the traditional healers have to travel far distances to get some of these medicaments for their patients and this reflects on the cost. So this is why really we are very much considering if it is possible to try and rejuvenate our forest and at the same time make sure that we come up with other options of cultivating traditional herbal plants in this country.

Senghore *Now do you come across any other major constraints? I know you have talked about investment; people are not easily willing to invest in traditional medicine. Now are there any other major constraints that may prohibit the development and implementation of the products?*

Sillah Presently the major problem is, the financial support is very minimal indeed. Government is trying to help us but really the capacity is yet to be developed. That is one major setback and other inhibiting factors to the promotion of traditional medicine in this country, as I was telling you is deforestation. The other factor is illiteracy. Almost 95% of traditional healers in this country are all illiterates and we all know the impact of illiteracy on any development. It is very difficult for these traditional healers to organise themselves, even to keep records is a problem. So because of that it is very difficult indeed to promote traditional medicine when you have a vast majority of traditional healers being illiterate. Another thing is ageing; this practice is restricted to old people and the unfortunate thing is compounded with illiteracy; they do not make documentation of their practice.

Senghore *In other words the knowledge can be lost?*

Sillah Yes the knowledge can be lost and it is not transferred. And because practitioners are not gaining much, their children see that their parents are not getting much from it. So they are not keen at learning the skills. So eventually the old people are dying with their skills and this, as a result, is bringing down traditional medicine which might eventually lead to total obliteration in

The Gambia.

Senghore *Therefore on a final note do you see light at the end of the tunnel when this policy is finally drawn up and it's been implemented?*

Sillah Yes for sure indeed, when this policy is finally drawn up, we hope really this will regulate the practice and at the same time it will encourage other people to come into the scene to promote traditional medicine in this country. *End of track.*