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Growing herbal plants in home gardens for health care

1. GENERAL INFORMATION

1.1 Title of practice or experience

Growing herbal plants in home gardens for health care

1.2 Category of practice/experience and brief description

Nature has always been a first-rate drugstore, with its enormous range of plants that are known to have effective therapeutic qualities. The Foundation for Revitalisation of Local Health Traditions (FRLHT) in India has come up with a tested package of plants and medical herbs that are useful in the treatment of common illnesses like fevers, headaches, dysentery, jaundice and stomach problems and which can be easily grown in household gardens and directly consumed by people who may require them. The package of plants selected also includes plants useful for preventive and promotive health care.

Since the list is a general list, each and every plant recommended for growing may not necessarily do well in all ecosystems and the individual home garden will have to work out its own ideal mix. The scheme also includes a campaign to get householders to raise nurseries of such plants for sale to primary health centres for the needs of primary health care as a full-time employment-generating activity.

The use of plant-based medicines is expanding rapidly throughout the world and any economic activity relating to the growing of herbal gardens and for supply of medicinal plant material is bound to be a viable enterprise. The entire scheme of maintaining herbal gardens is low-cost, relies on the fund of expertise in raising plants already available with village populations, particularly women, and, what is most important, provides an effective way of treating such illnesses without having to consume dangerous costly drugs and pills manufactured in remote factories. Ayurveda already has a list of plants whose efficiency in the treatment and control of common illnesses has

been proven beyond doubt over several centuries. The FRLHT has been researching and finalising the list of basic plants for several years and is now busy setting up and supporting initiatives in the directions discussed above.

1.3 Name of person or institution responsible for the practice or experience

The Foundation for Revitalisation of Local Health Traditions (FRLHT)

1.4 Name and position of key or relevant persons or officials involved

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1.6 Name of person and/or institution conducting the research

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2. THE PROBLEM OR SITUATION BEING ADDRESSED BY THE PRACTICE/INNOVATIVE EXPERIENCE

In countries like India, the system of medicine based on allopathy serves no more than 15% of the general population, even though it takes up the lion's share of the health budget. Accessibility to doctors and drugs is still a major problem for most people in the rural areas. It is common knowledge that doctors prefer to congregate in urban areas where they have some hope of recovering the enormous sums spent for their education. Rural areas even today lack basic amenities, facilities and infrastructure. For this reason, doctors, like other professionals including engineers, are not inclined to look for jobs

in such areas even though they may be seriously wanted there. Available doctors are also expensive and the pharmaceutical drugs they are habituated to prescribe even more so. Thus, even physical accessibility to a modern doctor may not necessarily be a solution since one may not be able to afford his services. Also, allopathic medicine is increasingly being seen as ineffective in a large number of chronic illnesses. Intensive investigations using hi-tech equipment and instrumentation are conducted, costly medicines prescribed and consumed, but the patient complains he is yet to get any relief from his pains or disease.

The situation, in fact, has been aggravated due to present liberalisation trends which require the production of drugs in the country to be submitted to new kinds of patent regimes. Naturally, this development is bound to push the prices of pharmaceutical drugs even further skywards – many of them are already too expensive – and consequently further out of the reach of common people. Thus, it is a foregone conclusion that a system of primary health care based on allopathic doctors and pharmaceutical drugs will not be able to live up to its promise of providing even basic health care to people in the rural areas or to the economically deprived in the urban areas. This has been recognised at the international World Health Organisation (WHO) level and at the national level.

In many primary health care centres in the country, the availability of even basic pharmaceuticals has indeed become a major problem. Such centres are invariably frequented by the poorer sections of the population, particularly women and children. Even basic drugs like aspirin or paracetamol may not be available in the centres' stock. It is important to remember that such primary health centres are also used as a base by authorities for administering the series of immunisations that children are given when very young.

How, then, does one improve this miserable situation? One solution has come from groups like the Foundation for Revitalisation of Local Health Traditions (FRLHT). The Foundation has, together with other public interest NGOs working on traditional medical systems, argued forcefully for re-orienting public health care policies, at least in India, in the direction of tapping the enormous skills and expertise available with practitioners involved in local or folk health traditions. The same groups have also insisted that more attention be paid to the Indian Systems of Medicine (ISM), notably Ayurveda, Unani, Siddha and Tibetan Medicine. They point to the example of China, which has continued to treat its indigenous system of medicine on par with the imported Western system.

The common point in most of the Asian systems is that they are largely based on plant medicines. The cultures which have given rise to these systems of medicine are also fairly expert in their knowledge of medicinal plants and

their collection from the wild or their cultivation in specialised gardens.

India is a country with major expertise in plant-related medicine. This is a living tradition in the country. Over 7,500 species of plants are estimated to be used by over 4,500 ethnic communities for both human and veterinary health care purposes from the Himalayas to the south of India. In the older medical literature, several plant drugs are recommended for specific problems relating to human, veterinary and plant health which, in Ayurveda, comprise three different, distinct bodies of systematised scientific knowledge. Over 1,700 plants are fully described in terms of their biological properties and actions in the codified medical texts under the Ayurvedic system.

The point has also been made that knowledge of the properties of these plants is not based on chemistry or pharmacology but on wholly indigenous category of knowledge called “dravya guna shastra” which cannot be converted into modern-day chemistry or pharmacology. Even today, there are over a million traditional, village-resident experts in herbal medicine and they include traditional birth attendants, bone setters, herbal healers and even monks who are well versed in dravya guna shastra. There is also a vast tradition that is very well informed in various home remedies and their preparation, and in important aspects of food and nutrition in so far as they are related to health.

Building on this tradition, the FRLHT has been working for several years on a creative scheme for addressing the problems of availability of drugs in the primary health care (PHC) centres and also for individual families through this alternative route. It has researched and honed in on a set of plants, largely from indigenous sources of medical knowledge like Ayurveda, that can be used to treat quite effectively a range of common ailments for which people visit PHC centres or family doctors. The FRLHT has also worked out schemes for production of these plants in different nurseries and herbariums, so that they are easily accessible to such centres. Such herbal gardens are to be managed by village communities and can even serve as an important employment-generating system, considering the attention plant drugs are now getting all over the globe.

The FRLHT’s schemes of domestic herbal gardens and primary health care based on indigenous herbal plants are some of the most interesting social innovations of our time. Since herbs can be easily grown and are cheap, the costs of providing good medicare to people can be considerably reduced and good health care made available and within the reach of all.

Medical experts argue that most diseases (almost 75%) are, in any case, self-limiting, that is, the patient will get well after the disease has run its course. A large number of illnesses are of the category of common illnesses, which are not only self-limiting in nature, but whose symptoms can be easily recognised and treated with the use of several kinds of fairly effective remedies,

including those in the category of “grandma’s medicines” and folk remedies which include plants and herbs.

The use of plants in human health care is also not peculiar to India. More than 80% of the population of this planet, according to WHO estimates, continue to rely chiefly on traditional medicine for primary health needs and most of these are based on drugs derived from plants or herbs. The achievement of the FRLHT is of such a nature that it recognises this empirical reality and then works with it to generate practical solutions to make it more effective, using, of course, local expertise and local resources. Needless to say, the herbal-garden concept can be usefully replicated in other communities of the world which also have equally strong traditions of plant medicine.

3. DESCRIPTION OF THE PRACTICE/INNOVATIVE EXPERIENCE AND ITS MAIN FEATURES

The package of plants selected by the FRLHT for use in primary health care and for self-consumption home gardens is designed to treat common illnesses like colds, coughs and fevers. The package also includes plants that are known to be successful in the treatment of minor problems and deviations from normal health, care of mother and child during pregnancy, and preventive and promotive health care. The plants required for these packages are all easily grown and used. The ailments dealt with in primary health care are grouped together under the different body regions which the human body can be conceived in terms of:

Head:	Headaches
Eyes:	Sore eyes
Chest:	Cough
Abdomen:	Acidity, indigestion, stomach ache, diarrhoea, dysentery, worms, scanty urination with burning sensation (urinary infection)
Arms and legs:	Cuts and wounds, burning feet syndrome
Skin:	Scabies and fungal infections
General:	Fever
Mother and child health:	Morning sickness, anaemia during pregnancy, breast-milk purification and production
Gynaecological problems:	Red discharge, white discharge, painful menstruation
Promotion of positive health:	General immunity, mental tonics, liver tonics

Plant medicines administered for the above conditions would work far better if accompanied by behavioural and diet changes. This is an important

contrast with allopathic medicine, which often ignores such dietary regimes or holds them as unimportant. The idea behind the herbal-garden package is that it should make available those plants which can be used specially in ailments where the diagnosis is easily made and where the symptoms are easily recognisable, as in colds and jaundice, for example, and where the treatment can be self-managed without endangering the person's life. Promoters of health care based on herbs invariably recommend seeking expert medical advice if the condition is not treated or does not abate within a week of using such plant drugs. Plants selected for the package have been included by the FRLHT on the basis of the following rational criteria, among others:

- (a) there is no doubt about the efficacy of the plant: the recommended use must be drawn from actually prevalent practices and tested by authorities in the field;
- (b) the plant should not have any toxic side-effects; it should be safe;
- (c) one should be able to use the plant as a single drug or in simple combinations;
- (d) one should be able to grow the plant easily in one's immediate surroundings and harvest it in a short period of time;
- (e) those plants need to be grown which can be used effectively in the treatment of more than one condition; and
- (f)** the method of preparing the plant drug must be simple and easy to understand and follow.

According to this scheme, the following plants, for example, have been worked out for herbal gardens in South India:

Aloe barbadensis
Amaranthus viridis
Asparagus racemosus
Azadirachta indica
Bacopa monnieri
Centella asiatica
Coriandrum sativum
Citrus lemon
Cuminum cyminum
Curcuma longa
Cynodon dactylon
Cyperus rotundus
Eclipta prostrata
Embelia ribes
Emblica officinalis (Phyllanthus emblica)
Hemidesmus indicus
Hibiscus rosa-sinensis

Holarrhena pubescens (*Holarrhena antidysenterica*)
Ipomea mauritiana (*Ipomea paniculata*)
Justicia adhatoda (*Adatoda zeylanica*)
Lawsonia inermis
Leptadenia reticulata
Mimosa pudica
Moringa oleifera
Ocimum tenuiflorum (*Ocimum sanctum*)
Phyllanthus amarus
Piper longum
Piper nigrum
Punica granatum
Terminalia chebula
Terminalia bellerica
Tinospora cordifolia
Vetiveria zizanioides
Withania somnifera
Zingiber officinale

The FRLHT has published a “User’s Guide to Medicinal Plants for Primary Health Care”, as part of its herbal-garden campaign. The guide gives detailed information on how to prepare the plants for ingestion (or external application), dosages and the precautionary regimen, particularly nutritional intake, in each case. Symptoms are enumerated for which the various preparations are to be used. The instructions are extremely detailed and nothing has been left to chance.

Accordingly, the FRLHT has worked out a scheme of encouraging and assisting individuals and organisations to come forward to maintain herbal gardens and herbariums in different parts of the country. There are, in fact, several more herbal gardens today than 50 years ago as a result of the renewed interest in medicinal plants. There are estimated to be 50 such gardens in the country already, ranging from one- to 40-acre plots. Many of these were set up by the **Lok** Swasthya Parampara Samvardhan Samiti between 1987-1992. More recently, the FRLHT itself set up a network of 15 such herbal gardens in South India. One of the gardens is located in TGBRI, Palode at Thiruvananthapuram and the rest are managed by leading environment and health NGOs. Two of South India’s leading ayurvedic manufacturing companies have also established herbal gardens. Herbal gardens have been established by several agricultural universities in Kerala, Maharashtra, Uttar Pradesh, Rajasthan, Gujarat, Karnataka and Himachal Pradesh. State forest departments in several states like Karnataka, Madhya Pradesh, Gujarat, Orissa and Kerala have also established their own herbal gardens. Some herbal gardens have

been set up by state-level directorates of ISM like in Gujarat and Karnataka. In fact, in Gujarat, a chain of as many as nine herbal gardens has been established in several districts. The FRLHT has (also in South India) set up a network of 55 supplier nurseries which are designed to raise four basic combinations of plants:

- (a) plants for primary health care;
- (b) economic plants needed by industry;
- (c) RET (rare, endangered, threatened) plants for possible re-introduction into their natural habitats; and
- (d) a set of plants for home and institutional gardens.

These nurseries have been set up to ensure the immediate availability of plants and planting materials to the various user groups so that the number of nurseries generating medicinal plants can be multiplied in a nationwide network. State forest departments in South India have also collaborated with the FRLHT in conducting training courses on medicinal plants and their conservation and sustainable use.

4. DESCRIPTION OF THE INSTITUTION RESPONSIBLE AND ITS ORGANISATIONAL ASPECTS

The FRLHT is a trust registered under the Societies Registration Act 1860. It has received considerable funding from aid agencies to set up an elaborate structure of research, documentation, dissemination and programmes of political support for its strategies of health care based on herbs and herbariums.

The FRLHT is convinced that the only way to make rural primary health care services effective is to revive and promote traditional health practices based on the use of medicinal plants.

FRLHT has a wealth of research data collected during the course of its activities. The Medicinal Plants Conservation Research, Herbarium & Database Unit has developed a multi-disciplinary, computerised medicinal plants database, which is constantly expanding and being updated. The main objective of the database is to generate reliable multi-disciplinary information on identity, distribution, threat and conservation status, trade data and agro-technology of medicinal plants. This will serve the information needs of sectors like forestry, conservation science, agriculture, drugs and cosmetics, and trade.

The FRLHT biocultural herbarium houses, and maintains records of, over 12,000 voucher specimens relating to approximately 2,300 wild plants of Southern India, both medicinal and non-medicinal. Around 1,500 of these are known medicinal plants, with the remaining holding promise of untapped potential. These medicinal plants occur in different forest types of Southern India, viz., tropical evergreen, tropical semi-evergreen, tropical moist decidu-

ous, etc. The herbarium also keeps raw drug samples of medicinal plants used in trade.

FRLHT has made a pioneering effort to assess the rare, endangered and threatened medicinal plants of Southern India, based on guidelines prepared by the International Union for Conservation of Nature. To focus conservation action on these threatened species, a Red Data **Book** of medicinal plants is being prepared.

This information would help promote their conservation and facilitate the propagation and cultivation of these species, and ultimately reduce the pressure on their exploitation from the wild that could result in their extinction.

The Unit has also initiated the preparation of eco-distribution maps of about 300 of the most threatened plants of Southern India, with their precise latitudinal and longitudinal locations. The distribution patterns of these prioritised plants are analysed based on geographical data.

Research into the techniques of plant propagation and cultivation of selected medicinal species has been undertaken.

5. PROBLEMS OR OBSTACLES ENCOUNTERED AND HOW THEY WERE OVERCOME

Not applicable.

6. EFFECTS OF THE PRACTICE/INNOVATIVE EXPERIENCE

The successful implementation of the scheme **of** herbal gardens is bound to enhance public health considerably and lead to a far better health scenario than at present. The FRLHT project has proved **to** most people that herbal drugs are not inferior because they are cheap. They are often superior and can provide just as good, if not better, therapy as chemical-based pharmaceuticals. Commonly-used medicinal plants can easily be raised in nurseries and distributed among the public with guidelines on how to use them **for** treating common ailments.

Thus, a network of nurseries which are familiar with the propagation techniques of medicinal plants and well stocked with these plants will be a strong foundation for starting a popular movement for reviving local health traditions and also for providing effective health care. The most significant impact of the project is the growing public awareness that a public health system based on ingestion of toxic chemicals should not be considered as a long-term system, but a transitional one at most, especially when there are recognised, proven and safer alternatives which ought to be encouraged at all costs. If, eventually, this movement leads planners and politicians to seriously consider

re-linking public health policies with indigenous medical knowledge – classic and folk – society would be the most important beneficiary.

7. SUITABILITY AND POSSIBILITY FOR UPSCALING

Given the nature of the scheme, which is based on the concept of small herbal gardens, it is inappropriate to consider upscaling. The idea of using herbs for PHC centres is that they can be grown in small local herbariums and gardens also situated close to the PHC centres and can be consumed fresh, if necessary.

Practically speaking, however, there is no real impediment to upscaling as it is possible to have larger herbariums and gardens to serve the purpose of nodal centres or focal points for distribution of plant material to larger areas. The problem here is that there is an inbuilt natural limitation: most of the plants grown for individual packages are bound to be ecosystem-specific and it might not be necessary to grow plants for other localities which may have their own specialities. However, duplication and replication of the plants listed in the basic list for home gardens and multiplication of such gardens are desirable and possible. The FRLHT is willing to provide expert advice to those who wish to upgrade their gardens to include a larger number of plant species or to start out on new gardens.

8. SIGNIFICANCE FOR (AND IMPACT ON) POLICY-MAKING

The planet today is looking for alternatives to the increasingly powerful and toxic drugs used in modern health care. Health care based on plants and herbs is a viable alternative. Governments are also on the lookout for medicare solutions that are cheaper than those offered by an overmedicalised health setup which leaves most people either impoverished, intimidated or unsatisfied. A sane public health policy should include reliance on effective herbs produced in herbal gardens. Public health care will not only be cheaper as a result, but less toxic as well.

Supporting plant gardens as a matter of public health policy also makes good economic sense. Demand and trade in medicinal plant species are both increasing by leaps and bounds. One estimate places the total world trade in medicinal plants at **US\$5 trillion** by 2050. The demand for such plant materials has hitherto been met by plundering wild sources. However, many species are going extinct due to such practices. There is therefore a good case for encouraging in an organised way small and marginal farmers and tribal communities to grow medicinal plants in their household gardens, bunds, wastelands and other available spaces because this can encourage the economic

participation of these marginalised groups in the growth of the herbal industry.

However, the real change in policy required is to base public health policies on local health traditions and **ISM**. Both these traditions have an enormous fund of expertise and knowledge. Due to the colonial period and thereafter due to the lasting influence of colonial education, governments have been uncaring about indigenous medical knowledge of any kind. There is no justification for maintaining this posture, especially in view of the critical assessment now underway of the allopathic system **of** knowledge and, more importantly, of the system of corporate control in which modern allopathy is now firmly embedded.

9. POSSIBILITY AND SCOPE OF TRANSFERRING TO OTHER COMMUNITIES OR COUNTRIES

Replicability is an important question in innovations of this kind. The principles can be followed everywhere, since all older societies (including tribal communities) have a rich store of indigenous information available about plants and their therapeutic values. The nature of the package of plants, however, is bound to differ from eco-region to eco-region: herbs growing in one area may not necessarily flourish in another. However, local plants can be examined, researched and used as substitutes. The idea of herbal gardens maintained by villagers for producing herbs for sale to PHCs should be supported, especially where allopathy-based pharmaceuticals are simply unavailable. Later, pressures should be increased for re-orienting the public health system as a whole to rely more on tried and tested indigenous medical knowledge systems and decrease the health system's dependence on allopathy.