

Conservation, Rejuvenation and Preventing Extinction of Rare Herbal Species with the Application of Remote Sensing Techniques

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ABSTRACT An attempt is made hypothetically, identification, conservation of medicinal plants and also forming medicinal plant farm. For which the nature of soil, climate and plant is tested with the help of satellite to simulate and therefore the plan can be derived on the computer with the help of an ariel view. It also depends on the resolution available *i.e.*, from 7 metre to 20 metre. Above all the indigenous knowledge of plants-their medicinal values, usage and all the relative practices can be preserved at the same time forming up medicinal incentives too. Once when the medicinal plants are tested chemically positive there will be demand for more production in turn helping the natives for a continuous income.

Due to chemical drug abuse there are lots of health problems. In terms of permanent remedies, the only medicine with no qualms can be from herbs. In the present situation of environmental degradation, many species have become extinct, in which we are losing rare and valuable also. To avoid the above, forming colonies of medicinal plants is at great demand.

To begin with, one should have a thorough knowledge of the vegetation, type, soil, etc. A complete knowledge of habitation is a must before deciding about the type of plants to be cultivated. Since development is in great demand, remote sensing helps in identifying areas where one can possibly make colonies of medicinal plants. With the help of geographical information system (GIS), we can simulate the type of areas suitable for developing medicinal plants. It is an interdisciplinary approach; with the help of bio-technology, we can list the breeding of species of plants in terms of soil condition, weather, etc.

For a sustainable living, good health is a resource. For good health, conducive and congenial environment is important. But the modern living has resulted in unconditional and unsustainable life leading to an unhealthy and unsafe life. A perfect health care system needs prevention

and cure of diseases and promotion of good health.

Modern medicine enjoys maximum popularity all over the world. Its side effects are negative chemical reactions, therefore, destroying the common system. There is hue and cry for drug abatement. Slow rejuvenation of indigenous medicinal system is also in need. The traditional medical system of indigenous communities has to be taken care of for the present need

But the problem is the proper identification, pharmacotherapeutic functions and standardization of herbs. At this point the focus is mainly on:

- a) identification of feasible location for the cultivation of herbal plants.
- b) technical need felt for identifying field area.

Environmental degradation is the sole reason for causing unsustainable living conditions. The indiscriminate destruction of forests has created a blaring cry on the loss of rare floral spices. Here, the herbal medical system is endangering the only resources, the herbal plants. Chemical reaction from drug abuse has caused a great uproar. Therefore, the drug abatement has increased the demand for the traditional system of health care. But once we lose the species, we also lose the regenerating capacity facing the extinction of the potential resources of herbal medicine. Only an interdisciplinary approach can derive a fast and considerate solution in saving the species, and at the same time, rejuvenating it.

Medicinal plants are being used in the prevention and cure of diseases and for the promotion of health. Although drugs from animals and animal source were also explored and used, the use of plant has far exceeded in various disorders. Indigenous people acquire this knowledge by direct contact with forests and identified each and every plant without difficulty. But gradually this contact with nature was cut down;

consequently, the knowledge about identification of plants also deteriorated. Second, because of the geographical variations and the expanse of our country being large, it was not possible to find and grow plants everywhere. Lastly, when drugs became material of commerce and trade, various adulterants developed to fetch more profit. With the result, a large number of medicinal plants became controversial. They were also dropped from use and for some time became quite unknown.

The problem related in the study of medicinal plants is of identification. Now, in the fast development of diagnostic set up, a research based study of these medicinal plants with modern parameters is necessary. For identification, the issue of controversial drugs needs to be tackled from various angles.

When the depletion of forest occurs, some of the medicinal plants also get destroyed. To overcome this problem, remote sensing renders a lot of help. Environmental scientists have created a new software package, combining environmental remote sensing and the topographical information. This EASI-PACE is one such package.

Specifically speaking, resource mapping of the hills with specific references to the forest, water and medicinal plant resources with relevant application of GIS/digital mapping, with which the area under forest cover is first quantified precisely, can be exhibited in the monitor. The periodical or temporal changer will help to identify the areas of vegetation depletion and vegetation concentration.

Mapping of biotic resources with special emphasis on medicinal herbs may be useful for delineating thick forest (vegetation) area of hills. Other resources of the area would include valley, water falls when it is believed that the species around the above is said to have more effect in its medicinal values. Other resources of

the area would include forest resources and the data on which may be drawn from the local people.

After identification, resource mapping helps to create maps, the final map will show, different species, vegetation in different density. Less density can be intensified. The areas susceptible for soil erosion can also be identified and further steps may taken.

By involving remote sensing and cartographic techniques, including image and data analysis, photographs of the area can be taken. The information assembled for each component can be displayed in maps. With the help of bar charts, the location plus the amount of availability can be known through the bar charts or any other convenient graphic techniques. Where required, statistical techniques, with respect to the field survey data, such as the multivariate procedures would be used with the help of computer. Probably an enhancement can identify areas where similar kind of species can be cultivated and also a high level enhancement could provide an identification based on similar tone.

The recognition of traditional rights must go hand in hand with measures to protect the local institutions that enforced responsibility in resource use. This recognition must also give local communities a decisive voice in the decision about resources use in their area. For science to effectively support indigenous medicinal knowledge and its management, one must place the highest priority on supporting the development of permanent technical, scientific and support capacity under the control and direction of indigenous people. The benefit of traditional medicinal knowledge can be developed and shared when there is respect, understanding, the recognition of traditional rights and the recognition of existing indigenous stewardship of many regions of earth.