

CONCEPT OF DESH VICHAR AND ECOLOGICAL HEALTH BENEFITS OF BIODIVERSITY

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ABSTRACT

Ayurveda is a premium health science which is deeply rooted in antiquity of human civilization. It has carried forward some of the finest traditions in healing and cure. One of the most potential aspect of Ayurveda is *desh vichar*, different *desh* geographical area variety of topographic features and different type of biodiversity. *Desh vichar* advocates how a well-balanced geographical area (*prakrit desh*) with its balanced climatic and ecological features exhibits resourceful energy and health benefits to human and a distorted geographical area (*vikrit desh*) fuel more health consequences with polluted biotic

and abiotic factors. It should be ensured by community to adopt those practices which maintain the balance of their environment.

KEYWORDS: *desh vichar*, *prakrit desh*, *vikrit desh*, biodiversity.

INTRODUCTION

Nature is enriching human life from the beginning of human civilization. Nature provides space for all creatures to interact with other species and surrounding environment to frame a complex interaction network. The classical greater ayurvedic triad depict the concept of *desh* which refers to the natural habitat of a person (*bhoomi desh*) and part of a human body (*deh desh*). A *bhoomi desh* is a particular geographic area where different types of biotic and abiotic elements controls the life of a creature. A specific *desh* has distinct biophysical properties and species living in that *desh* are determined by climatic and topographic features

of that habitat. Variety of plants and animal life exists in a region is called biodiversity and biodiversity has direct and indirect effects on human health. Ayurvedic aspects of biodiversity and its effects on human health are described in *viman sthan* and *kalp sthan* of *charak samhita*. Biophysical portfolio of people (*prakriti*), food habits (*aahar*) daily regimen (*dincahrya*), cultural trends, disease prevalence, epidemiology (*janpadodhvan*), diagnosis of diseases (*nidan*), curability of disease (*sukhsadhy*, *krrichhsadhy*, *asahdhy*) are regulated by features of that specific desh. Desh also determines the cropping pattern, quality of water and air, availability and efficacy of a drug, immunity level of people (*vyadhikshmatva*). A stable desh in natural conditions, nourishes human health and minimizes morbid conditions of that area and stability of a desh is depends upon its biodiversity.

Classification of desh

Acharya charak has categorized *desh* into three classes on the basis of geomorphologic and climatic conditions. These are *jangladesh*, *anoopdesh* and *sadharan desh*. Each *desh* displays diversified range of features and biodiversity.

Feature	Jangal desh	Anoop desh
Climatic conditions	Arid and semiarid land Low rainfall Relatively high temperature Strong heat waves with dusty storms Lower humidity Clear sky without clouds	Higher humidity and marshy land Abundant rainfall General pattern of weather conditions Local breeze
Terrestrial features	Open, arid, rough bumpy, land Hard and rocky crust with gravel and pebbles Mini water bodies with less water Mirage type delusion in summer	Wetlands where land joins water Mountains and water springs Rivers full of water Large water bodies
Prominent dosh	Vata, pitta	Vata, kapha
Human body pattern	Firm and strong body	Fragile body
Vegetation Characterstics	Scattered thorny small sized tree Shrubs and grasses grow in isolated tufts Succulent plants with waxy cuticle.	Densely packed broad leaf trees Excess of Shrubs, vines, epiphytes Dense and soft bark
		High timber value of trees
Vegetation	Khadir(<i>Acacia catechu</i>) Asan(<i>Pterocarpus marsupium</i>) Ashvakarn (<i>Dipterocarpus turbinatus</i>) Dhav(<i>Anogeissus latifolia</i>) Tinish(<i>Ougenia oogeinsis</i>) Saal(<i>Vateria indica</i>) Somvalk(<i>Acacia suma</i>) Ber(<i>Ziziphus mauritiana</i>) Tendu(<i>Diospyros pergiliana</i>) Pipal(<i>Ficus religiosa</i>) Arjun(<i>Terminalia arjuna</i>) Shami(<i>Prosopis cineraria</i>) Sheesham(<i>Delbergia sissoo</i>)	Tamala(<i>Cinamomum tamala</i>) Nariyal(<i>Coccus nucifera</i>) Kela(<i>Musa sapientum</i>) Tad(<i>Borassus flabellifer</i>) Supari(<i>Areca catechu</i>) Ela(<i>Elattaria cardamum</i>) Tuvrak(<i>Hydnocarpus laurifolia</i>) Singhada(<i>Trapa bispinosa</i>) Jayphal(<i>Myristica fragrance</i>) Garjan (<i>dipterocarpus alatus</i>)
Animals charecterstics	Small size Mostly nocturnal	Both small and large predators Abundance of insects
Animals	Lava (Quail) Titar(grey francolin)	Hans (<i>Cygnus cygnus</i>) Baghula (Indian

Chakor(<i>Alectoris chukar</i>) Uluk(<i>Strix hadorami</i>) Goh(monitor lizard) Ushtra(<i>Camelus dromedarius</i>) Shsashk(<i>Oryctolagus cuniculus</i>) Mrig(<i>Gazella bennettii</i>)	heron) Pundrik(crane) Bhiring(Bumble bee) Koyal(cuckoo) Magar (<i>Crocodulus palustris</i>) Kachhap(<i>Geochelone elegans</i>)
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Third category of desh is *Sadharan* desh which has properties of both *jangla* and *anoop desh*. It is like a buffer area between *jangla* and *anoop desh* with mixed type of flora and fauna. Here the people have firm and stable body composition with good strength.

CHARECTERSTICS OF PRASHAST DESH (NON-POLLUTED AND BIODIVERSITY RICH HABITAT)

Prashast desh refers to a habitat where all biotic and abiotic components have an dynamic equilibrium and self regulating mechanism. It is a mature ecosystem has attained the stage of climax community of flora and fauna. These type of desh have ability to continue their functions without any hindrances and have capability of recovering after stressed conditions. In these areas all climatic elements like water, air, humidity, soil quality remains stable and consistent in their natural range. *Acharya sushruta* describes about drug collection protocol from a *prashast bhoomi* and he mentioned about charcterstics of *prashast bhoomi*. A landscape without much pits, stones, lowlands, burrows, trenches nearby graveyard, alkaline soil and have shallow groundwater level, is suitable for drug collection due to its composed nature. In ayurvedic texts land is classified on the basis of *mahabhoot* and each *mahabhoot* in its normal amount determines the characters of that particular land's soil texture, topography, groundwater level, vegetation and taste of water. These habitats have high species diversity, thus any species of that habitat have multiple alternatives for their food. This increases the resilience of the system to harsh conditions.

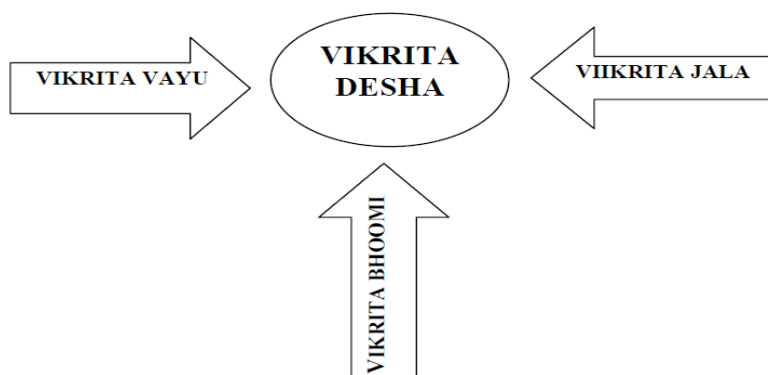
CHARECTERSTICS OF VIKRIT DESH (POLLUTED AND LOW BIODIVERSITY HABBITAT)

A habitat which is contaminated by undesirable elements and has lost its original traits which leads to regressive changes in physical, and biological characteristics of any components of the habitat i.e. air, water, soil. this can cause adverse changes and harmful effects on various life in habitat. These type of contaminations are caused either by natural elements (exotic species) or by manmade reasons. Ayurveda says *adhrma* is root cause of *vikrit desh*. *Vayu*, *jala*, and soil are critical factor for a habitat and degradation of these elements affects complete habitat. *Vikrit vayu* (air pollution) is condition where air loses its general pattern

and blows either in very low velocity (*atinischal*) or in the form of strong storms (*atishigra*), cyclones (*atikundali*), mixture of solid particles and liquid droplets in air are called particulated matter and high level of particulated matter spoils the air quality. Smoke (*dhoom*), dust (*dhooli*), dirt (*asamyak gandh*), soot (*kalikh*), water vapour droplets (*vashp*) are, major particulated matters. When some substance (organic, inorganic, biological) or heat mix in water and degrades the quality of water and further it becomes health hazard for man, animals or plants and unfit for use. Foul smell (*vikrit gandh*), increased salinity, strange taste of water (*vikrit rasa*) all these are indicator of deteriorating water quality and high level of pollutants in water have significant implication on concerning aquatic biodiversity. Polluted water (*vikrit jal*) is not suitable for aquatic life so they migrate from that water bodies.

Polluted air and water gives surge to degradation of land, reduction in fertility of land, building up of toxic elements in soil and it leads to health hazards and ecological imbalance.

Vikrit vayu, *vikrit jal* and *vikrit bhoomi* all together converts habitable conditions of a *desh* into vulnerable conditions to survive. In this *vikrit desh* new and exotic species of plants and animals found, Vegetation gets decline in its density and crop yields ceases to thrive. Reduced vegetation accompanied with unfavorable weather condition makes imbalance in food chain of that habitat and this makes a chaos in system. Creatures rush with unusual direction and unfamiliar sounds. Some geophysical activities like earthquake and volcanism can be found in *vikrit desh*.



ECOLOGICAL HEALTH BENEFITS OF PRASASTH DESH

Health is fundamental element of life and maintaining the health status is unavoidable for an individual. Human interact with the environment constantly, these interactions affect quality of life, years of healthy life live, and health disparities. A *prashast* desh means biodiversity rich and non polluted habitat which serves people with remarkable health benefits.

All human health goals ultimately depends upon ecosystem services that are made possible by biodiversity and the products derived from them. Thus biodiversity of a habitat plays a critical role in providing ecological health benefits. Ecological services are indispensable to the wellbeing of people, everywhere in the world. They include provisioning, regulating and cultural services that directly affects human health. A stable ecosystem plays a crucial role in human nutrition through its influence on food production, crop pattern and soil quality. A healthy marine habitat enhances the productivity of marine food (sea food and culture of marine species). Many essential micro nutrients and minerals for human cannot be synthesized in laboratories so their need can only meet by ecological services. About 80% of world's population is depend upon traditional medicine. Herbs, minerals and body part of animals are used extensively in every system of traditional medicine all over the globe, thus a biodiversity rich ecosystem primary source of these medicine and it helps in decreasing financial burden on primary health care services. Despite of food and medicine biodiversity provides many goods and services essential for life like energy, tangible goods for their shelter, land to use, fresh water. The loss of these resources can create the conditions responsible for morbidity and mortality. Climate is an integral part of ecosystem functioning and human health is impacted directly and indirectly by climatic conditions. long term changes in climate affect the viability and health of ecosystems, influencing shifts in the distribution of plants, pathogens, animals, and even human settlements. *Jangla anoop* and *sadahran desh* are different in climatic scenario so their respective climatic conditions determines the health status of that desh. Biodiversity influences disease pattern in an individual or population, how the local climate is suitable for life. Biodiversity lose and changes in ecosystem due to anthropogenic factors create disturbance in system. Such disturbances reduce the population balance of microorganisms in that area. This triggers the outbreak of infectious diseases like SARS, Ebola, Nipah, Marburg, Corona, Hanta virus, Malaria, dengue, Encephalitis. Green lavish atmosphere with various species of trees, animals and birds pacifies the impulses of human and somewhere in the abode of nature human mental health rejuvenates. Every aspect of human life has a perpetual bonding with nature and the environment and biodiversity of that particular region affects the community and their culture. Cultural values have a clear relation with human health thus biodiversity deliver health promoting benefits to support the life.

DISCUSSION

A geographical area (*desh*) and its ecological components establish a special relation with

human health. Classification of desh in *ayurveda* texts is appropriate to determine the human health and how does a well balanced environment makes life of people healthy. On the other hand a polluted ecosystem (vikrit desh) contains many hazardous features for the well being of human life. In recent time many ecosystem and their biodiversity has been depleted. The global death rate due to air pollution exposure is 86 deaths per 100,000 people. Will we ever realize how critical it is to conserve the environment and its biodiversity. So it is need of hour to protect and maintain the landscapes and their biodiversity so human can be benifited by the natures health blessings.

CONCLUSION

The interrelation of nature and human is never ending and intensely closed as it is said in ancient Indian literature that माता भूमिः पुत्रो अहं पृथिव्या it depicts the eternal relation between mother nature and all the creatures in the world.

So a stable system should be sustained for long time without any manipulation. Preservation of a prasasth desh (non polluted geographical area) is needed so that the natural resources can be utilized for the benefit of mankind and the improvement of health and wellbeing of the people.