THE IMPACT OF MEDICINAL PLANT INDUSTRY ON RURAL LIVELIHOODS AND ECONOMIC GROWTH

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Abstract

Our healthcare system would be incomplete without therapeutic herbs. Pre-modern societies developed "traditional medicine," "indigenous medicine," and "folk medicine." Plants and plant-based products are commonly used for medicine. Allopathic, homoeopathic, Ayurvedic, and Chinese medicine are available globally. Each developed community has a Materia Medica, a detailed database of medicinal plants. Botany says there are 2,50,000–3,50,000 plant species. Approximately 35,000 species are used to treat a variety of diseases worldwide. Due to their ubiquity across all demographics, phytopharmaceuticals are vital to the world economy and commerce. By 2030, the worldwide herbal medicine industry is expected to reach 550 billion dollars, up from 83 billion in 2019. This estimate comes from Globe News Wire research. China and India lead the botanical market. Every year, China exports 120,000 tons of herbal treatments and India 32,000 tonnes. Europe imports about 400,000 tons of medicinal plants (MP) yearly to suit local demand. This analysis examines MPs and their worldwide economic impact.

Keywords: *Phytochemical Compounds, Traditional Medicine, Pharmacological Activities, Economic Botany.*

Introduction

Most people worldwide depend on plants for health. Approximately 2 million Indian traditional healers use medicinal plants (MP) to cure various ailments. Therapeutic herbs have been used from the beginning of time. Traditional and folkloric medicine bases a plant's history on the experiences of many healers, which may have been handed down from ancestors or developed from the author's own experiences. Importantly, no recent cultural upheavals have tarnished this natural medical resource's vast understanding. Thus, none of the two therapeutic techniques can claim to have originated it. Traditional therapies including Ayurvedic, homeopathic, and allopathic are well-developed. These treatments vary in concept and execution. Materia Medica has considerable information on medicinal plants in developed nations. Combining this natural human pharmacy with the amazing advances in other medical research sectors offers the groundwork for a much-needed change in the established health-care system.

Botanical study estimates 2,50,000–3,50,000 plant species worldwide. In contrast, just 35,000 species are used worldwide to treat different diseases. Quality control testing and rigorous clinical research are needed for scientific justification since these plants are nearly entirely used raw or semi-processed and often mixed. A study indicated that 15% of MP underwent phytochemical analysis and 6% biological screening. The rest of the plants were left alone, therefore this treatment procedure offers great promise for developing new and more effective medicines.

Phytopharmaceuticals are considered crucial to international trade and the global economy due to their universal acceptance

by all ages. The global herbal medicine market was 18 billion dollars in 2005, reached 83 billion dollars in 2019, and is expected to reach 550 billion dollars by 2030, according to the Globe News Wire. It's no surprise that China and India dominate herb commerce globally. China is expected to export over 120,000 tons of herbal medicines year, followed by India at 32,000 tonnes. The world's top MP importer is Europe, which imports 400,000 tons annually from a variety of European countries to suit local herbal remedy demand.

A study to the British parliament showed that English people trust natural treatments. UK people spent 126 million pounds at 50,000 herbalists in 2002. Herbal products are becoming more popular in the US, with a market of 230 billion dollars in 2021 and 430 billion in 2028. Herbal remedies have grown in popularity in the US. Several European countries have experienced similar incidents. Herbal OTC sales are expected to reach 73.4 billion dollars in 2020 (Fortune Business Intelligence). Herbal medicines are most popular in Germany and France. More specifically, 50% of Germans trust herbal treatments to heal various diseases. In many Asian and African countries, herbal remedies are used at home. In the present age of medical engineering, some MP-derived compounds have a large market share worldwide. The WHO estimates that 11% of the 250 essential drugs are plant-based, according to Ndhlala et al. Antimalarials, antihypertensive reserpine, anticancer drugs paclitaxel, docetaxel, irinotican, and etoposide, digitalis (cardiotonic), morphine (narcotic analgesic), and turbocurarine may be taken as-is. The WHO defines Traditional Chinese Medicine as "preparations and/or finished products made from whole plants or parts of plant materials" (including leaves, barks, berries, flowers, or roots) and "active ingredients made from whole plants or parts of plant materials". Indigenous and local cultures employ MP to cure disease while manufacturing new products. Botanical drugs are botanical treatments.

In recent years, Pakistan has participated in worldwide MP commerce. Pakistan is the ninth greatest importer of medicinal plants (11,350 tonnes) but the tenth largest exporter (8100 tonnes), showing its potential. Over 10.5 million dollars in quality plant products are sold in Pakistan yearly. 1999, 2000, and 2001 saw 49 million, 78 million, and 87 million USD in herbal treatment sales in Pakistan. The herbal industry has struggled, thus the nation imports raw ingredients. Emphasize this crucial aspect. MP cultivation is promoted to sustain the herbal business using modern scientific methods. This meets rising local demand and generates cash from plant-based products exports.

Market Value of Mp

Up to 80% of the world's population uses herbs, and 95% in underdeveloped nations. Usage of herbs in the US is rising. Barnes et al. found 17.7% of people used natural goods (primarily herbs) in a year. Whites (43.1%) and Hispanics (28.8%) used CAM the most (23.7%). In El Paso research, 59%–70% of Hispanics, especially the elderly, used herbs more than the overall population. Some approaches may underestimate use. Most research shows that herb use is seldom reported to doctors, which is concerning. Low rates were caused by providers not asking about herbal usage or being unhappy with it. The

most popular herbs in various nations depend on the product and local traditions. Supplementing energy drinks, diet pills, and other nutritional supplements with herbs is a recent Western trend.

Ayurveda is predicted to expand 20% year. India had the world's greatest MP sales growth of 25% from 1987 to 1996. India's yearly drug spending is among the lowest in wealthy countries. Plants are the main medicine in many developing nations. Medical herb use is highest in China and India.

Both Indian and Chinese traditional medicine use 7,000 plant species. The US Export-Import Bank reports a 7% yearly increase in MP-related trade globally. China controls about half of the worldwide herbal market, while India owns 1%.

Indian MP exports are Rs. 1200 million annually. Almost all major herbal medicinal firms see 15–20% annual revenue growth. It has produced alternative medicine, novel drugs, and traditional medicine-derived healthcare products. Medical plants are crucial to pharmaceutical research and development because they may be used to create new drugs or start current ones. Many contemporary medications come from medicinal plants. MP compounds have little side effects and are non-narcotic.

National status

The natural medicine market is growing steadily. The Indian herbal medicine industry has expanded 15% and the pharmaceutical business 29% during the previous several years (Pharmaceutical.gov.in). Indian MP and herb exports have skyrocketed in recent years. India will produce 2.036 million tons of castor seed in 2020, making it the second-largest producer. India has exported isabgol, opium alkaloids, cinchona alkaloids, vinca extract, ipecac root alkaloids, solasodine, Menthol, and Gudmar plant in recent years. Mehdi departs Papian. Rauwolfia Guar gum. Jasmine oil. Sandalwood and agarwood oils. Indian herbal medicines earn nearly 1 billion dollars annually as OTC medications, ethical and classical formulations, and traditional home remedies, while crude herbal extract exports earn 456.12 million dollars.

India has over 25,000 licensed system of medicine pharmacies. More than 3,000 drug combinations are authorized in the US. India's herbal business uses 8000 MP.

Around 8000 medication producers work in India, although just 25 are large-scale. Ayurvedic and Unani medicines accounted for 27.7 million dollars in India's herbal market annually. 31.7 million dollars were earned in 1998–1999, and 48.9 million dollars in 1999–2000 from Ayurvedic and herbal product turnovers. Herbal medicine exports from India are valued at $80 million.

International status

Global herb sales are hard to measure, therefore figures are generally modest. Herbs are utilized in meals, energy drinks, multivitamins, and raw form, which explains this. The WHO estimates the worldwide market at approximately 83 billion dollars. Marketing and selling herbs in some countries is driven by profits. However, treating some conditions with plants in other nations might be cheaper. Global herbal drug sales exceed 61 billion dollars. Annual herbal medicine sales growth is expected to reach 6.4%. Due to many causes, the worldwide herbal medicine industry has grown rapidly. CAM is gaining popularity since many

worry about the adverse effects of contemporary drugs and think herbal remedies, which have been used for millennia by millions worldwide, have no harmful effects. Due to population aging, they choose preventative medicine. The WHO estimates that herbal medicines have a worldwide market of $43 billion annually.

Mp and Their Socio-Economic Importance

MP and human health

Any plant used to manufacture drugs or their precursors to treat, stop, or regulate pathogenic and physiological processes is an MP. A phytopharmaceutical preparation, sometimes known as herbal medicine, is any plant-based therapy, whether pharmaceutical or natural. Pharmaceutical drugs and other health products are made from MP, which is needed worldwide but diminishing rapidly. The commercial value of MP has been a major economic benefit of biodiversity. MP are the most valued non-timber forest products because they provide access to affordable healthcare, livelihood security, and economic well-being. In recent years, natural medicine has gained popularity. Quality control and safety are crucial while developing natural drugs. Almost all civilizations have used MP as medicine for millennia. Every ancient culture had amazing and successful medical and healthcare systems, including Egyptian, Babylonian, Jewish, Chinese, and Indus-valley. Developing countries lack research and policy interventions on MP cultivation, commercialization, and advantages to personal heath, social and economic well-being, and national economy. Indian culture has traditionally used aromatic and medicinal plants to safeguard its population, like other civilizations. Human encroachment, population growth, and other problems threaten medicinal plants. Created and natural habitats may offer MP. The supply chain may comprise primary collectors and producers, local contractors, regional wholesale markets, large wholesale markets, and specialists. Planting, managing natural resources, harvesting, processing, and, most critically, commercializing MP supply chains are regulated differently. Using diverse methods, many stalk holders manage and conserve medicinal plants. Many plant materials' medicinal benefits come from secondary product combinations. Many cultures utilize the plant for everyday medical treatment due to its therapeutic properties. Traditional MP species use knowledge is still passed down orally by indigenous peoples. The project examined production and management leveraging industry-community partnership to boost the MP value chain. At now, Over 25% of allopathic drugs are synthetic replacements for plant compounds or model molecules. Most of these species are endemic to the Himalayan sub-alpine and alpine regions, and over 70% of medicinal plants in the Indian Himalayas are harvested destructively. The herbal industry uses about 90% natural plant species. MPs provide culturally appropriate and affordable primary care to about 80% of the population (WHO 2005). Traditional medicine in most South and East Asian nations uses thousands of MP species to treat different diseases. These areas consistently support and encourage traditional medicine, which is cultural and spiritual. In impoverished nations, over 80% of people utilize plant-based

traditional medicine, which is natural, non-narcotic, and safe with minimal side effects. Traditional knowledge systems may assist achieve "Health for All" economically. Due to a lack of doctors, hospitals, and clinics, most of these villages must use non-allopathic care. Traditional medicine and MP constitute the backbone of excellent health in most poor cultures, according to UNSECO (1996). India and China have captured 40% of the world's biodiversity and uncommon plant species, becoming major medicinal plant producers. Several UN studies show that 33% of medication in highly developed countries comes from higher plants.

Socio-economic importance

The population is 74% rural, with 78% impoverished and reliant on direct exploitation of water, woods, and farmland for a livelihood (United Nations Development Programme, 2013). An estimated 80% of African and Asian people use plant-based pharmaceuticals for their medical needs, and the WHO (2008) forecasted that a similar proportion of the world population may do so in the next decades. Since the Western Ghats and Himalayas of India contain the world's richest medicinal and aromatic plant (MAP) biodiversity, MP and natural biodiversity are strongly linked. Environmental, economical, and institutional concerns threaten these areas' biodiversity. Popular topic: manufacturing using MAPs. Pharmaceuticals, health care, cosmetics, organic food, and other businesses use MAPs. MP's value depends on several local and worldwide socioeconomic factors. India has some of the most plentiful MAP sources, but farmers are ignorant of its advantages, therefore they have failed to maximize their potential. One study (Tiwari, 2002) found that Meghalaya's Khasi community sold about 2800 tons of cinnamon tamala for 0.75 million USD annually. Indigenous knowledge, traditional practices, and understanding of these plants are decreasing or vanishing from the public. India has around 8000 MP species, nearly half of which are higher flowering plants. MP aids millions of rural people. One million or more practitioners and oral streams employ codified Indian System of Medicine medicinal plants for curative, preventive, and fundamental purposes. Due to increased demand for herbal products, plant materials have been transferred rapidly within and across countries. The EXIM Bank estimates the global medicinal herb trade at $60 billion. Unlike India, where the natural medicine business produces 3.5 billion rupees and grows 7% yearly. India has varied fauna, but its growing population is straining its resources. Some MP are becoming endangered in their natural habitats because to rising demand. MP output must be increased to suit future needs. According to a nationwide ethnobiological assessment by the Ministry of Environment and Forests, India uses about 8000 medicinal plant species. A resource-extraction economic cycle has been suggested. This cycle is impacted by wild stock availability, development and environmental restrictions, socioeconomic variables, scientific and technology advancements, migratory propensity, and labor markets. In addition to MP overuse concerns. Low prices, low profits, income elasticity, the stimulation of the discovery of synthetic substitutes, an unbalanced change in demand, and lower competition

than other economic sectors indicate the need for a comparative analysis of MP production systems' economic performance. Plant-based botanical components are extensively accessible in the EU, with several formulations having distinct nomenclatures. They are cosmetics, natural remedies, nutritional supplements, or medical supplies. The global market for traditional herbal products is almost $60 billion, and most Africans use them. Many feel that studying traditional herbal therapy can improve global health. The WHO has researched traditional herbal medicines in India, China, Nigeria, and the US. Pharmaceutical and other companies have invested millions developing innovative chemical compounds and MP. This is a small investment compared to the pharmaceutical business, but it raises ethical issues that are not considered in typical drug research. MP may assist farm families generate income, provide a "safety net" if other expected earnings are not met, and boost the rural economy by subsidizing health care and subsistence medicine. Rural women may also work in farming, MP harvesting, and basic processing industries. MP cultivation and harvesting might boost rural households' income with scientific understanding and a good marketing strategy. These MP uses might dramatically increase rural employment. MP research is still popular in Asia due to its many benefits for poverty reduction and health care, but there is a lack of scientific data on institutional setups, production system potentials, methods of use, commercialization, and livelihood contributions. Systematic marketing of MP and traditional awareness of the herbal therapeutic potential of some important medicinal herbs may lead to cottage enterprises that protect tribal people's cultural heritage and boost economic growth.

Future Prospective

Given that there are 500,000 plants worldwide and that most have not been investigated for medicinal advantages, MP's future is bright. These unused resources may affect present and future research. Religions and other ceremonies have advanced thanks to medicinal plants. Many contemporary pharmaceuticals are created from healing herbs, and garlic is a therapeutic food. MP research helps us understand plant toxicity and protect humans and animals from environmental toxins. Plants are medicinal because they synthesize secondary metabolites. With this in mind, natural product chemistry has gained popularity. Therapeutic requirements, the remarkably varied chemical composition and biological functions of natural secondary metabolites, using fresh natural bioactive substances as biochemical indicators, developing new, accurate methods for identifying naturally occurring compounds with biological activity, improving methods for isolating, purifying, and structurally characterizing these active constituents, and advanced methods for characterizing these active

Herbal cures and medicinal herbs must be grown, processed, and produced using agro-industrial processes. Conventional medicine is important, hence the WHO provides norms, guidelines, and standards for herbal treatments. Modern drugs are indirectly made from MP, which produces unique drugs. Research on tribal healers' healing plant claims has intensified. After scientific examination and distribution,

these regional ethnomedical formulations will teach people about effective pharmaceutical therapy and enhanced health. Despite the long history of using therapeutic herbs in traditional medicine, scientific investigation and identification of active plant compounds and their results can lead to new natural products and therapeutic benefits. The process of converting medicinal plants into pharmaceuticals requires a comprehensive approach for safeguarding these resources.

Conclusion

About 75–80% of the world's population, mostly in poor countries, utilizes herbal medicine for basic care. Many think herbal remedies are safe, inexpensive, and accessible. Herbal remedies are two to three times more popular than medications, claims the WHO. Prehistoric herbs were used for healing and influenced modern medicine. Plant-based medicines were historically most effective. Morphine, quinine, dioxin, and aspirin (willow bark). Ancient people treated illness using herbs. Allopathy grew with industrialization. Herbal medicine worked but was unpopular.

Herbal medicines were abandoned by conventional medicine in the mid-20th century because synthetic drugs were more lucrative. MPs provide healthcare and income for growth. Despite the necessity for natural efficacy evidence, botanical and herbal supply is booming.

Even developed nations use natural remedies. Global demand for plant-based items is growing. Expect herbal supplements and therapies to drive demand. Since China and India have the most MP species and are the top exporters, scientists, doctors, and pharmaceutical companies will look there.

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