
Ayurveda Sector Profile: Exploring the Untapped Potential

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Introduction

'Ayurveda' has become a buzzword of sorts in COVID-19 pandemic times. The Government of India has made some important recommendations in preventive health solutions emerging from this medical heritage. The Ministry of AYUSH on its part has initiated many validation studies and the interim reports indicate a fair advantage benefiting society, frontline COVID-19 medical staff and others in combating exposure to this virus. The attention received has also led to the Ministry of Finance announcing an INR 4000 cr. package for the cultivation of medicinal plants as part of a larger economic stimulus for the economy.¹ This is a much-needed initiative to be managed by the National Medicinal Plants Board, an autonomous body dedicated to backward integration efforts and sustainable supply of medicinal plants for the AYUSH Sector in India.

AYUSH, an acronym for Ayurveda, Unani, Siddha, Yoga, Naturopathy, Sowa Rigpa & Homoeopathy, is a loosely put together indicator to sometimes describe everything that is not allopathy *ala* modern science-based pharmaceuticals or health care delivery. Ayurveda as a sector occupies a majority of this AYUSH aspect. Its profile has many dimensions which emerge from a traditional medicine standpoint. Ayurveda, like everything traditional and history-rich is glory personifying a bygone era. Its romance includes an era when gods walked Earth and their interaction led to miracle cures, nectar and elixir in common life. But unlike all things mythological and historic, Ayurveda is here, codified and documented, it's now in practice and is a fledgling sector awaiting recognition. With

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the advent of modern medicine in India, Ayurveda a mainstream primary health care monopoly of a pre-independence era, has seen the challenge, labelled an alternate and even sometimes relegated to a status of a probationary complementary health option, blasphemously called a placebo. Systematic policy neglect, urgent national health concerns, and a shift to quickly embrace the 'new' resulted in the country setting aside its medical heritage to something being a cultural nuance. A combination blend of Ayurveda and modern medicine to the advantage of society and mankind was not followed by a curriculum that ingrains the two. Hence, whilst the glory of Ayurveda is an accepted great, its current status has not been credibly documented nor its interventions pronounced in health policy. The economic slowdown of this sector was but natural and a renaissance in Ayurveda is only on account of modern medicine's

failure to live up to promise of being truly a 'primary health solution'. Modern medicine's failure has led to a sprint for a return to roots, whilst Ayurveda is caught muddled in an identity crisis, trying to configure the signals of this newfound attention. The era-based upgrade that has served Ayurveda well since its inception in 3000 BC, is yet to happen for this cycle. As a consequence, the sector is yet to emerge as a true comparator to modern medicine. Translational science fails this traditional sector. A profile or its absence now mars its progress.

This article is an attempt to provide an overview of the sector through a profile, with the objective of providing a broad outline of the potential it holds for the economy. This overview is provided with aid of measurements of economic components within the sector. Importantly, this article limits itself to an understanding of the Ayurveda dimension only.

Figure 1: Stakeholders in this 'Ayurveda Profile'



Source: Author's compilation.

Gross Domestic Product (GDP)

A normal exercise of estimating a sector's economic footprint includes comparison with the GDP of the country to assess the weightage associated with the particular sector.

Tapping into public information database like World Bank, various Ministry reports, trade reports, press statements and statistics published, we have put together some comparators to attempt an 'Ayurveda Profile'. Assumptions are transparently placed to draw inference and not to claim exactitude or any semblance of factual position.

India's GDP estimated is US\$ 1875.14 Billion² for FY 2019-20 and is ranked 5th in the world. India is on a fast track looking at 50 years of economic boom with a challenge and a boon - extending this growth story to over 600 million³ citizens awaiting inclusion in India's economic upturn. Ministry of Finance has targeted a US\$ 5 trillion GDP⁴, next to only USA and China by 2024. Important to note is that a former agrarian economy is now well balanced with a 24.9 per cent contribution

from an emerging Manufacturing sector.⁵ This is a huge plus when it comes to achieving the US\$ 5 trillion targeted growth leap by 2025 and including 600 million citizens to this largesse.

The modern pharmaceutical industry of India brands itself to be the 'pharmacy of the world' and true to its claim boasts of a phenomenal last decade of growth with exports of over INR 1.50 lac crs., and a total size of INR 2.77 lac crs.⁶, with a GDP footprint of 1.15 per cent. India also boasts of over 44 per cent of all Abbreviated New Drug Applications (ANDA) approvals by USFDA in 2018.⁷ The growth of the modern pharmaceutical industry in India has a special meaning, a precursor, to the future potential of the Ayurveda industry and its emergence globally. Can the country use this credibility to provide medicines from its own medical heritage to the confidence of regulators world-wide? We have an immense science and technological base in pharmaceuticals and it shows that the same can be established for Ayurveda as well. We are received in markets as proven manufacturers of quality pharmaceuticals, competently employing scientific rigour

Figure 2: Components of GDD



Source: Author's compilation.

and it's time we wrote our own new drug paradigm emerging from Ayurveda medicine. To do that it is important to question the readiness of the country, policy makers, scientists and the Ayurveda industry to make it happen. The main areas of focus should be disease, disorder, cure & management.

There is currently no official estimate of the Ayurveda industry size, although a CII report published in 2018 estimated the size of Ayurveda industry to be INR 30,000 crore.⁸ Even if one argues that the estimate is inflated, we can place a realistic assumption that Ayurveda Industry is INR 25,000 crs in market size and just 0.10 per cent of GDP for the financial year 2019-20. There is no quantitative basis for this assumption, there is no database that has a validated estimate for the market size of the Ayurveda industry. It's merely a conservative estimate vis-a-vis quotes of it being INR 30,000 crs., and is as good a guess as any.

Per Capita

The second aspect of profiling is to understand earnings within the sector. There is no relevant database but we do know that there are approximately 7494⁹ licensed Ayurveda manufacturers in India, as per the Ministry of AYUSH estimates. A rule of thumb would indicate an average economic size of INR 3.34 crs. for a typical industry unit. But based on estimates drawn from industry experience we do know that 200 companies control almost 85 per cent of the market share and this would mean that 7294 units would share an assumed INR 3750 crs. of commerce, resulting in an unviable economic size of just INR 51 lacs per unit. This is unviable sustenance, for any development agenda and for any competency to emerge in the coming years. Associated with such unviability are some of the glaring negatives we see in Ayurveda sector - amplified claim benefit, inconsistent quality offerings, packaging, compliance issues and sale at any cost strategies. This

Table-1 Estimating Work Force in Ayurveda

Unit	Estimated workforce per unit**	Total Estimated workforce
Medium and Large Ayurveda Co's - 200**	250 Employees per Company	50,000
Small and Micro Ayurveda Co's - 7,294*	10 Employees per Company	73,000
Medicinal Practitioners (Vaidya's)*	478450	478,750
Add: Assistants of Vaidya's	2 assistant per Vaidya	957,500
PHCs - 15,118*	5 employees per centre	75,590
Colleges- 254*	150 employees per college	38,100
State Govt's - 29*	500 employees per state	14,500
Medicinal Plant Traders	50 per state x 5 per trader	7,250
Total Sector Employment		16,94,690

Source: *Estimates taken from Ministry of AYUSH website, **Author's estimates based on minimalistic assumption drawn from industry experience/association.

per capita assessment, however one resets it statistically, reality will be in an around this malady. It's therefore given that new capital would be needed for extension of India's economic boom to the Ayurveda sector, new champions will have to emerge and in the short-term with a firm foot of Drug Control - shrinkage in number of units is inevitable.

Employment

On a very conservative and minimalistic base it is estimated that Ayurveda sector will have an economic impact on approximately 1.7 million workforce (Table 1). This would not include the medicinal plant farmers and forest communities who cultivate and collect the natural resources, hitherto undocumented and a little difficult to segregate and estimate this large group of stakeholders. A growing focus on sustainable sources for medicinal plants from agriculture and afforested areas would mean a very large impact on employment opportunities from this upstream activity. The National Medicinal Plants Board recently claimed to have over 6 lac of hectares under conservation activity and over 10 lac hectares under cultivation activity with an annual budget of a paltry INR 60 crs.¹⁰ We must imagine the INR 4000 cr. stimulus in this activity to be god sent and boom as far as employment in this sector is concerned even at a low assumption of impact - 1 worker per hectare.

Given the size of India's workforce, it can be claimed that with even a marginal encouragement from Government - State & Central -- we would see Ayurveda sharing its economic boom with 1 per cent of the total workforce that India employs, i.e 5 million strong engagement in allied

activities of medicinal plants cultivation and collection, in the medium term.

Agriculture

Sustainable sourcing of medicinal plants is a challenge for the Ayurveda sector. Hitherto Ayurveda industry has sourced its need for medicinal plants from forests. In recent years with the growth of phytochemicals, which source medicinal plants for the extraction of pure compounds used in modern pharmaceuticals (it is reported that almost 25 per cent of modern pharmaceuticals still source their pure compounds from plant resources), the pressure on the natural cycle of regeneration from the forests has been disturbed. This has led to the cultivation of medicinal plants on a larger scale and we estimate this global demand coupled with boom from within the Ayurveda sector has afforded agriculture to be a primary source of such herbs. Industry sources indicate that even today 90 per cent of the medicinal plant species are sourced from the forests but in volume, the picture would be inverse with over 80 per cent of the volume coming in from farms. Firms usually report the cost of medicinal plants as raw material at around 12 per cent¹¹ of the total cost to the industry. With an economic sector size estimate of INR 25,000 crs., this would mean INR 2,400 crs. worth of medicinal plants are sourced from farms. Here lies a huge opportunity to make a difference with higher volumes being sourced from Agriculture and sustained Afforestation. Commensurate to this activity is a huge potential for impacting livelihoods of forest communities and providing an alternative crop for farmers. Medicinal plant sourcing should be one of the greenfield sectors for global trade from Ayurveda sector. Value

addition and like economic activities can only spell greater value realization to communities and farmers.

Industry

Indian Industry accounts for around 25 per cent of GDP which nears to around USD 468.8 Billion and employees around 26 percent workforce which account for around of 130.5 million people.¹² To estimate the size of Ayurveda economic footprint, Table 2 attempts a very basic minimal summary of INR 57,117 crs. Ministry of AYUSH, Government of India enjoys a budget of INR 2,122 crs.¹³, we should safely say that this relegates AYUSH sector to still being a ‘cultural nuance’ and not a coparcener in the National Health Programme.

The incomes of Ayurveda Physicians have been assumed at a very subsistence level of existence.¹⁴ Some knowledge regards gross budget of an Ayurveda

teaching institution with a basic minimum capacity of 60 UG students per academic year has been relied upon for the above estimate. The State budgets for Ayurveda or AYUSH have not been factored in. The incomes of all employees in the Ayurveda Industry, related trade channels and commerce from medicinal plant trade have been assumed to be within the gamut of assumed industry annual turnover.

Global Trade

Export statistics from PHARMEXCIL have been relied upon in Table 3. We understand PHARMEXCIL have their source from DGFT HS Code data. The sector exports have been collated to be US\$ 423.12 million or INR 3173.42 crs for the year 2019-20.

Export data from PHARMEXCIL for the past 10 years shows a US Dollar stagnant export amount. No phenomenal growth or demand is seen here. The

Table 2: Ayurveda Commerce

Sector	Estimated Size per unit	Total
AYUSH Industry	25,000 crore**	25,000 Crs.
254 Colleges*	5 crore per college per annum**	1,270 Crs.
Vaidya’s 478750*	6 lakh per Vaidya per annum**	28,725 Crs
Ministry of AYUSH Budget 2020-21	2,112 crore*	2,122 Crs.
Total Minimum Commerce		57,117 Crs

Source: *Ministry of AYUSH, Govt. of India. **Author’s estimates based on minimalistic assumption drawn from industry experience/association.

Table 3: Global Trade

Ayurveda Sector	Exports (USD Million)	Exports (INR Crore)
Medicines for Retail Sale	126.06	945.50
Medicines in Bulk	16.15	121.12
Herbal Extracts & Crude	280.92	2106.90
Total	423.13	3173.42

Source: PHARMEXCIL.

incidence of export efforts in medicinal plants or standardized herbal extracts have met with some global interest but over the years there has been no monumental addition to export trade. It is also known that the export of medicinal plants is driven hugely by global demand for *Isabgol* and *Senna* pods, almost 80 per cent of the exports¹⁵. These two medicinal plants have nothing in common with the Ayurveda element in exports; it's purely dietary and phyto chemical demand from overseas buyers. There is no real export drive for medicinal plants or standardized herbal extracts emerging from Ayurveda, which have borne fruit.

The export of medicines, dietary supplement, herbal powders, put up for retail sales or exported in bulk for repackaging has also remained stagnant. Lack of regulatory recognition for Ayurveda is a major factor that impedes the exploitation of this global interest in all things natural and non-pharmaceutical. The recent acceptance of traditional medicine in countries like Switzerland, Canada, Oman and in some measure in ASEAN Trade block, are opportunities for exports from the Ayurveda sector. Very often Traditional Chinese Medicine (TCM) has been a comparator with regards Ayurveda potential for global trade. There is no real study of what the comparative trade statistics would show.

Exports from the Ayurveda sector can be divided into two types: i) demand for medicinal plants and standardized herbal extracts for their phytochemical compounds ii) Ayurveda medicaments. Given the absence of any blockbuster 'drug' from Ayurveda in India as yet, Ayurveda exports would have to be in the paradigm of 'whole sector' approach of

science, diagnosis, health delivery, services and medicine. This approach riding on an extended 'Yoga' fad world over can have early reception but for 'medicine', 'medical service', disease - disorder treatment to Cure & Mitigate, there is a lot of traditional science to be translated into modern syntax. This is not impossible though this has not been attempted till date. The faster India adopts a 'whole systems' approach for exports and global propagation of Ayurveda the earlier it can realise its potential to global health care. For this domestic preparedness is the key, and inter-ministerial cooperation and coordination essential. The reference here would include the Ministry of AYUSH and Ministry of Health and Family Welfare working in sync to address many reasons of mortality and disease affecting the population. Recent experience with reference to COVID-19 Protocols shows that whilst 're-purposed' chemical molecules were 'tried' for their treatment of COVID-19, even celebrated, only to be withdrawn, there was little opportunity or no interest in Ayurveda 'empirical' treatment approaches. The lack of support as mentioned above would mean that the bloom of global trade from Ayurveda or its contribution into a robust GDP US\$ 5 trillion would be a deferred realisation. The policy framework in the health sector of India is not encouraging for the growth and emergence of Ayurveda.

Research & Development (R&D)

India spends 0.70 per cent of its GDP on R&D.¹⁶ Budget for CCRAS is INR 276 crs.¹⁷ With the assumption that almost 50 per cent of this budget is for salaries and wages, it implies very little developmental

capacity in this premier research institution. It is to be noted that several clinical trials are registered with CTRI for “Ayurvedic” interventions. Recently all allied Government departments and research organisations were asked to develop their revival of ‘swadeshi’ science mandates. With regards to Ayurveda, not much is seen on the horizon or not much is going on. In the private sector, there is no real estimate of R&D spending. We do know that the industry is engaging in validation studies for its drug rationale translation in modern medical terms but a disease treatment or cure protocol is still absent. Ayurveda drugs in market are - ‘good for ...’, ‘aid in management of ...’, adjuvant palliation in disease management but there is no real claim statement of benefit that the medical fraternity relies upon for Ayurveda medicines. Despite INR 25,000 crs. of commerce, the appreciation of Ayurved as a science and the attribute of ‘cure’ is continually denied by modern medicine lobbies. ‘Wellness’, ‘Preventive’ and ‘Promotive’ are surrogate pluses bestowed to Ayurved, but ‘drug’ for ‘cure’ is denied, it’s a crafted side-lining in stature with substantial influence on health policy diktat. The whole approach of research in Ayurveda must recognize its ‘empirical’ stand point of being a ‘whole systems approach’. Systems biology is an approach that recognizes this approach and medical research in developing protocols with multi drug interventions, sometimes including treatments like Panchakarma or even Yoga, need to be considered. There is no monetary exclusive gain in generic classical approaches for industry and quest for being pioneer for a drug discovery phenomenon has not yielded any success so far, one must admit it may not be possible. Ayurveda classical

approach that has seen its relevance through the ages is on basis of a ‘whole system’ approach and not a blockbuster drug discovery commercial success. Given even the meagre attention of research to Ayurvedic medicinal plants, scientists prospecting flora for compounds for decades, the plight of waning pipelines of ‘new drugs’ in modern pharmaceuticals, can indicate ‘not much to report here’. Its best India’s research policy and Ayurveda sector reflect on its traditional standpoint and in earnestness undertake era relevant translational science to present itself on its own pharmacology rather than be hopeful applicants for a ‘new drug’ source.

Broadly, little or no research reflecting the core essence of Ayurveda approaches which has added experiential wisdom to the principles through the ages is taking place. Ayurveda the manner in which it is practised in clinics every day, is not the subject of much Research agenda today. For Ayurveda to emerge as an active coparcener in the National Health Program such protocols are the need of the day.

Potential Economic Impact of growth in Ayurveda Sector

Ministry of AYUSH, CII, FICCI and some other industry associations have touted a target of the sector emerging to an economic size of INR 1 lac cr. by 2025. Even if the start point is INR 25000 cr. or INR 57000 cr. the achievement would be manifold and of high impact. Even if the target is delayed from 2025 to 2027, the analysis carried above that shows the potential for growth in AYUSH and what it means for sectors such as agriculture, employment, global propagation of Ayurveda, education and vocational options to students, and availability of

medical practitioners to our population. All the numbers projected above have not been modelled on any economic growth matrix but simply forecasted as a possibility based on bare minimum and realistic assumptions.

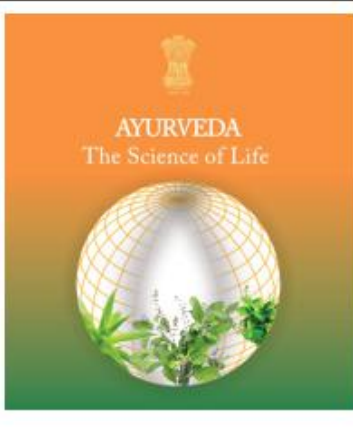
The Way Forward

A slight indication of benefit by Ministry of AYUSH echoed by the office of the Prime Minister saw phenomenal growth in certain product segments in the Ayurveda industry. Basic research and validation of a 'whole systems approach of Ayurveda' is also being brought to the fore. The focus could be protocols in managing chronic and non-communicable diseases and disorders, which have been strong points of experience from Ayurveda treatment throughout the ages. Modern medicine admittedly has little or nothing to offer in such medical segments. Ayurveda in principle can make and does make a difference in primary health care. Ayurveda is a science that employs basic principles to deliver benefit at the discretion of the practitioner. It has been misunderstood

to be 'individualistic medicine', which it is from a modern medicine standpoint but not in absolute terms. There is every possibility of assessing standard groups, degree of disease progressions and prescribing standardized treatment and medicine protocols. The more we employ basic principles of diagnosis, document, review and refine the better will be our ability to employ this in public health. A cursory listing of national disease burden and Ayurveda strong points indicates a huge role Ayurveda can play in managing these health challenges.

'National Dossiers' is a validated approach to disease & disorder treatment and cure. This should be an end to end compendium of standards and norms for managing disease and disorder. Such protocols being the subject of curriculum in Ayurveda colleges would see patronage, data and refinement over time. This economic benefit will flow to every stakeholder in the Ayurveda sector. National Dossiers will also address a much-needed standardization in manufacturing for industry, alignment of

Figure 3: National AYUSH Dossiers

<ul style="list-style-type: none">• Mother & Child Health• Malaria, Dengue & all types of <i>Jwar</i>• Cancer palliative care• Cardiac Care• Diabetes Management• Thyroid & Blood Pressure management• Sports Medicine• COPD & Asthama• Geriatric medicine	
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Note: This table is a cursory listing and not a comprehensive scope.

efforts to bridge the gap between supply and demand of medicinal plants, validated claim statements, medical integration with cross referencing or adoption of Ayurveda across medical practitioners

The faster we pursue a 'whole system' approach for Ayurveda acceptance the easier it would be to enjoy the benefits of this traditional medicine towards healthier, wholesome, longer and happier lives.

Database exists in national and state charts regarding direct and indirect taxation, public expenditure, regulatory licensing, EXIM trade, census and many more such and like data charts. However, data on the Ayurveda sector or AYUSH as sector have not been captured in these data charts. This is a serious lacuna that impacts any further effective policy strategy for growth. Going forward 2020 for a sector like Ayurveda or AYUSH, an absence of 'Profile' cannot be stressed more.

Further clarity on the several traditional components that have been included in AYUSH as a result of policy compulsions is required. Inclusion of Homeopathy as component of 'Indian systems of medicine', is a caveat as it originates from Germany. This complex milieu needs its own paradigm for a deeper understanding and in coming times the phenomenon called - AYUSH, would need an intense detailing on advantages and standpoint, for India first and its global echo thereafter. The fine line of indigenous systems, homoeopathy, and the advantages of each stream of traditional medicine is not very clear. Even to policy maker and Ministry of Health or Ministry of AYUSH, it would still be an unknown 'potential', medical heritage at best.

This is where the need for a Profile

becomes imperative. It brings out the core syntax of this colossus called 'AYUSH' with the objective of further streamlining of the sector.

Endnotes

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- ⁹ Ministry of AYUSH Dashboard. Ayurveda Licensed Manufacturing units - <https://main.ayush.gov.in/infrastructure/summary-infrastructure-facilities-under-ayush>

- ¹⁰ National Medicinal Plants Board. NMPB Budget outlay, Notes on Demands for Grants, 2020-2021 - <https://www.indiabudget.gov.in/doc/eb/sbe4.pdf>
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- ¹³ Ministry of AYUSH, Government of India. Budget, Notes on Demands for Grants, 2020-2021 - <https://www.indiabudget.gov.in/doc/eb/sbe4.pdf>
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