

Discussion and Recommendations

Turnover of the domestic herbal industry in the country, estimated at ₹ 20,000 crore for the year 2014-15, has registered a growth of about 11% over the past ten years. Herbal sector is poised to grow further globally. India, with strong traditional base in the use of herbals for health care, has an excellent opportunity to meet the global expectations through enhanced exports of quality herbal material and products and by developing world class herbal based health care facilities within the country. This requires demonstrating the fair trade practices and quality, authenticity and sustainability of herbal produce. The herbal raw drug trade in the country, however, is seen as secretive, with chain of custody of the material linking it to the source being not visible. If the country has to reap benefits of the potential this sector has, immediate interventions would need to be made in the area of wild harvests, trade, cultivation, and policy and law. Support would also need to be provided to research and development initiatives on various aspects related to the sector.

12.1. HERBAL SECTOR IN INDIA ON A PATH OF GROWTH

Herbal sector in the country is on a path of growth. The estimated annual trade volume has grown from 317,500 MT in 2004-05 to 512,000 MT in 2014-15 with a corresponding increase in the estimated trade value from ₹ 1,070 crore in 2004-05 to ₹ 7,000 crore in 2014-15. Whereas the domestic herbal industry has registered a three-fold increase in trade value of the herbal raw drugs consumed by it over the ten year period from 2004-05 to 2014-15, the trade value on account of exports registered a nine-fold increase over the same period. Based on the estimated consumption of herbal raw drugs, the total estimated turnover of the domestic herbal industry in the country for the year 2014-15 stands at ₹ 20,000 crore! Comparison with the estimated turnover of the domestic herbal industry as worked out by Ved and Goraya (2008) reveals that the sector has grown at a healthy 11% per year over the ten year period from 2004-05 to 2014-15.

Total turnover of the domestic herbal industry in the country for the year 2014-15 is estimated at ₹ 20,000 crore!

The country sees a great potential for further expansion of this sector. However, alongside the increasing demand for herbals are corresponding concerns about sustainable harvesting practices, quality, authenticity, and ethical trade practices related to the herbal material. It is, therefore, worthwhile to list out the strengths and weaknesses of the sector to identify the areas for improvement to ensure that the herbal sector continues to follow a growth path.

12.1.1: Strengths

- India has a very strong ancient tradition of plant use for health care and well being with a very large number of its population continuing to rely upon this tradition.
- Diverse agro-climatic zones in the country make India a very rich repository of medicinal plants that form basis of the country's health care traditions.
- Cultivation of many species of medicinal plants is already seen as a way of life in various parts of the country, and millions of hard working farmers are eager to take up cultivation of medicinal plant species suitable to their area.
- India has a very strong existence of herbal raw drug mandis and a vast network of highly experienced herbal traders, who provide an effective and efficient link between the primary producers and the end users.
- India has a very strong network of research organisations dealing with various aspects of medicinal plants and herbal raw drugs.

12.1.2: Weaknesses

- Depleting populations of many wild collected medicinal plant species due to unorganised wild collection that may result in non-availability of key herbal raw drugs and adversely affect the sector.
- Weak protocols with respect to post harvest handling resulting in loss of quality and damage to the harvested produce.
- Complex state-wise regulatory regimes for wild collection, cultivation, transport and trade of herbal raw drugs.
- Apparently non-transparent trade practices, coupled with absence of any mandi-level centralised record keeping system of trade along the trade chain.
- Increasing concerns about quality and authenticity of the herbal raw drugs used in the herbal formulations.

- Inadequacy of ITC (HS) system to maintain species-wise record of exports, making it difficult for the planners and managers to plan resource management regimes for medicinal plant species.
- Lack of national policy on medicinal plants, with the effect that different organisations focus on their own agendas without any national focus.

12.1.3: Opportunities

- The global demand of herbal products for health care and life style related issues is likely to grow further and if positioned well, India can be a leader in fulfilling this demand.
- Many CBOs/ NGOs have initiated programs to organise wild gatherers/ farmers for sustainable harvest/ cultivation, and to develop processes to follow fair trade protocols.
- Domestic herbal industry, represented by more than 8,600 registered units, has started adopting good manufacturing practices, including the one related to maintenance of record of herbal raw drugs consumed by the Industry during the year.
- Government has come forward to support medicinal plant conservation and cultivation programs with a view to strengthen the herbal raw drug resource base.

12.1.4: Threats

- Continuation of 'no change' in the current practices attitude may turn many a followers of 'herbal' away from the sector.
- Any further dithering to adopt a national medicinal plant policy may result in country losing the initiative to be a major player in the growing global herbal sector.
- The ongoing processes of developing synthetic drugs may adversely impact demand of medicinal plant species under large scale cultivation.
- The current government policies of harvest, domestic use and export of plant material may hamper primary production and consumption of such material.

12.2. RECOMMENDATIONS

Based on the outcomes of the study as brought out in previous chapters and the SWOT analysis of the sector, there is a need to support and act upon the following action points for further strengthening and promotion of herbal sector in the country:

12.2.1: Management of Wild Resource

Wild collected medicinal plants remain the mainstay of herbal health care systems in the country due to their easy accessibility to the local populations for their self-use and for trade to fulfil the requirements of the herbal industry and other end users. Over-harvesting and inadequate management focus on this 'minor forest produce' has brought many of these species under serious threat of extinction. The most vulnerable of these 'threatened' species are trees, other long-gestation species and the Himalayan herbs. At the current level of understanding, the best viable method of their conservation and development is to conserve these species in their natural habitats. One such initiative has been establishment of Medicinal Plant Conservation Areas (MPCAs) around viable populations of the threatened species. MPCAs have been established across the country with the objective to conserve the wild populations of 'threatened' medicinal plant species in situ under various externally funded project. NMPB is also supporting establishment of Medicinal Plant Conservation and Development Areas (MPCDAs) in many states. However, the status of these in situ medicinal plant conservatories, both MPCAs and MPCDAs, needs to be evaluated.

With communities having been devolved the right over the 'minor forest produce' no conservation effort would be successful unless taken up along with the local communities. Forest Departments of the states being the custodians of the forest land would also need to be actively involved. Research organisations with clear mandate and good strength in field botany would need to be involved in organising threat assessment exercises, in undertaking population surveys and in developing sustainable harvest methods. Local CBOs/ NGOs would need to be involved for initial organisation of the local communities, their hand holding during the program and for providing technical, organisational and marketing support. The available instrument of Joint Forest Management (JFM) provides a good option to involve local communities in managing the MPCAs/ MPCDAs and in strengthening wild resources of medicinal plants in the form of Community Medicinal Plant Reserves (CMPRs) for sustainable harvest of threatened species in forest/ common land.

S. No.	Recommendation	Action Points	Suggested Time Line (15 years i.e. upto 2030)
a	Initiate and support a country-wide program to strengthen wild populations of (a) medicinal trees, (b) other long gestation medicinal plant species, and (c) high Himalayan herbs in the form of CMPRs in forest land through JFM	Encourage and facilitate the SFDs to select suitable CBOs/ NGOs - 2 or more per state (@ one for 2-3 districts) - and enter into long-term agreement with them to organise, energise, and train local JFM committees in managing CMPRs in the assigned forest land for strengthening wild populations of native tree species of medicinal value, other long-gestation species and high Himalayan herbs including their sustainable harvest.	2017
		Provide financial support to the JFM Committees for strengthening of medicinal tree resources.	2017-2026 (10 years)
		Provide financial support to SFDs in strengthening and expanding the <i>in situ</i> conservation network of priority medicinal plants.	2017-2026 (10 years)
b	Support workshops to assess threat status of the wild collected medicinal plant species and to prioritise conservation action at regional and national level.	Identify suitable national agency to anchor the threat assessment program.	2017
		Identify a core group of resource persons to steer this specialised job.	2017
		Provide financial support for organising such threat assessment workshops and developing Red-lists for priority action.	2017-2022 (5 years)
c	Support population surveys to identify viable wild populations of medicinal plant species assessed 'Red-listed' and initiate their conservation action	Identify a suitable national agency to anchor, and 3-4 regional agencies to carry out population surveys in respect of Red-listed medicinal plant species.	2017
		Provide financial support to the selected organisations for carrying out population surveys.	2017-2022 (5 years)

S. No.	Recommendation	Action Points	Suggested Time Line (15 years i.e. upto 2030)
		Equip the State Forest Departments in undertaking <i>in situ</i> conservation and resource enhancement measures.	2019-2030 (12 years)
d	Support research on development of forest-type specific forest management/ silviculture systems for integrating management of native medicinal plants.	Assign this work with necessary financial support to national forestry research organisations like ICFRE for development of appropriate forest management systems in a time bound manner.	2016-2030 (15 years)
e	Putting in place long-term mechanism for monitoring and evaluating efficacy of MPCAs/ MPCDAs in conserving priority Red Listed medicinal plant species	Identify appropriate organisations at national and regional level for periodic monitoring and evaluation of conservation status of Red Listed medicinal plant species.	2016-2030 (15 years)
		Prepare triennial report on such status, to identify and address gaps.	2020-2030

12.2.2: Promotion of Commercial Cultivation of Medicinal Plants

Cultivation of many medicinal plant species where adequate supplies from the wild are becoming difficult to get and where authentic material gets a premium has become a necessity. NMPB has played a stellar role in promoting commercial cultivation of medicinal plants since its inception about 15 years ago. The Board now supports commercial cultivation of 116 listed species under 3 sets of subsidy regimes. It has come out very clearly during the study that commercial cultivation of medicinal plants could be successfully introduced only in those new areas where some local CBO/ NGO came forward and steered the process of cluster formation with or without subsidy support, and provided technical and marketing support to the farmers.

Lack of adequate quantities of authentic and good quality seed/ planting material came out as one of the important stumbling blocks in promoting cultivation of medicinal plants. On-field demonstration trials of integrated cultivation of medicinal plant species with conventional crops are required to be set up to promote cultivation of medicinal plants.

Dispensation of subsidy, especially getting the second instalment released due to complex inspection protocols, was cited by small farmers as a major dampener in utilising the available subsidy. The subsidy regime would need to continue especially in respect of newly introduced Red-listed species where risk of low returns is higher. The subsidy regime, however, would need to be revisited and alternative methods of its dispensation would need to be studied.



S. No.	Recommendation	Action Points	Suggested Time Line (15 years i.e. upto 2030)
a	Support development and production of high quality planting material of medicinal plant species to be promoted for cultivation	Assign the task of developing high quality certified planting material to selected research organisations and provide to them financial support for the job.	2017-18
		Support establishment of institutional medicinal plant nurseries for commercial production of initial stock of high quality planting material.	2018-2025 (7 years)
b	Support local CBOs/ NGOs for organising farmers and to provide them technical and marketing support.	Select local CBOs/ NGOs @ one per 3-4 districts, and arrange training programs for them in understanding key issues related to cultivation of medicinal plants.	2016-17
		Retain these selected CBOs/ NGOs at nominal monthly fee to develop clusters of at least 1000 farmers in their allocated districts.	2017-18
		Support the cultivation promotion programs through these selected CBOs/ NGOs.	2018-2027 (10 years)
c	Support processes for certification of cultivated herbal raw drug material	Identify a nodal agency to develop scope and protocols for certification of medicinal plant cultivation.	2017-18
		Support pilot scale certification of 4-5 village clusters in different regions of the country	2018-20
d	Support setting up of on-farm demonstration trials of different agro-forestry models with medicinal plants.	Formulate and support research program for setting up on-farm demonstration trials showing intercropping of medicinal plants with conventional agri-crops as collaborative program between the concerned research organisation, local CBO/ NGO and the state medicinal plants board. A pilot program for 10 species for different agro-climatic zones may be initiated to start with.	2017-2026 (10 years)
e	Evolve suitable farmer cluster based and production-linked subsidy dispensation mechanism instead of the present individual and cultivation-linked mechanism	Initiate a process of national consultation on the issue.	2017-18

12.2.3: Supporting Good Post Harvest Handling Practices and Infrastructure

The present study has brought out very clearly that the herbal raw drug material suffers substantial wastage and loss of quality due to poor post harvest handling of the material. It is an issue of serious concern from both wild harvest and cultivation point of view. Whereas wastage of the wild collected material has adverse impact on the wild resource, wastage of cultivated

material impacts the economic returns to the farmer. Farmers and wild gatherers expressed their ignorance about the existence of any 'good post harvest handling practices' protocols, pointing to an urgent need for initiating nation-wide training-cum-capacity building programs for the wild gatherers and the farmers.

Acute lack of even simple facilities like driers and drying yards was noticed, creating difficulties for the wild gatherers and the farmers in drying the harvested material. Many a times, due to rains, the fresh material is kept in bundles indoors resulting in its getting fungal infestation, and damage to the material. Dried material is usually kept in shoddy packing material at all available spaces in the house till it is lifted by the traders. There are no laboratory facilities near production centres making wild gatherers/ farmers vulnerable to exploitation on account of lower quality assessed at the end of the large traders/ users.

S. No.	Recommendation	Action Points	Suggested Time Line (15 years i.e. upto 2030)
a	Support development of post harvest handling facilities at key medicinal plant growing clusters	Select local CBOs/ NGOs for anchoring the facilities.	2017
		Create a minimum of 100 post harvest handling centres with each centre to have chopping machines, drying courtyards, covered drying platforms, solar dryers, weighing scales, godowns, etc.	2017-20 (3 years)
		Train the farmers in good post harvest handling practices.	2017-22 (5 years)
b	Support mobile laboratories to test quality of medicinal plant produce before its dispatch to bulk buyers	Deploy on pilot basis mobile laboratories equipped with necessary equipment and trained technicians to undertake testing of medicinal plant produce at farm gate.	2017-18

12.2.4: Fair Trade Practices

The herbal raw drug trade in the country is far from transparent, with little demonstrable mechanism to reflect fair trade practices, with inadequate mechanisms to follow the movement of material along the trade chain and to link the material in trade to its phyto-geographic production source, and with no mechanism of managing trade data in respect of conventional herbal mandis.

The inadequacy of data availability and no systems to trace backward linkages of the herbal raw drug material in place, confirming authenticity of the material remains a challenge, and the question raised by Ved and Goraya (2008) that 'from where does Asoka Chhal come' remains unanswered even after ten years. The origin, authenticity and botanical correlation of the herbal raw drug entities actually used as 'Jivanti', 'Vidari', 'Shakhapuspi', 'Daruharidra', etc. also remains questionable. With supplies of wild collected produce in adequate quantities becoming scarcer, the problem is only expected to become more serious.

In the absence of firm protocols to establish backward linkages of the material at any stage in the trade, questions about the source of the material, about its authenticity, and about the fair returns to the primary producers will continue to be asked.

S. No.	Recommendation	Action Points	Suggested Time Line (15 years i.e. upto 2030)
a	Develop and put in place an effective 'trade record management system' in place in respect of conventional herbal raw drug mandis.	Assign the task of developing prototype of 'trade record management system' to some suitable organisation.	2017-18
		Initiate national consultation on the issue and finalise the 'trade record management system' for implementation.	2018-19
b	Develop and implement chain of custody protocols in respect of traded herbal raw drugs.	Assign the task of developing prototype of 'chain of custody protocols' to some suitable organisation.	2017-18
		Initiate national consultation on the issue and finalise the 'chain of custody protocols' for implementation.	2018-19
c	Launch a national capacity building program for frontline staff of SFDs and the Panchayat functionaries in identification and documentation of medicinal plants harvested from the forests towards developing chain of custody regime at the primary production level.	Assign the task of developing prototype of 'capacity building module' and 'training-cum-reference material for the trainees' to some suitable organisation.	2017-18
		Organise these capacity building programs in collaboration with Panchayati Raj Institutions.	2018-22 (5 years)
		Organise capacity building programs for SFD personnel through training institutions of repute.	2018-22 (5 years)

12.2.5: Research & Development

Research and development aspects related to medicinal plant sector in the country have not received due focus in the past. Various past efforts on the subject have been far too scattered, too small and too short-lived failing to make the desired mark. Various organisations are involved in research on the subject in pursuit of their own independent agendas often with duplication of efforts and little coordination amongst them. A lot more research work needs to be carried out to resolve the issues related to entities used in the controversial herbal raw drug groups like 'Jivanti', 'Daruharidra', 'Shankhapushapi', 'Vidari', etc. Research inputs are also needed to enhance availability of raw drugs from many species like 'Kakarshingi'. The subject of developing high yielding germplasm of species proposed to be brought under cultivation also needs to be strengthened. There is an acute shortage of repositories of herbal raw drug for reference and authentication of traded material.

S. No.	Recommendation	Action Points	Suggested Time Line (15 years i.e. upto 2030)
a	Support developing a network of agencies engaged in research in medicinal plants.	Designate a national nodal agency to develop and service the network.	2017
		Engage with the managements of all such research organisations to bring them together for following a common research agenda.	2017-2018 (2 years)
		Support the nodal agency and the research organisations in conducting annual common research review and planning seminars.	2017-2026 (10 years)
b	Support projects to resolve the issues of plants used as part of the controversial herbal raw drug groups.	Support studies on controversial raw drug groups to firmly establish botanical identities of plant species used in these groups.	2017-2026 (10 years)
		Sponsor development of field character based identification keys to facilitate identification of the entities during handling at various stages.	2017-2020 (3 years)
c	Support setting up of traded herbal raw drug repositories	Develop ToRs for setting up of one central and 4-5 regional herbal raw drug repositories.	2016-17
		Assign the task of developing these repositories as per finalised ToRs to identified research organisations having good experience of working on medicinal plants and having good strength in field botany, and provide financial support for the purpose.	2017-2022 (5 years)
d	Initiate and support program for long-term conservation of seeds of Red-listed medicinal plant species	Enter into long-term MoU with NBPGR or other national research organisation having similar seed storage facilities for long-term storage of seeds of Red-listed medicinal plant species.	2017
		Support research organisations with strong field botany mandate for collection of seeds of Red-listed medicinal plant species from across various provenances towards conservation of their genetic diversity for future germplasm developmental programs.	2017-2026 (10 years)
e	Support triennial review of demand and supply of herbal raw drugs.	Appoint a national nodal agency on long-term basis (min. 10 years) to coordinate and steer the triennial review and prepare final triennial reports.	2017-2026 (10 years)
		Identify and support appropriate organisations to carry out subject-specific review-cum-assessment of demand and supply of medicinal plants in the country for (a) assessing consumption by domestic herbal industry, (b) assessing species-wise imports and exports	2017-2026 (10 years)

S. No.	Recommendation	Action Points	Suggested Time Line (15 years i.e. upto 2030)
		using DGCIS data, DTRs data from key ports, and interactions with exporters, © assessing household consumption, (d) assessing consumption by folk healers and ISM practitioners, (e) assessing wild collected supplies from forests and non-forest landscapes, (f) assessing supplies from cultivation, and (g) study of trade, and (h) review of policy and legislative framework impacting the sector.	

12.2.6: Policy and Regulatory Regime

The medicinal plant sector in the country has lacked vision and focus due to lack of national medicinal plants policy/ strategy. This has led different organisations dealing with medicinal plants to work on their independent agendas with no mechanisms for pooling the same at national level. Whereas there always are chances of duplication of work in such situations, most of such work remains confined to the labs.

Data management in respect of wild collected medicinal plants has also become an area of concern. With the devolving of rights over 'minor forest produce' to the communities, the State Forest Departments, which used to pool such information at the State level, have stopped maintaining records of herbal raw drugs wild collected from the forests in the State. The transit regulations are very complex and vary from state to state, requiring the consignments to stop at every State border for checking causing deterioration of the herbal material. There is a need to have uniform transit rules across the country.

The notifications under section 38 of the Biological Diversity Act, 2002 have put many an important medicinal plant species under strict regulation, amounting to a virtual ban on their collection, cultivation and trade. Many of these species are under active cultivation promotion by the NMPB in a virtually conflicting situation. These notifications need to be reviewed and turned into 'Action Lists' for proactive interventions to save Red-listed medicinal plant species from extinction and also to fulfil needs of the herbal sector. Wild populations of 'Kuth' have survived only because the species was brought under active cultivation more than 70 years back and that its commercial demand is now fully met from cultivation! Similarly, there is a dire need to review and make more comprehensive the list of 'Normally Traded Commodities' as defined under the Biological Diversity Act to facilitate the development of the Herbal Sector in the country.

The ITC (HS) Codes under which foreign trade of medicinal plants takes place are too restrictive to lead to the specific entities in trade, impacting the management actions for the species under foreign trade. The subject needs at least one time thorough study of the species in foreign trade based on DGCIS record, DTR records of key ports and interactions with exporters and importers.

S. No.	Recommendation	Action Points	Suggested Time Line (15 years i.e. upto 2030)
a	Develop and adopt a national medicinal plant policy/ strategy	Identify a suitable organisation for the purpose and initiate national consultation on the subject.	2017-18
		Prepare draft national medicinal plant policy and seek public views on the draft.	2018-19
		Adopt the policy	2018-19
b	Develop appropriate data management procedures for maintenance of data of all wild harvests of medicinal plants from forests	Sponsor a study to review the various policies and legislations under which communities have been granted rights over 'minor forest produce', and ways to build in data management procedures in the rules.	2017-18
		Initiate national consultation on the issue and finalise the draft data management procedures for implementation.	2018-19
		Finalise the procedure and circulate these for implementation	2019-20
c	Harmonisation of Forest Produce Transit Rules	Assign the task of compiling the transit rules in operation in different states and to work out prototype of National Transit Rules.	2017-18
		Initiate national consultation on the issue and finalise the prototype of the National Transit Rules for implementation.	2018-19
		Finalise the procedure and circulate these for implementation	2019-20
d	Review notifications under different sections of the Biological Diversity Act, 2002.	Initiate dialogue with the National Biodiversity Authority on the issue and review the notifications issued under section 38 of the BDA, 2002, and on the enlistment of 'Normally Traded Commodities'.	2016-17
		Turn the lists of notified species for strict regulation into 'Action Lists' to facilitate conservation, cultivation, and research initiatives in respect of these species.	2017-18
e	Improve ITC (HS) system of classification for herbal raw drugs in foreign trade	Sponsor a comprehensive study to bring out the various herbal raw drug entities in foreign trade along with their botanical correlation	2017-19
		Based on this study, develop a comprehensive ITC (HS) coding to record species-wise export/ import of herbal raw drug entities.	2019-20

12.2.7: Capacity Building

Many of the issues pertaining to medicinal plant sector are due to lack of awareness about these issues amongst the stakeholders. For example, the Panchayat functionaries endowed with right to issue transit passes for transportation of the herbal material are not aware about the data management systems. The traders and customs officials are not generally aware of the botanical correlations of the entities in trade. The wild gatherers sometimes are not aware of the adverse impacts of destructive harvesting on the resource. There is, therefore, a felt need to initiate an awareness-cum-capacity building campaign to make various stakeholders aware of the issues related to medicinal plant sector.

Development and distribution of illustrated posters on sustainable harvest practices, good post-harvest handling practices and organising awareness-cum-training programs for different stakeholders is proposed. It is also recommended that an Illustrated Compendium of Traded Medicinal Plants in India be published for use by traders, domestic herbal units, resource managers, customs officials, researchers, and others.

S. No.	Recommendation	Action Points	Suggested Time Line (15 years i.e. upto 2030)
a	Support capacity building programs for different stakeholder groups in management of medicinal plant resources and data management	Identify agencies to develop and implement the capacity building programs at national and state levels – - For forest field staff - For Panchayat functionaries - For wild gatherers - For traders - For Customs officials at Ports	2017-2022 (5 years)
		NMPB may initiate action to get standard training modules developed for different stakeholder categories.	2017-2019 (2 years)
b	Support publication of an Illustrated Compendium of 1178 Traded Medicinal Plants in India recorded under the present study	Identify an organisation/ core group for the purpose.	2017-18
		Support preparation of the manuscript of the illustrated Compendium	2017-18 (2 years)
		Get the manuscript reviewed and support its printing (at least 2000 copies)	2019-20
c	Support development and printing of posters/ brochures on good harvesting and post harvest handling practices and their distribution upto the level of Panchayats.	Identify appropriate organisations at national and state levels to develop posters/ brochures in vernacular.	2017-18
		Support development of a prototype of the posters/ brochures at national level.	2017-18
		Support development/ printing of state-specific posters/ brochures in vernacular broadly based on the national prototype and their distribution upto Panchayat level.	2018-19

12.2.8: Institutional Mechanisms

The medicinal plant sector is a very diverse sector. On one end of this diverse spectrum is the vast array of medicinal plant species that are either collected from the wild with its own complexities and forming the major source of cash income to millions of wild gatherers, or are cultivated or imported to meet the demands, and on the other end of the spectrum is the complex web of consumers of this resource varying from households to folk practitioners and the herbal units. There is a complex regulatory mechanism from wild collection/ cultivation to trade that varies from state to state, with a part under regulation by the National Biodiversity Authority, and under the negative lists of exports. There are questions about the authenticity of the material. There are researchers on the subject and there are users of the resource. These diverse functions require specialised inputs to strengthen the hands of NMPB, the key organisation dealing with medicinal plant sector in the country. Whereas there is a need to strengthen the in-house team and infrastructure of NMPB, establishing of regional Medicinal Plant Technical Support Groups (MP-TSGs) to support NMPB in achieving its mandate in a time bound and effective way would be required. These MP-TSGs, to be developed as 'Centres of Excellence' of the NMPB, would ideally be located in the existing Organisations/ Institutions that already have medicinal plants/ NTFPs as one of their core mandates. There is presently no institutional mechanism to collate and make use of the data being submitted by the domestic herbal units in the form of annual returns under section 157 A of the Drug & Cosmetic Rules, 1945. A web-base portal for data uploading by the industry will go long way in collating the data at national level and making it useful.

S. No.	Recommendation	Action Points	Suggested Time Line (15 years i.e. upto 2030)
a	Support establishment of regional Medicinal Plant Technical Support Groups (MP-TSG) in existing Institutions for strengthening NMPB's research, extension and development agenda	Prepare ToRs for the MP-TSGs through a consultative process.	2017
		Identify suitable existing organisations to be supported as MP-TSGs and enter into long-term agreement with them for the purpose. Support the MP-TSGs to act as Centres of Excellence of the NMPB in allocated areas. These MP-TSGs would also be good nodes to carry out periodic review of the demand and supply of medicinal plants in the country.	2017-18 2018-2027 (10 years)
b	Strengthen NMPB with infrastructure and manpower to enable it to increase its reach and to enhance the scope of its activities	Develop a 10-year institutional consolidation plan for NMPB	2017-18
c	Develop and put in place a web-based National MedPlant Portal for online submission of annual returns by the domestic herbal industry under section 157A of the Drug and Cosmetic Rules, 1945	Identify and support a national nodal agency for developing the web-portal.	2017-18
		Identify and support on long term basis a national agency to monitor data submission by herbal industry, collate, verify and analyse data, and bring out periodic – annual – bulletins on the subject.	2018-2025 (7 years)

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