

June 2015

Chief Editor : Deepika Kachhal
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Vol 59

YOJANA

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E-mail (Editorial) : yojanace@gmail.com
(Circulation) : pdjucir@gmail.com
Website : www.yojana.gov.in
https://www.facebook.com/pages/Yojana-Journal

*Let noble thoughts come to us from all sides
Rig Veda*

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EDITORIAL OFFICE : Office of Chief Editor (YOJANA), has shifted to Soochana Bhavan, (Ph: 24362971). The present address for Yojana (English) is Room No. 647, Soochana Bhavan, C.G.O. Complex, Lodi Road, New Delhi - 110 003.

Business Manager (Hqs.) : Ph :24367260, 24365609, 24365610

For new subscriptions, renewals, enquiries please contact : Business Manager (Circulation & Advt.), Publications Division, Min. of I&B, East Block-IV, Level-VII, R.K. Puram, New Delhi-110066, Tel.: 26100207;] Sales Emporia : Publications Division: *Soochna Bhavan, CGO Complex, Lodhi Road, New Delhi -110003 (Ph 24365610) *Hall No.196, Old Secretariat, Delhi 110054(Ph 23890205) * 701, B Wing, 7th Floor, Kendriya Sadan, Belapur, Navi Mumbai 400614 (Ph 27570686)*8, Esplanade East, Kolkata-700069 (Ph 22488030) *A' Wing, Rajaji Bhawan, Basant Nagar, Chennai-600090 (Ph 24917673) *Press road, Near Govt. Press, Thiruvananthapuram-695001 (Ph 2330650) *Block No.4, 1st Floor, Gruhakalpa Complex, M G Road, Nampally, Hyderabad-500001 (Ph 24605383) *1st Floor, 'F' Wing, Kendriya Sadan, Koramangala, Bangalore-560034 (Ph 25537244) *Bihar State Co-operative Bank Building, Ashoka Rajpath, Patna-800004 (Ph 2683407) *Hall No 1, 2nd floor, Kendriya Bhawan, Sector-H, Aliganj, Lucknow-226024(Ph 2225455) *Ambica Complex, 1st Floor, above UCO Bank, Paldi, Ahmedabad-380007 (Ph 26588669) *KKB Road, New Colony, House No.7, Chenikuthi, Guwahati 781003 (Ph 2665090)

SUBSCRIPTION : 1 year ₹ 100, 2 years ₹ 180, 3 years ₹ 250. For SAARC countries by Air Mail ₹ 530 yearly; for European and other countries ₹ 730 yearly.

No. of Pages : 64

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Chief Editor's Desk

Ensuring Holistic Health

Long ago, Charles Darwin gave the theory of evolution which propagated that species with useful adaptations to the environment are more likely to survive than those with less useful adaptations. This competition and urge to survive has always forced mankind to come up with newer inventions and innovate sustainable ways of living.

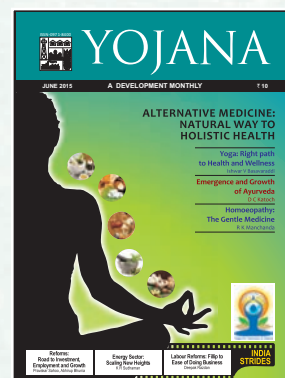
Today, no one can ignore the impact and usefulness of modernisation in our daily life especially on how these innovations have made day to day life hassle-free. This is particularly true about faster means of communication and travelling as well as the field of medicine that is conquering new frontiers. State-of-the-art diagnostic techniques and treatment facilities have added an altogether different dimension to the profession of saving precious lives. The other side of the coin however, is too much of human interference with the nature and unhealthy lifestyle resulting in greater sufferings in terms of severe and untreatable diseases. While modern technology has tried to find newer ways of treating diseases, it has not been able to stop or reverse the process. It is in this scenario that mankind has started looking back to the Nature and that is exactly where the role of alternative medicine and therapies come into play. They work on the principle of restoring natural balance and bringing human life back in harmony with the Nature. Indian traditional medicine system has been based on this principle focusing on holistic health rather than treating a disease. Ayurveda, Homoeopathy, Naturopathy, Yoga, Unani, Siddha, all these alternative therapies advocate a lifestyle which provides a healthy body, mind and overall happiness.

Ayurveda and Yoga started their journey more than 5000 years ago as ancient Indian sciences. While Siddha is one of the ancient systems of medicines popular in South India, Unani, the traditional system of medicine has its genesis in ancient Greece. Homoeopathy was developed in the early 1800s by the German physician Samuel Hahnemann. These systems have enjoyed continued patronage of people over the years. However, in recent times all alternative systems of medicine have gained global acceptance and popularity. The reason could be that apart from being effective, cheap, with no side effects, these therapies have been able to provide respite to certain chronic diseases and terminal stage patients. Modern medicine need not have a solution or answer to such situations. Institutions worldwide have undertaken researches to understand these systems more scientifically.

Governments world over are trying to evolve policies to promote these therapies amongst their people so that the less-privileged sections are more benefited. In India, a full-fledged Ministry was created to focus on Education and Research in Ayurveda, Yoga, Naturopathy, Unani, Siddha and Homoeopathy systems. The Ministry continues to lay emphasis on upgradation of AYUSH educational standards, quality control and standardization of drugs, research and development and awareness generation on the efficacy of the system domestically and internationally. The United Nations has also recognised holistic benefits of Yoga for physical, mental and spiritual wellbeing and passed a resolution at its General Assembly in December 2014 to celebrate 21st June every year as the International Yoga Day. 2015 will mark the first year of celebration.

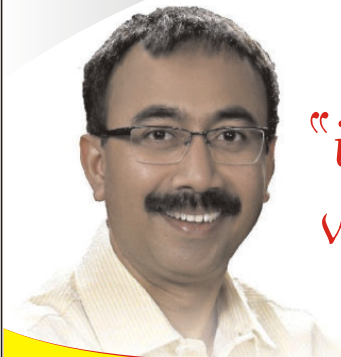
It is on this occasion that **Yojana** has also decided to give its readers an insight into some of the alternative therapies, the principles governing them and benefits as well as shortcomings. Beside this, with the present government completing one year of its being in power, the latest Issue also takes a glimpse at some of the major initiatives undertaken during the last one year and analyses its impact on employment generation, poverty alleviation, bridging the gulf between the haves and have nots and the overall growth saga of the Indian Economy.

One can conclude by saying that Alternative Medicine is not an 'alternative' at all, but the basis of our health care system and hence should become a part of everyone's life. This, coupled with adequate and appropriate government policies, can ensure a healthy, blissful life for every Indian citizen. Happy reading! □



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Yoga: Right Path to Health and Wellness

Ishwar V Basavaraddi



Yogic principles of lifestyle help to strengthen and develop positive health enabling us to withstand stress better. This Yogic health insurance has achieved by normalizing the perception of stress, optimizing the reaction to it and by releasing the pent-up stress effectively through the practice of various Yogic steps

Y

OGA IS a spiritual discipline based on an extremely subtle science, which focuses on bringing harmony between mind and body. It is an art and science of healthy living. The holistic approach of *Yoga* is well established and it brings harmony in all walks of life and thus, known for disease prevention, health promotion and management of many lifestyle –related disorders. The term ‘*Yoga*’ is derived from the Sanskrit root ‘*Yuj*’, meaning ‘to join’ or ‘to yoke’ or ‘to unite’. As per Yogic scriptures, the practice of *Yoga* leads to the union of individual consciousness with that of the Universal Consciousness, indicating a perfect harmony between the mind and body, man and nature. The aim of *yoga* is self-realization, to overcome all kinds of sufferings leading to ‘the state of liberation’ (*Moksha*) or ‘freedom’ (*Kaivalya*). Living with freedom in all walks of life, health and harmony are the main objectives of *yoga* practice. The practice of *yoga* is believed to have started with the very dawn of civilization. *Yoga*, being widely considered as an ‘immortal cultural outcome’ of Indus Saraswati Valley civilization – dating back to 2700 B.C.– has proved itself catering to both material and spiritual upliftment of humanity.

Origin and Development of Yoga

The science of *yoga* has its origin

thousands of years ago, long before the first religion or belief systems were born. According to yogic lore, Shiva is seen as the first *Yogi* or *Adiyogi*, and the first *Guru* or *Adi Guru*. Several thousand years ago, on the banks of the lake Kantisarovar in the Himalayas, *Adiyogi* poured his profound knowledge into the legendary *Saptarishis* or “seven sages”. The sages carried this powerful yogic science to different parts of the world, including Asia, the Middle East, Northern Africa and South America. Interestingly, modern scholars have noted and marvelled at the close parallels found between ancient cultures across the globe. However, it was in India that the yogic system found its fullest expression. *Agastya*, the *Saptarishi* who travelled across the Indian subcontinent, crafted this culture around a core yogic way of life.

The number of seals and fossil remains of Indus Saraswati Valley civilization with yogic motives and figures performing *Yoga Sadhana* suggest the presence of *yoga* in ancient India. The phallic symbols, seals of idols of mother Goddess are suggestive of *Tantra Yoga*. Presence of *yoga* is available in folk traditions, Indus Saraswati valley civilization, Vedic and *Upanishadic* heritage, Buddhist and Jain traditions, *Darshanas*, epics of Mahabharat including *Bhagavadgeeta* and

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Ramayana, theistic traditions of *Shaivas*, *Vaishnavas*, and *Tantric* traditions. Though yoga was being practiced in the pre-Vedic period, the great Sage *Maharshi Patanjali* systematized and codified the then existing practices of Yoga, its meaning and its related knowledge through his *Yoga Sutras*. After Patanjali, many Sages and Yoga Masters contributed greatly for the preservation and development of the field through their well documented practices and literature. Now-a-days, everybody has conviction about yoga practices towards prevention, maintenance and promotion of health. Yoga has spread all over the world by the teachings of great personalities and yoga masters.

The different philosophies, traditions, lineages and *Guru-shishya paramparas* of Yoga led to the emergence of different Traditional Schools of Yoga e.g. *Jnana-yoga*, *Bhakti-yoga*, *Karma-yoga*, *Dhyana-yoga*, *Patanjala-yoga*, *Kundalini-yoga*, *Hatha-yoga*, *Mantra-yoga*, *Laya-yoga*, *Raja-yoga*, *Jain-yoga*, *Bouddha-yoga* etc. Each school has its own principles and practices leading to ultimate aim and objectives of yoga.

Different social customs and rituals in India, the land of yoga, reflect a love for ecological balance, tolerance towards other systems of thought and a compassionate outlook towards all creations. *Yoga Sadhana* of all hues and colours is considered panacea for a meaningful life and living. Its orientation to a comprehensive health, both individual and social, makes it a worthy practice for the people of all religions, races and nationalities.

Now-a-days, millions and millions of people have benefitted by the practice of yoga which has been preserved and promoted by the great eminent Yoga Masters from ancient time to this date.

Yogic Practices for Health and Wellness: The widely practiced *Yoga Sadhanas* (Practices) are: *Yama*, *Niyama*, *Asana*, *Pranayama*,

Pratyahara, *Dharana*, *Dhyana* (Meditation), *Samadhi /Samyama*, *Bandhas & Mudras*, *Shat-karmas*, *Yukta-ahara*, *Yukta karma*, *Mantra japa*, etc.

Yamas are restraints and *Niyamas* are observances. These are considered to be pre-requisites for the *Yoga Sadhanas* (Practices). *Asanas*, capable of bringing about stability of body and mind, consists in adopting various body (psycho-physical) patterns, giving ability to maintain a body position (a stable awareness of one's structural existence) for a considerable length and period of time as well. *Asanas* are widely practiced Yogic practices for healthy living.

The knowledge aspect of Yoga Sadhana is being extensively researched, with advantage to Yoga practitioners. Psychological, Anatomico-physiological, Bio-chemical and philosophical phenomena underlying Yoga Sadhana have been commendably understood by us today. It is a matter of satisfaction for the entire humanity. So also, elaborate and effective means of its transmission, such as internet across the globe, is a great stride for propagation of yogic knowledge. Teaching methodology in Yoga has also ingrained modern educational methodological rigours into it. There is also a worldwide growth of teaching schools of Yoga.

Pranayama consists of developing awareness of one's breathing followed by willful regulation of respiration as the functional or vital basis of one's existence. It helps in developing awareness of one's mind and helps to establish control over the mind. In the initial stages, this is done by developing awareness of the 'flow of in-breath and out-breath' (*svasa-prasvasa*) through nostrils, mouth and other body openings, its internal and

external pathways and destinations. Later, this phenomenon is modified, through regulated, controlled and monitored inhalation (*svasa*) leading to the awareness of the body space/s getting filled (*puraka*), the space/s remaining in a filled state (*kumbhaka*) and it's getting emptied (*rechaka*) during regulated, controlled and monitored exhalation (*prasvasa*).

Pratyahara indicates dissociation of one's consciousness (withdrawal) from the sense organs which help one to remain connected with the external objects. *Dharana* indicates broad based field of attention (inside the body and mind) which is usually understood as concentration. *Dhyana* (Meditation) is contemplation (focussed attention inside the body and mind) and *Samadhi* – integration.

Bandhas and *Mudras* are practices associated with *pranayama*. They are viewed as (the) higher Yogic practices mainly consisting on adopting certain body (psycho-physical) patterns along with (as well as) control over respiration. This further facilitates control over mind and paves the way for higher yogic attainment. *Shat-karmas* are de-toxification procedures, help to remove the toxins accumulated in the body and are clinical in nature.

Yuktahara (Right Food and other inputs) advocates appropriate food and food habits for healthy living. However, practice of *Dhyana* (Meditation) helping in self-realization leading to transcendence is considered as the essence of *Yoga Sadhana*. However, 'a judicious combination of practice of *asana*, *pranayama* and *dhyana* daily, keep individuals healthy and disease free'.

The knowledge aspect of *Yoga Sadhana* is being extensively researched, with advantage to Yoga practitioners. Psychological, Anatomico-physiological, Bio-chemical and philosophical phenomena underlying *Yoga Sadhana* have been commendably understood by us today. It is a matter of satisfaction for the entire humanity. So also, elaborate and

effective means of its transmission, such as internet across the globe, is a great stride for propagation of yogic knowledge. Teaching methodology in Yoga has also ingrained modern educational methodological rigours into it. There is also a worldwide growth of teaching schools of Yoga across the globe. An earnest scientific and philosophico-literary research has also caught up globally and is yet another encouraging sign of evolution of Yoga.

Life Style and Yoga: Lifestyle is the way people live and this has immense influence on the status of health or disease an individual. Since one's lifestyle has developed early in life, it is advisable to cultivate healthy lifestyle in early childhood. Many factors determine one's lifestyle. Economic status determines incidence of under-nutrition in poor and obesity in the rich. Cultural values of the society dictate the dietary preferences in the population. Sedentary life is a major factor for coronary artery disease while personal habits like smoking and alcoholism determine the incidence of heart disease and cirrhosis of liver. Healthy diet, physical activity, good habits, rest and relaxation are important components of healthy lifestyle.

Yoga is the most perfect lifestyle module as it is comprehensive and holistic in its nature. Yogic principles of lifestyle help to strengthen and develop positive health enabling us to withstand stress better. This Yogic health insurance has achieved by normalizing the perception of stress, optimizing the reaction to it and by releasing the pent-up stress effectively through the practice of various Yogic practices. Yoga is popular now a days because of its therapeutic credentials and it is being widely used as complementary medicine by practitioners of different systems of health care across the globe.

Yoga as Therapy: Using Yogic principles and practices for healing is called "Yoga Therapy". Use of Yoga practices for therapeutic purposes is a 'by-product' of Yoga. Yogic Practices

are mind centric and if we examine different references of Yoga, e.g. *Upanishads, Gita, Yoga Sutra*, classical *Hatha Yoga* texts or any other yogic texts, it is clear that Yoga is a discipline aimed for freedom of mind and its different faculties. The Mind, which is an instrument of perception, is used to 'transcend' itself to give the perceiver clarity about its position. Though, there is no reference of yogic tools available directly dealing with illness in the Yoga Sutra of Patanjali, the word "Vyadhi" which means illness is given as one of the "antarāya-s" (obstacles) (Chapter 1 Sutra 30). There are of course, direct references available to show how *Kriyas, Asanas, Pranayamas* and *Mudras* can be used to cure illnesses in



Hatha Yoga Texts such as Hatha-yoga pradiipika, GherandaSamhita, Yoga YajnavalkyaSamhita, Yoga Rahasya, etc. It is over the years, *Yogācārya-s* have developed the systems of Yoga for therapy purposes. They are passed on to their disciple and practiced as 'Traditions of Yoga Therapy'.

The Yoga Therapy: Doctrines and Concepts

- Doctrine of "Chitta-vrittinirodha", "Kriyayoga" and "Astanga" as found in Patanjali's *Yoga Sutras*.
- Doctrine of "Panchakosha" (five sheaths/bodies) as found in *Upanishads*.
- Doctrine of various kinds of "Shuddhi" found in *Patanjali Yoga Sutra* and *Hathayoga*.

- Doctrine of opening blocked channels of vayus and prana (nadishuddhi), opening of lotuses and *chakras, pranayamas, mudras* and *dristis* as found in *Hathayoga* and *Kundalini Yoga*.
- Working with the mind on the lines of *Patanjali Yoga Sutra, Mantra Yoga* and *Hathayoga*.
- Working on the lines of "Karma-Jnana-Bhakti" from *Bhagawadgita*.
- Certain aspects of *Tantra Yoga* also get integrated in various Yoga practices.

Yoga therapy is being practiced now as an alternative healthcare practice in many parts of the world. The number of Yoga practitioners continues to rise tremendously. Of the many benefits ascribed to Yoga practice, blood pressure control is among the most studied. There are several reviews regarding the potential benefits of Yoga for reducing blood pressure and other cardiovascular disease risk factors but the degree to which yoga therapy may decrease blood pressure and its potential modifying effects remain unclear. Yoga therapy has also been found to improve indices of risk in adults with type 2 diabetes, including glucose tolerance and insulin sensitivity, lipid profiles, anthropometric characteristics and blood pressure. It also leads to a reduction in oxidative damage; improve coagulation profiles and pulmonary function, and decreases sympathetic activation in adults with diabetes and related chronic disorders. Yoga may also be useful in reducing medication requirements in patients with diabetes and could help prevent and manage cardiovascular complications in this population. Many research papers have been published in indexed peer reviewed journals to prove the efficacy of Yoga therapy in the management of lifestyle related diseases. Medical research in recent years has also uncovered many physical and psychological benefits that Yoga also offers, corroborating the experiences of millions of practitioners.

How Yoga Works:

The following are just a few of the mechanisms through which Yoga works as an integrated mind-body medicine:

1. Cleanses the accumulated toxins through various *shuddikriyas* and generates a sense of relaxed lightness through Yogic *sukshnavyayama* (simple micro movements for all joints and ligaments of body). Free flow in all bodily passages prevents the many infections that may occur when pathogens stagnate therein.
2. Adoption of a Yogic lifestyle with proper nourishing diet, creates positive antioxidant enhancement thus neutralizing free radicals while enabling a rejuvenative storehouse of nutrients packed with life energy to work on anabolic, reparative and healing processes.
3. Steadies the entire body through different physical postures held in a steady and comfortable manner without strain. Physical balance and a sense of ease with oneself enhance mental / emotional balance and enable all physiological processes to occur in a healthy manner.
4. Improves control over autonomic respiratory mechanisms through breathing patterns that generate energy and enhance emotional stability. The mind and emotions are related to our breathing pattern and rate and hence the slowing down of the breathing process influences autonomic functioning, metabolic processes as well as emotional responses.
5. Integrates body movements with the breath creates psychosomatic harmony. In Yoga, the physical body is related to *annamayakosha* (our anatomical existence) and the mind to *manomayakosha* (our psychological existence). As the *pranayama kosha* (our physiological existence sustained by the energy of the breath) lies in between them, the breath is the key to psychosomatic harmony.
6. Focuses the mind positively on

activities being done, enhances energy flow and results in healthy circulation to the different body parts and internal organs. Where the mind goes, there the *prana* flows!

7. Creates a calm internal environment through contemplative practices that in turn enable normalization of homeostatic mechanisms. Yoga is all about balance or *samatvam* at all levels of being. Mental balance produces physical balance and vice versa too.

Yoga and Ayurveda reveal to us the secret powers of the body, breath, senses, mind and spirit. More importantly, they unfold transformational methods to work on them through proper diet, herbs, panch-karma, yogasana, pranayama and meditation – covering the entire range of our life style. Both recognize that keeping the body and mind healthy is vital for fulfilling the four aims of life (Purushartha Chatusthaya): dharma (duty), artha (wealth), kama (desire), and moksha (liberation)

8. Relaxes the body-emotion-mind complex through physical and mental techniques that enhance our pain threshold and coping ability in responding to external and internal stressors. This enhances the quality of life as seen in so many terminal cases where other therapies are not able to offer any solace.
9. Enhances self confidence and internal healing capacities through the cultivation of right attitudes towards life and moral-ethical living through *yama-niyama* and various Yogic psychological



principles. Faith, self confidence and inner strength are most essential for healing, repair, rejuvenation and re-invigoration.

10. Yoga works towards restoration of normalcy in all systems of the human body with special emphasis on the psycho-neuro-immuno-endocrine axis. In addition to its preventive and restorative capabilities, Yoga also aims at promoting positive health that will help us to tide over health challenges that occur during our lifetime. This concept of positive health is one of Yoga's unique contributions to modern healthcare as Yoga has both a preventive as well as promotive role in healthcare. It is also inexpensive and can be used in tandem with other systems of medicine in an integrated manner to benefit patients.

Yoga and Ayurveda: Yoga and Ayurveda are inseparable sisters. Both originate as part of a great system of Vedic knowledge. Both Yoga and Ayurveda are based upon the principles of *trigunas* (*sattva*, *rajas* and *tamas*) and the *panchamahabuthas* (earth, air, fire, water, space). Yoga and Ayurveda also encompass an understanding of how the body works (*Dosha-Dhatu-Mala*/humor-tissue-waste material theory) and the effect that food and medicines have on the body (*Rasa-Veerya-Vipaka*/taste-energy-post digestive effect concept). Yoga and Ayurveda are complimentary to each other and holistic in nature. The two have a common understanding of health of the body being dependent on the health and balance of the mind. They share virtually the same metaphysical anatomy and physiology,

which consists of 72,000 *nadis* (subtle channels), seven main *chakras* (energy centers), *panchakoshas* (five bodily sheaths) and the *kundalinishakti* (the serpent power). Ayurveda make best use of the metaphysics of Yoga, and Yoga practices to treat the patient in totality. In treatment, Ayurveda advocates the regular practice of *asana*, *pranayama* and meditation as well as the use of herbs, body purification procedures, food and chanting of mantras for physical and mental health. Yoga and Ayurveda reveal to us the secret powers of the body, breath, senses, mind and spirit. More importantly, they unfold transformational methods to work on them through proper diet, herbs, *panch-karma*, *yogasana*, *pranayama* and meditation – covering the entire range of our life style. Both recognize that keeping the body and mind healthy is vital for fulfilling the four aims of life (*Purushartha Chatusthaya*): *dharma* (duty), *artha* (wealth), *kama* (desire), and *moksha* (liberation) Thus, vedic medicine (Ayurveda) and spiritual practice (Yoga) work together in bringing health and harmony to both body and mind leading to self realization.

Conclusion: At present global healthcare is dominated by modern medicine. Cost of such medicine is going beyond the reach of poor and middle class people. On the other hand, communities need safe, effective, affordable and accessible healthcare. The holistic wisdom of Yoga and other ancient health systems offer the necessary wisdom, experience and capabilities that are crucial for such transformational change. The increasing use of alternative medicine not only in developing nations but also in industrialized and presumable advanced Western nations presents itself as something of an enigma. As a social phenomenon, Yoga is not well understood as a therapy or indeed much researched in terms of modern medicine. It is curious that its growth is occurring in countries where Western science and scientific method generally has accepted as the major foundations for healthcare, and “evidence-based” practice is the dominant paradigm. As medicine experiences an explosion in its knowledge base, genomic medicine opens a whole new approach to medical care. There seems to be an insatiable desire for ancient philosophies and approaches to medical care by the general public. One reason for the popularity of complementary and traditional medicine is the spiraling cost of modern allopathic medical care and associated adverse effects. New technologies have been developed at a record pace, producing many medical, surgical and diagnostic innovations, most of which are unquestionable improvements but are also very expensive that have placed them out of reach of a large segment of the population. One consequence appears to be the creation of a strong public desire for a wide range of complementary modalities to prevent and treat the full gamut of human illness, particularly non-communicable diseases. Yoga is proving to be the most desirable complimentary and traditional system of health care in the present scenario. □

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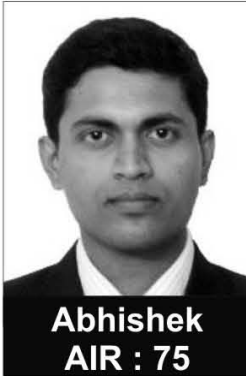
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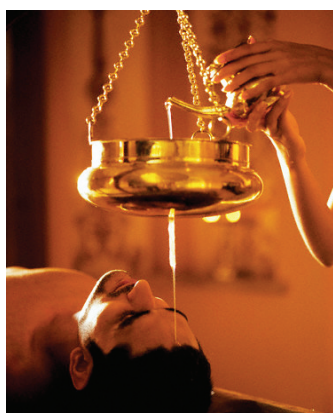
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Emergence and Growth of Ayurveda

D C Katoch



Ayurveda has always enjoyed the patronage of people and survived through adverse times during pre-independence era. In independent India, Ayurveda represents as officially recognized healthcare and medical knowledge system that is amply codified, adequately organized and is an integral part of the healthcare network of the country

ORIGIN OF Ayurveda as a system of holistic healthcare is known to have emanated from the health and medical knowledge imbibed in the Vedic literature. Dating back to about 5000 years, Ayurveda is believed to have its roots in *Atharva Veda* and also recounted as fifth Veda and science of life. Initially transmitted in oral form from one generation to another, systematic documentation of Ayurvedic concepts, basic principles and clinical applications started with two major compendia called as *Charak Samhita* and *Sushrut Samhita* that were written about 1000 years BC. Other compendia of Ayurveda based by and large on *Charak Samhita* and *Sushruta Samhita* came up much later in the name of *Ashtang Sangraha* and *Ashtang Hridayam*. By the end of the first millennium BC, Ayurveda got established with two main schools of thought, namely, *Atreya Sampradaye* - the school of physicians and *Dhanwantri Sampradaye*- the school of surgeons dealing predominantly with medical and surgical aspects of the diseases respectively. At that time, tenets of clinical medicine being classified in eight specialties of *Kayachikista* (Medicine), *Shalya* (Surgery), *Shalakya* (Ophthalmology and ENT), *Kaumar Bhritya* (Pediatrics), *Agad*

Tantra (Toxicology), *Bhoot Vidya* (Psychiatry), *Rasayana* (Gerontology) and *Vajikarana* (Science of Virility and Healthy progeny) led to name this health knowledge system as *Ashtang Ayurveda*. The fundamental concepts and subjects of clinical medicine are described mainly in two triads of classical treatises called 'Brihat Trayee' comprising of *Charak Samhita*, *Sushruta Samhita* and *Ashtang Sangraha* and 'Laghu Trayee' comprising of *Madhava Nidan*, *Sharnghadhara Samhita* and *Bhava Prakasha*. Fortunately, all the major authoritative books of Ayurveda are available today and are listed in the First Schedule of the Drugs and Cosmetics Act, 1940 to serve the purpose of legal definition of Ayurvedic drugs.

Different aspects of Ayurveda have evolved and documented from time to time that is why various Ayurvedic treatises have specific objective and subject to emphasize than the others. Like in *Charak Samhita*, there is much emphasis on the philosophy of life, health and medicine and classical line of treatment for different diseases. *Sushruta Samhita* emphasizes more on surgical aspects of diseases and systematic approach to the diagnosis and surgical treatment of the diseases of eye, ear, throat, nose and dentistry. *Kashyap Samhita* deals mainly with child healthcare, *Madhava Nidana*

The author is Adviser (Ayurveda) Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH).

with aetio-pathological aspects and diagnosis of diseases, *Bhava Prakasha* with formulations based treatment of diseases and description of food items and last in the series *Sharnghadhara Samhita* is replete with various aspects of pharmaceuticals and dosage forms. There have been perpetual and methodical inputs to enhance the theoretical framework and applied aspects of Ayurveda with perpetual innovations, inclusions and necessary modifications from time to time. Subsequent commentaries on the original texts have clarified intricacies and complexities of the subject matters and helped to resolve the textual ambiguities and confusion. Presently, Ayurveda has reached a stage of much clarity of its fundamental principles, concepts and applications owing to continuous efforts that have gone in the process of its development and evolution.

According to Ayurveda, human body is like a mini universe made up of five physical elements- Prithvi (Earth), Jala (Water), Agni (Fire), Vayu (Air) and Akash (Ether) and a foremost subtle element called Chetana or Atma Tatva, which is responsible for consciousness and indicator of life. There exists similarity and co-relation between the macrocosm (universe) and the microcosm (human body) in terms of laws of nature. The functional entities of the body system derived from interaction of physical elements in definite proportions are named as *Tridosha* (three bio humors), namely- *Vata*, *Pitta* and *Kapha*, which in the state of dynamic equilibrium, maintain health and in the state of imbalance, lead to causation of disease. Structural entities forming the body matrix are termed as *Dhatus*, namely- *Rasa* (Plasma), *Rakta* (Blood cells), *Mansa* (Muscular tissue), *Meda* (Fatty tissue), *Asthi* (Bony tissue), *Majja* (Bone Marrow) and *Shukra* (Reproductive secretions). All metabolic and bio-transformation functions in the body system are

in the hands of *Agni* (Bio-fire) and *Srotas* (Channels) and in the process excretory wastes called '*Mala*' like stools, urine, sweat etc are produced. Integrated balance of *Dosha*, *Dhatu* and *Mala* and happiness of soul, mind and sense organs is attributable to health and imbalance of these factors causes indisposition. The definition of 'Health' given in *Sushruta Samhita* is very comprehensive, depicting the wholesome state of well-being and harmonious and happy life with stable equilibrium of functional, structural and excretory entities. Health is considered as a basic prerequisite for enjoying the virtues of life including attainment of dutifulness and materialistic, social and spiritual gains. Due to dynamic role of



five physical elements in different combinations and permutations and interplay with the subtle elements in determining the physico-psychological characteristics of the individual, understanding '*Prakariti*' i.e. Body-Mind Constitution is important in disease causation, diagnosis, prognosis as well as lifestyle management and treatment interventions. It is postulated that the basic constitution of a person is manifested at the time of conception and fertilization, which never changes throughout one's lifetime but influenced by various factors with apparent modulation of physical and psychological expression in accordance with the place of birth, familial predisposition, caste, age, season and personal habits.

Ayurveda provides distinct approach towards diagnosis and management of diseases. In principle, the diagnosis in Ayurvedic terms means complete understanding of the disease factors and process of manifestation of the disease in an individualized manner. Treatment is accordingly planned with the objective to balance *Dosha*, *Dhatu* and *Mala* by breaking the disease process and to restore pre-disease state of health. This involves dual diagnostic methodology of investigating the disease and the individual to find out the strength of the disease process as well patient's strength. Modes and modalities of treatment are accordingly determined from the perspective of facilitating avoidance of predisposing and aggravating factors of disease; palliative care with medicines, diet and behavior modulation; bio-purification by *Panchakarma* procedures and observance of necessary precautions and lifestyle interventions to achieve not only control over the underlying indisposition but also the healthy state. In this way, adopting customized approach to an individual patient attributes to the holistic characteristic of Ayurveda treatment.

In Ayurveda, all substances are believed to have therapeutic potential when used judiciously and logically. Raw materials for Ayurvedic medicines are basically sourced from the products of plant, animal and mineral origin, which are processed in various ways to prepare different dosage forms. There is a wide range of Ayurvedic drugs categorized as herbal, herbo-mineral and mineral based formulations depending upon the nature of ingredients used in them. Drugs made of mineral ingredients are grouped as '*Rasaushdhies*', which in the process of their manufacturing are subjected to certain specific processes of *Shodhana*, *Marana*, *Amritikaran* etc to render them therapeutically safe and effective. Classical Ayurveda literature is replete

with numerous single-ingredient and multi-ingredient based formulations made from medicinal plants, which are practiced even today and the prioritized ones are standardized and listed in the National Formulary and Pharmacopoeia of Ayurveda. *Anupana* (drug vehicle like honey, milk, warm water, decoction) and *Bheshaja kala* (time of drug administration) are of high importance in Ayurvedic treatment. While the type of therapeutic procedure or treatment regimen to be given to a patient is decided on the basis of severity and state of the disease and the general condition of the patient, medicines are administered in specific dosage forms with certain vehicle at specific time and interval to facilitate better absorption, drug delivery, bio-transformation and desired therapeutic effects. Eleven types of drug consumption times are prescribed in the literature depending upon the site and nature of disease, symptomatology, status of digestion, dosage form etc. **Though Ayurveda is capable to offer solutions for various diseases, yet its strength areas include chronic and degenerative diseases and therapeutic specialties of Panchakarma for metabolic and geriatric problems, Kshar Sutra for ano-rectal disorders and Prakriti-based lifestyle interventions for preventive & promotive healthcare.**

Ayurveda has always enjoyed the patronage of people and survived through adverse times during pre-independence era. In independent India, Ayurveda represents as officially recognized healthcare and medical knowledge system that is amply codified, adequately organized and is an integral part of the healthcare network of the country. Supportive policies for **Ayurveda and other AYUSH systems have been evolving and Ayurveda sector grew and developed with specific strategies envisaged in the National Health Policy-1983, National Population Policy-2000**

and the implementation framework of National Rural Health Mission-2007. With the establishment of Department of AYUSH in 1995 and declaration of National Policy for Indian Systems of Medicine and Homoeopathy-2002, focused attention could be given for the inclusive growth and development of Ayurveda and implementation of programs in accordance with its own genius and acumen. Favourable policies and increasing budgetary support steered the implementation of focused strategies and schemes during the Five Year Plans that have significantly impacted the Ayurveda sector in improving its infrastructure, functional capabilities, services and use of contemporary technologies. Outcomes of these interventions are visible in terms of enhanced institutional network, initiatives for standardization & quality control, expansion and accessibility of Ayurvedic services and awareness building about the strength areas of Ayurveda. Mainstreaming of AYUSH strategy under National Rural Health Mission and Centrally Sponsored Schemes program have helped considerably in building up the outreach, acceptability and demand of Ayurveda at various levels of healthcare. Emerging recognition of the potential of Ayurvedic interventions in dealing with health problems, particularly prevention and management of non-communicable diseases and in facilitating Universal Health Coverage has prompted more and more support from the Government for Research & Development activities and evidence-based involvement of Ayurveda in healthcare delivery system.

On the regulatory front, Ayurveda education and practice is under the control of Central Council of Indian

Medicine, which is a statutory body constituted under the provisions of Indian Medicine Central Council Act, 1970. The Council is responsible to prescribe, revise and enforce the standards of Ayurvedic education, course curricula and infrastructural facilities of colleges. Today, the undergraduate and postgraduate education of Ayurveda is properly



structured. BAMS degree course of 5½ year duration including one year of internship period and three year postgraduate courses in 22 specialties are conducted from recognized colleges. Ph.D program and short to mid-term informal courses of study are also conducted in the Ayurvedic institutions. With the amendment of Indian Medicine Central Council Act in 2003, no college or course of Ayurvedic study can be started in the country without prior permission of the Central Government. Similarly, Central Government has the power to notify recognized Ayurvedic qualifications in consultation with the Central Council of Indian Medicine. In order to meet the emerging demand from various circles, initiative has been taken to develop and implement bridge course of Ayurveda for training of allopathic and foreign doctors. Manufacturing and quality control of Ayurvedic drugs is regulated under the provisions of Drugs & Cosmetics Act, 1940 and the Rules thereunder. Manufacturers of Ayurvedic medicines need to take license and certificate of Good Manufacturing Practices from the Licensing Authority appointed by the State Government. Recent regulatory amendments for ensuring quality of Ayurvedic products

include notification of guidelines for licensing of different categories of drugs; revised labeling provisions for plant parts, form of ingredients and botanical names of medicinal plants used in the formulation; display of shelf-life or date of expiry; use of excipients, preservatives etc in the manufacturing of drugs and ban on the use of prefix or suffix with the name of classical Ayurvedic drugs.

India has the unique distinction of having a pluralistic health system comprising of allopathic system and Indian Systems of Medicine & Homoeopathy including Ayurveda. Prevailing socio-economic, epidemiologic and demographic transition of the country and fast changing lifestyles of the people coupled with high rate of population growth and limited resources have been responsible to make the Indian healthcare delivery system more complex and challenging in order to achieve the health goals and effective management of dual burden of communicable and non-communicable diseases. In this scenario, Ayurveda stands out prominently to supplement the efforts for delivery of preventive and promotive health services and primary health care and management of chronic health problems. **Over the years, the infrastructural network of Ayurvedic functionaries has grown to 3,99,400 registered practitioners, 15153 dispensaries, 2838 public sector hospitals, 260 degree colleges with annual admission capacity of 13152 students, 100 postgraduate centres with annual admission capacity of about 2500 scholars and 7835 licensed manufacturing units.** Access to Ayurvedic services has also been augmented with the collocation of AYUSH facilities in the Primary Health Centres, Community Health Centres, District Hospitals and other hospitals under the mainstreaming of AYUSH strategy of National Rural Health Mission. With this strategy about 18128 health facilities in the country are reported to cater AYUSH services, predominantly of Ayurveda indeed. In addition, Pharmacopoeia Commission of Indian Medicine

& Homoeopathy, Pharmacopoeia Committee, National Institutes, Ayurveda Research Council, Pharmacopoeial Laboratory of Indian Medicine and Rashtriya Ayurveda Vidyapeeth are in place to promote scientific endeavors for development of Ayurveda. Establishment of All India Institute of Ayurveda in New Delhi is going to advance R&D and interdisciplinary education of Ayurveda and pave the way for finding health solutions of contemporary relevance. Publication of Ayurvedic Formulary with 635 formulations and volumes of Ayurvedic Pharmacopoeia containing about 600 monographs of quality standards of single drugs and 152 monographs of multi-ingredient

Bioinstrumentation of equipment used in administering Ayurvedic therapies is of significant interest to the entrepreneurs, for which Ayurvedic institutions have collaborated with premier technology institutes. With such developments in public and private sectors, research environment in Ayurveda is growing phenomenally.

formulations is an important step that has helped in the improvement of quality of Ayurvedic medicines and enforcement of standards. The implementation of various Central Sector and Centrally Sponsored Schemes aimed at inclusive development of Ayurveda and other AYUSH systems has steered the outcomes in terms of quality health delivery, availability of quality drugs and professionally skilled human resources and research and validation of drugs. Scientific activities on Ayurveda are also supported through the schemes of other Government organizations like Department of Science and Technology, Department of Scientific & Industrial Research, Department of Health Research, Department of Bio-technology, Council of Scientific & Industrial Research, Indian Council of Medical Research etc. With these initiatives scientific aspects of Ayurveda are

becoming more and more evident and evidence-based safety, efficacy and quality is being promoted. Intellectual Property Rights involved in the development of innovative Ayurveda technologies, tools and medicinal products are protectable within the provisions of Indian Patent Law though it is difficult to get patent on prior art and traditional knowledge.

Research and Development in Ayurveda is mainly anchored under the Central Council for Research in Ayurvedic Sciences, which has 30 field centres spread across the country. Intramural activities of the Council include clinical research, drug research, pharmacological research, survey & documentation of medicinal plants, standardization and validation of safety and efficacy of Ayurvedic drugs & therapies. Council has accomplished validation of 26 formulations for 17 disease conditions, documentation of 704 tribal folk claims and local health traditions. Validation studies on 35 drugs for 10 disease conditions are in progress and a target of validating another 64 drugs has been taken up. Ayurveda Research Council and investigators in other R&D institutions are reported to have been granted patents for their innovative outcomes of commercial application. The Council has been granted 17 patents and 14 patent applications filed and technology transfer has been done for 10 products. **Bioinstrumentation of equipment used in administering Ayurvedic therapies is of significant interest to the entrepreneurs, for which Ayurvedic institutions have collaborated with premier technology institutes. With such developments in public and private sectors, research environment in Ayurveda is growing phenomenally.** Central Ayurvedic Research Council alone has published about 3500 scientific papers and uploaded 23065 research articles in the AYUSH research web portal. Digital Helpline of Ayurvedic Research Articles (DHARA), a web portal launched

by an NGO is reported to have about 54,000 articles, out of which 7336 are filtered peer reviewed ones.

National Policy on Indian Systems of Medicine & Homoeopathy was adopted in 2002. The Policy emphasized the need for a meaningful phased integration of Indian Systems of Medicine in the health delivery system, and also outlined the need to secure complete integration of all plans for health and human development. Accordingly, Ministry of AYUSH in the Central Government is mandated to address seven functional areas to steer the development of AYUSH for meeting healthcare needs of the people at national and international levels. These thrust areas including that of Ayurveda are Health Services, Human Resource Development, Research, Drugs Administration, Information-Education-Communication, International Cooperation and Medicinal Plants. Need based planning and program implementation on the basis of objectives and strategic interventions outlined in the respective Five Year Plans has been instrumental in the expansion and strengthening of AYUSH and propelling its development in accordance with emerging trends. With the challenge of meeting the ever increasing healthcare needs of the population at an acceptable standard with limited resources, Ayurveda seems poised to provide socially acceptable and time-tested effective and affordable healthcare technologies within the present framework. In this context, efforts for functional integration of relevant AYUSH practices in healthcare delivery system seem more pertinent.

Emerging global demand and establishment of bilateral & multilateral platforms for traditional medicine and Complementary & Alternative Medicine have inter alia provided Ayurveda the opportunities to develop initiatives of international cooperation and promotion. To achieve this objective, Ministry

of AYUSH has implemented a Central Sector Scheme to facilitate international exchange of experts and officials, provision of scholarships to foreign students for studying regular courses in Indian institutions, participation of drug industry in international exhibitions, trade fairs, road shows, etc and registration of products for market authorization by foreign regulatory bodies. **With the help of this scheme, success has been achieved in establishing AYUSH information Cells in Indian Missions in Malaysia, Trinidad & Tobago, Mexico, Indonesia, Mauritius, Cuba, Russia, Hungary etc. 115 foreign students have availed scholarships to study ASU&H courses in India from the year 2005-06 onwards. Ayurveda academic chairs are established in the University of West Indies, Trinidad & Tobago and University of Debrecen, Hungary respectively. Similar proposals for setting up Ayurveda Chairs in Slovenia and Indonesia are in pipeline.** Memoranda of Understanding (MoUs) have also been signed with Malaysia, Trinidad & Tobago, Hungary, Bangladesh, Nepal, and Mauritius and with some other countries are in pipeline for developing bilateral cooperation in the field of Traditional Medicine including Ayurveda. Normative engagement with WHO in the area of Traditional Medicine has led to two Ayurveda publications brought out by WHO itself in 2010. WHO Collaborating Centre designation of the Institute of Postgraduate Teaching & Research in Ayurveda, Jamnagar since April 2013 has opened vistas to work for development and global positioning of Ayurveda. Though Ayurveda has made inroads to many countries, perceptual indifference prevails in its utility, quality and safety at global level. Ayurveda as a system of medicine is not recognized in most of the countries and its identity and practice face regulatory problems. Promoting international cooperation to address these concerns is the objective of Government efforts

and to steer contribution of Ayurveda in global healthcare.

Despite the fact that growing popularity of Ayurveda has reached a stage from where we can look forward to offer it for healthcare of the people; evidences of safety, efficacy and quality are required to the extent that products and services meet the standards prevalent in international market. The challenge is to prove the pharmacodynamics and the bioavailability of Ayurvedic medicines and export them like pharmaceutical products. Scientific validation of therapeutic claims, development of Standard Treatment Protocols and protection of traditional knowledge of Ayurveda from piracy and misappropriation are important aspects to pursue.

Important websites for Reference:

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4. www.nia.nic.in - National Institute of Ayurveda, Jaipur, Rajasthan
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11. www.nmpb.nic.in - National Medicinal Plants Board, New Delhi
12. www.ayushportal.ap.nic.in - AYUSH Research Portal. □

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Homoeopathy: The Gentle Medicine



Raj K Manchanda
Harleen Kaur



Homoeopathic system is practiced worldwide by several practitioners. Its popularity has soared in recent years due to its inherent virtues as well as advancements in evidence-based researches. There is an evident shift in the trend of public preferences for therapy selection from standard biomedicine to other holistic and individualised treatment

MEDICAL SCIENCE is transforming at a fast pace, and the novel ideas are bringing ‘modern’ science closer to the ‘traditional’ one – with ideas of holistic treatment and life space investigation becoming not only acceptable but imitable, as conventional medicine rethinks its perspective towards human health and objectives behind case interrogation.

Homoeopathy is a system of health care that treats an individual gently, holistically and permanently. It has been used for over 200 years. It is known to be the second largest therapeutic system in use in the world. Homoeopathy originated in disregard to the crude practices of the orthodox medicine back in the eighteenth century. Dr. Hahnemann, a reputed German physician, saw leeching, bloodletting and other forms of crude practices intended to alleviate people’s suffering, only adding to the misery and pain. An accomplished clinician himself, he discontinued this form of practice and resorted to his skills as chemist and translator to earn his means. However, the plight of the patients could not let ‘clinician’ in him rest. That was when a chapter on the therapeutic ability of Cinchona bark to cure malaria in the Cullen’s *Materia Medica*, a book that Dr. Hahnemann was translating,

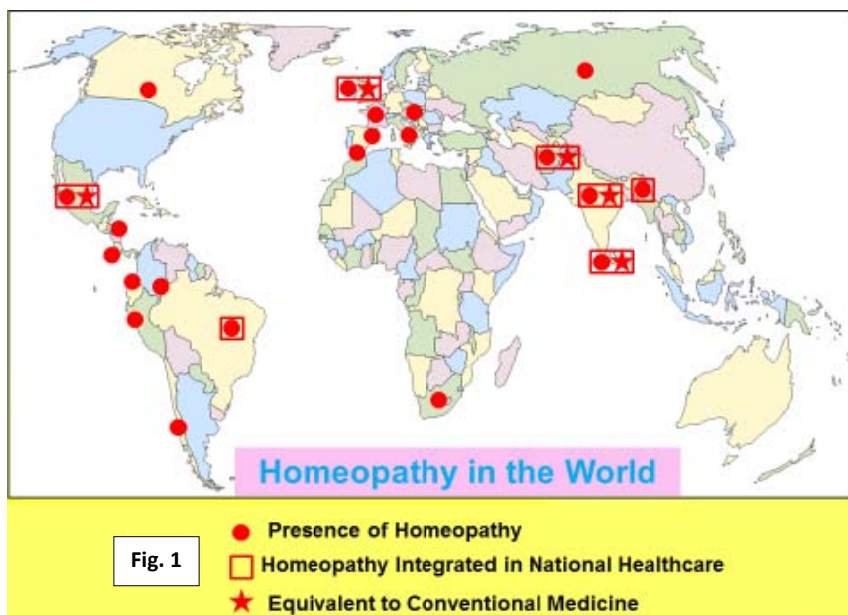
turned a new leaf in the history of medical science. Homoeopathy was eventually born as a scientific system of medicine, based solely on the concepts and methods derived from scientific experiments. In fact, historically, it turns out that Homoeopathy was the most likely source for later placebo-controlled crossover and parallel group experiments. The first ever blind trial using placebo dates back to the 19th-century Homoeopathic therapeutic trials and provings. Single-blind placebo controls, still used today by both contemporary and Complementary & Alternative Medicine (CAM) systems, was first put to biomedical use by Homoeopathy.¹

Principles

Homoeopathy is chiefly founded on two principles. The first principle of ‘*similiasimilibuscurentur*’ meaning that a medicine similar in action to the disease acts as a stimulus to the body’s own response to a disease, giving it the information it needs to complete its healing work. It is guided by another principle, that of body’s own inherent healing force, which means that the body knows what it is doing and that healing response to overcome an illness is initiated from within the living organisms.

The third principle, that only ‘the minimum dose’ should be employed, is based upon the understanding that the

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stimulus of the medicine is needed in a dose just about to initiate the vitality. That is why Homoeopathic medicines, usually given in minimum doses, stimulate the body's healing response, without producing the gross side effects that are so often the pit-fall of other modes of treatment.

Apart from these, there are other principles that form the basis of Homoeopathy. These are law of simplex, which advocates administration of simple and single medicine; law of chronic disease, which describes the approach to a chronic case; doctrine of drug dynamisation, which talks of how medicinal substances are converted into homoeopathic substances during preparation; and doctrine of drug proving, which concerns with effects of homoeopathic medicines on healthy human beings.

Situation of Homoeopathy

Homoeopathic system is practiced worldwide by several practitioners. Its popularity has soared in recent years due to its inherent virtues as well as advancements in evidence-based researches. There is an evident shift in trend of public's preferences for therapy selection from standard biomedicine to other systems that offer holistic and individualised treatment. A recent publication reveals

that both practitioners and users of Homoeopathy are rapidly growing in USA, Brazil, South Africa and in European countries like U.K., France, Germany, Norway, Austria and Switzerland. India tops this list with maximum practitioners (over 2.5 lakhs) and huge number of users. Fig. 1 shows the presence of Homoeopathy in various parts of the world.

Based on the huge demand for Homoeopathy, Government of India has extended strong infrastructural and technical support for successful institutionalisation of Homoeopathy in India. As a result, India has about 187 graduate and 42 post graduate Homoeopathic medical colleges that produce qualified doctors who undergo a rigorous medical training of 5 ½ years before they get their degree in Homoeopathy (B.H.M.S). Higher studies in Homoeopathy include M.D. in Homoeopathy at postgraduate level and Ph.D at doctorate level.

In India, healthcare services in Homoeopathy are provided by 215 hospitals and 6812 dispensaries run by state governments and municipal bodies, 35 dispensaries of Central Government Health Scheme, 39 of the labour ministry and 129 of the railway ministry.³ Homoeopathic treatment facilities are also provided by public sector undertakings such as

Thermal Power Corporations, National Aluminium Corporation, Central Reserve Police Force, Border Security Force, etc. However, a majority of Homoeopathic practitioners in India operate singly through private clinics, which vary immensely in terms of available facilities and consultation costs and treatment costs. Homoeopathic treatment is also available in some allopathic hospital establishments largely through the efforts of individual Homoeopathic practitioners in the private sector and through co-location of facilities in the government sector. Further, Homoeopathic hospitals in India operate along with educational colleges and independently, providing an array of Outdoor Patient Department (OPD) and Indoor Patient Department (IPD) services including radiological and pathological facilities.

Scope & Advantages

Users are attracted to Homoeopathy for its innate qualities like personalised treatment with no side effects; Medicines are gentle, easy to administer, cost-effective and, therefore, affordable to the poorest of poor. A study found out that cost per patient in a homoeopathic clinic is 1/5th the cost incurred per patient in a standard biomedicine setup.⁴ Being palatable, the patients of all age groups, ranging from infants to the very old can be given these medicines. Further, all homoeopathic medicines are proven or verified on human beings, prior to their clinical application, hence are clinically safe. Most single Homoeopathic medicines are non-patented as their original Homoeopathic use remains reserved with the old stalwarts of Homoeopathy who bared their knowledge to the profession without patenting the drugs.

A study reflecting the data analysis of a decade (2001-2011) of patients reporting to Homoeopathic units of Government of Delhi revealed that the popularity of Homoeopathy has steadily gone up, with 58 per cent rise in the patient inflow over a decade

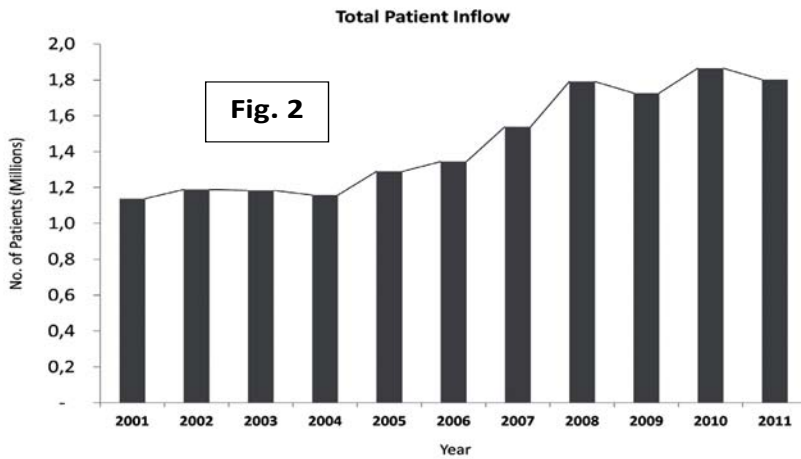


Fig. 2

(Fig. 2). The study also revealed that Homoeopathy was primarily popular among the patients for the chronic or sub-acute problems related to skin, respiratory, infectious, female and digestive disorders, as these conditions were most frequently brought to a homeopath's table for treatment. Another finding was that that females and children were the more common users of Homoeopathy (Fig.3).⁴ Another study reported that most Homoeopathic patients fell in the middle age of 25-44 years, had above-average incomes, were highly educated and, therefore, capable of making an informed choice of selecting Homoeopathy as a line of treatment.⁵

However, as is true with all medicinal systems, Homoeopathy too has its own set of limitations. Its scope is limited in emergencies, cases with irreversible or advanced organic changes, artificial chronic diseases resulting from abuse of medicinal substances, cases where the patient is lacking a vital organ, or its function is greatly compromised; as also in cases where surgery is unavoidable. Also, the cases where one's immune system is compromised beyond recovery like in HIV, cancer, terminally ill cases, Homoeopathy has limited scope.⁶

Further, crosspathy or the practice of a doctor to prescribe medicines from other medical systems, in addition, or in lieu of medicines of his own system, has its own positives and negatives. On one hand, if a doctor

of standard biomedicine prescribes a Homoeopathic medicine, it promotes the Homoeopathic system medicine and adds to the system some level of credibility. However, on the other hand, it takes away the chance of a better suited prescription to that patient which a trained homeopath might have been able to do, based on his expertise in the subject. That said, crosspathy of prescribing Homoeopathic medicine by conventional doctors is not an unusual occurrence. On the contrary, another crosspathy that is practised is by Homoeopathic practitioners who tend to prescribe conventional drugs in acute cases or in emergencies. The issue of incompetence remains the same in such a practice too, which is why it should be avoided as far as possible.

Research in Homoeopathy

Research is an integral part of a medical system, as it ensures that the system evolves and proves its various aspects with respect to newer understandings of science. With advent of nanotechnology and cutting edge laboratory research techniques, it is becoming increasingly possible to prove the positive effect of homoeopathic medicines in various

fundamental, preclinical and clinical ways.

In the recent past, Homoeopathy has been researched for its viability in medical care through various means – the primary one being clinical research. A review of clinical trials in Homoeopathy reported from 1975 to 2002 found 93 studies comparing Homoeopathy with placebo or other treatment.⁷ Positive effects of Homoeopathy were found in 50. There is replicated Randomised Control Trials (RCT) evidence that Homoeopathy is effective in various clinical conditions ranging from various skin and respiratory allergies to many female and childhood problems.

Yet, the data from RCTs do not seem to reflect the true picture of the effectiveness of Homoeopathic treatment. Although a widely respected format for conventional studies, the RCTs most certainly do not encompass the 'Homoeopathic' features of treatment to yield results which are as encouraging as observational studies which is more patient-oriented. Homoeopathy, being a holistic medicine, relies on a self-regulation process where only the defence mechanism of an individual is stimulated to act in defence of the disease.

New adaptations in RCTs and other ways of capturing the 'Homoeopathic' element of clinical outcomes are, therefore, being conceived, with initial results being encouraging. One such design is prognosis research, studying effect modifiers, ie, variables that

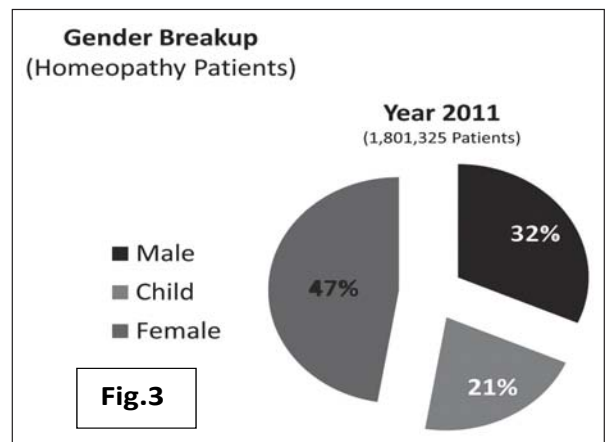


Fig. 3

influence outcome of treatment. As in conventional medicine prognosis research is becoming more important. This type of research becomes increasingly important in medicine since the emergence of pharmacogenomics, learning that the medicine should not only fit the indication, but also the person (personalised or stratified medicine).⁸ This principle of personalised medicine has always been the core of Homoeopathic philosophy. Prognosis research resembles diagnosis research: several symptoms and personal characteristics increase or decrease the probability that a specific medicine will work, instead of the probability of a specific diagnosis. As in most differential diagnoses about illness, the differential prognosis' about successful Homoeopathic medicines is based on analysis of more than one symptom/characteristic by application of concepts like Bayes theorem and Likelihood Ratio.⁹

Another category of research is basic research, which investigates many intriguing questions in Homoeopathy, for example, the presence of curative powers of original substances in Homoeopathic medicines in ultra-diluted potencies, mechanism of action of the medicine, once administered, in a

biological system, be it human, animal or plant, both its pharmacokinetic and pharmacodynamics aspects and the relevance of negative controls in basic researches in order to validate the findings. A successful basic research is capable of setting a standard for formulating subsequent research designs at multiple levels – right from standardisation of parameter(s) of a drug substance, its proving effects on individuals to clinical findings that can be expected basing on the original basic research. In all, basic or fundamental research can set the goals for the other researches resulting from the findings of one such high quality research. That is all the more a reason why such researches have to be fool-proof and its findings immaculate.

The peer reviewed journal *Homoeopathy*, published two special issues on biological models of Homoeopathy in 2009 and 2010 and concluded as such: “Above all this field is exciting and dynamic: there is a remarkable range of biological models of relevance to Homoeopathy, with encouraging progress in terms of quality and a growing number of positive findings.”¹⁰ In a data profile named HomBrex, which keeps a track of Homoeopathic basic researches

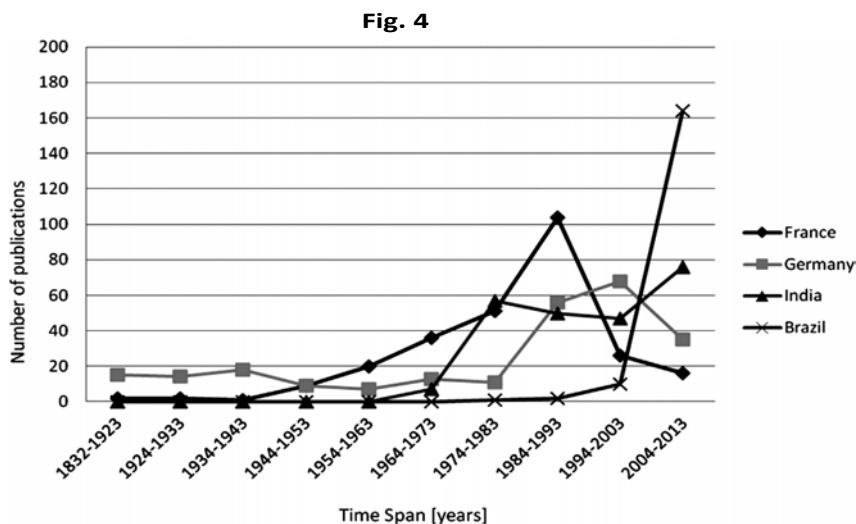
worldwide, India is the third highest contributor of basic research work in the world, with 237 publications, including 80 papers in last ten years (Fig. 4).¹

Committed to credible research in Homoeopathy, Central Council for Research in Homoeopathy (CCRH), an autonomous organization under Ministry of AYUSH, Government of India, was established in 1978 to undertake scientific research and development in Homoeopathy. Since inception, the Council is engaged to bring best of research activities. It has a strong network of 29 units spread across the country with its headquarters in New Delhi.

The main thrust research areas of CCRH are: Survey, collection and cultivation of medicinal plants; Drug Standardization; Drug Proving; Clinical Verification; Clinical Research; Epidemic Management; Collaborative and Fundamental Research; Extra-Mural Research; Documentation & Dissemination. The work has been published in various international and national journals of repute. Various research initiatives of the Council and their outcomes are also available online at official website. : www.ccrhindia.org. The Council also invites proposals for collaborative research under Expression of Interest (EoI) scheme, which can be studied at its website. Besides, it also runs own peer-reviewed research journal for dissemination of contemporary research work conducted at council or elsewhere. The journal is accessible at www.ijrh.org (Fig. 6). An overview of research in Homoeopathy in India has been compiled by Ministry of AYUSH in a dossier ‘Homoeopathy: Science of Gentle Healing’ available online at <http://www.ccrhindia.org/Dossier/index.html>.

Apart from several clinical research studies, CCRH has been able to conduct some high end basic researches in collaboration with Bose Institute, Kolkata, which observes the effect of Homoeopathic medicines Calcarea carbonicum and Thuja on cancer through gene regulation,

Total number of publications from 1832 onward in France (diamond), Germany (square), India (triangle) and Brazil (X). The number of publications from France dropped from n = 104 during 1984-1993 to n = 16 from 2004 to 2013. In total contrast, number of publications from Brazil increased from n = 10 (1994-2003) to n = 164 in 2004-2013.



respectively^{12,13}; with School of Tropical Medicine, Kolkata, which explores the effect of medicines on chorioallantoic membrane of chick infected with Japanese Encephalitis and in suckling mice of pre-medicated mothers, respectively^{14,15}; with ALM Post Graduate Institute of Basic Medical Sciences, University of Madras, which explores the effect of the medicines on high fructose-induced type-2 diabetic rats¹⁶; and with Indian Institute of Technology, Delhi, which investigates a possible nano-science mechanism of action of Homoeopathic medicines¹⁷ (Fig. 5).

Yet, despite many research advances, research in Homoeopathy poses lot many challenges. This ranges from drug safety and efficacy studies to physicochemical experiments with high dilution drugs at preclinical level and rigorous validation of drugs in various diseases through concept of personalised medicine at clinical level. All efforts are being exerted to attend to several unanswered research questions through individual and grouped ventures in order to bring the evidence-based scientific value of Homoeopathy at par with its well-recognised clinical value.

Conclusion

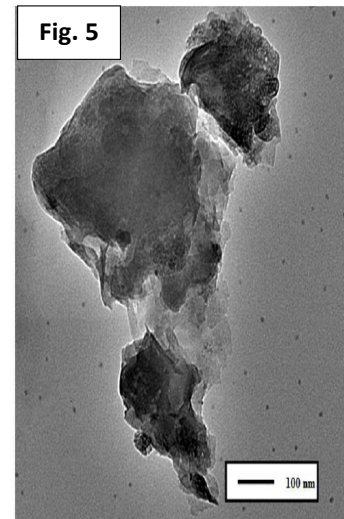
It is certain that Homoeopathy is gaining worldwide popularity and its status in various parts of the world is changing with many people looking for qualified Homoeopathic practitioners for their day to day and chronic ailments. No matter how small the size of pills which transfer the medicine to your biological system, Homoeopathy will continue to benefit the mankind in a big way and ensure restoration of health in the most gentle, safe, cost-effective and permanent manner.

So, if you are yet to taste the sweetness of Homoeopathy, go right ahead. No matter your age or past medical record, Homoeopathy has got something to offer to every ailing being. See your nearest qualified homoeopathic physician today and soon you would be a part of the community

that stays fit Homoeopathically, or in other words, naturally!

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YE-35/2015

Reforms: Road to Investment, Employment and Growth

*Pravakar Sahoo
Abhirup Bhunia*



The economic policy of the government in its first year has been focused on reforms, infrastructure, ease of doing business to revive investment for manufacturing sector growth for job creation and improvement in standard of living. Though it's too early to measure outcomes of these policies, the future of Indian economy certainly looks bright

HIGH INFLATION, dwindling growth, low investor's confidence, and policy paralysis in many areas in last few years before the General Election in 2014 resulted in high expectations from the Indian Industry, investors and the people at large from the new government. Everybody looked up to the new government to ease their pain and bring back the economy on track. It has taken several important steps to revive domestic investment, ensure ease of doing business, attract foreign investors so as to enable 'Make in India' initiative a successful one for manufacturing-led job creation and growth. Undoubtedly, it has been a year of good governance, and growth and development that has taken place is significant, however, the dreams of a billion of people are yet to be fulfilled. The following have been the policy focus areas and achievements.

Ease of Doing Business

The government has taken many steps to ease doing business in India. Investments worth Rs 16 lakh crore were stalled when the present Government won a thumping majority to lead the country. Policy paralysis and retrograde taxation policies in the previous years had put off investors. The present government has addressed most of these through new legislations,

changes to old laws, new notifications as well as through budget provisions. It cannot be claimed that any dramatic uptick in investment activity has occurred although the rate of capital formation has increased by 4.1 per cent in FY 2014-15, as per the government estimates. Specific policies to ease of doing business include deciding not to pursue the tax dispute with a leading telecom firm and announcing the end to the imposition of retrospective taxation in the 2014 interim budget.

Doing business in India is not easy as reflected by India's rank of 142 among a total of 160 countries as mentioned in the Global Competitive Index 2014. The Budget 2015-16 proposed many measures to ease doing business in India (Sahoo, 2014a; 2014b). A few of them include, setting up of an expert committee to get rid of multiple prior permissions, commitment to Goods and Services Tax (GST), abolishing wealth tax, reducing corporate tax rates from the present 30 per cent to 25 per cent over the next four years, an e-business portal which merges 14 regulatory permissions at one place, proposal to bring bankruptcy law for easier exit of investors, proposal to bring public contracts bill for dispute resolutions, deferring general anti-avoidance rule by two more years, dedicated branches in courts for early resolutions of commercial disputes are all measures directed towards improving the business environment.

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Commitment to implement GST from 1st April 2016 and phasing out of tax exemptions and concessions to corporates, which leads to innumerable tax disputes, are meant to be put in place for a transparent and more rationalized tax structure. Further, getting rid of distinction between foreign direct investment and foreign portfolio investment, and merging Forward Markets Commission with Security and Exchange Board of India for market regulations are meant to reduce multiplicity in administration and regulations and bring transparency in doing business. All these steps are directed towards reducing red-tapism, procedural delays, improving enforcement of contracts and facilitate quick dispute resolutions.

The Finance Minister also renewed his commitment towards enactment of the Goods and Services Tax (GST) Bill which is heralded as a landmark business-friendly reform. The GST requires Constitutional Amendment by both the Houses as well as by a majority of all State assemblies. The government demonstrated its commitment to the cause by periodically addressing state's concern, handing out olive branches to stubborn opposition parties, and eventually getting states and opposition parties on board. The GST Bill, with some amendments, was passed by the Lok Sabha on 6 May 2015. The Bill seeks to put in place a uniform, comprehensive tax on manufacture, sale and consumption of goods and services. The GST will subsume a range of indirect taxes currently levelled at the Centre and State levels. These include excise, service tax, sales tax, VAT, entry tax, luxury and entertainment taxes and cesses and surcharges relating to goods and services. The GST will also enable better tax compliance and possible widening of the tax base. It would also plug existing loopholes that emerge out of a multiplicity of taxes leading to unwanted litigations. The government estimates 1 to 2 per cent growth in GDP as a result of the implementation of GST. As of now, amendments include compensation to states for a period of five years, an additional 1 per cent tax

on interstate goods transport, and the exclusion of alcohol from its ambit, with the GST on petroleum products deferred for now.

Much of the procedural and administrative hurdles that businesses face in India have also been tackled, or are set to be tackled (Sahoo, 2014b). Many of these pertain to the complexity and multiplicity of paperwork, as that is one of the major causes of red-tape in India. The launch of eBiz portal for businesses is one of the technology enabled e-governance efforts. The eBiz portal is a single-window system



been pitching in. For example, the time required for a new electricity connection in Maharashtra has been reduced from 67 days to 21 days while the number of procedures involved in the same has been cut down to 3 from the existing 7.

The launch of eBiz portal for businesses is one of the technology enabled e-governance efforts. The eBiz portal is a single-window system on the web for firms to navigate the documentation-related formalities of setting and managing a business in India. As of now, eleven services can be availed online on G2B eBiz portal. The government aims to integrate 26 central government services across nine departments on the platform.

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The reduction in the number of documents required to import and export goods to and from India has been reduced to three from ten, thus substantially cutting transaction costs – one of the banes relating to trade in India. Security clearances for foreign investment promotion board (FIPB) investment proposals will now be cleared by 30 days, down from 90 days earlier. The states also have

In terms of the broader governance architecture, the government has sought to streamline the regulatory regime by merging implementing authorities (for example, the proposed merger between Forward Markets Commission (FMC) and Security and Exchange Board of India (SEBI), combining multiple and overlapping laws (for example the proposed five pronged labour code to replace the 44 laws governing labour relations now). These will help in better compliance, while contributing significantly to the ease of doing business in the country. The much awaited labour reforms necessary for mass manufacturing in India have finally been initiated last year. Any efforts to rationalise labour rules, around 250 together both at the Central and State Level, is a welcome step for the industry. The two key areas of reforms announced are namely 'unified labour and industrial portal' and 'Labour Inspection Scheme'. The objective criteria and transparent process for labour inspection would be a breather for industry, more so for SMEs, which are allegedly victims of arbitrary use of labour rules by labour inspectors. Introduction of Labour Identification Number (LIN) and putting inspection on unified portal will go a long way in bringing transparency in use of labour rules. Prime minister's efforts to raise minimum wage ceiling from Rs 6500 to Rs 15, 000 and to

ensure EPF for vulnerable groups and pension system, though meagre, are laudable steps.

To undo the malady in India's labour market, some changes have recently been initiated in the three acts that largely govern India's labour market: Factories Act (1948), Labour Laws Act (1988) and the Apprenticeship Act (1961). Amendments to some restrictive provisions of all these acts have been cleared by the Cabinet. In order to provide flexibility to managers and employers, the amendment to the Factories Act includes doubling the provision of overtime from 50 hours a quarter to 100 hours in some cases and from 75 hours to 125 hours in others involving works of public interest. This is seen by some as being anti-labour as it imposes greater working hours without ensuring their security and welfare. However, the penalty for violating the Act has been increased so as to deter exploitation. Increasing the working hours might also have to do with low worker productivity in India which requires the devotion of more hours for a given task. However, even as productivity issues should be addressed in part by bringing in quality FDI, it is important that maximum-hour protection is strictly enforced so as to prevent worker exploitation. In further relaxation, norms of female participation in certain industry segments have been relaxed (this is helpful in the Indian context). Importantly, the number of days that an employee needs to work before becoming eligible for benefits like leave with pay has been reduced to 90 from 240, a pro-labour step (Sahoo, 2014b; 2014d).

The amendments to Labour Laws Act 1988 meanwhile will allow companies to hire more employees without having to fulfil weighty labour law requirements as it is proposed that companies with 10-40 employees will now be exempt from provisions under labour laws that mandates them to furnish and file returns on various aspects. This is a crucial step and will help keep off unnecessary procedural

delays, an inordinate feature of doing business in India.

Infrastructure, Manufacturing and Investment

Boosting the manufacturing sector is an imperative for the Indian economy. Around 1 million people enter the workforce every month and unemployment hovered around 3.7 per cent in 2013. At the same time, educational levels and general skills are short in supply. As a result, low skilled manufacturing jobs have the highest chance of abating underemployment and unemployment. However, the contribution of the manufacturing sector has languished at about 15 per cent of GDP for years. The government

The government has rightly identified the problem and focused on the manufacturing sector on a mission mode. The government's 'Make in India' scheme basically announces to the world that India is a better place to invest in than before, that the government is doing what it can to ease the rules and simplify procedures, while investing in physical infrastructure.

has rightly identified the problem and focused on the manufacturing sector on a mission mode. The government's 'Make in India' scheme basically announces to the world that India is a better place to invest in than before, that the government is doing what it can to ease the rules and simplify procedures, while investing in physical infrastructure. With the aim of making India a production hub for global manufacturing companies, the government has promoted the scheme extensively within and outside India. The focus sectors include mining, telecom, textiles, automobiles, biotechnology, chemicals, construction, defence, food processing, leather, pharmaceuticals, and railways. As on February, the government had received project proposals worth Rs 21,000 crore under

the scheme of which Rs 6000 worth of projects have been sanctioned.

Further, the government has put more focus on ease of doing business and a boost in physical infrastructure. Since taking office, the government has made elaborate plans to spend on infrastructure, mainly focusing on connectivity. As a result, the government has made it a point to provide timely environmental clearances for projects.

In terms of ideational changes, the government mooted taking on greater responsibility in PPP models, because some of the PPP projects were getting stuck or quickly becoming Non Performing Assets. This is because the private sector didn't manage to shoulder multifarious implementation risks while navigating the policy scenario. The economic survey said that the stock of stalled projects at the end of December 2014 stood at Rs.8.8 trillion, or 7 per cent of gross domestic product (GDP).

In the interim budget, the government's allocation to infrastructure increased 8.6 per cent, from Rs 1,66,756 crore in 2013-14 to Rs 1,81,134 crore. The projects would span power, coal, roads, civil aviation, ports and railways sectors. The budget 2014-15 focused on infrastructure (roads/highways through NHAI, building and improving ports, smart cities, airports), InvIT (infrastructure investment trusts), an investment instrument, has been provided with tax incentives, thus dealing with the issue of funding of infrastructure. The interim budget 2014-15 allotted almost Rs 38,000 crore for national highway development and another Rs 14,389 crore for development of roads under the 'Pradhan Mantri Sadak' Yojana. The focus was to interconnect cities and achieve the quality road network of 8,500 km NH construction, which is the key medium of transportation in India. Further, Rs 7,060 crore for development of 100 smart cities and new airports through PPP; Rs11,000 crores allocated for the setting up of 16 new ports; Rs. 4,200

crore for 'Jal Marg Vikas' project on river Ganga connecting Allahabad to Haldia are the other good measures in the budget. The announcement to develop 15000 kms of gas pipeline through PPP, Rs 500 crore for solar projects, development of metro rails in other cities through the PPP mode like Delhi Metro and Rs 5,000 crore more to the National Bank for Agriculture and Rural Development (NABARD) for rural infrastructure are a few of the key highlights. Further, the budget has allowed banks to issue long term bonds without subjecting them to cash reserve ratio and Statutory Liquidity Ratio for financing infrastructure which was quite innovative to encourage the banking sector to finance infrastructure projects. Budget 2015-16, the government further increased allocation for in infrastructure by Rs 70,000 crores. The government has also announced establishing a National Investment and Infrastructure Fund as well as infrastructure bond in order to address funding for infrastructure projects. One of the noteworthy steps in the budget is the focus on infrastructure development, both in terms of allocation and policy measures. The overall objective of these measures is to improve competitiveness and attract investment.

Micro Small and Medium Enterprises (MSMEs) form the backbone of India's manufacturing sector. Such small enterprises account for 40 per cent of manufacturing output and 40 per cent of exports. Their share of manufacturing employment is also high. Estimates suggest that just about 10 per cent of MSMEs have access to institutional finance. Thus, the emphasis on credit delivery through market instruments makes sense since the banking sector hasn't been up to the task so far, despite the sector being under the RBI's priority sector. The proposal to set up a Microfinance Unit Development Refinance (MUDRA) bank to refinance microcredit will make credit affordable while helping the micro finance industry retain sound financials. With an initial corpus of Rs

20,000 crore and a credit guarantee corpus of INR 3000 crore, the MUDRA bank, it is suggested, should prioritise lending to Scheduled Castes and Scheduled Tribes.

A number of measures to have been taken revive Special Economic Zones (SEZs), attract FDI and pursue reforms in important sectors like defence to success in 'Make in India' story. The Budget 2015-16 has taken effective steps to revive SEZs including giving investment allowance at 15 per cent for 3 years to a manufacturing company which invests more than Rs. 25 crore in plant and machinery; announcing special SEZ's for women in 100 districts etc.

The huge increase in untied resources would give states the fiscal space to design their own developmental schemes and programs according to their specific circumstances. However, there is also apprehension about the use of money by the States as the quality and capacity of state administration varies widely and therefore, the increased untied fiscal transfers along with reduction in tied developmental plan schemes may lead to misuse of money.

The government's agenda to skill India and improve employability of young Indians is quite clear by creating institutes of higher learning, including five new IITs and five new IIMs across the country. The government focuses on creating industrial tier II and tier III cities and skill development for job creation and manufacturing development. Further, a few other steps like 10,000 crore start-up fund for new businesses, Rs. 100 Crore for start-up village entrepreneurship for rural population, Rs. 200 Crore for scheduled caste entrepreneurs and Young Leaders Programme with an investment of INR 100 crore are encouraging steps.

The hike in FDI caps in insurance and defence sectors to 49 per cent, almost scrapping of retrospective taxes, raising FDI limits in e-commerce, insurance, defence, and health insurance is one sign that the government is headed the reform way to attract FDI, which is necessary for manufacturing-led growth for job creation. In defence, the Commerce and Industry ministry in consultation with defence ministry (MoD) has already circulated a cabinet note seeking comments from other government agencies. It is a welcome move to increase FDI ceiling in defence in graded steps to 49 per cent, 74 per cent and 100 per cent to incentivise technology transfer. FDI up to 49 per cent in case of no technology transfer and 74 per cent where there is a technology transfer is being proposed and a no-cap policy for cases which bring in state-of-the-art technology. This would help India in leveraging critical technologies to shore up domestic capability in Indian defence industry and thereby creating jobs in the country, by setting up of JVs.

Fiscal Decentralisation and Cooperative Federalism

The recommendations of the 14th Finance Commission (FC) have come at a time when the new regime is committed to cooperative and competitive federalism. The current government accepted the recommendations of the Fourteenth Finance Commission and ushered in a new era of fiscal federalism in the country. The share of the 'divisible pool' — the basket of tax revenue that is allocated between the federal and state governments — goes to states without any strings attached from the 32 per cent to 42 per cent. Together with grants to local bodies, grants in aid for revenue deficits for 11 states and the states' share in coal auctions means that there will be huge increases in fiscal transfers to states. This would reduce the fiscal capacity of the Centre, discouraging it from getting involved in states' affairs. The huge increase in untied resources would

give states the fiscal space to design their own developmental schemes and programs according to their specific circumstances. However, there is also the apprehension about the use of money by the States as the quality and capacity of state administration varies widely across States and therefore, the increased untied fiscal transfers along with reduction in tied developmental plan schemes may lead to misuse of money.

The 2014-15 too in fact, ushered in greater fiscal autonomy to states through an act of change in the structure of outlays. In fiscal year 2013-14, states got Rs 1,19,039 crore out of the Rs 4,75,532 crore plan outlays. In the 2014-15 Budget, states were allocated Rs 3,38,408 crore from the total plan kitty of Rs 5,75,000 crore, equalling additional resources worth nearly 1.6 per cent of GDP that have been shifted from centre to states. The commitment to cooperative and competitive federalism is also evinced

by the fact that the Centre has left implementation of many crucial laws including in labour and land to the individual states. Well-governed states with proper institutions and vision are now likely to prosper on account of the increased fund disbursement.

Over all, the economic policy of the government in its first year has been focused on reforms, infrastructure, ease of doing business to revive investment for manufacturing sector growth for job creation and improvement in standard of living. Though it's too early to measure outcomes of these policies, the future of Indian economy certainly looks bright.

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YE-37/2015

Scaling New Heights in Energy Sector

KR Sudhaman



India is still a power deficit state despite massive scaling up of power generation since 1990s. So a lot more needs to be done and rightly the present government has taken several initiatives over the last one year to push power generation in the country

INDIA HAS come a long way in the power sector. From a mere 1362 Mw of power generation at the time of independence in 1947, India now has power generation capacity of over a 261,000 Mw. Though 60 per cent of power comes from thermal power generation, basically coal and to a small extent gas, there is renewed emphasis on pushing non renewable energy. In case of Hydel power, seventy per cent of the 1,48,000 Mw of hydel power potential remained untapped particularly in the North Eastern region where 50,000 Mw of power still remains untapped. Nuclear energy too has a huge potential but is fraught with some environmental concerns. It is however slowly picking up and India now generates around 6000 Mw of nuclear energy, which is to be scaled up to 63,000 Mw by 2032. With signing of Civilian Nuclear Pact with US in 2009, large size nuclear plant of over 1000 Mw are to be set up in the country. But lately wind and solar power have caught on with path breaking innovations particularly in solar. While wind power generation has picked up in the country with around 25,000 Mw of generation particularly in states like Tamil Nadu, Maharashtra, Gujarat, Andhra Pradesh and Rajasthan, Solar power is likely to bring about revolutionary change

in the coming years. While wind power has the potential to generate 1.5 lakh Mw, Solar power has potential of over 300,000 mw, of which only 3,800 MW has been tapped so far in the country. With costs coming down, solar power is expected grow leaps and bounds in the coming years and the present government has recently scaled up solar power generation to a whopping one lakh Mw by 2022 from 20,000 Mw targeted by the previous government. Already silent revolution is taking place in some states like Tamil Nadu, Haryana, Delhi, Punjab, Gujarat, Rajasthan and Andhra Pradesh with the launch of net metering concept for rooftop solar power, which reduces cost by at least 25 per cent as no batteries would be required for storage.

India is still a power deficit State despite massive scaling up of power generation since 1990s. So a lot more needs to be done and rightly the present government has taken several initiatives over the last one year to push power generation in the country. Of the 1.4 billion people of the world who have no access to electricity, India accounts for over 300 million. The International Energy Agency estimates India will have to add between 600 GW to 1,200 GW of new power generation capacity before 2050. Entire Europe Union had total

The author has over 40 years of experience in journalism. Besides serving as foreign correspondent for Press Trust of India (PTI) in Beijing and Islamabad, he was Associate Editor in the economic division of PTI and later Editor-in-charge of the Western Region, Mumbai. He was also Economic Affairs Editor in Ticker News and Economics Editor in Financial Chronicle. The author has vast experience in covering global economic conferences including WTO, World Bank, ADB, G-15, G-20 and G-8 summits.

power generation capacity of 740 GW in 2005 and what India needs to add would be much more. The technologies and fuel sources India adopts, as it adds this electricity generation capacity, may make significant impact to global resource usage and environmental issues and hence the government has decided to give special emphasis to tap renewable energy potential.

Some 800 million Indians use traditional fuels – fuel wood, agricultural waste and biomass cakes – for cooking and general heating needs. Traditional fuel is inefficient source of energy, it's burning releases high levels of smoke. World Health Organisation claims that 300,000 to 400,000 people in India die of indoor air pollution and carbon monoxide poisoning every year because of biomass burning and use of *chullahs*. The growth of electricity sector in India may help find a sustainable alternative to traditional fuel burning and in this *context*, renewable energy may play an important part and rightly the government has embarked upon an ambitious renewable energy development in the country. Studies point out that, in addition to air pollution problems, reliable generation and supply of electricity is essential for addressing India's water pollution and associated environmental issues. Also rapidly growing economy, rising exports, improving infrastructure and increasing household incomes will only push energy requirement further in the country.

The present government is rightly giving a massive thrust to the energy sector to ensure that India moves towards 24 into 7 power for all in the next four to five years. This calls for tackling issues of power thefts, coal linkages for thermal plants, transmission deficiencies, tapping renewable solar, wind and hydel power potential and so on through massive investments. The major initiatives embarked upon have already resulted in 15.8 per cent increase in thermal power generation, accounting for 60 per cent of power generation in the country. Government

has also come out with plans for 50 per cent increase in power generation capacity and provided Rs 1.1 lakh crore central government grant for bringing about 24 into 7 affordable power in rural and urban India. Government has a plan to double coal production in the country to 100 crore tonnes by 2020 through massive investments. The recent coal auction has kick-started this process and yielded nearly Rs 2 lakh crore to the government kitty, of which sizeable amount will go to the mining states, pushing up development activities in those backward states.

With the stepping up renewable energy power generation target to one lakh Mw of solar power and 60,000 Mw of wind power by 2022, Rs 10 lakh crore worth of investments are expected to pour in to the renewable energy sector in the next seven years. Apart from efforts to quickly restart stalled hydel projects, government has also stepped up budget allocation for renewable energy by 65.8 per cent and is in the process of coming out with new renewable energy policy for solar and wind power.

As part of its blueprint for energy security, the government plans to float five funds of \$5 billion each, targeted at promoting green energy sources.

The Ministry of New and Renewable energy (MNRE) plans to get the help of state-owned and private sector financial institutions such as Power Finance Corp. Ltd (PFC), Rural Electrification Corp. Ltd (REC), Indian Renewable Energy Development Agency (IREDA), IFCI Ltd, SBI Capital Markets Ltd and ICICI Bank Ltd to create a corpus of \$25 billion. The government's renewed focus on green energy comes in the backdrop of the US and China inking a climate change deal wherein the US will reduce its emissions by 26-28 per cent below its 2005 level by 2025 and China will reach the peak of its harmful carbon dioxide emissions in around 2030.

The new measures announced by the government give top priority for domestic players and Rs. 100,000 crore worth of orders placed in power sector in the recent months by NTPC, Coal India, Energy Efficiency Services, Power Grid Corporation will boost local manufacturing giving boost to Make in India campaign. Also, large orders have been placed on local manufacturers to make them price competitive by increasing capacity and getting world class technology. Government organizations will buy 1000Mw worth solar projects with special provision for use of only domestically produced cells and modules. Defence establishments will buy 300 Mw solar plants. Government has also planned to save 10 per cent energy through conservation. As much as 10,000 crore units are to be saved, which can light up 11 crore lives and save Rs 40,000 crore.

The government's strategy to focus on renewable energy also stems from the fact that India has an energy import bill of around \$150 billion, which is expected to reach \$300 billion by 2030. India imports 80 per cent of its crude oil and 18 per cent of its natural gas requirements. As of April 2014, total thermal installed capacity stood at 168.4 GW, while hydro and renewable energy installed capacity totalled 40.5 GW and 31.7 GW, respectively. Wind energy market of India is expected to attract about Rs 20,000 crore (US\$ 3.16 billion) of investments next year, as companies across sectors plan to add 3,000 MW of capacity powered by wind energy.

Around 293 global and domestic companies have committed to generate 266 GW of solar, wind, mini-hydel and bio-mass based power in India over the next 5-10 years. The initiative would entail an investment of about US\$ 310-350 billion. The industry has attracted FDI worth US\$ 9,548.82 million during the period April 2000 to February 2015.

Our power sector has an investment potential of Rs 15 trillion (US\$ 237.35 billion) in the next 4-5 years,

providing immense opportunities in power generation, distribution, transmission and equipment, said the Union Minister of Coal, Power and Renewable Energy.

The immediate goal of the government is to produce two trillion units (kilowatt hours) of energy by 2019. This will mean doubling the current production capacity in order to achieve provide 24x7 electricity for residential, industrial, commercial and agriculture use.

Installation of solar power plants requires nearly 2.4 hectares (6 acres) land per MW capacity which is similar to coal fired power plants when life cycle coal mining, consumptive water storage & ash disposal areas are also accounted and hydro power plants when submergence area of water reservoir is also accounted. 1.33 million MW capacity solar plants can be installed in India on its 1 per cent land (32,000 square km). There are vast tracts of land suitable for solar power in all parts of India exceeding 8 per cent of its total area which are unproductive, barren and devoid of vegetation. Part of waste lands (32,000 square km) when installed with solar power plants can produce 2000 billion Kwh of electricity (two times the total generation in the year 2013-14) with land productivity/yield of 1.5 million Rs per acre (6 Rs/kwh price) which is at par with many industrial areas and many times more than the best productive irrigated agriculture lands. Moreover, these solar power units are not dependent on supply of any raw material and are self productive. There is unlimited scope for solar electricity to replace all fossil fuel energy requirements (natural gas, coal, lignite, nuclear fuels and crude oil) if all the marginally productive lands are occupied by solar power plants in future. The solar power potential of India can meet perennially to cater per capita energy consumption at par with USA/ Japan for the peak population in its demographic transition.

Land acquisition is a challenge to solar farm projects in India. Some state governments are exploring means to address land availability through innovation; for example, by exploring means to deploy solar capacity above their extensive irrigation canal projects, thereby harvesting solar energy while reducing the loss of irrigation water by solar evaporation. The state of Gujarat was first to implement the Canal Solar Power project, to use 19,000 km (12,000 mi) long network of Narmada canals across the state for setting up solar panels to generate electricity. It was the first ever such project in India. It has environmental angle as well. Extensive use of solar power could prevent the emission of more than 6 billion tonnes of carbon dioxide per year by 2050 – that is more than all current energy related CO₂ emissions from the United States or almost all of the direct emissions from the transport sector worldwide today. In many parts of India, the sun is strong and skies are clear. India will be able to reach the highest reduction in additional CO₂ emission in 2050 and along with China could account for half the global additional emission reductions. India could emerge as a solar energy hub and rightly the government is putting in place policy framework. Though solar power generation is a little less than 4000 mw, the roof top solar power generation is likely go up to 40,000 Mw in the next 5-7 years. German Development Bank, KfW, which has already provided one billion euro soft loan for setting up green transmission corridors in Rajasthan and Tamil Nadu, will very soon sanction another one billion euro soft loan for promoting roof top solar power, which fast catching up in several cities with introduction net metering. Delhi alone has potential to generate 2000 Mw of roof top solar power, which is one third of 6000 Mw of power consumed in



the city. Likewise all major cities had huge potential and this is a win-win situation for both power generators and individual building or house owner as their electricity bill would come down by two third and investment in solar panels, which is maintenance free and lasts for 25 years, will be recovered in 4-5 years.

The Indian Renewable Energy Development Agency (IREDA) is likely to raise tax free bonds worth Rs.2, 000 crores from markets to support the solar initiatives of the government in next few months in a bid to lend soft loans to developers to accomplish the roof top mission of the government, according to the Ministry of New and Renewable Energy.

A top official of the Ministry has told a recent PHD Chamber of Commerce and Industry summit "the government has approved an amount of Rs.5,000 crores for raising the tax free bonds to support and sustain its solar initiatives through various agencies a couple of days ago, of which IREDA is assigned an amount of Rs.2,000 crores".

"In the current fiscal, the government would be contented if solar projects of 2,000 to 3,000 mw are implemented", He further added that it would be an attempt of the government of the day to add on solar capacity of 10,000 Mw each year from fiscal 2017-18. This would be sustainable level that could be scaled up to 15,000 mw annually after a few years.

The official also announced that the government has decided to withdraw subsidies to achieve its non-conventional targets for power generation for industrial and commercial purposes adding that the subsidy would stay put for social sectors including hospitals, education centers and other similar health related initiatives. The subsidy is increasingly becoming not necessary with solar power generation falling to Rs 6-7 per unit and is expected to fall further to Rs 4.5 per unit, while cost of thermal power was going up.

The government has also announced schemes to develop at least 25 solar parks of 500 Mw each in the next five years. The government has allocated Rs 4050 crore for this purpose. The solar parks offer facilities to attract investors and developers. A solar park removes most of the hurdles faced by individual small project developers.

Skill development is one area which requires special emphasis particularly for setting up solar plants. Trained manpower already exists for setting up thermal, hydel and wind power plant. For the massive scaling up of solar power generation, huge number of manpower is required particularly smaller plants in remote areas and rooftop solar power that is spreading rapidly. Government already has a plan for skill development, which needed to be scaled up, providing opportunity for local youth in various parts of the country.

The cost of solar power, expected to come down by 25-30 per cent by December this year to Rs 4.50 per unit from Rs 6-7 per unit at present. "We are looking at bringing in innovative solutions, besides improving counter party risk and bring down the cost of solar and wind energy," he said adding the government has also engaged global consultant PriceWaterHouse Cooper for formulation of plan to scale up solar energy further in the country.

The government's plan to step up renewable energy will bring about much needed energy security to people of the country. With India expected grow at 8-9 per cent in the next decade or two, there will be huge demand for power and the government is on right track to ensure that power sector kept pace with the requirement in a power deficit country with low per capita electricity consumption. The government is also for the first time attempted a right mix of thermal, gas, hydel, nuclear, wind, solar and biogas power generation. India still has a lot of catching up to do with China, which generates four times more power and has plans for massive scaling up of solar and hydel power. Solar power will also come in handy for replacing diesel generation sets for backup power with the development of lightweight and cheaper lithium batteries for storage of solar power. There are more than 30,000 Mw of Diesel generation sets in use resulting in huge drain of foreign exchange reserved in import of oil. □

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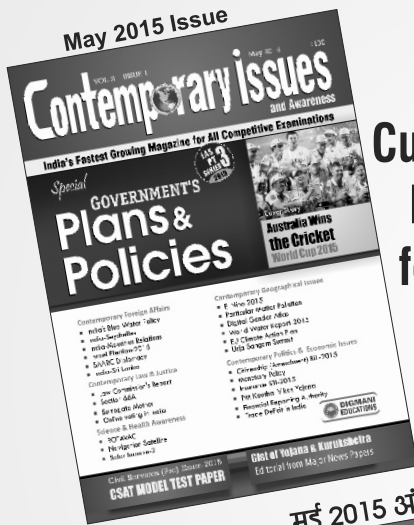
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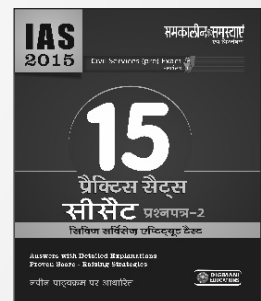
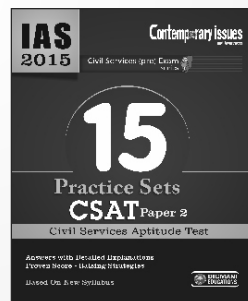
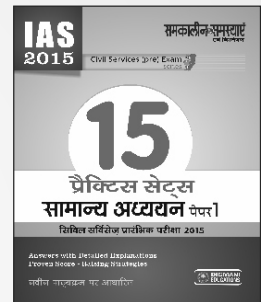
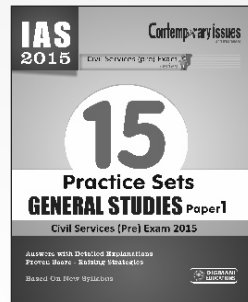
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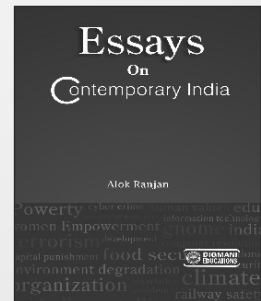
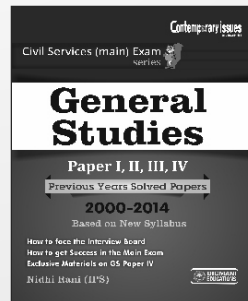


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DO YOU KNOW?

NATIONAL AIR QUALITY INDEX

Air Quality Index (AQI) is a 'One Number- One Colour-One Description' mechanism to judge the air quality within one's vicinity. This index has been constituted as part of the Government's mission to introduce the culture of cleanliness across the country under Swachh Bharat Mission. AQI is a tool for effective dissemination of air quality information for the people. Maintaining clean air would also be a part of peoples's campaign to take up the issue of cleanliness in a mission mode. These initiatives are aimed at balancing environment, conservation and development.

Under the current measurement of air quality, eight parameters are included. There are six AQI categories, namely Good, Satisfactory, Moderate, Poor, Very Poor, and Severely polluted. The proposed AQI will consider eight pollutants for which short-term (up to 24-hourly averaging period) National Ambient Air Quality Standards are prescribed. Based on the measured ambient concentrations, corresponding standards and likely health impact, a sub-index is calculated for each of these pollutants. The worst sub-index reflects overall AQI.

Air pollution has been a matter of environmental and health concern, particularly in our urban areas. Central Pollution Control Board along with State Pollution Control Boards has been operating National Air Monitoring Programme (NAMP) covering 240 cities of the country. Thus, it was important that information on air quality is brought to the public domain in linguistic terms that is easily understood by a common person. In order to widen the ambit for promoting the culture of cleanliness, sensitization programme in school/college curriculum are also being contemplated.

PAHAL SCHEME

PAHAL stands for *Pratyaksh Hanstantrit Labh* which is a Direct Benefit Transfer for LPG (DBTL) scheme, launched by the Centre on 1st January, 2015 with the aim to benefit the LPG consumers. Under this scheme, LPG cylinders will be sold to Cash Transfer Compliant (CTC) consumers at the market determined price, while the cash subsidy will be directly transferred to the bank account of the beneficiary by the following methods:

1. Primary: Consumers having Aadhar number have to get it linked with bank account so as to get the subsidy directly in their bank accounts.

2. Secondary: Consumers lacking Aadhar number will get subsidy in their account after submitting their relevant bank account details to the LPG distributor (A/C No., Name of A/C holder, IFSC code etc).

Consumers who are receiving subsidy directly in their bank accounts are called Cash Transfer Compliant (CTC) Consumers. For the non-CTC Consumers, however, a grace period of three months (with an additional parking period of three months) is allowed to become CTC consumer. But during this period, the non- CTC consumers will be given LPG cylinders at the market determined prices.

A one- time advance is provided to every CTC Consumer joining PAHAL. The advance is notified by the Government from time to time and remains fixed during that financial year. The advance will remain with the consumers till the time of termination of their connection.

The modified scheme had been re launched initially in 54 districts of the country in the first phase and in other parts of the country on 1st January 2015.



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YOJANA

Forthcoming Issue

July

New Vistas in International Relations

Labour Reforms : Fillip to Ease of Doing Business

Deepak Razdan



In a significant legislative move to make industry-running attractive, the Centre is holding consultative meetings on the draft Small Factories (Regulation of Employment and Conditions of Services) Bill, 2014 which will regulate factories employing less than 40 workers. In addition, the Apprentices Act, 1961 was amended last year to make it more responsive to industry and to youth

FOR SEVERAL decades now, rigid labour laws have been the major reason behind India's slow employment growth compared to the expansion of the country's labour force. Economic analysts have stressed time and again that labour reforms were needed not just for industrial growth, but also to generate adequate employment opportunities. There was, however, little progress on the issue as the consensus needed among the stakeholders remained elusive. Fortunately, the new Government has realised that this impasse could no longer be allowed to continue indefinitely, if India were to continue its pace as an emerging economic power. Initiatives taken by the Government in its first year of work have shown that **"ease of doing business"** and **"Shramev Jayate"** (glory of work) could go together and combine into a mechanism for a faster and more inclusive growth. Adopting a multi-pronged strategy, the Centre has initiated steps to rationalize the multiplicity of laws, while encouraging the States to go ahead with their labour reform initiatives. Success in these attempts will come only if workers are convinced that they are an essential part of the progress process, and not just an expenditure burden.

Numerous reports and documents have pointed out that a status quo-

ist approach will not do if industrial growth is to get a push, or jobs have to be created for India's rising young population. The Mid-Year Economic Analysis for 2014-15 has stated that reforms of labour laws and reducing the costs of doing business "will need to be a joint endeavour of the States and the Centre." The Government recognised the need to work accordingly, duly accepting the Concurrent List status of the subject. Among the first reform actions of the Centre was, therefore, facilitating Presidential Assent for labour reforming in Rajasthan, thereby setting an example for further reform initiatives by the States; while consolidating and making transparent a number of labour laws at the Central level.

The Economic Survey 2014-15 (Vol. 1, Chapter 1), referring to the severity of unemployment, has stated that regardless of which data source is used, it seems clear that employment growth is lagging behind growth in labour force. For example, according to the Census, between 2001 and 2011, labour force growth was 2.23 per cent. This is higher than most estimates of employment growth in this decade of closer to 1.4 per cent. Creating more rapid employment opportunities was clearly a major policy challenge, it said.

At present, there are 44 labour-related statutes enacted by the Central

The author is Delhi-based senior journalist with over 43 years of experience on labour issues, rural development and economic planning. He has worked with leading dailies like Hindustan Times, The Statesman, New Delhi. The author has been faculty member of a leading journalism institute.

Government, and another 100 by the State Governments. Underscoring the problem the labour laws were posing in their present shape, the Twelfth Five Year Plan (2012-2017) (Vol. 3, Ch. 22) too had stated “the multiplicity of labour laws administered both by the Central and State Governments are not conducive for the congenial development of the factory sector.” It said 84 per cent of the labour sector being unorganized was outside the purview of the labour laws, while the remaining 16 per cent constituting the organized sector was “overburdened with regulatory interference at all levels.” Labour being a Concurrent subject, there was a need to simplify the labour laws both at the Central and State levels, it pointed out.

Going specific, the Twelfth Plan said “to generate overall employment, at least labour intensive manufacturing industries like textiles and garments, leather and footwear, gems and jewellery, food processing and so on, must be permitted to adjust their labour force, in response to fluctuations in demand. The focus should be on promoting labour market flexibility without compromising fairness to labour.”

While initiating its moves, the present Government has committed itself to establish the dignity of labour, transparency and accountability in the enforcement of Labour Laws and to promote workers’ welfare through good governance initiatives. The Government’s mantra is “*Shrimev Jayate*” – that is, work is celebration only when both partners – the worker and industry – thoroughly benefit from it.

Undertaking the daunting task of making the Indian labour legislation easily comprehensible, the Labour Ministry has begun the process of rationalizing the entire labour laws into five Labour codes – Code on Wages, Code on Safety and Working Conditions, Code on Industrial Relations, Code on Social Security and Welfare and a Code on Employment Training and Miscellaneous. An inter-

Ministerial Group has been formed to consider the suggestions of the stakeholders and to draft the Codes. As part of the spirit of tripartism, the Labour Ministry has begun holding meetings with the stakeholders on the proposed Codes.

The Labour and Employment Minister held three tripartite consultation meetings – the third on 6th May, 2015, on the crucial draft Labour Code on Industrial Relations with representatives from Central Trade Unions, Employers’ Associations, Labour Departments of State Governments and Central Ministries and Departments.

The proposed Labour Code on Industrial Relations seeks to rationalise and amalgamate the relevant provisions of the Trade Unions Act, 1926, The Industrial Employment (Standing Orders) Act, 1946 and The Industrial Disputes Act, 1947. There has been longstanding demand from industry for flexible labour laws but trade unions consider that the changes would bring job insecurity to workers, and it would be difficult to form unions. To build a consensus, the Minister invited suggestions from the participants for incorporation in the Labour Code. The Minister assured the meetings that the rights of the workers will be protected at all costs, and views of the participants will be considered while finalizing the Labour Code on Industrial Relations.

There have been two similar meetings on the draft Labour Code on Wages, the second on the 13th April, 2015, where the participants discussed the Code which proposes to amalgamate the relevant provisions of the Minimum Wages Act 1948, The Payment of Wages Act 1936, The Payment of Bonus Act 1965, and The Equal Remuneration Act 1976. The Minister briefed the participants about the proposed Labour Code and invited

suggestions from the participants who included representatives of the Central Trade Unions, Employers’ Associations and State Governments.



In a significant legislative move to make industry-running attractive, the Centre is holding consultative meetings on the draft Small Factories (Regulation of Employment and Conditions of Services) Bill, 2014 which will regulate factories employing less than 40 workers. In addition, the Apprentices Act, 1961 was amended last year to make it more responsive to industry and to youth. Non-engineering graduates and diploma holders have been included. Compliance is portal-based and there are penalties in the form of fine only.

Signalling that the second-generation economic reforms will be led by the States, the Central Government helped the Rajasthan Government get Presidential assent for the three labour law amendment Bills relating to the Industrial Disputes Act, 1947, the Contract Labour Act, 1970 and the Factories Act, 1947. Among the major changes, the Industrial Disputes Act will allow companies employing up to 300 employees to lay off workers or close down without taking the government’s prior approval. Earlier, those with up to 100 employees were allowed to do so. This amendment is expected to bring to the organized sector more investors who were reluctant to do business as they had to approach authorities over small issues if they employed more than 100 workers. The small industries will particularly benefit.

Among the other changes in the Rajasthan laws, the amended Industrial Disputes Act now provides that in case of retrenchment, a worker has to raise an objection within three months. There was no time limit earlier. Trade unions can be formed only if they get 30 per cent of the workers as members. The requirement at present is 15 per cent. The Factories Act will apply to factories with 40 workers, if without electricity; and 20 workers, if with electricity. The earlier requirement was just half. The Contract Labour Act will apply to companies employing more than 50 workers as against 20 earlier. Industries will be able to hire more temporary workers without passing on to them the benefits contract workers are entitled to. The Rajasthan labour reforms have been hailed by eminent economists, among others. Several States are considering following the Rajasthan initiative.

Outside the influence of labour reform controversies, the Government in its Budget for 2015-16 announced several initiatives which will in due course lead to creation of millions of jobs. The Budget's tax proposals have kept in view the ease of doing business which will lead to faster creation of jobs. The Government launched the 'Make in India' campaign and combined it with a detailed process and policy re-engineering to make India a Global Manufacturing Hub for creation of job opportunities for millions of youth. Investment policies have been fine-tuned to bring business to India. The first year of the new Government has generated the much needed promise and hope, and it is for administrative dynamism to fulfil them.

The *Shramev Jayate Karyakaram*, inaugurated by the Prime Minister on 16th October, 2014, unveiled the Government's good governance package with the belief that the "ease in compliance" will create massive avenues of employment for the youth of this country and in turn promote "transition to formality" in a big way.

Digital India, as part of the package, will present a new regime

of governance through effective use of information technology. The Ministry of Labour & Employment launched the unified Web Portal '*Shram Suvidha Portal*' on 16th October, 2014. The portal is catering to four major Organisations under the Ministry, namely Office of Chief Labour Commissioner (Central), Directorate General of Mines Safety, Employees' Provident Fund Organization and Employees' State Insurance Corporation.

The four main features of this Portal are: Unique Labour Identification Number (LIN) is allotted to Units to facilitate online registration; Filing of self-certified and simplified Single Online Return by the establishments.

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Units will only file a single consolidated Return online instead of filing separate Returns; Transparent Labour inspection scheme through computerized system based on risk based criteria and uploading the inspection reports within 72 hours by the Labour inspectors; Timely redressal of grievances will be ensured with the help of the portal. The Unique Labour Identification Number (LIN) has been already allotted to more than 9.5 lakh existing establishments. The facility for filing Common Return under eight Labour Acts has been launched recently on 24th April 2015. This service will reduce the transaction costs of business and make it easy and convenient to meet their obligations.

The e-Biz portal which integrates 14 regulatory permissions at one source has been launched.

The Government recognized that employability of rural youth is the key to unlocking India's demographic dividend, as rural population still forms close to 70 per cent of India's population. *The Deen Dayal Upadhyay Gramin Kaushal Yojana* was launched keeping in view only this. The Budget 2015-16 has kept Rs 1500 crore for this scheme. Disbursement will be through a digital voucher directly into qualified students bank accounts.

For the unorganized workers, who constitute 92 per cent of the work force, the Government has promised to start their identification and registration as per the Unorganized Workers Social Security Act, 2008, leading to creation of a database of unorganized workers. An identity card to unorganized workers with linkages with Aadhaar No. and Bank Account No. will be issued for convergence of Social Security Schemes for unorganized workers on a single platform.

In the organized sector, Universal Account Numbers have been allotted to more than 4.47 crore workers to pave way for complete portability of Employees Provident Fund (EPF) benefits. Here, 99 per cent payments to members are being made electronically. SMS alert for monthly contribution and accumulation are being sent. It is proposed to include contract and construction workers in UAN to bring them under formal social security cover.

The Government has put the seal of perpetuity to the grant of a minimum pension of Rs.1000 per month for Employees Pension Scheme (EPS) subscribers. Notified in September 2014, the higher pension has now secured the approval of the Union Cabinet to continue in perpetuity. Pension is now being credited to about 50 lakh pensioners every month on the first working day of the month. Also, a notification has been issued for enhancement of wage ceiling under the EPF Scheme

from Rs.6500 to Rs.15000. For the first time ever, 15.54 crore member accounts pertaining to 103 of 122 EPF offices have been updated on 1st April 2015, that is, on the first day of new financial year.

With more than 65 per cent of the population being young in the working age category, the Government is responding to the vision of Skill India to harness the potential of this unprecedented demographic dividend. A separate Ministry for Skill Development has been created. Over the last one year, there have been major initiatives to promote Demand Responsive Vocational Training And Career Services to enhance employment and employability of the youth and other vulnerable sections of the workforce. The *Apprentice Protsahan Yojana* (APY) launched on 16th October, 2014, with focus on MSME, aims to support one lakh apprentices in next two and a half years by sharing 50 per cent of the stipend burden with a vision to have more than 20 lakh apprentices in next few years against the present number of 2.9 lakh. Enhanced rates of stipend indexed to minimum wage of semi-skilled worker have been notified for trade apprentices.

The Budget said the Government is establishing a mechanism to be known as SETU (Self-Employment and Talent Utilisation). SETU will be a techno-financial incubation and facilitation programme to support all aspects of start-up businesses, and other self-employment activities, particularly in technology-driven areas. The Budget kept Rs 1000 crore for this project in the NITI Aayog.

Employment Services are being modernised. The National Career Service (NCS) has become operational in March, 2015. A hundred Model Career Centers are to be developed to provide training in Last-Mile Employability skills. Another milestone was achieved with NCVT-MIS Portal which went live from December 2014. Recognition of Prior Learning (RPL) for construction sector

is another unique initiative to bring the informally-trained construction workforce in the ambit of skilled labour. Training of ITI instructors through distance learning technology has been initiated to improve the quality and delivery of training in ITIs.

The Government considers tripartism as the hallmark of Labour Policy discourse, and meetings convened by the Labour and Employment Ministry have generated good debate. Chairing a tripartite meeting with State Governments, Central Trade Unions and Employers' Organisations, the Minister of State for

With more than 65 per cent of the population being young in the working age category, the Government is responding to the vision of Skill India to harness the potential of this unprecedented demographic dividend. A separate Ministry for Skill Development has been created. Over the last one year, there have been major initiatives to promote Demand Responsive Vocational Training And Career Services to enhance employment and employability of the youth and other vulnerable sections of the workforce.

Labour and Employment (Independent Charge), Mr Bandaru Dattatreya, on 13th January this year, said there was need for pro-active involvement of all stakeholders in the labour matters. Affirming faith in the consultative process, he said the Ministry of Labour follows the legacy of social dialogue.

The employers unanimously agreed that the vision of industrial development can be achieved only when workers' interest coincides and is taken into account in a holistic manner. Tripartite consultations were held for the second time on the proposed EPF Act Amendments also on 31 March, 2015. The Minister

informed the stakeholders about the major changes being mulled in the proposals. It is proposed to give the workers a choice to either join the EPF or the National Pension Scheme (NPS). The Trade Unions however, raised the issue of their long-pending 10-point charter of demands given by them and sought more consultations with the Government. The unions plan to give their view after a national convention at Delhi.

The wide-ranging worker-friendly amendments proposed in the EPF Act include bringing down the minimum number of employees required for coverage under the Act from the existing 20 to 10, doing away with the Schedule Head for coverage and bringing in a negative list instead, special provisions for encouraging the functioning of small-scale units, provisions for setting up of multiple Appellate Authorities under the Act and removing ambiguities in the implementation of the Act. The amendments will ensure greater clarity in the definitions under the Act, especially with regard to wages which qualify for deduction for the purposes of the Act, introducing greater transparency and accountability in the enforcement of the Act by having an objective inspection scheme.

The tripartite discussions showed there was general acceptance for the proposed amendments. The NPS/EPF choice would mean greater choice for the workers, they felt. However, there were also views that NPS cannot match the benefits offered by EPFO and therefore, was not comparable. Views were expressed felt that the amendments would help in sharpening the competitiveness of Indian Industry and would enable India to become a manufacturing hub. There was a need to further encourage the concessions granted to the small-scale industries, it was noted. Keeping the dialogue alive, the Government responded to the stakeholders saying their concerns will be kept in view while giving final touches to the legislative amendments. □

(E-mail: deepakrazdan50@gmail.com)

LAW RANKERS

2, 6, 8, 13, 19, 22, 57, 62
67, 82, 84, 156, 166, 167
178, & many others.



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FIRST-EVER BIOTECH PARK IN J&K

Recently, around ten acres of land has been acquired for constructing the first- ever Biotechnology Park in the state of Jammu & Kashmir. This land was acquired by Science & Technology Department at Gaati SIDCO Phase-III Industrial Complex in Kathua. To be set up at a cost of about Rs.80 crores, it will be Centre's second mega project to come up in Kathua district, on the lines of Keedian-Gandyal bridge sanctioned by Union Surface Transport Ministry.

The aim of this project is to help catalyze the development of the region by increasing revenues, generate employment opportunities, promote industrial culture and agricultural productivity, that will contribute towards the overall socio-economic growth of the state.

The work on the project will take place in three phases. The first phase will cost around Rs.23 crore and work is expected to complete in about 3 to 4 years. Phase-II and phase-III will be carried out in quick succession in a subsequent manner. Besides providing employment and income generation for the youth, the park will also promote research based entrepreneurship and development of biotech industry. There will be a Biotech Information Centre as well as pilot scale units for micro propagation and medicinal plants extraction. In addition, there will also be a training cell and a business support facility cell. □

J&K: SOME DEVELOPMENT HIGHLIGHTS

Udaan, a Special Industry Skill enhancement initiative to make employable 40,000 youth of J&K over a 5 year period in key high growth sectors through skill and employability of unemployed graduates, post graduates and 3 year engineering diploma holders of J&K. 13 mega drives at Jammu, Srinagar, Udhampur, Kupwara, Budgam, Anantnag, Ganderbal, Baramulla, Reasi, Kathua and Chandigarh selecting nearly 9000 candidates for training organized since May 2014. 74 corporates partnered with Udaan and placement offers made to 3,133 candidates.

- Various Medical Camps, vocational training courses and educational excursions conducted by Central Armed Police Forces (CAPFs); also performed tremendous work in rescuing and providing immediate relief to the people affected by the floods of September 2014. Special initiative taken to train 450 youths from the flood affected areas to become security guards.

- Pilot project by Self Employed Women Association (SEWA) to make militancy affected 125 women of J&K self reliant and help them in coming to the mainstream from Kupwara, by training them in Cutting, Tailoring, Handicraft, Food Processing, Renewable Energy , Agriculture and allied activities. A Resource Centre at Kupwara set up to train 3000 trainees and 500 master trainers. During the period from May 2014, 500 trainers and master trainers trained by SEWA. • The 2014 Assembly Elections peacefully conducted in the State of J&K in five phases from 25th November 2014 to 20th December with a voter turnout of about 66 per cent, despite attempts made by the militants to disturb this process like involving an infiltration attempt in Arnia and attack on military camp in Uri in Baramulla district.

- All possible help provided by the Indian Railways to the travelling public in the wake of unprecedented flood in Jammu and Kashmir. Railways arranged transport of relief material free of charge by coaching trains to Jammu Tawi and Udhampur from any station of India. Indian Railways completed Udhampur-Katra Broad gauge line in the State of Jammu and Kashmir, bringing Katra on country's railway map . Also newly constructed Shri Mata Vaishno Devi Katra Station inaugurated with facilities like tourist guide counter, cloak room, waiting hall, VIP lounge, escalators, lifts and parking spaces. The four platforms of this station accommodate 26-coach trains and powered by Solar energy.

- The scheme for Pashmina Promotion and welfare of the nomads rearing Pashmina in the Ladakh region launched. • Special Package for Development of Sports Infrastructure of Jammu and Kashmir to upgrade sports infrastructure and facilities by Department of Sports to develop Sports Infrastructure through creating ultra-modern & high tech facilities in the existing stadiums at Srinagar and Jammu, maximizing operational efficiency, phasing of construction programmes, efficiency by the management. The proposal by the J & K Government for Rs. 200 crore approved for reconstructing existing stadium on international specification with ten lane athletic track, sports hostel for 500 inmates at Srinagar and Jammu with Rs. 70 crores each, water sports centre at Manasbal, Srinagar with Rs. 2 crore, multipurpose indoor sports facility with Rs. 4 Crore each. □

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UNANI Medicine : The Art of Health and Healing

Rais-ur-Rahman



As the name suggests, the Unani System of Medicine owes its immediate origin to ancient Greece. Its fundamental framework is based on deep philosophical insights and scientific principles. Propagation of Unani system of Medicine beyond the Indian boundaries has been boosted with the globalization process and efforts of international cooperation

UNANI SYSTEM of medicine is one of the traditional systems of medicine with its genesis in Greece. Unani is basically synthesis of contemporary systems of traditional medicine in Egypt, Syria, Iraq, Iran, China, India and other Far East countries. The system is holistic in nature and offers preventive, promotive, curative and rehabilitative healthcare.

Unani system started in 5th and 4th Century B.C under the patronage of Hippocrates (Borate) in Greece (Unan). This system was then developed in Arab and Persian lands. It was introduced by Arabs into Indian subcontinent about a millennium ago and here it found its permanent home to attain the zenith of scientific development. This system, over the centuries has assimilated so well in the Indian civilization that today, Unani is recognized by the Government of India as one of the Indian systems of medicine, and forms an integral part of our national healthcare delivery structure. The Government has been providing increasing funds and support for its multi-dimensional development. As a result, today the country has several educational and research institutions, pharmaceutical industries and hospitals providing healthcare to the masses at national level. In the area of public healthcare, a large network

of Unani hospitals and dispensaries is functioning across the country; predominantly through Central and State Government initiatives.

Propagation of Unani system of Medicine beyond the Indian boundaries has been boosted with the globalization process and efforts of international cooperation. These steps have led to setting up of a Unani Medicine Chair at the University of Western Cape, South Africa and proposals are in pipeline for establishing Unani Medicine Chair in many other countries.

The need for establishing a Centre of Excellence dedicated to tertiary healthcare and advanced research in Unani Medicine has been felt for a long time. The Ministry of AYUSH, has agreed in principle to set up an All India Institute of Unani Medicine (AIUM) focused on research and development and high quality teaching and training at postgraduate and doctoral level. The Planning Commission has allocated a budgetary provision of approx. Rs.250 Crore for construction of this Institution.

Fundamentals of Unani Medicine

As the name suggests, the Unani System of Medicine owes its immediate origin to ancient Greece. Its fundamental framework is based on deep philosophical insights and

The author is Advisor (UNANI)/In-charge, Director General, C.C.R.U.M, Ministry of AYUSH, New Delhi.

scientific principles. The most important fundamental principles are; Natural/ Basic components (*Umoor-e-Taba'iyah*) which state that the human body is composed of seven natural and basic components called "*Umoor-e-Tabaiyah*" which are mainly responsible for maintaining the health. These are Elements (*Arkaan*), Temperament (*Mizaj*), Humours (*Akhlaat*), Organs (*Aa'za*), Spirit/vital forces (*Arwaah*), Faculty/energy (*Quw'a*) and Functions/actions (*Afa'al*). Hippocrates propounded the doctrine of humours and a distinguished feature of Unani medicine conceived by him is that the human body consists of three types of materials: Solids which are named as organs (*A'zaa*), Liquids which are named as Humours (*Akhlaat*) and gaseous matter named as *Arwaah* (*pneuma*).

Trimatter theory (*Mawaleed-e-Salasa*) postulates that the entire universe is made up by these three matters i.e solid, liquid and gases. Unani system of Medicine lays emphasis on diagnosing a disease through Pulse (*Nabz*), Urine examination (*Baul*) and Stool (*Baraz*) etc. The system relies on the theory of four elements – Air, Water, Fire and Earth; and the theory of four humours – Blood, Phlegm, Yellow Bile and Black Bile. Any disturbance in the humoral balance in the body causes disease. A perfect balance of the humors is responsible for good health. In Unani system, great emphasis is placed on temperament and the temperament is denoted by the dominant humour i.e. Sanguine, Phlegmatic, Choleric and Melancholic. The treatment aims at restoring the equilibrium by giving factors (including drugs) of opposite temperament. There are four modes of treatment in Unani system of medicine. They are Dietotherapy, Regimenal therapy, Pharmacotherapy and Surgery.

Areas of Strength

The strengths of Unani system of medicine are its holistic approach, temperament based prescription and treatment and principles of six

essential factors of Life (*Asbab-e-Sittah Zarooriyah*) which are pivotal for an perseverance and maintenance of health. The toning up of organs and immune system is a unique feature of Unani system of medicine. Unani System has shown remarkable results in curing diseases such as Musculoskeletal disorders, Respiratory conditions, Skin disorders, Liver disorders, Nervous system disorders and several other acute and chronic diseases.

The Regimenal therapy (*Ilaj-Bit-Tadbeer*) is a boon of Unani system of medicine which works on the principle of modifying six essential factors of life. Regimenal therapies include Dietotherapy, Cupping (*Hijamah*), Leeching (*Taleeq*), Venesection (*Fasd*) etc which help to eliminate morbid humours from the body (*tanqiya*) and can be used alone or in combination with drug therapy.

The toning up of organs and immune system is a unique feature of Unani system of medicine. Unani System has shown remarkable results in curing diseases such as Musculoskeletal disorders, Respiratory conditions, Skin disorders, Liver disorders, Nervous system disorders and several other acute and chronic diseases.

Pain management and various skin disorders can be managed effectively with least medication by Regimenal therapies. The prompt effectiveness of Regimenal therapy excels it from other modes of treatment used in Unani system of Medicine.

Immuno-modulators such as *khameera Marwareed*, *Jawahar Mohra* are available which can boost such up the immunity. In chronic diseases as Tuberculosis, AIDS, Cancer etc where a long term medication is used, Unani a system of Medicine can act as adjuvant to minimize the side effects of main therapy, enhancing the body immunity and improving overall quality of life.

Unani system of Medicine offers an effective treatment for various diseases especially chronic disorders; GIT disorders as Gastritis, Peptic ulcer, Ulcerative colitis etc; Respiratory disorders such as Bronchial Asthma, Chronic Bronchitis etc; Musculoskeletal disorders such as Arthritis, Osteoporosis; Neurological disorders as Senile dementia, Paralysis, Paralysis; Cardiovascular disorders such as Hypertension; Lifestyle and Metabolic disorders such as Obesity, Diabetes, Hyperlipidemia, Gout and Sexual disorders such as erectile dysfunction, loss of libido, premature ejaculation etc.

Unani Education in India

The education and practice in Unani system of Medicine is monitored and regulated by the Central Council of Indian Medicine (CCIM) established under Indian Medicine Council Act 1970. The five and a half year Undergraduate Course in Unani Medicine leading to award of BUMS Degree is governed by Indian Medicine Central Council (IMCC) Regulations 1995. Three year Post Graduate Courses leading to award of MD (Doctor of Medicine) /MS degree are governed by IMCC Regulations 2007. At present, there are 42 recognized colleges in India providing Education & Training in Unani System of Medicine at UG level, out of this 8 colleges have PG course facility. National Institute of Unani Medicine at Bangalore offers Post Graduate education and undertakes Research in Unani Medicine. The total seats available for UG and PG courses in these institutions are 1851 and 135 respectively. Recently, PhD programme has also been started at National Institute of Unani Medicine (NIUM) under Rajiv Gandhi University of Health Sciences, Bangalore and Govt. Nizamia Tibbi College under Vijayawada University, Hyderabad.

Role in Health Care Sector

There are 50,475 registered Unani practitioners providing Health Care in remote areas across the country.

There are 259 Unani Hospitals with 3744 indoor bed facility. There are 1483 Unani Dispensaries all over the country. The National Policy on Indian Medicine & Homeopath 2002 insures provision for AYUSH Health care facility including Unani System of Medicine in primary health care network. 11650 AYUSH Doctors including Unani System of Medicine have been appointed on contract at primary & community health centre's under the National Rural Health Mission (NRHM). AYUSH practitioners including Unani System of Medicine are also involved in Reproductive & Child Health and School Health Programme.

Advances in Research & Development

Research & Development in Unani Medicine is by and large in the hands of Central Council for Research in Unani Medicine (CCRUM). The Council has, over the past three and a half decades, emerged as the leading organization to bring out significant scientific documents for reference and use in this field. The CCRUM was established 1979 to build up research base for Unani System. The CCRUM has its headquarters in New Delhi with 23 centres functioning in different parts of the country.

The Institution Network of Council includes: Two Central Research Institute of Unani Medicine one each at Hyderabad and Lucknow; Eight Regional Research Institute of Unani Medicine with one each at Chennai, Bhadrak, Patna, New Delhi, Mumbai, Calcutta, Aligarh & Srinagar; One Literary Research Institute of Unani Medicine is at New Delhi; Drug Standardization Institute at Ghaziabad; two Regional Research centres of Unani Medicine one each at Allahabad and Silchar; six Clinical Research Units one each at Bhopal, Burhanpur, Meerut, Bangalore, Kurnool and Edathala; One Drug Standardization Research Unit is New Delhi; Chemical Research Unit at Aligarh and Clinical Research

Pilot Project at Imphal, Manipur; Two Co-location centre's in major Allopathic Hospitals in New Delhi for providing free Unani treatment under one roof.

- **Unani Medical Centre at Dr. Ram Manohar Lohiya Hospital.**
- **Unani Specialty Centre at Deen Dayal Upadhyay Hospital.**

Under Clinical Pharmacology activity, the CCRUM has conducted Pharmacological action and safety evaluation studies of 130 single drugs & 120 formulations in 30 diseases.

The initiative of the Department of AYUSH to set up CRISM is intended to meet increasing global concerns on the safety, efficacy and quality of Indian Systems of Medicine (ISM) products, and promote high level research in these systems and their worldwide acceptance. The primary mission of the Centre is to facilitate scientific validation and dissemination of information on ISM, in particular Ayurveda, Siddha and Unani Medicine, through collaborative research and advocacy by the Department of AYUSH and National Center for Natural Products Research (NCNPR), University of Mississippi, USA.

CCRUM has developed a kit of Unani drugs for common seasonal ailments and scientifically validated the efficacies of these drugs. These are now being commercially available through National Research Development Corporation. CCRUM Conducted studies on healthy ageing and developed a package for senior citizens. Council has also conducted multicentric trials of Unani drugs in different skin diseases.

Collaborative Research

The Council is engaged in collaborative studies with different scientific organizations and medical

colleges of repute in the country, including Council for Scientific and Industrial Research (CSIR), AIIMS, ICMR and other prestigious institutions of the country.

The Government of India is developing cooperation with foreign countries to promote traditional Indian systems of Medicine including Unani Medicine globally. In this area, a landmark was made with the launching of an Indo-US Centre for Research in Indian Systems of Medicine (CRISM) at University of Mississippi, USA in April 2009 by, Ministry of AYUSH. The initiative of the Department of AYUSH to set up CRISM is intended to meet increasing global concerns on the safety, efficacy and quality of Indian Systems of Medicine (ISM) products, and promote high level research in these systems and their worldwide acceptance. The primary mission of the Centre is to facilitate scientific validation and dissemination of information on ISM, in particular Ayurveda, Siddha and Unani Medicine, through collaborative research and advocacy by the Department of AYUSH and National Center for Natural Products Research (NCNPR), University of Mississippi, USA.

The Ministry of AYUSH has constituted a National Medicinal Plants Board (NMPB) to coordinate and support conservation, cultivation and trade of medicinal plants. Alongwith the Indian Medicines Pharmaceuticals Limited (IMPCL), Mohan (Uttarakhand)–Government of India enterprises for supply of medicines to Government dispensaries and hospitals, there are a good number of licensed manufacturing units for Unani drugs in the private sector.

Drug Standardization & Patenting of Drugs

Standards for 298 single and 100 compound drugs under the Technical Guidance of Unani Pharmacopeia Committee have been developed by

the CCRUM. Standardization of 277 single drugs of Unani Medicine (in five volumes) with 385 Compound Drugs and Physico-chemical standards of Unani formulations (in four volumes) has also been published. Unani Pharmacopeia of India (in six volumes of 298 monographs of single drug and in two volumes of 100 monographs of compound drugs have been completed. National Formulary of Unani Medicine (in five parts containing Standards of 1228 formulations). Eight patents have been granted from the Indian Patent Office on the research conducted by CCRUM. Fortysix applications for grant of patent are pending in Indian Patent Office.

Based on this work, the Council has brought out two publications. The book, *Physicochemical Standards of Unani Formulations* carries monographs on Unani formulations. This title has appeared in four parts consisting of 350 compound Unani drugs. Another publication, *Standardization of Single Drugs of Unani Medicine*, carries monographs on single Unani drugs in five volumes – each having standards for 50 single drugs. The Council has also published books entitled *Chemistry of Unani Medicinal Plants* and *Chemical Investigation of some Common Unani Medicinal Plants*. Since 1978 the Council has carried out a series of ethnobotanical surveys in remote forest zones in different states, particularly which are mainly inhabited by tribals and various ethnic groups.

Classical Unani literature are abound with references about the use of medicinal plants. Unmindful over-exploitation of this important resource has led to extinction of several species. Availability of genuine raw drug material is very important for the efficacy of the formulation. Besides, there are also some medicinal plants/drugs whose identification is controversial. Keeping this in view, a herb garden at CRIUM, Hyderabad



has been established for plantation of about hundred Unani medicinal plants of repute for demonstration purposes and field scale cultivation of medicinal plants particularly those used in clinical trials and kit medicines.

In order to popularize medicinal plants, particularly those used in Unani Medicine, the CCRUM has embarked upon a vigorous programme of cultivating about 100 species in its

The Traditional Knowledge Digital Library (TKDL) is an important joint initiative of the Ministry of AYUSH, Ministry of Health Family Welfare, Government of India and Council of Scientific and Industrial Research (CSIR), and is being implemented by the CSIR through National Institute of Science Communication and Information Resources (NISCAIR), Ministry of Science and Technology, to prevent the bio-piracy and misappropriation of the classical Unani formulations.

nurseries at its centers at Aligarh, Hyderabad, Chennai and Srinagar. Based on ethno-botanical survey in different forest zones of the country. Ethno-pharmacological data have been collected and compiled region wise (*Medicinal Plants in Folklores of Northern India, Southern India, Kashmir Himalayas, Northern India –part II, Orissa- part II, Southern India – part II*) in seven assortments.

Traditional Knowledge Digital Library

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Traditional Knowledge Digital Library (TKDL) is a collaborative project of the Ministry of AYUSH and the Council of Scientific and Industrial Research (CSIR) The main objective of this globally renowned project is to prevent misappropriation of India's rich heritage of traditional medical knowledge. Details of 1,54,015 formulations of Unani Medicine are available with the TKDL.

Unani Drug Industry

There are 485 licensed Pharmacies manufacturing Unani Drugs, in addition to Govt. of India enterprises "Indian Medicine Pharmaceutical Corporation Limited" (IMPCL). Manufacturing and sale of Unani Drugs is regulated under Drug & Cosmetic Act 1940 with mandatory compliance of Good Manufacturing Practices (GMP). Drug Standardization is undertaken by competent institutions e.g. Pharmacopeial Laboratory for Indian Medicine (PLIM), Pharmacopeia Commission of Indian Medicine (PCIM), Unani Pharmacopeia Committee (UPC) and CCRUM.

Global Scenario

Unani system is popular in different parts of the world with different names:

- India, Bangladesh, Sri Lanka & South Africa - Unani Medicine or Unani Tibb
- Iran-Tibb-e-Sunnati(Traditional Medicine)
- Pakistan- Eastern Medicine
- China- Uyghur Medicine
- United Arab Emirates (UAE)- Traditional Complementary and Alternative Medicine (TCAM)
- Kuwait- Islamic Medicine

Conclusion

Unani system of Medicine is holistic in nature and takes into account the whole personality rather than taking a reductionist approach towards disease. It is a great healing art as well as a science whose theories, philosophies of nature (Tabi'at) and temperament (Mizaj) and practices of medicine are most appropriate for the maintenance of human health.

India is a land of great ecological

diversity. Its healthcare system reflects this diversity, both in its plural systems of health knowledge and practice. In India, Unani system of medicine co-exists with conventional medicine and other AYUSH systems to form a unique model of medical conflation. Unani system of Medicine is a comprehensive medical system that deals with various states of the body (health and disease). Hippocrates, the father of medicine in conjunction with the founder of Unani medicine brought medicine out of superstition and his teachings were well adopted in modern system of medicine till the sixteenth century. While Arabs and Persians developed the fundamental principles and core practices of Unani but Indian Scholars explained and applied them to a peerless in the lands of its inception and Unani was very well comprehended in the soil of India. There was exchange of knowledge between Unani and Ayurved. Many things of Ayurved were

assimilated in Unani by determining their temperament and actions. The continuing creativity of Indian Scholars is testified by emerging encyclopedia of Hakeem Azam Khan and research development by Hakim Ajmal Khan. It helped Unani to become the legacy of India.

The Unani System of Medicine has a long and impressive record in India. Today, India is one of the leading countries in so far as the practice of Unani medicine is concerned. It has the widest network of well developed educational institutions, Comprehensive health care facilities, state-of-art research and quality drug manufacturing. India has reached a stage where many countries are approaching for cooperation and support for Unani System of Medicine. Based on the above facts, it has been established that India is a world leader in Unani system of Medicine. □

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Yours obediently,
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Sir, I don't have enough words to
appreciate you. You are simply the best.
Sir the way you taught 'History' is uncomparable.
You are the person because of whom I could
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Yours obediently,
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YE-38A/2015

Naturopathy and India's Health Care Challenges

R M Nair



Naturopathy believes that all the diseases are caused by accumulation of morbid matters/toxins in the body due to one's faulty eating and living habits. It is based on the principle that nature itself is a doctor - make use of only natural elements to restore the health of a patient by eliminating toxins

HEALTH INFRA-STRUCTURE is an important indicator to understand the health-care delivery provisions and mechanisms in a country². Ensuring well coordinated, high quality healthcare also requires establishment of a supportive health system infrastructure.

National Demographic and Health Profile

As per Census 2011, In India, out of a total population of 12101.9 lakhs (6237 lakhs males and 5864 lakhs females) the older population above 60 years is 7.4 per cent. This segment is the most vulnerable group requiring attention where naturopathy, which is easily accessible and affordable, can play a vital role. Further, the percentage of population below poverty line in the entire country in rural areas is 33.8 per cent and that in urban areas is 20.9 per cent. A total of 35.46 crore people are below poverty line¹. This again is vulnerable segment requiring affordable healthcare.

The National Health Profile 2013 states that in the entire country there are 19,817 Hospitals, of which 15,398 are in rural area and 4,419 in urban area. In addition there are 1, 51,684 Sub Centers, 24,448 Primary Health Centers and 5,187 Community Health Centers in India. Further medical care facilities under

AYUSH by management status i.e. dispensaries and hospitals are 26,107 & 3,167 respectively².

Further, as per information available, the following is the status of Naturopathy Hospitals/Dispensaries.

S.No	Facility	Naturopathy
1.	Hospitals	107
2.	Dispensaries	97
3.	Registered Practioners	1401
4.	Degree Colleges	17

Despite all the above infrastructure, there is still a wide gap in the ratio of population served per Doctor/Nurse/other paramedical available². This is evident from the following figures:

Naturopathy: The System

Nature Cure is a system of building the entire being in harmony with the constructive principle in Nature on the physical, mental, moral and spiritual planes of being⁹. Naturopathy, nature cure and Naturotherapy are the names given to the system of treatment in which seven elements are used to restore health of a patient.

Treatment by seven elements is quite different from the other systems

The author has 32 years of experience in Naturopathy and Yoga as a practicing Doctor as well as Administrator.

Table : 2

S. No	National Councils Registered	Population Served per Doctor/ Dental surgeon/ AYUSH/ Nurse/ Pharmacist
1.	Per Doctor both Allopathic and AYUSH	1217.84
2.	Allopathic doctor	1384.43
3.	AYUSH Doctor	1783.21
4.	Dental Surgeon	10120.85
5.	Nurse	531.79
6.	Pharmacist	1986.94

of medicine practiced at present. Those who regard nature cure only as a method of curing diseases are mistaken. In reality nature cure is the right way of living. It is an art of attaining a long, healthy and blissful life.

Naturopathy believes that all the diseases are caused by accumulation of morbid matters / toxins in the body due to one's faulty eating and living habits. It is based on the principle that nature itself is a doctor - make use of only natural elements to restore the health of a patient by eliminating toxins.

The father of the Nation, Mahatma Gandhi had repeatedly told during his life that to maintain good health one must live in harmony with nature and advocated nature cure in case someone fell sick. Gandhiji had advocated Nature Cure after his long experience and search in giving treatment through nature cure to those who came to him. The system of nature cure is so simple and easy that once a person takes refuge in this system he becomes its devotee throughout his life. In comparison to other systems of medicine Nature Cure is very cheap. Therefore, it can be very useful in our country. Our rural folk can easily adopt it and remain healthy without doctors and medicines ⁴.

The main strength of naturopathy is in providing not only preventive, but also promotive and curative services. This system has been found very effective in the treatment of various chronic diseases especially among older people above the age of 60 years.

What benefits will it cover?

Naturopathy can tackle illnesses that cannot be wholly healed by allopathic treatment. The treatment focuses on the patient's entire body and not just a particular part. A naturopath instructs the patients about the significance of natural foods loaded with rich nutrition and to maintain a healthy lifestyle/ living.

Apart from natural food sources, Naturopaths offer several therapeutic modalities which have benefited millions of people across the globe.

The main strength of naturopathy is in providing not only preventive, but also promotive and curative services. This system has been found very effective in the treatment of various chronic diseases especially among older people above the age of 60 years.

Some important naturopathic therapies are:-

Hydrotherapy- Hydrotherapy is a well-known and ancient form of therapy. In hydrotherapy different temperatures of water, as in hot and cold baths, steam baths, compresses and fomentation, saunas, wraps, and immersion baths to produce several types of physiological effects depending upon temperature of water, duration and area of application for different disease conditions.

Mud-Therapy- Mud absorbs, dissolves and eliminates the toxins

and rejuvenates the body⁵. It is done with mud pack poultice and mud bath and is useful in curing skin conditions



such as (Eczema, Psoriasis, boils, pimples and patches) hypertension, diabetes, migraine, arthritis, constipation, gastritis, dyspepsia, anorexia, peptic & duodenal ulcers and menstrual disorders etc.

Massage Therapy- Massage is generally employed for tonic, stimulant and sedative effects⁵. The therapy is useful in improving blood circulation and relieving fatigue. It helps in opening up clogged pores of the skin which is essential for letting harmful toxins go from the body with sweat. The therapy is found very useful in all chronic conditions like rheumatoid arthritis, osteoarthritis, inter-vertebral disc prolapse, frozen shoulder, stroke, and in other gastrointestinal conditions like (constipation, dyspepsia, anorexia), CAD, metabolic disorders, hormonal disorders, neurological disorders etc.

Chromo Therapy- Sun rays have seven colors- violet, indigo, blue, green, yellow, orange and red. These colors are employed through irradiation on body or by administering charged water and oil for treatment⁵. The most commonly administered treatments in chromo therapy are plantain leaf sun bath, thermolium sun bath and open air sun bath. The therapy is useful for rheumatoid arthritis, osteoarthritis, osteoporosis, psoriasis, eczema,

upper respiratory problems, anemia, paralysis, hypertension and digestive disorders.

Magneto Therapy- Magnets influence health. South and north poles of different powers and shapes are employed in treatment, by applying directly on different parts of the body or through charged up water or oil⁵.



In addition to the above modalities of treatments in Naturopathy, yoga, diet, fasting, acupressure, acupuncture, mudra therapy and pyramid therapy are also very popular. These therapies are effectual for treatment of nervous system imbalances such as stress, anxiety, muscle cramps, headaches, depression and fatigue. Reproductive disorders like menstrual problems, pre-menstrual syndrome, infertility, obesity, pre-conception care can be treated by this healing therapy. It is also recommended for digestive disorders, gastrointestinal disorders, constipation, prickly bowel syndrome. Immune disorders, allergies, sensitivities, weight loss, cough, cold and flu, insomnia, prostate problems, arthritis, high cholesterol can be cured by this therapy.

Cost-effectiveness

A nation could save huge amount in health care costs and provide better quality of care without compromising patient outcomes if alternative medicine is widely practiced.^{6,7} Naturopathic care is less expensive than conventional medicine, resolving the costly epidemic of chronic disease and making healthcare more available to those who otherwise could not afford it. The adoption and use of competent healthcare delivery system can be an effective way to manage health care cost and improve the quality of care.

National Health Policy

The National Health Policy 2015, while acknowledging achievements in health emphasizes the need to be mindful and to confront the high degree of health inequity in health outcomes and access to healthcare services as evidenced by indicators disaggregated for vulnerable groups. These are urban rural inequities and there are inequities across States. A number of districts, many in tribal areas, perform poorly even in those states where overall averages are improving. Marginalized communities and poorer economic quintiles of the population continue to fare poorly³.

nation could save huge amount in health care costs and provide better quality of care without compromising patient outcomes if alternative medicine is widely practiced.^{6,7} Naturopathic care is less expensive than conventional medicine, resolving the costly epidemic of chronic disease and making healthcare more available to those who otherwise could not afford it. The adoption and use of competent healthcare delivery system can be an effective way to manage health care cost and improve the quality of care.

National Health Policy also emphasizes the realization of the potential of AYUSH services for overall strengthening of AYUSH networks in the public sector with focus on AYUSH services, development of infrastructure facilities, capacity building and community based preventive and promotive interventions. The policy also recognizes the contribution of the large private sector and not for profit organizations providing AYUSH services.

Conclusion

In view of the merits of naturopathy as an alternative system of medicine the Govt. of India through the aegis of NITI AYOOG may take up promoting this healing system in a big way so as to reach even the people living in remotest of remote places in an organized manner through the State Govts., Local Bodies, Panchayats, NGOs and other sectors. This may be on the lines of the vision enshrined in the National Health Policy cited above.

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YE-34/2015

The Siddha System of Medicine

Krishnamachary



Siddha like all other traditional medical systems gave way to biomedicine some 300 years back. Revival happened and institutionalized education started in the middle of the twentieth century NGOs in different regions of country carry out field based research and other university departments on medicinal plants, Phytochemistry, Pharmacology, and State public health Department also carry out field based research activities to promote the Siddha system

THE SIDDHA system of medicine is one of the ancient systems of medicine found in South India near Kanyakumari in Tamil Nadu. The term siddha means achievements and *Siddhars* are those who have achieved perfection in the medicine. Eighteen *Siddhars* are said to have contributed towards the systematic development of this system and recorded their experience in Tamil language.

The Siddha system of medicine emphasizes on the patient, environment, age, sex, race, habits, mental frame work, habitat diet, appetite, physical condition, physiological constitution of the disease for its treatment which is individualistic in nature. Diagnosis of the disease is done through examination of pulse (ratio of *Vatham, Pitham, Kapam* etc), urine, eyes, study of voice, colour of the body, tongue and status of the digestion of individual patient. System has unique treasure for the conversion of metals and minerals as drug and many infective disease are treated with the medicines containing specially processed mercury, silver, arsenic, lead and sulphur without any side effects.

The strength of the Siddha system lies in providing very effective therapy for Psoriasis, Rheumatic

disorders, Chronic liver disorders, benign prostate hypertrophy, bleeding piles, peptic ulcer including various kind of dermatological disorders of non-psoriatic nature.

Varman (Pressure Manipulating therapy) is special kind of treatment in Siddha system and specific points being manipulated by pressure with the figure and the pain is relieved and the restricted movement becomes free and active.

Thokkanam is another type of treatment which includes applying oil on the area of swelling and pain and massaging so that the neuromuscular and musculoskeletal pain and swelling is relieved.

The Siddha system of medicine is very popular in Tamil Nadu and most of the Primary Health Centres and Government Hospitals are having Siddha wing and this system of medicine to be utilized throughout India by opening Siddha Wing throughout the country.

During the last six decades, there has been continuous development in Siddha medical education and this has led to the establishment of the National Institute of Siddha at Chennai as apex institute having six specialities in post graduate teaching leading to the award of M.D. (S) Degree. These are *Maruthuvam*

The author is Joint Adviser in the Ministry of AYUSH, Government of India.

(General Medicine), *Sirappu Maruthuvam* (Special Medicine), *Kuzanthai Maruthuvam* (Paediatrics), *Gunapadam* (Pharmacology), *Noi Nadal* (Pathology) and *Nanju Nool & Maruthuvam Neethinool* (Toxicology).

For the development of focused research in Siddha system of medicine, Govt. has constituted Central Council for Research in Siddha (CCRS), an autonomous body under the Ministry of AYUSH, Govt. of India.

Education

Siddha like all other traditional medical systems gave way to biomedicine some 300 years back. Revival happened and institutionalized education started in the middle of the twentieth century. Diplomas were awarded in the Presidency of Madras and medical registration based on hereditary training was awarded.

An integrated course along with allopathic training was in vogue till 1960. Subsequently an exclusive college affiliated to university of Madras was started at Palayamkottai in Thirunelveli district of Tamil Nadu in 1964. Medical degree Bachelor of Indian Medicine (BIM-Siddha) with five and half years duration was awarded. This college now conducts post-graduate courses with three years duration in five branches. The other college at Chennai also conducts both graduate and postgraduate courses leading to Bachelor of Siddha Medicine and Surgery and Doctor of Medicine. (Siddha). Two colleges are run by the government of Tamil Nadu and are affiliated to The Tamil Nadu Dr. M.G.R. Medical University, Chennai. There are five private siddha colleges in Tamil Nadu and one in Kerala. The National Institute of Siddha imparts postgraduate training. Around three hundred Graduates and 100 Post graduates pass out every year.

More Specialty branches like external therapies including *Varmam* (*Sirappumaruthuvam*), Pathology

(*Noi Nadal*), Toxicology, (*Nanju Maruthuvam*) and Pediatrics (*Kuzhanthai Maruthuvam*), were established in Post graduation of Siddha medicine. The curriculum is based on the one laid down by the Central Council of Indian Medicine, New Delhi. (An autonomous body formed under the I.M.C.C. ACT 1970.) University of Jaffna in Srilanka also imparts graduate training in Siddha medicine.

Govt. of India strictly implements the qualifying norms for new colleges and new specialization with the objective of improving teaching standards and also broad based review of curriculum and syllabus which includes modern sciences like Micro biology, Medical Biochemistry,

Siddha like all other traditional medical systems gave way to biomedicine some 300 years back. Revival happened and institutionalized education started in the middle of the twentieth century. Diplomas were awarded in the presidency of Madras and medical registration based on hereditary training was awarded.

Pharmacology, Toxicology and Modern medicine. New diploma course in integrated ISM pharmacy and Nursing therapists to provide well trained Para-medics for treatment centers both in public and private sector has been started in Tamil Nadu. Currently, Internees are posted to primary health centers to enable them in delivering primary care after completion and train them to work in rural environment.

Ministry of AYUSH provides financial support for conducting Continuing Medical Education program for teachers and for Govt. Physicians. Young physicians undergo Training under *Guru-Sishya* programme.

To start new Siddha Medical College where Siddha Medical

College is not available, the Ministry of AYUSH is sanctioning the college and giving 10 crores for construction of the college. Taking this opportunity,



the private management and the state governments may start new Siddha medical colleges in their areas.

Research

An apex body for research was formed exclusively for Siddha, Central Council of research in Siddha which was earlier apart of CCRAS. This autonomous council has one central research institute for siddha and regional Research institutes and two units like survey of medicinal plants unit and Clinical research units.

Research is focused on clinical research, literary research, drug development and standardization and Fundamental research. Apart from central council the state dept has also established centers for Research in diseases like AIDS, Cancer, Diabetes, Asthma, Infertility. Multi-Disciplinary research are being carried out in identifying new health benefits for known drugs and known benefits from so far unknown drugs. Dermatological and Neuro-skeletal muscular Disorders have Been effectively treated. Clinical research shows the Efficacy of various Siddha formulations in Anti-natal care/Post natalcare, Anemia, HIV, Diabetes, Rheumatoid arthritis, Psoriasis, cancer, Polycystic ovarian disease and fibroid uterus.

Research organizations currently focusing on child survival to reduce the infant mortality, Safety profile of Herbomineral drugs,

Drug standardization, Endangered Siddha plants conservation and multiplication, Literary research and survey and documentation of Traditional knowledge. Research organizations in India which carry out research are the Central Research Institute for Siddha, three Post-graduate colleges of Siddha, Private universities with grants from Dept of AYUSH, Department of Bio-Technology and Department of Science and Technology.

NGOs in different regions of country carry out field based research and other university departments on medicinal plants, Phyto-chemistry, Pharmacology, and State public health Department also carry out field based research activities to promote the Siddha system.

Manufacture

As many as six hundred units mostly in the tiny sector and a few in small scale sector are engaged in the manufacture of Siddha medicine. Government of Tamil Nadu pharmacies at Chennai and Thirunelveli manufacture medicine for the requirement of government hospitals. The major Siddha Industries in Tamil Nadu are Indian Medical Practitioners Cooperative Pharmacy and Stores (IMPCOPS), SKM Siddha and Siddha Pharmaceuticals, Lakshmi Seva Sangh and Tamil Nadu Medicinal Plants Corporation Limited (TAMPCOL) has consistently paid.

Each one of the above industry has increased their production / packaging capacity. Most of them have excess capacity for future growth. Rest of them are in the process of improving capacity. Interestingly most of them are manufacturers of Classical formulations and increase the number of Retail outlets and also sales. Good manufacturing. Practice (GMP) was implemented in 2002 and is mandatory for all AYUSH drug manufacturing units. Sophisticated Instrumentation Labs for analysis are being established by companies. There are four independent Third

party labs for testing quality standards with expertise in Siddha.

Formulation Testing

GMP education is carried out for continuous quality improvement both by Govt. bodies and Manufacturers Association. Manufacture and sale of Siddha medicine are regulated by the state licensing authority–ISM and technical inputs for the formulations are given by a competent authority of the state directorate of Indian medicine. The Drug and Cosmetics Act of 1940 with various amendments to it with specific reference to Siddha is applicable to it.

Siddha in Global Context

Siddha system of medicine is also patronized extensively, more

Siddha system of medicine is also patronized extensively, more particularly in Tamil speaking countries like Sri Lanka, Singapore, Malaysia, Mauritius and some parts of Indonesia. The internet, Social media and electronic media particularly the Tamil Television channels have created an awareness among the Tamil diaspora.

particularly in Tamil speaking countries like Sri Lanka, Singapore, Malaysia, Mauritius and some parts of Indonesia. The internet, Social media and electronic media particularly the Tamil Television channels have created an awareness among the Tamil diaspora. Siddha system could be practiced in any part of the world as it stresses food as the basis for health and even most of the remedies for common ailments that affect human being could be managed with many spices used in kitchen and adoption of healthy food habit based on individuals body types, season and health status. It has provided simple lifestyle based practices like breathing exercise, meditation practice appropriate postural practice

for unison of body and mind. Yet another advantage of siddha for its universal utility is its branch of Physical manipulation of Varma and thokanam, which are carried out by trained skillfully proficient practitioners manually without drugs or instruments particularly in case of trauma or postural disorders and for pain management.

Cost Effectiveness

The Cost of drug and treatment procedures are much less and are affordable to vast majority of the people of the developing countries where universal health insurance or public health delivery is in adequate.

Yet strength of the Siddha system is in the area of diagnosis, particularly the pulse diagnosis which is predominantly dependant on the clinical acumen of the practitioner and could be carried out in any location and precise. It does not require a great clinical laboratory or costly instruments.

Most of the drugs based on food ingredients, spices and plants are proven to be safe in general. And even in case of inorganic such as coral, pearl oyster, conch shell cowrie shells and processed calcinated copper, zinc are safe in the micro particulate state and dose levels.

Patenting of Procedures

There are certain unique external therapy procedures in Siddha medicine like Varma which is slowly gaining national attention. There is a need to validate, standardize these procedures before they are patented. Like some postures of yoga asanas being patented there is every chance that these procedures are also patented. So the CCRS is taking special interest in standardizing and patenting.

Crosspathy : Issues and Challenges

There is a felt need among siddha physicians who run clinics in remote

locations as well as the ones who man major hospitals that they should be allowed to use some of the bio-medicine. Since many patients come to Siddha treatment once they find no alternative or in terminal illness, siddha physicians feel it is their responsibility to provide pain relief, protect patients from acute distress and prevent sudden death. Now many cardiologists themselves recommend high risk individuals to keep certain medications in their pockets and use to prevent damage in ischemic heart disease. The argument of these doctors arise from the fact that they are taught in Human anatomy, physiology, Biochemistry, Microbiology and pharmacology in their Siddha course and also trained in Teaching hospitals in obstetrics. They are not seeking complete use of bio-medicine. Moreover in Tamilnadu, Allopathy and siddha are collocated in Primary health Centres. In centres where there are only one Allopath and one Siddha physician, on days allopath is either on leave or on field work, Siddha physicians are forced to attend patients who seek bio-medicine. Since in remote hilly regions Allopath's hesitate to work siddha physicians are forced to use bio-medicine. In most medium sized hospitals even in metros there is a scarcity of biomedicine trained physicians for night calls and siddha physicians do the role. This challenge could be overcome by bridge course for Siddha physicians.

Government Efforts

Both the Government of India and Tamil Nadu State Government have a policy to promote Siddha medicine and are taking efforts to mainstream this system in public health delivery. Various Institutions have been established by the government and regulations are in place for ensuring better quality of health care. WHO on its part has initiated lot of efforts for strengthening various components of system. Through Central Sector Scheme and Centrally Sponsored Scheme, Public Health initiative Scheme of Government of India, Ministry of AYUSH Siddha Projects are carried out throughout India.

In central Government, Siddha physician are selected through UPSC and posted in Central Government Health Scheme Wellness Centre throughout India.

Increasing Popularity Abroad

Siddha System of Medicine is more popular in Sri Lanka where Siddha Medical Colleges and Hospitals are available. The system is also popular in Malaysia, Singapore, Thailand where Siddha Hereditary Physicians and Qualified Physicians are Practicing and doing noble services.

Realising the above value of Siddha system of medicine, the noble system should be utilized further nationally and internationally for the welfare of the human beings. ▣

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NORTH EAST DIARY

HIGHWAY PROJECTS IN NORTH EAST

Two major Highway projects have been taken up in the north eastern region to ease travel from Guwahati towards Shillong and other parts of the North East. These include Shillong Bypass and four laning of Jorabat-Barapani Section of NH-40. The Shillong Bypass will connect NH 40 and NH 44 (New NH 6) and will decongest traffic in Shillong from trucks and heavy vehicles coming from the North Eastern parts of Assam and other states-Mizoram and Tripura. The Bypass will have a length of 48.76 Km, starting from NH 40 at Umiam in Ri-Bhoi District and ending at NH 44 (new NH 6) at Mawryngkneng in East Khasi Hills District. The 61.80 km bypass has been constructed by NHA on BOT mode. Four laning of Jorabat-Barapani provides robust road connectivity between Guwahati and Shillong. The project stretch passes mostly through the hilly terrain covering major urban areas like Byrnihat and Nongpoh. A sum of Rs. 15000 Cr worth of projects will be funded by the Centre for North Eastern states this year.

SOME OTHER DEVELOPMENT HIGHLIGHTS

- Special emphasis on monitoring of infrastructure projects for time-bound completion, priority funding for the identified projects tied up and fast tracking of environmental and forest clearance by Ministry for Development of North East Region
- Completion of projects and early release of funds, sanction and approval of the new projects streamlined.
- Rs 400 crore released in Non Lapsable Central Pool of Resources State and Rs 71.97 crore released under Non Lapsable Central Pool of Resources Central.
- Capacity building & technical assistance scheme to boost employability & entrepreneurial skill of NER youth.
- Rs. 200.00 Crore released for North East Road Corporation and Rs.100.00 Crore in the Budget 2014-15 for Organic Farming in NER.
- Meghalaya put on the railway network Dudhno (Assam)-Mendipathar (Meghalaya) new railway line inaugurated on 29th November, 2014, connecting New Bongaigaon-Goalpara-Guwahati main line.
- NER power system improvement project sanctioned for Rs 5, 111 crore for six NE states to strengthen intra state transmission and distribution-Goal.
- Unit –II of Palatana Power Plant in Tirpura commissioned. Special focus for NER by various ministries in the Union Budget 2014-15 with an allocation of Rs 53,000 crore.
- Six new Agriculture Colleges in the North-East with Rs 100 crore allocated for Organic farming in 2014-15.
- One Modern Apparel Factory in each state of north-east as a part of 'Make in India' to promote rich cultural heritage and nature.



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DEVELOPMENT ROADMAP

National AYUSH Mission

The Government has launched the National AYUSH Mission with the objectives to promote AYUSH medical systems through cost effective AYUSH services, strengthening of educational systems, to facilitate the enforcement of quality control of Ayurveda, Siddha and Unani & Homoeopathy (ASU &H) drugs and sustainable availability of ASU & H raw-materials.

The Mission has been launched (NAM) with an aim to address the gaps in health services through supporting the efforts of State/UT Governments for providing AYUSH health services/education in the country, particularly in vulnerable and far-flung areas. Under NAM special focus will be given for specific needs of such areas and for allocation of higher resources in their Annual Plans. The mission also has provision for 20 per cent of financial resources for flexible components to be proposed by the State/UT Governments.

This Mission will help in the improvement of AYUSH education through enhancement in the number of upgraded educational institutions, in providing better access to AYUSH services through increase in number of AYUSH hospitals and dispensaries, availability of drugs and manpower, providing sustained availability of quality raw material for AYUSH systems of medicine, supporting cultivation of medicinal plants by adopting Good Agricultural Practices (GAPs) so as to provide sustained supply of quality raw-materials and support certification mechanism for quality standards, improving availability of quality of Ayurvedic, Siddha, Unani and Homeopathy (ASU&H) drugs through increase in number of pharmacies, drug laboratories and improved enforcement mechanism of ASU&H drugs.

The Mission at National level will be governed by a National AYUSH Mission Directorate headed by secretary as Chairman and at State level Mission will be governed and executed by a State AYUSH Mission Society headed by chief Secretary acting as Chairperson.

Vanbandhu Kalyan Yojana

Centre has launched Vanbandhu Kalyan Yojana (VKY) for the welfare of Tribals. The scheme been launched on pilot basis in one block each of the States of AP, MP, HP, Telangana, Orissa, Jharkhand, Chattisgarh, Rajasthan, Maharashtra and Gujarat. Under this scheme centre has provided Rs. 10 crore for each block for development of various facilities for the Tribals. These blocks have been selected on the recommendations of the concerned States and have very low literacy rate. The scheme mainly focuses on bridging infrastructural gaps and gaps in human development indices between Schedule tribes and other social groups. VKY also envisages to focus on convergence of different schemes of development of the Centre and State Governments with an outcome oriented approach. Initially the blocks having at least 33 per cent tribal population in comparison to total population of the block are to be targeted.



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